

2023

INTEGRATED **MANAGEMENT** REPORT



We are energy that transforms!

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01

Presentation



Letter from the Chairman of the Board



Saúl Kattan Cohen
Chairman
Board of Directors
of Ecopetrol

The Board of Directors of Ecopetrol is delighted to present the 2023 Integrated Management Report, showcasing the Company's progress aligned with its corporate objectives. These advancements reflect the professionalism and dedication of our employees, whose diverse roles positively contribute to the growth and

positioning of Ecopetrol. Our success is also credited to the trust-based relationships with stakeholder groups, rooted in ethics, transparency, and respect for human rights.

Throughout 2023, discussions on the challenges posed by new socio-economic dynamics, both nationally and internationally, guided the Company's actions. This further solidified our commitment to environmental, social, governance, and technological best practices that define Ecopetrol. Within this framework, Ecopetrol has reaffirmed its dedication to a Just Energy Transition, achieved through portfolio diversification and the consolidation of a diversified energy group. Consequently, in 2023, adjustments were made to the 2040 Strategy "Energy That Transforms," initially presented at the beginning of the preceding year, with a focus on three key aspects:

- Adjusting strategic lever "Growing with the Transition" to guide the Company towards maximizing the potential of gas in the Colombian Caribbean Offshore.
- Opting not to pursue unconventional hydrocarbon exploration activities in Colombia.
- Substituting the strategic goal of energy efficiency with a 25 petajoule (PJ) internal energy consumption optimization target accumulated by the period 2018-2030.

These adjustments were approved with the objective of solidifying the Ecopetrol Group's commitment to climate change and the environment, alongside enhancing the efficiency, sustainability, and competitiveness of the Company.

As a testament to this objective, the Board of Directors, in its role of providing direction, conducting insightful analysis, and offering strategic supervision, underscores the following outcomes attained in 2023:

- The highest production in the last eight (8) years: 737 kboed by the year-end, exceeding the projected target.
- Outstanding financial results, with consolidated revenues of COP 143.1 trillion, with a net profit of COP 19.1 trillion, an EBITDA of COP 60.7 trillion, and an EBITDA margin of 42.4%. These results mark the second-best performance in the history of Ecopetrol.
- Upholding the commitment to "Life First," showing sustained compliance with the total recordable injury indicator (TRIF). The Ecopetrol Group achieved a result of 0.26 against a limit of 0.33, signifying a 21% reduction compared to 2022. For Ecopetrol S.A., the TRIF result was 0.27 against a limit of 0.33.
- The marketing of natural gas, reaching over 11 million people in Colombia, and the Social Gas Program, which succeeded in connecting more than 20,000 families nationwide, of which 14,202 have been certified connections.

- A reduction of 581,532 tCO₂e of greenhouse gas emissions compared to the 2023 target of 416,672 tCO₂e. Additionally, the definition of a methane emissions reduction target of 55% by 2030 in direct production operations.
- Saving of 3.89 PJ in 2023 under the Energy Efficiency Program, the highest figure since 2018, complemented by the addition of 472 MW of renewable energy.
- Signing the 2023 – 2026 Collective Labor Convention with nine (9) labor unions, securing agreements that align with the 2040 Strategy by improving working conditions and committing to gender equity.

It is also noteworthy to mention the incorporation and use of artificial intelligence to achieve greater efficiency, positioning Ecopetrol at the forefront globally in the adoption of these technologies. The current challenge for the Board of Directors is to ensure the reinforcement of cybersecurity, aspiring to make Ecopetrol not only a more competitive, efficient, technological, and innovative company but also a safer one. Recognizing the pivotal role that Ecopetrol plays in the country and the regions, the Board of Directors reaffirms its commitment to continue guiding the Company on short, medium, and long-term strategic matters, maintaining its status as the "Energy That Transforms" in Colombia and Latin America.

Letter from the CEO

As we approach the first anniversary of leading this esteemed corporate family, it is my honor to present our 2023 Integrated Management Report, which encapsulates the most noteworthy progress, results, and challenges faced by Ecopetrol S.A. and its Group throughout the year. Through these accomplishments, we reinforce our core commitment to creating value for our stakeholder groups and advancing projects associated with the energy transition in alignment with the 2040 Strategy, "Energy That Transforms." Continuously addressing social, environmental, industry, and market challenges, we prioritize efficiencies, savings, and the seamless integration of technology.

In 2023, we fortified our traditional hydrocarbons business across all segments, achieving significant milestones such as increased renewable energy capacity, decarbonization of operations, and environmental conservation. These efforts underscore our unwavering commitment to the energy transition. The results exemplify that the roadmap outlined in the strategy, reaffirmed in September 2023 during the 15th-anniversary celebration of Ecopetrol on the New York Stock Exchange, is clear and guides us toward our defined purpose.

Adhering to the highest standards of performance, ethics, and transparency, and employing sound environmental, social, and governance practices, we have shaped a more humane company, where life takes precedence, and our actions align with the respect for human rights. This approach fosters opportunities and conditions in our surroundings, creating value in business, enhancing field efficiency and productivity, and promoting sustainable operations and activities. Today, we proudly declare that we have evolved into a diversified energy group.

Building on these substantial advances, the report meticulously outlines the operational, financial, and TESG results achieved in 2023. Numerous highlights contributed to our attainment of a net profit of COP 19.1 trillion, an EBITDA of COP 60.7 trillion, an EBITDA margin of 42.4%, and transfers to the nation totaling COP 58.3 trillion—the highest figure in our history. Additionally, liquidity improved with the closure of the Fuel Price Stabilization Fund (FEPC, as per its Spanish acronym) gap, which reached COP 37 trillion by 2022.

The results reflect successful corporate and financial management, as well as synergies between the Group's business lines, as follows:

- In hydrocarbons, we accomplished an exceptional 50% exploration success rate, outshining the industry

standard of 30%-38%. We not only surpassed our production target of 720 kboed by reaching 737 kboed but also achieved the highest figure in the last eight (8) years. In the refining sector, our unprecedented financial performance soared, boasting an EBITDA that exceeded COP 7.6 trillion. Transportation witnessed a robust growth of 4.5%, as we transported approximately 807.0kbd of crude oil through pipelines. Moreover, refined products transportation via pipelines saw a commendable 2.6% increase, achieving historically high evacuation levels of over ~305.9 kbd.

- In our low-emission initiatives, the Energy Efficiency Program propelled the Ecopetrol Group to achieve an impressive 3.9 petajoules in savings in 2023—a record since the inception of measurements in 2018, surpassing the previous year by an outstanding 250%. Our commitment to a greener energy matrix was further underscored by the addition of 472 MW of renewable energy. We continue advancing in our transition with the enhancement of natural gas through the successful exploration of Glaucus-1 in the Colombian Caribbean offshore, a collaborative effort with Shell in the Gorgón area. Additionally, the commencement of drilling the Orca Norte-1 well in deep waters, a 100% Ecopetrol-operated project, not only contributes significantly to the sustainability goals of our traditional business but also fortifies our position in the transition to more sustainable energy sources.
- In transmission and roads, we achieved a notable COP 2.5 trillion in profit, marking a 12% increase from the preceding year, and we invested USD 1,087 million. Further attesting to our dedication to excellence, ISA was honored with the quality seal from the Colombian Stock Exchange for its transparency, corporate governance, and unwavering commitment to the stock market.
- In the commercial front, in October 2023, we announced the opening of our trading office in Houston to be closer to global markets, resulting in value generation of USD 175.5 million in EBITDA along with the Singapore trading office.

The outstanding performance was acknowledged by credit rating agencies Standard & Poor's (S&P), Moody's, and Fitch, highlighting the Company's robust financial profile, access to capital markets, and its strategic importance for Colombia by maintaining global credit ratings.

In terms of TESG, we exceeded the annual target for greenhouse gas emissions reduction by 40%, amounting to 581,532 TonCO₂e. This contributes to a cumulative reduction of 1,491,645 TonCO₂e (2020-2023), complemented by the Gold Standard recognition for the methane program and our commitment to the Zero Methane Emissions by 2030 initiative promoted by the Oil and Gas Climate Initiative (OGCI). On the subject of integrated water management, we were able to reuse of 152.8 million cubic meters of water in operations, equivalent to 79% of the total volume required for operations, representing a 16% increase compared to the volume reused in 2022.

Committed to the circular economy, we were honored with a Portafolio Award under the innovation category for the modified asphalt circular economy project. Through the execution of 14 projects, consuming 845 tons of asphalt (equivalent to 6 million plastic bags), Ecopetrol prevented plastics incorporated into asphalt from reaching water sources or landfills.

In alignment with our dedication to environmental stewardship, we expanded the number of ecoregions from 15 to 20. In these areas, a cumulative expanse of 15,583 hectares preserves over 500 species of flora and fauna.

Within the social realm, as the year concluded, we earmarked COP 366.233 billion for the execution of the territorial development portfolio. This includes social and relationship investment that is mandatory and strategic in nature. The positive impact in the regions complements the growth of the social gas program, which has reached over 20,000 families nationwide, with 14,202 certified connections.

Throughout 2023, our supply chain engaged 128,733 workers from Ecopetrol Group partners, with 87% being local labor. This active involvement contributes to the development of communities in the regions where we operate.

In reference to our Human talent, it is noteworthy that we successfully negotiated the 2023-2026 Collective Labor Convention with the Union of Oil Industry Workers (USO) and other labor organizations such as ADECO, SINDISPETROL, ASINTRAHC, SINTRAMEN, ASOPRETROGAS, SUP, ASTECO, and UTIPEC. Emphasizing reasonableness, austerity, and efficiency criteria, these agreements focus on enhancing employees' working conditions and a commitment to persistently promote diversity, equity,



Ricardo Roa Barragán
CEO
Ecopetrol S.A.

and inclusion with a gender focus in new hires, among other aspects.

As an integral part of the Science, Technology, and Innovation Strategy, our businesses generated certified benefits in the amount of USD 777.95 million. These benefits are linked to increased revenues from incremental production, deferred reduction, naphtha and middle distillate yields, efficiencies in CAPEX, and higher productivity. These elements guide Ecopetrol towards the objective of sustaining production and EBITDA generation, ensuring the operational continuity of the traditional business alongside the energy transition.

I invite you to explore this Integrated Management Report and delve into the specifics of our achievements. These milestones would not have been attainable without the steadfast commitment of all our employees, partners, and the communities where we operate. Their dedication, commitment, and hard work contribute daily to ensuring that Ecopetrol remains the primary driving force behind transformative energy in Colombia.

About this Report

(SFC 7.1i) In line with its commitment to transparency in reporting its annual management efforts, Ecopetrol is delighted to present its 15th Integrated Management Report (IIG), which consolidates the Annual Management Report, the Periodic End-of-Year Report, the Annual Corporate Governance Report, and the Corporate Responsibility and T ESG Report.

(GRI 2-2) (DJSI 1.1.1) The information within the report offers an overview of Ecopetrol S.A.'s (hereinafter referred to as Ecopetrol or the Company) management. In cases specifically indicated, it also encompasses corporate responsibility and T ESG information from select companies within the Ecopetrol Group. Moreover, information related to the hydrocarbons, transmission, roads, and telecommunications business lines will be consolidated from CENIT and ISA, respectively.

For this publication's purposes, the term "Ecopetrol Group" (EG)¹ refers to all companies in which Ecopetrol, directly or indirectly, holds shares, irrespective of ownership percentage or control. It serves as a broad, non-legal concept designed to

create a shared identity, allowing the integration of various investments held, directly or indirectly, by Ecopetrol in these companies, from the direction, management, and culture standpoints.

(GRI 2-2) The financial reports cited in this publication align with the same reporting period as the IIG, covering January 1 to December 31, 2023. The financial statements included in the separate financial statements pertain to Ecopetrol, while the consolidated financial statements encompass companies with a unitary purpose and direction, forming the Ecopetrol Business Group.

(GRI 2-3) This report represents an annual undertaking that, in the pursuit of building trust with its Stakeholder Groups (SG), communicates Ecopetrol's performance in 2023 within the framework of the 2040 Strategy "Energy That Transforms." It additionally outlines the environmental, social, and governance (ESG) risks and impacts that delineate Ecopetrol's material issues and how the Company manages them.



1. The designation "Ecopetrol Group" encompasses all companies in which Ecopetrol holds shares, whether directly or indirectly, without regard to the ownership percentage or control. This expansive, non-legal term serves the purpose of fostering a shared identity, facilitating the consolidation, under a unified term, of the diverse investments that Ecopetrol maintains in these companies. This integration is approached from the angles of leadership, management, and cultural alignment, both for the holdings directly managed by Ecopetrol and those it holds indirectly.

This report not only adheres to the Global Reporting Initiative (GRI) Standards but also aligns with relevant regulatory requirements, guidelines from diverse reporting frameworks, standards, rankings, and Environmental, Social, and Governance (ESG) rating agencies, encompassing the following:



Stakeholder Capitalism Metrics (SCM) by the World Economic Forum (WEF)



United Nations Sustainable Development Goals (SDGs)



Sustainability Accounting Standards Board (SASB) – (Exploration and Production)



Task Force on Climate-Related Financial Disclosures (TCFD)



Corporate Sustainability Reporting Directive (CSRD)

Member of
Dow Jones Sustainability Indices
Powered by the S&P Global CSA

Dow Jones Sustainability Index by S&P Global (DJSI)



International Sustainability Standards Board (ISSB)

Additionally, it adheres to the requirements of the Superintendence of Companies and Circulars 031 and 012 of 2022 from the Financial Superintendency of Colombia. It also complies with External Circular 100-000010 dated November 21, 2023, from the Superintendence of Companies of Colombia, which introduces Chapter XV

– Administrative recommendations on sustainability reporting to its Legal Basic Circular.

(SFC 7.4.1.2.7) Materiality Criteria in the Disclosure of Periodic Information

Relevant risks faced by the Company and its subsidiaries	Significant risks impacting the corporate purpose, strategy, financial situation, investment plan, operational results, cash flow, and growth prospects are noteworthy.
Events leading to the materialization of risks	Risks that materialize will be deemed relevant if their magnitude exceeds 5% of the total value of Ecopetrol Group's assets, liabilities, operating revenues, operating profit, or profit before taxes.
Litigations, judicial, and administrative proceedings involving the Company and its subsidiaries, with the potential to impact their operations, financial standing, and/or financial conditions	Litigations, judicial, and administrative proceedings with risk assessments exceeding 5% of the total value of Ecopetrol Group's assets, liabilities, operating revenues, operating profit, or profit before taxes are also considered significant.
Subscription or termination of definitive agreements outside the normal course of business for the Company	The subscription or termination of agreements impacting the Company with variations equal to or greater than 5% in the total value of assets, liabilities, operating revenues, operating profit, or profit before taxes of Ecopetrol Group is considered significant.
Subscription to agreements resulting in off-balance sheet obligations for the Company, its subsidiaries, and/or subordinate autonomous patrimonies	The subscription of agreements by the Company or its subsidiaries, leading to off-balance sheet obligations exceeding 5% of the total value of assets, liabilities, operating revenues, operating profit, or profit before taxes of Ecopetrol Group, is considered noteworthy.
Imposition of sanctions on the Company, its administrators, or auditors by state regulatory bodies	Litigations, judicial, and administrative proceedings with risk assessments exceeding 5% of the total value of Ecopetrol Group's assets, liabilities, operating revenues, operating profit, or profit before taxes, including any sanctions incurred by administrators and statutory auditors under the law, are considered significant.
Changes in capital structure, ownership stakes in the Company, and other aspects related to its private capital ownership structure; subscription to agreements resulting in financial obligations	Changes in capital structure, ownership stakes in the Company, and other matters related to its ownership structure are substantial. This includes the adoption of financial obligations in the event of: 1. Changes in subscribed and paid-up capital and/or; 2. Adoption of a liquidation or dissolution plan for the Company and/or; 3. The Republic of Colombia ceasing to be the effective owner, directly or indirectly, of the majority of voting rights of the Company's voting shares.
Subscription to agreements resulting in financial obligations acquired directly by the Company and/or its subsidiaries and/or subordinate autonomous patrimonies	Financial obligations under the responsibility of Ecopetrol and its subsidiaries are of significance when their payment term exceeds one year for Ecopetrol and, for subsidiaries, when they exceed 10% of the consolidated liability for the last fiscal year.
Events leading to the acceleration of obligations incurred by the Company or its subsidiaries and/or subordinate autonomous patrimonies	The acceleration of obligations for the Ecopetrol Group is noteworthy when it exceeds 10% of the current liabilities for the last fiscal year.
Changes in liquidity situations; transactions with related parties involving the Company	Changes in liquidity situations, requiring provisions for accounts receivable, or provisioning for possible contingencies exceeding 5% of the total value of assets or liabilities, are significant. Individual non-recurring transactions with related parties of the Company, resulting in variations equal to or greater than 5% in the total value of assets, liabilities, operating revenues, operating profit, or profit before taxes, are also considered significant.
Social and environmental matters, including climate-related issues, that may impact the issuer's financial situation	Environmental, social, and governance matters are considered material if, in the opinion of the Management, they impact the development of the Company's strategy.

In this manner, the sections addressing the requirements of each reporting framework are identified by the acronyms specified in the **Table of Contents** or in the Financial Statements included in this report as annexes.

The content of the Integrated Management Report (IMG) is presented for consideration and decision at the 2024 Annual General Shareholders' Meeting. The previous report was published and endorsed by the Annual General Shareholders' Meeting on March 29, 2023.

(GRI 2-5) The Board of Directors authorized its presentation at the 2024 Annual General Shareholders' Meeting, relying on the review conducted by Senior Management of the 2023 Integrated Management Report, further authenticated by Ernst & Young (EY), which conducted limited assurance on the social, environmental, and economic indicators. EY provides audit process services to Ecopetrol.

(GRI 2-3) If you have any concerns, inquiries, or requests for additional information about the 2023 Integrated Management Report, please direct them via email to the following address: responsabilidadcorporativaecp@ecopetrol.com.co.





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About the
Organization



Ecopetrol's Geographic Presence Map

(GRI 2-1) (GRI 2-7) (GRI 2-8) (SFC 7.1ii) (SFC 7.1iii)
Ecopetrol Group

Our presence

Our Headquarters

Bogotá, Colombia.
Cra. 13 #36-24
Main office

Ecopetrol S.A.
Colombia



7,294
Men

2,556
Women

9,850

Number of Workers
Ecopetrol S.A.



14,347
Men

5,303
Women

+19,650

Number of Workers GE

128,732

Number of EG Contractor Employees

Ecopetrol Group (GE):

Mexico &
Central
America

United States

Colombia

Ecuador
Peru

Brazil

Bolivia

Chile

Argentina

Singapore

Asia
Europe

Central America and the Caribbean
United States

Ecopetrol Group Markets

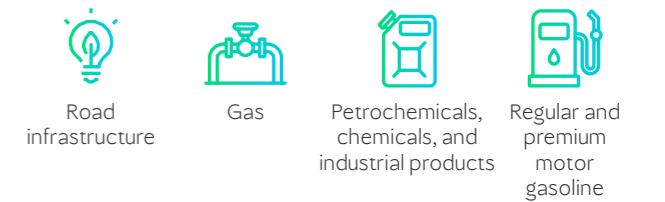
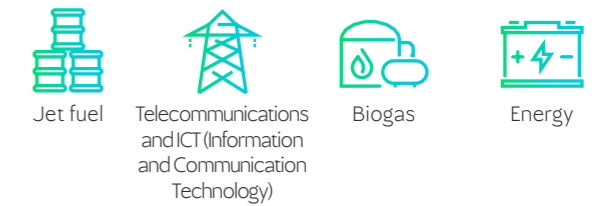
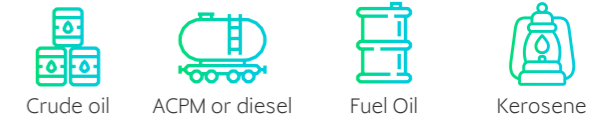
A total of
376
clients

Hydrocarbons

Low-Emission
Solutions

Transmission
and Roads

Productos



About Ecopetrol (GRI 2-6) (SFC 7.4.1.1.1)

Ecopetrol is a national-scale mixed-economy company affiliated with the Ministry of Mines and Energy (MME). It combines both public and private participation, functioning as a commercial entity involved in competitive endeavors alongside private enterprises.

Ecopetrol's primary objective is to undertake industrial and commercial activities, either in Colombia or internationally, associated with or connected to the exploration, exploitation, refining, transportation, storage, distribution, and marketing of hydrocarbons, their derivatives, and related products. This encompasses the research, development, and commercialization of both conventional and alternative energy sources. Furthermore, Ecopetrol is engaged in the production, blending, storage, transportation, and marketing of oxygenating components, as well as port operations and the execution of any associated, complementary, or beneficial activities contributing to the advancement of the aforementioned operations.

● Ecopetrol Group Companies

The EG comprises Ecopetrol and its subsidiaries, along with companies in which Ecopetrol holds equity, and encompasses the financial and investment vehicles managed by Ecopetrol both in Colombia and internationally.



ISA operates in the electric power, roads and telecommunications, and ICT sectors, with a footprint across six (6) South American countries and Central America.



Ecopetrol America: oversees hydrocarbon exploration and production in the Gulf Coast of the United States.



Ecopetrol Permian: a subsidiary of Ecopetrol USA, specializing in unconventional exploration and production in the Permian Basin.



Ecopetrol Brazil: a subsidiary of Ecopetrol S.A., engaged in hydrocarbon exploration in the Equatorial Margin waters and the pre-salt of the Santos Basin.



Ecopetrol USA: a subsidiary of Ecopetrol S.A., serves as the parent company in the United States, providing shared services to both Ecopetrol America and Ecopetrol Permian.



Hocol: specializes in hydrocarbon exploration and production in Colombia, with a 57-year presence in the Upper and Lower Magdalena Valleys, the Eastern Plains, and the Piedemonte basins.



Equión: the company is actively involved in the exploration, production, processing, marketing, and transportation of hydrocarbons.



InverColsa: a holding company that invests in energy sector enterprises and holds interests in eight natural gas distributors serving over 3.5 million users across 15 departments in Colombia.



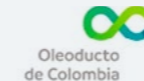
Cenit: a company dedicated to the transport and logistics of hydrocarbons, managing nearly 9,000 kilometers of pipelines responsible for transporting the majority of Colombia's crude and refined products.



Oleoducto de los Llanos Orientales (ODL): operational since 2009, with the capacity to transport 340,000 barrels per day from the Rubiales Station (Puerto Gaitán, Meta) to the Monterrey Station (Casanare).



Oleoducto Bicentenario de Colombia: operational since 2013. Its infrastructure consists of a 229.3 km pipeline starting at the Araguaneý Station (Yopal, Casanare) and ending at the Banadía Station (Saravena, Arauca).



Oleoducto de Colombia (ODC): offers transportation services for heavy and medium crude, blends, and specialized services across a 483 km route through Boyacá, Antioquia, Sucre, and a 33.8 km offshore extension. This pipeline exports approximately 33% of the country's crude oil.



Cartagena Refinery: The Cartagena Refinery is an industrial refining complex consisting of 34 units, covering an area of 140 hectares, which uses both domestic and international crude oils to convert them into clean and efficient products.



Esenttia: commercializes 100% recyclable raw materials, including polypropylene, polyethylene, and masterbatch. These materials are utilized by the plastic processing industry across a wide range of sectors, encompassing agro-industrial, automotive, consumer goods, construction, flexible packaging, rigid packaging, industrial, health, and textile applications.



Ecodiesel Colombia S.A.: produces and markets biodiesel from crude palm oil, resulting from a strategic alliance between Ecopetrol S.A. and seven palm companies in Magdalena Medio.



Ocensa: Ocensa stands as Colombia's most extensive oil transportation platform, covering 836 km on land and 12 km at sea, inclusive of 10 pumping stations, one (1) pressure reducer, a maritime terminal, tanks with a five (5) million barrel capacity, and a maintenance coordination base.



Ecopetrol Global Energy: a subsidiary of Ecopetrol S.A. headquartered in Madrid, Spain. Its primary role is to hold shares and equity interests in other companies affiliated with the Ecopetrol Group. The overarching goal is to supervise and effectively manage these holdings within the share capital of the respective companies.



Econova: focuses on activities related to Science, Technology, and Innovation (ST+i), addressing the challenges of the 2040 Strategy "Energy That Transforms" by seeking international funding, engaging in global innovation ecosystems, and accessing technology contributing to energy transition, decarbonization, circular economy, TEGS, and the fifth industrial revolution.

Value chain

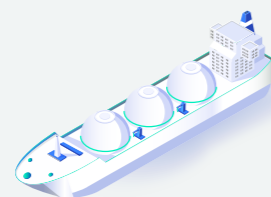
(GRI 2-6) (SFC 7.4.1.1.1) (SFC 7.4.1.1.1.ii)

The EG's value chain comprises three (3) strategic business lines designed to advance the objectives outlined in the Company's 2040 Strategy, with a focus on maximizing value and competitiveness. This is achieved through the consolidation of a diversified portfolio that actively contributes to the Just Energy Transition and the decarbonization of operations.

Business Lines

Hydrocarbons Business Line¹

This line spans segments and operations across various links in the hydrocarbon chain, encompassing Upstream (exploration and exploitation), Midstream (transportation and logistics), Downstream (refining and petrochemicals), and the trading of crude, products, petrochemicals, and industrials. Its primary goal is to maximize business value, ensuring a keen focus on efficiency and competitiveness. The operations are conducted responsibly within territories, with a significant emphasis on decarbonizing activities.



Production Highlights:

Surpassed the production target of 720-725 kboed, closing the year with a record **737 kboed** – the highest in the last eight years, with the highest annual gas and white product sales in the entire history of the Company.

Accomplished a substantial reduction of **485.7 KTonCO₂e** in Upstream operations (84% of total EG), amounting to a reduction of over 1 million tons of CO₂ equivalents between 2020 and 2023.

Exploration Highlights:

Confirmed the presence of a gas field in the KGG block through the successful drilling of the Glaucus-1 well offshore. **Ecopetrol also fully executed** the drilling of the first deepwater well, Orca-Norte-1.

Declared eleven successful wells in strategically important basins, bolstering the country's energy sovereignty (eight in 2023 and three in 2022).

Achieved an exploration success **rate of 50%**, surpassing industry standards.

Refining and Industrial Processes Highlights:

Installed the first **4 MW** of photovoltaic energy at the Cartagena Refinery.

Achieved the production of Extra Gasoline with less than **15 ppm sulfur**.

Obtained **water footprint** certification for the Cartagena and Barrancabermeja refineries.

Marketing Highlights:

Closed 2023 with a total of **376 clients**.

The Houston-based trader contributed **USD \$14 million in EBITDA** for the EG.

The Singapore-based trader generated USD \$161.5 million in EBITDA for the EG.

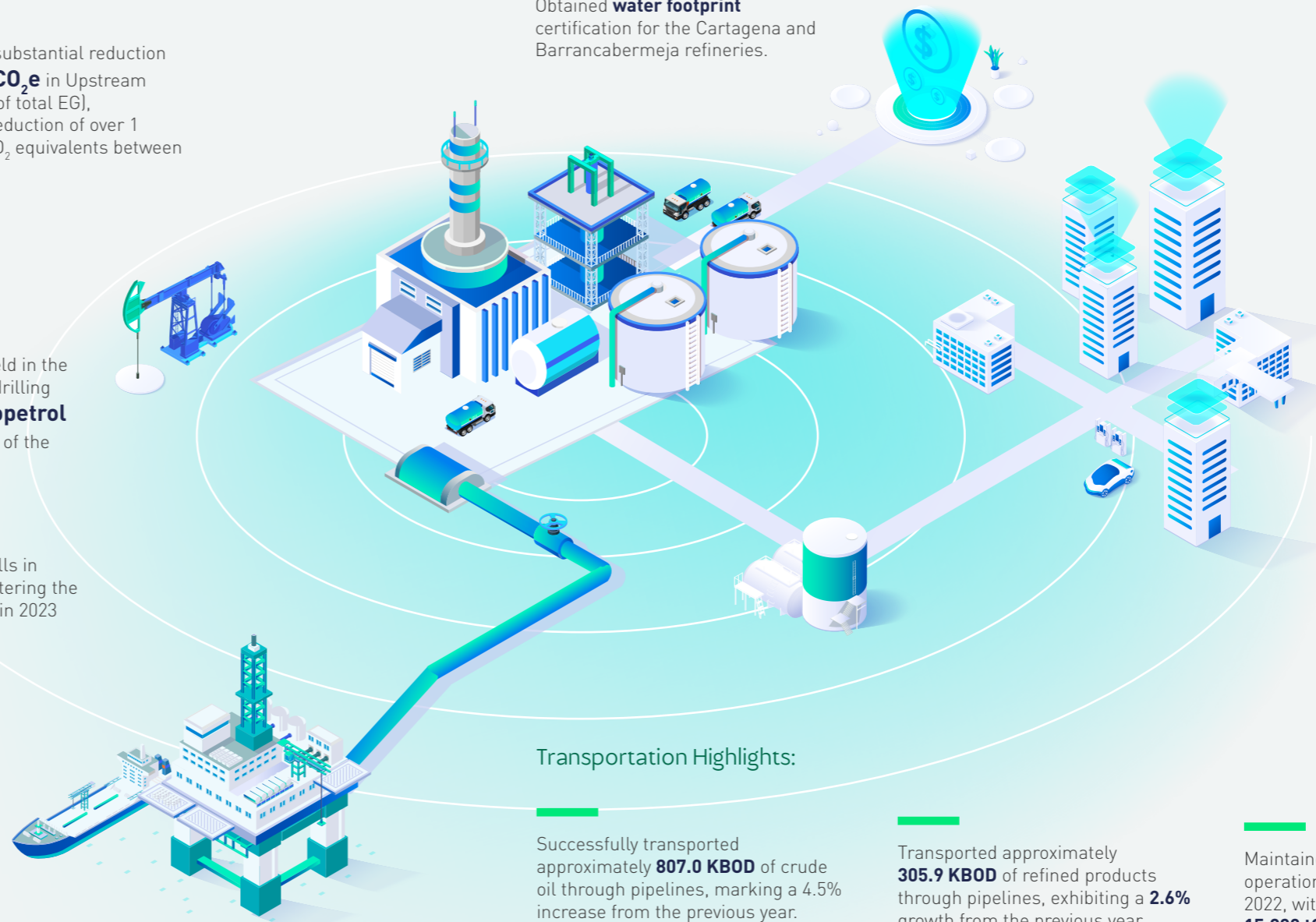
Asset Back Trading (ABT) operations in crude, products, and petrochemicals amounted to **USD \$56 million**.

Transportation Highlights:

Successfully transported approximately **807.0 KBOD** of crude oil through pipelines, marking a 4.5% increase from the previous year.

Transported approximately **305.9 KBOD** of refined products through pipelines, exhibiting a **2.6%** growth from the previous year.

Maintained a carbon-neutral operation, certified by ICONTEC since 2022, with a remarkable reduction of **15,930 tCO₂e of GHG**.



Upstream

EXPLORATION

PRODUCTION

485.7
ktCO₂eq reduced, 84%
of the EG's total

2.7
Trillion COP in
efficiencies

11
Declared
exploratory
successes

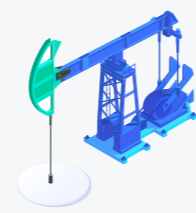
1st
Deepwater well
ORCA-NTE-1



1
Gas field
GLAUCUS-1

737
Kboed at closing

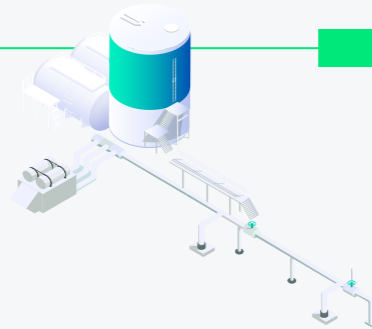
467
EG development
wells



Midstream

TRANSPORT

15.9
tCO₂eq reduced



807*
Kbpd transported
through oil pipelines

306*
Kbpd of refined
products
transported
through pipelines

Downstream

REFINING AND PETROCHEMICALS

MARKETING

4
Mw of voltaic
energy

<15
Ppm sulfur in extra
gasoline

Water footprint
certification at the
refineries



56
Million USD in
ABT in crude and
petrochemicals

376
clients

175.5
Million USD in
EBITDA by Singapore
and Houston



*: Approximate values
Ppm: parts per million
<: less than
+: more than

EBITDA: Earnings Before Interest Taxes
Depreciation and Amortization

PCH: Small Hydropower
Plants
MW: mega watts
ABT: Asset Back Trading

**Low-Emission
Solutions Business Line**

This line involves the development of gas, liquefied petroleum gas (LPG), biogas, energy management, hydrogen, renewable energies, carbon capture, storage, utilization, geothermal, among other initiatives. The objective is to conceptualize and develop a comprehensive portfolio of energy solutions for the diversification and decarbonization of the EG's operations, leveraging cross-cutting synergies with other business lines.

Accomplishments:

Established **20,213 physical connections** through the Gas and LPG Social program.

Successfully reduced approximately **19,000 tons of CO₂** in solar parks and Small Hydroelectric Power Plants (SHP).

Attained a 5.9% optimization in electrical energy compared to the 2018 baseline, resulting in a substantial reduction of **198,000 tons of CO₂**.



**Transmission and
Roads Business Line**

This business line encompasses activities related to electrical power transmission, road infrastructure, and telecommunications. Its objective is to improve performance and leverage synergies with other business lines, thereby maximizing the value of these ventures characterized by well-developed and implemented operational models and regulated returns.

Outstanding Accomplishments

Achieved a net profit of COP 2.462 trillion, reflecting a **12% variation** compared to the year 2022.

Awarded the quality seal from the Colombia Stock Exchange (BVC) for transparency, corporate governance, and commitment to the stock market, maintaining this recognition for seven (7) consecutive years.

Key Data Highlights

Achieved a net profit of
COP 19.1 trillion and an EBITDA of COP 60.7 trillion, marking the second-best results in the company's history.

Established a historic record of loads in refineries,
attaining 420 kbd between the Barrancabermeja and Cartagena refineries.

Successfully verified
14,202 gas service connections.

Achieved a remarkable saving of
3.9 petajoules in 2023, the highest figure since 2018 in the Ecopetrol Group. This saving is equivalent to the annual electricity consumption of all households in the cities of Cartagena, Ibagué, and Cúcuta.

Restored/conserved
167,000 hectares, planting over eight (8) million trees, and designated 20 eco-reserves for the conservation of flora and fauna within the Ecopetrol Group.

Reached the highest production target in the last eight (8) years, achieving a production of
737 kboed.

Invested **COP 366,233 million** in social and relationship initiatives, demonstrating a 20% increase compared to 2022.

Realized **USD 777.95 million** in certified benefits from business activities, in alignment with the Science, Technology, and Innovation Strategy.

Reduced **581,532 tCO₂e** in 2023, contributing to a total reduction of **1,491,645 tCO₂e**.

Reused **152.8 million m³** of water, equivalent to 79% of the required amount for operations.

Signed the Collective Labor Convention 2023-2026 with the Workers' Union of the Petroleum Industry (USO) and other
union organizations.

Corporate Governance Structure

Governance emerges from the interplay and coordination among corporate governance, codes, policies, and guidelines grounded in responsibility, integrity, respect, and transparency – fundamental tenets of corporate conduct. Ecopetrol, committed to operating as a responsible corporate citizen, has established a robust system that governs its conduct, defines decision-making processes, and establishes mechanisms for coordination and interaction within the EG.

In this governance framework, it has been determined that the EG is managed through three (3) business lines that align with the energy transition strategy. Consequently, in 2023, Ecopetrol concentrated on analyzing and addressing key issues

to fulfill the 2040 Strategy "Energy That Transforms," leveraging the corporate governance model. This model provides elements and tools designed to actualize the unity of purpose and direction of the EG (for additional details, refer to the Annual Corporate Governance Report and the Special Group Report).

This acknowledgment comes from the Dow Jones Sustainability Index, which, in its latest report, positioned Ecopetrol in the 98th percentile for companies excelling in the economic and governance dimensions of the oil and gas sector. While numerous elements are evaluated within the governance dimension, the corporate governance structure finds its foundation in its corporate governance model.

Corporate Governance Structure of Ecopetrol and the Ecopetrol Group

(GRI 2-9) (GRI 2-12) For Ecopetrol, corporate governance is a valuable asset and a lever for executing the 2040 Strategy and ensuring the sustainability of its business lines. The EG corporate governance model encompasses the set of rules and practices guiding decision-making by Ecopetrol's governing bodies, as well as the mechanisms for coordination and interaction with the companies constituting the Group.

This model is defined based on applicable law, international standards, the corporate governance principles of the Organization for Economic Cooperation and Development (OECD), good corporate governance practices, and the EG Strategy.

Ecopetrol embodies a dual character:

- 1 On the one hand, it operates in the oil and gas and low-emission solutions industry, and on the other hand,
- 2 It serves as the parent or investor in the companies comprising the EG, entailing relationships of:
 - Direct or indirect control.
 - Business group.
 - Shareholding without control.

In its role as a parent or investor, Ecopetrol provides direction to the EG companies, considering various corporate, functional, and societal aspects, among others. Currently, the Group is managed through three (3) business lines:



Hydrocarbons.



Low-Emission Solutions.

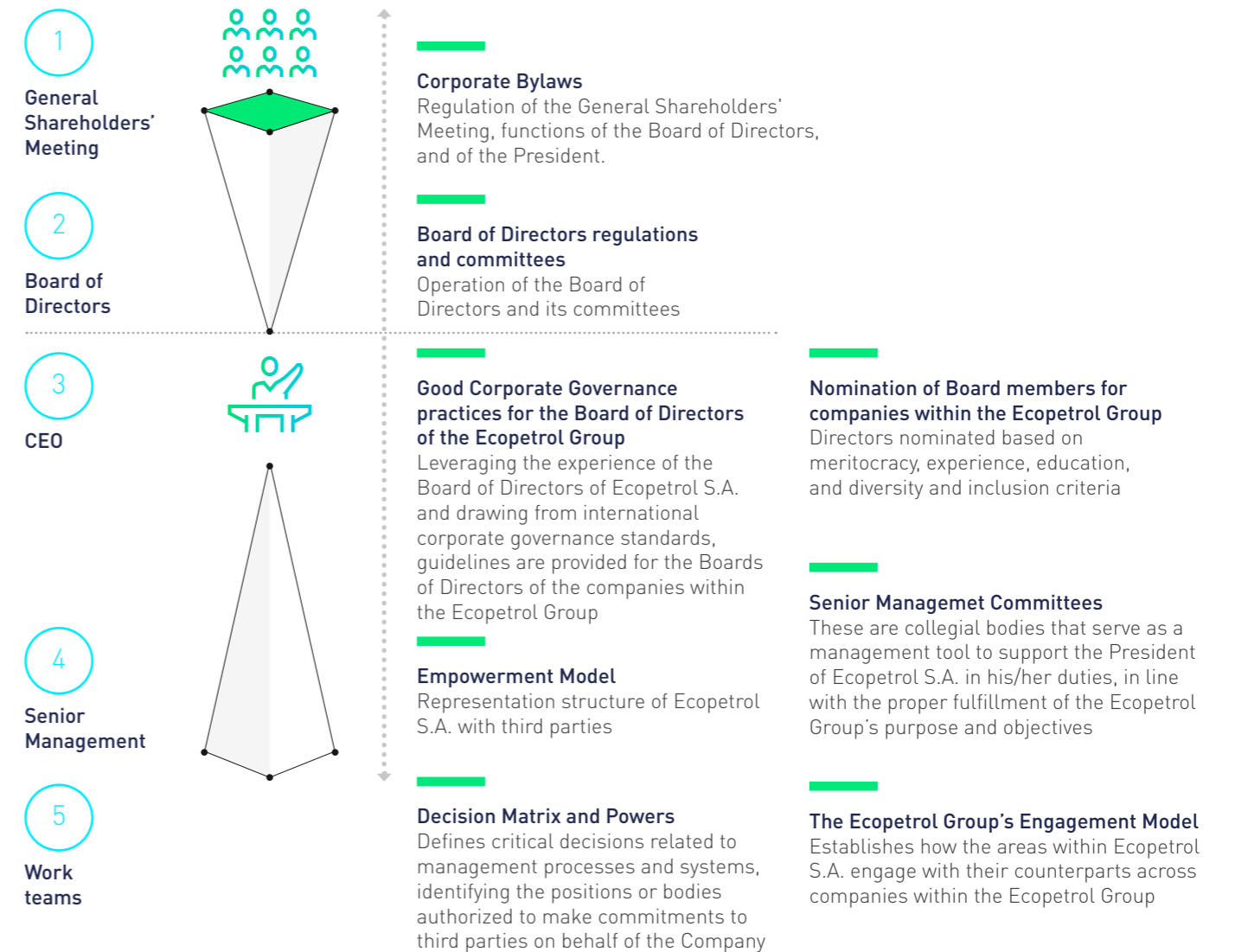


Transmission, Roads, and Telecommunications.

For further information about the Group's business lines, refer to the "GROWING WITH THE ENERGY TRANSITION" section of this report.



Elements for Coordinating Corporate Governance at Ecopetrol



Board of Directors

(GRI 2-9) (DJSI 1.2.1) (DJSI 1.2.2) (SFC 7.4.1.3.1.ii) Ecopetrol's Board of Directors serves as the apex administrative body, shaping the strategic direction of the Group while prioritizing the rights of shareholders and fostering the sustainability and growth of the Company.

(DJSI 1.2.3) (DJSI 1.2.6) Article 23 of the bylaws delineates the functions of this social body, supplementing those mandated by law and other statutory provisions. Furthermore, the Board of Directors operates under an **internal regulation**, outlining fundamental rules for

its organization, functioning, nomination procedures, code of conduct for members, and principles of operation.

Upon election, the members of the Board of Directors become representatives of all shareholders and, as such, prioritize the collective interest over personal interests. In alignment with their fiduciary obligations and responsibilities, these members carry out their duties in good faith, independently, and with meticulous diligence and care, all aimed at advancing the best interests of Ecopetrol.



Composition of the Board of Directors

(GRI 2-9) (GRI 2-10) (DJSI 1.2.1) (DJSI 1.2.3) (DJSI 1.2.4) (DJSI 1.2.6) (SFC 7.4.1.3.1.ii) In accordance with the bylaws, Ecopetrol's Board of Directors comprises nine (9) principal members, without alternates. The composition of the Board adheres to both legal and statutory criteria, as well as best practices in corporate governance:



Bylaws of Ecopetrol

Minimum Requirements for Board Membership	<p>Possess knowledge or international experience relevant to the Company's corporate objectives, with expertise in industrial, commercial, financial, business risk, stock market, administrative, legal, or related fields.</p> <p>Demonstrate professional experience exceeding 12 years².</p> <p>Maintain a stellar reputation, recognized for professional competence and integrity</p> <p>Serve on no more than five (5) boards of directors concurrently, including positions in joint-stock companies such as Ecopetrol</p>
Appointment	<p>During the nomination of candidates for consideration by the General Shareholders' Meeting, the slate should include a minimum of three (3) existing members, excluding those intended for the eighth and ninth positions, which will be nominated in accordance with the bylaws.</p>
Independents	<p>A majority of the Board of Directors should consist of independent members³.</p>
Experts	<p>Ensure that at least one (1) member is a financial expert, adhering to the relevant regulations of the United States of America's securities market.</p>
Producing Departments and Minority Shareholders	<p>Include individuals suggested by the hydrocarbon-producing departments exploited by Ecopetrol and minority shareholders in the list of candidates for the eighth and ninth positions, respectively</p>
Gender, Diversity, and Inclusion⁴	<p>When forming the Board of Directors, consider gender, diversity, and inclusion criteria, which must align with the minimum requirements for board membership.</p> <p>A minimum of 30% of the Board of Directors should be composed of women⁵.</p>

(DJSI 1.2.4) [Click here](#) for details on the Diversity and Inclusion Policy for the Board of Directors' composition.

- Following the approved statutory reform during the recent Extraordinary Shareholders' Assembly on January 10, 2024.
- As outlined in the first paragraph of Article twenty of the Bylaws, the majority of Board members are required to be independent. This mandates that at least five (5) out of the nine (9) members must hold independent status.
- Conforming to the Diversity and Inclusion Policy governing the composition of Ecopetrol's Board of Directors and the boards within the Ecopetrol Group. Details can be found at the following link: <https://www.ecopetrol.com.co/wps/wcm/connect/625c4fd7-2c30-4930-9920-ffd5de975504/211223-CGOB-diversity-inclusion-policy-BD-ENG.pdf?MOD=AJPERES&attachment=true&id=1640356151508>
- As a result of the statutory reform sanctioned during the latest Extraordinary Shareholders' Assembly convened on January 10, 2024.

Board of Directors Appointment

(GRI 2-9) (GRI 2-10) (DJSI 1.2.6) (SFC 7.4.1.3.1.ii)

The members of Ecopetrol's Board of Directors are elected through the proportional representation system by the General Shareholders' Meeting for institutional terms of four (4) years, with the option of being re-elected multiple times for an equal period, not exceeding three (3) terms in total⁶.

The slate of candidates is presented by the Nation, represented by the Ministry of Finance and Public Credit, as the majority shareholder of Ecopetrol. Nevertheless, other shareholders have an equal right to propose alternative slates to the one presented by the majority shareholder. Any slate submitted to the General Shareholders' Meeting must comply with the requirements of the bylaws.

If the presented slate includes the minimum number of independent members required by law or bylaws, the election of all Board members will occur in a single vote. If not, the procedure outlined in Decree 3923 of 2006 (regulatory of Law 964 of 2005) must be followed, first electing independent members

and then non-independent members of the Board of Directors by the General Shareholders' Meeting.

If, for any reason, a Board member loses their independence status, they must notify the secretary in writing, who will inform the Board of Directors of this situation. In case the minimum number of independent members is reduced, the CEO of Ecopetrol must convene an extraordinary General Shareholders' Meeting for the reintegration of the Board of Directors.

(DJSI 1.2.1) (DJSI 1.2.2) All independent members must sign an Independence Letter, which is publicly available on the Ecopetrol website and can be accessed by clicking [here](#).

The current members of the Board of Directors were elected by the General Shareholders' Meeting on March 30, 2023⁷, and their institutional term extends until the regular General Shareholders' Meeting to be held in 2025.

(DJSI 1.2.2) (DJSI 1.2.3) (DJSI 1.2.5)

The Board is composed as described below:

Board of Directors

As of December 31, 2023

Nine (9) members	
Independent Members	Non-Independent Members
Saúl Kattan Cohen	Gonzalo Hernández Jiménez
Mónica de Greiff Lindo ⁸	Esteban Piedrahíta Uribe ⁹
Claudia González Sánchez	
Gabriel Mauricio Cabrera Galvis	
Luis Alberto Zuleta Jaramillo	
Sandra Ospina Arango	
Juan José Echavarría Soto	
Chairman of the Board of Directors	
Saúl Kattan Cohen	
Vice Chairman of the Board of Directors	
Gabriel Mauricio Cabrera Galvis	
Financial Expert	
Luis Alberto Zuleta Jaramillo	

(GRI 2-11) (DJSI 1.2.3)

The Board of Directors elects its chairman and vice chairman from among its members, and under no circumstances can the Company's CEO be appointed as the chairman of the Board of Directors.

- In accordance with the transitional paragraph of Article 20 of Ecopetrol's Bylaws, "the initial institutional term of four (4) years for the members of the Board of Directors will commence from the election held in 2021 and will extend until the regular meeting of the general assembly of shareholders in 2025. This marks the first term, allowing for reelection and a maximum tenure of three (3) terms in total, as stipulated in the initial paragraph of Article 20.J".
- One (1) member was elected in April 2019, and five (5) were elected in October 2022. Detailed information about the elections for each member can be accessed through their respective profiles at the following link: <https://www.ecopetrol.com.co/wps/portal/Home/en/investors/governance/BoardofDirectors>
- Member of the Board of Directors of Ecopetrol S.A. since October 2022. Formerly a non-independent member until October 2023, and subsequently an independent member since that day.
- Member of the Board of Directors of Ecopetrol S.A. since April 2019. Formerly an independent member until November 2023, and subsequently a non-independent member since that day.

Until March 30, 2023, the Board of Directors was composed as follows:

Board of Directors	
Until March 30, 2023	
Nine (9) members	
Independent Members	Non-Independent Members
Gabriel Mauricio Cabrera Galvis	Gonzalo Hernández Jiménez
Saul Kattan Cohen	Mónica de Greiff Lindo
Luis Santiago Perdomo Maldonado	
Sergio Restrepo Isaza	
Esteban Piedrahíta	
Sandra Ospina Arango	
Carlos Gustavo Cano Sanz	
Chairman of the Board of Directors	
Saul Kattan Cohen	
Vice Chairman of the Board of Directors	
Gabriel Mauricio Cabrera Galvis	
Financial Experts	
Sergio Restrepo Isaza	
Luis Santiago Perdomo Maldonado	

(DJSI 1.2.4) Ecopetrol has implemented a **Succession Policy for members of the Board of Directors**, aiming to ensure an organized transition and mitigate the potential economic and reputational impacts resulting from changes in the company's leadership.

Tenure on the Board of Directors

(GRI 2-9) (SFC 7.4.1.3.1.ii) (SFC 7.4.1.3.1.vi) (WEF 2) (WEF 11) As of March 30, 2023, the General Shareholder's Meeting, during its regular meeting, appointed nine (9) members to form the Board of Directors, whose tenure extended until December 31, 2023, as outlined below:

Tenure	Number of members
9 months	1
1 year and 2 months	4
1 year and 2 months	1*
1 year and 9 months	1*
3 years and 2 months	1*
6 years	1*

* Including periods prior to the current one.



(DJSI 1.2.7) As of December 31, 2023, the average tenure of Board members stood at two (2) years. Up to March 2023, the Board comprised the nine (9) members appointed during the Extraordinary General Shareholders' Meeting on October 24, 2022. A summary of the members' tenure until March 30 is provided below:

Tenure	Number of members
5 months	4
2 years and 5 months	1*
4 years	2
5 years and 3 months	1*
6 years	1

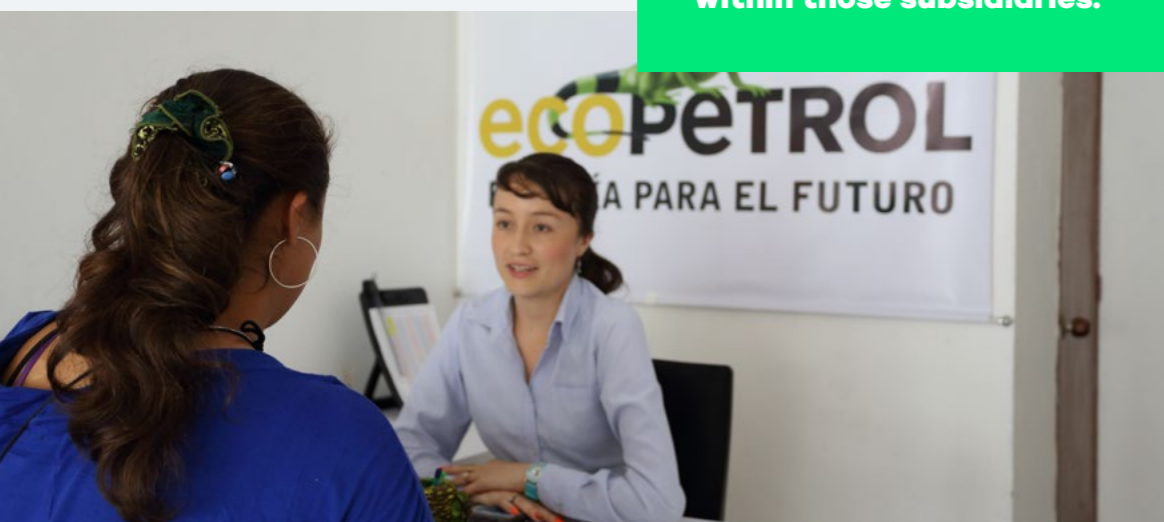
* Including periods prior to the current one.

(GRI 2-9) (GRI 2-10) (DJSI 1.2.1) (DJSI 1.2.5) (SFC 7.4.1.3.1.ii) (SFC 7.4.1.3.1.iv) (SFC 7.4.1.3.1.v) (SFC 7.4.1.3.1.vi) (WEF 2) (WEF 11) The majority of Board members are independent, adhering to the independence criteria outlined in the second paragraph of Article 44 of Law 964 of 2005¹⁰.

(DJSI 1.2.2) As of December 31, 2023, 78% of the members (7 out of 9) fulfilled the independence criteria, exceeding the minimum requirements set by the Colombian securities market law¹¹ and statutory provisions¹². Moreover, Ecopetrol adheres to the independence criteria for Board members established by the New York Stock Exchange standards.

The Chairman and the Vice Chairman of the Board of Directors are independent.

(DJSI 1.2.3)
The members of Ecopetrol's Board of Directors do not serve on the boards of directors of subsidiary companies nor hold executive positions within those subsidiaries.



10. A person will be considered an independent member only if, under no circumstances, they are:

- An employee or executive of Ecopetrol S.A. or any of its subsidiaries, affiliates, or parent companies, including those who held such a position during the immediately preceding year before the appointment, unless it involves the reelection of an independent person.
- A shareholder who directly or through an agreement directs, guides, or controls the majority of voting rights of the entity or determines the majority composition of its administrative, managerial, or supervisory bodies.
- A partner or employee of associations or companies providing advisory or consultancy services to the issuer or companies belonging to the same economic group, where the income from this source represents 20% or more of the operating expenses of Ecopetrol S.A. or the operational income of the advisor, consultant, or provider.
- An employee or executive of a foundation, association, or company receiving significant donations from Ecopetrol S.A. Significant donations are those representing more than 20% of the total donations received by the respective institution.
- An administrator of an entity in whose Board of Directors a legal representative of Ecopetrol S.A. participates.
- A person receiving from Ecopetrol S.A. any remuneration other than fees as a member of the Board of Directors, the Audit Committee, or any other committee of the Board.

11. 25%, equivalent to 3 out of 9 members.

12. Majority, equivalent to 5 out of 9 members.

Table 2.4.1.
Profile of the Board of Directors
(DJSI 1.2.6) (DJSI 1.9.1) (TCFD G-1.2) (SFC 7.4.1.3.1.iv)

Name	Is he/she an independent member?	Is he/she the Chairman of the Board of Directors?	Committees involved in	Attendance at committee meetings	Attendance at Board Meetings	Does he/she own shares at Ecopetrol S.A.?	Member of other Boards
Saúl Kattan	Yes	Yes	*Business Committee. *Technology and Innovation Committee. *Remuneration, Appointments, and Culture Committee.	*Business Committee: 100% (11/11 sessions). *Technology and Innovation Committee: 100% (3/3 sessions). *Remuneration, Appointments, and Culture Committee: 94% (17/18 sessions).	100% (22/22 sessions).	No	• Other Boards of Directors of Companies Listed on the Colombian Stock Exchange (BVC): None. • Other Boards of Directors of Companies Listed on the New York Stock Exchange (NYSE): None. • Other Boards of Directors: Tikva S.A. (alternate member).
Mónica De Greiff	Yes	No	*Business Committee. *Corporate Governance and Sustainability Committee. *Remuneration, Appointments, and Culture Committee. *HSE Committee.	*Business Committee: 100% (9/9 sessions). *Remuneration, Appointments, and Culture Committee: 100% (18/18 sessions). *HSE Committee: 100% (5/5 sessions). *Corporate Governance and Sustainability Committee: 100% (11/11 sessions).	100% (22/22 sessions).	No	• Other Boards of Directors of Companies Listed on BVC: None. • Other Boards of Directors of Companies Listed on NYSE: Aris Mining Corp located in Toronto, Canada. • Other Boards of Directors: EPS Sanitas S.A.S.; Lagos de Aurea S.A.S.; One Young World located in London; and, Fiducoldex.
Gonzalo Hernández	No	No	*Business Committee. *Corporate Governance and Sustainability Committee.	*Corporate Governance and Sustainability Committee: 100% (11/11 sessions). *Business Committee: 100% (11/11 sessions).	100% (28/28 sessions).	No	• Other Boards of Directors of Companies Listed on BVC: Financiera de Desarrollo Nacional (FDN). • Other Boards of Directors of Companies Listed on NYSE: None. • Other Boards of Directors: None.

Continued.

Table 2.4.1.
Profile of the Board of Directors (Continued)
(DJSI 1.2.6) (DJSI 1.9.1) (TCFD G-1.2) (SFC 7.4.1.3.1.iv)

Name	Is he/she an independent member?	Is he/she the Chairman of the Board of Directors?	Committees involved in	Attendance at committee meetings	Attendance at Board Meetings	Does he/she own shares at Ecopetrol S.A.?	Member of other Boards
Claudia González	Yes	No	*Audit and Risk Committee. *Business Committee. *Corporate Governance and Sustainability Committee. *HSE Committee.	*Audit and Risk Committee: 100% (10/10 sessions). *Corporate Governance and Sustainability Committee: 100% (9/9 sessions). *Business Committee: 100% (9/9 sessions). *HSE Committee: 100% (4/4 sessions).	100% (18/18 sessions).	No	•Other Boards of Directors of Companies Listed on BVC: None. • Other Boards of Directors of Companies Listed on NYSE: None. • Other Boards of Directors: None.
Mauricio Cabrera	Yes	No	*Business Committee. *Remuneration, Appointments, and Culture Committee. *HSE Committee.	*Business Committee: 100% (11/11 sessions). *Remuneration, Appointments, and Culture Committee: 100% (18/18 sessions). *HSE Committee: 100% (5/5 sessions).	100% (22 /22 sessions).	Yes	•Other Boards of Directors of Companies Listed on BVC: Financiera de Desarrollo Nacional S.A. (FDN). • Other Boards of Directors of Companies Listed on NYSE: Not applicable. • Other Boards of Directors: Association for the Promotion of Arts (PROARTES); and Lloreda S.A.
Luis Alberto Zuleta	Yes	No	*Audit and Risk Committee. *Corporate Governance and Sustainability Committee. *HSE Committee.	*Audit and Risk Committee: 100% (10/10 sessions). *Corporate Governance and Sustainability Committee: 100% (9/9 sessions). *HSE Committee: 100% (4/4 sessions).	100% (18/18 sessions).	No	•Other Boards of Directors of Companies Listed on BVC: None. • Other Boards of Directors of Companies Listed on NYSE: None. • Other Boards of Directors: Fundación Pro-Niñez Gabriel Herrera Rogelis.

Continued.

Table 2.4.1.
Profile of the Board of Directors (Continued)
(DJSI 1.2.6) (DJSI 1.9.1) (TCFD G-1.2) (SFC 7.4.1.3.1.iv)

Name	Is he/she an independent member?	Is he/she the Chairman of the Board of Directors?	Committees involved in	Attendance at committee meetings	Attendance at Board Meetings	Does he/she own shares at Ecopetrol S.A.?	Member of other Boards
Esteban Piedrahíta Uribe	No	No	*Business Committee. *Corporate Governance and Sustainability Committee. *Technology and Innovation Committee.	*Corporate Governance and Sustainability Committee: 100% (11/11 sessions). *Business Committee: 100% (11/11 sessions). *Technology and Innovation Committee: 67% (2/3 sessions).	100% (22/22 sessions).	No	•Other Boards of Directors of Companies Listed on BVC: Grupo Argos S.A. • Other Boards of Directors of Companies Listed on NYSE: None. • Other Boards of Directors: Compañía de Seguros Bolívar S.A.; Seguros Comerciales Bolívar S.A.; Board of Directors of the Sidoc Foundation; and, Board of Directors of the International Training and Medical Research Center (CIDEIM).
Sandra Ospina	Yes	No	*Audit and Risk Committee. *Technology and Innovation Committee. *HSE Committee.	*HSE Committee: 100% (5/5 sessions). *Technology and Innovation Committee: 100% (3/3 sessions). *Audit and Risk Committee: 100% (10/10 sessions).	95% (21/ 22 sessions).	No	•Other Boards of Directors of Companies Listed on BVC: None. • Other Boards of Directors of Companies Listed on NYSE: None. • Other Boards of Directors: None
Juan José Echavarría	Yes	No	*Audit and Risk Committee. *Corporate Governance and Sustainability Committee. *Remuneration, Appointments, and Culture Committee.	*Corporate Governance and Sustainability Committee: 100% (9/9 sessions). *Remuneration, Appointments, and Culture Committee: 100% (14/14 sessions). *Audit and Risk Committee: 100% (10/10 sessions).	100% (18/18 sessions).	No	•Other Boards of Directors of Companies Listed on BVC: None. • Other Boards of Directors of Companies Listed on NYSE: None. • Other Boards: Alejandro Ángel Escobar Foundation

(GRI 405-1) (DJSI 1.2.5)

As of December 31, 2023, three (3) members of the Board of Directors, equivalent to 33.33%, were women.

Below are the profiles of the three (3) members of the Board of Directors who belonged to this social body until March 30, 2023:

Name	Is he/she an independent member?	Is he/she the Chairman of the Board of Directors?	Committees involved in	Attendance at committee meetings	Attendance at Board Meetings	Does he/she own shares at Ecopetrol S.A.?	Member of other Boards
Luis Santiago Perdomo	Yes	No	*Business Committee (member and chairman since October 27, 2022). *Technology and Innovation Committee. *Audit and Risk Committee.	* Business Committee: 100% (2/2 sessions). *Technology and Innovation Committee: 100% (1/1 session). * Audit and Risk Committee: 100% (4/4 sessions).	100% (4/4).	No	*Other Boards of Listed Companies on the BVC: Mineros S.A. *Other Boards of Listed Companies on the NYSE: None. *Other Boards: None
Sergio Restrepo	Yes	No	*Audit and Risk Committee (chairman) *Business Committee. *HSE Committee.	*Audit and Risk Committee: 100% (4/4 sessions). *Business Committee: 100% (2/2 sessions). *HSE Committee: 100% (1/1 session).	100% (4/4).	No	*Other Boards of Listed Companies on the BVC: Odinsa S.A.; and, Mineros S.A. *Other Boards of Listed Companies on the NYSE: None. *Other Boards: Grupo BIO S.A.S.
Carlos Gustavo Cano	Yes (nominated by minority shareholders)	No	* Business Committee (chairman until October 26, 2022). * Audit and Risk Committee. * Corporate Governance and Sustainability Committee	*Business Committee: 100% (2/2 sessions). *Audit and Risk Committee: 100% (4/4 sessions). *Corporate Governance and Sustainability Committee: 100% (2/2 sessions).	100% (4/4).	No	*Other Boards of Listed Companies on the BVC: None. *Other Boards of Listed Companies on the NYSE: None. *Other Boards: Inversiones Minka S.A.S.

(GRI 405-1) None of the previously mentioned Board members represented an underrepresented social group.

For additional details regarding the profiles of Board members, please consult the following [link](#).

Board of Directors' Experience

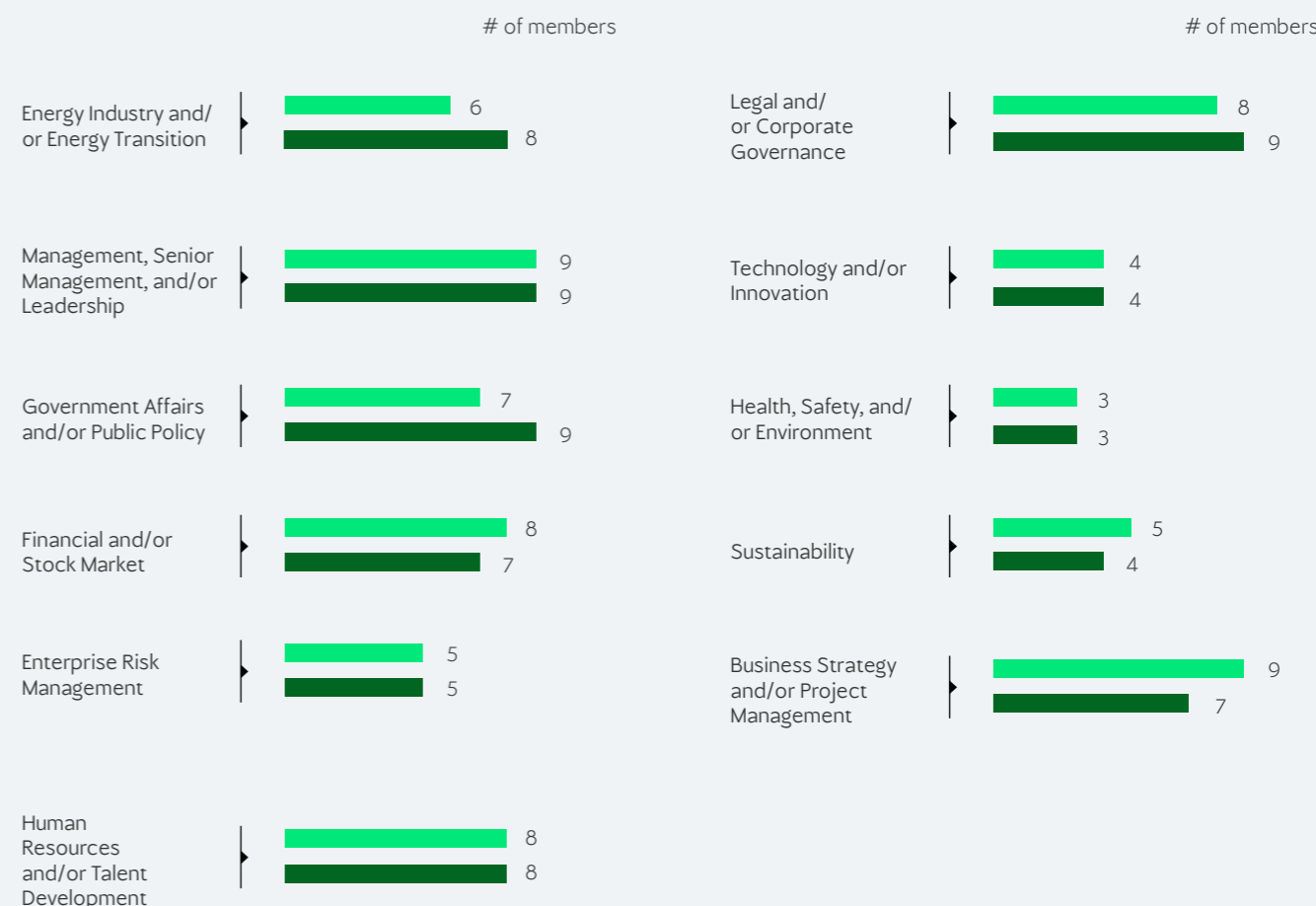
(GRI 2-9) (DJSI 1.2.4) (DJSI 1.2.8) (SFC 7.4.1.3.1.iv) (WEF 2) (WEF 11) The Board of Directors, supported by its Corporate Governance and Sustainability Committee, assesses the education and expertise required for members to fulfill their roles and guide the 2040 Strategy.

In order to ensure that Board members possess diverse knowledge and experience to contribute to business development, establish trustworthy

relationships with Stakeholder Groups, and support the sustainable development of the environment and the business, the Board has adopted a Competency and Experience Matrix for the Board of Directors.

This matrix is a dynamic tool that, in alignment with the business's needs, aims to spotlight the competencies and experience necessary for membership in this social body, complementing statutory and legal provisions.

Figure 2.4.1.
Board of Directors' Experience



Board of Directors' Experience (January 1, 2023, to March 29, 2023)

Board of Directors' Experience (March 30, 2023, to December 31, 2023)

(GRI 2-17) (SFC 7.4.13.1.iv) During 2023, with the aim of contributing to the ongoing education of the Board of Directors and fostering spaces for debate and collaborative knowledge-building, several directors participated in the following events:

- CERAWeek – S&P Global.
- Making Corporate Boards More Effective – Harvard Business School.
- Corporate Governance Effectiveness and Accountability in the Boardroom – Kellogg School of Management.
- VI Oil, Gas, and Energy Summit.
- II Grand ACP Oil and Gas Forum. "Sustainability Facts" – Colombian Oil and Gas Association.
- Forum on New Economic Development Models by Paul Krugman – Pontificia Universidad Javeriana.
- Training on business risks – Deloitte & Touche S.A.S.
- Training on matters supervised by U.S. authorities and the role of Board members – Miller & Chevalier.

The members of the Board of Directors also participated in induction sessions and operational visits to gain insights into the 2040 Strategy, the functioning of the Board of Directors, its supporting committees, and the new ventures of the Group. This initiative also aimed to enhance their understanding of the functions, organizational structure, and objectives of the business areas and the key activities of the business lines in the operational zones.



Function of the Board of Directors and Senior Management in Overseeing Impact Management

(GRI 2-12) (SFC 7.4.13.1.xiii) The Board of Directors undertakes various functions related to value statements, mission, strategies, and objectives associated with sustainability.

In 2020, the Board of Directors approved the EG's Cultural Declaration, encompassing the purpose and the six (6) cultural principles guiding the Group. Additionally, the Board of Directors periodically reviewed and updated the EG's corporate strategy, incorporating objectives pertaining to TESG and others.

In adherence to Ecopetrol's bylaws, the Board of Directors holds the responsibility for approving the EG's

In 2023, the Board of Directors and its committees reviewed 244 informational matters and made decisions on 99 issues in accordance with their functions.

business strategy and plan, ensuring corporate responsibility, including environmental, social, governance, technology, and innovation criteria. Consequently, the Board of Directors integrates elements of TESG into its analyses for monitoring and approving the EG's objectives.

(DJSI 2.6.1) (TCFD G-1.3) Furthermore, the Internal Regulations of all Committees empower them to

intervene in actions related to their functions, aiming, in their judgment, for the optimal development of Ecopetrol's activities. Committees can request the Administration to present reports, allowing directors to seek more detailed information on specific topics, including those related to Ecopetrol's impacts on the economy, the environment, and people.

Delegating the Responsibility of Managing Impacts

(GRI 2-13) The Company ensures an effective management of impacts on the economy, environment, and people through a transparent assignment of responsibilities to its employees. This assignment is delineated in the job descriptions and a decision and attribution matrix, encompassing key decisions crucial for the Group, along with identifying responsible parties within the Company and their scope in relation to the EG.

Every year, Ecopetrol's Board of Directors approves its meeting schedule, outlining the dates for this social body and its committees, including the thematic work agenda. Through this agenda, Senior Management and the teams responsible for specific topics present their respective results and management actions undertaken for

matters impacting economic, social, and environmental aspects.

Economic matters are presented to the Board of Directors' Audit and Risk Committee, which analyzes, among other topics, the profit distribution project, repurchase of the company's own shares, interim and year-end financial statements (separate and consolidated), and issuances and placements of shares and bonds.

(DJSI 2.6.1) (TCFD G-1.1) (TCFD G-1.3) Environmental impacts are scrutinized by the HSE Committee, which reviews the proposal for annual HSE objectives, targets, and associated strategic business risks. It also monitors the Group's HSE strategy.

Issues concerning Ecopetrol's Human talent are presented to the Board's Remuneration, Appointments, and

Culture Committee, addressing topics such as the Company's relations with workers, retirees, and beneficiaries; organizational culture; training and knowledge processes for workers; employee compensation policy, and compensation guidelines for the EG.

Furthermore, the Corporate Governance and Sustainability Committee is responsible for analyzing Ecopetrol's sustainability agenda, including a review of the management and progress made in human rights (HR) within the Group.

(GRI 2-14) The Board of Directors' Corporate Governance and Sustainability Committee is tasked with studying and recommending the Company's Integrated Management Report to the Board for consideration and decision at the General Shareholders' Meeting.

To ensure the relevance, quality, and accuracy of the information, the Report undergoes scrutiny by the Corporate Affairs Vice Presidency and General Secretariat, the Management Committee, and the Company's CEO before being presented to the Boards of Directors' Corporate Governance and Sustainability Committee.

Management of the Board of Directors

(GRI 2-12) (GRI 2-9) (SFC 7.4.1.3.1.vi) In 2023, the Board held 22 sessions: 12 regular and 10 extraordinary, with three (3) related to the progress of the 2040 Strategy. Six (6) decisions were made through circulated votes.

Of the 22 meetings, four (4), accounting for 18%, were entirely virtual, 16 (73%) were hybrid¹³ and two (2), representing 9%, were in-person.

(DJSI 12.6) Total participation of directors in the sessions accounted for 99%, meeting the minimum

attendance required by all members (80%). In this sense, Board of Directors' deliberations took place with a number equal to or greater than five (5) of its members.

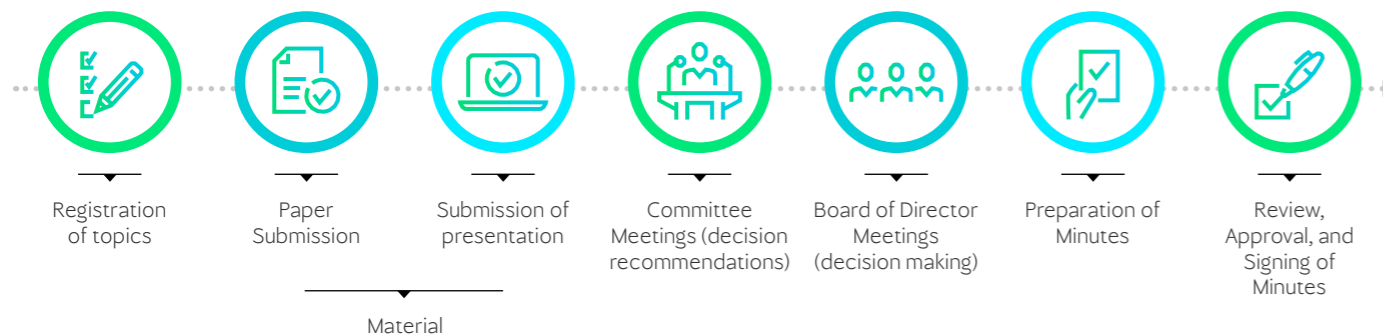
The decision-making process in the Board of Directors enables informed decisions at each stage based on the attributions of different instances, thereby focusing its management on strategic matters.

The Corporate Affairs Vice Presidency and General Secretariat organizes

topics according to the corresponding subject matter and assigns them to the different supporting committees of the Board of Directors based on their competencies.

13. Some directors attended in person, while others participated virtually.

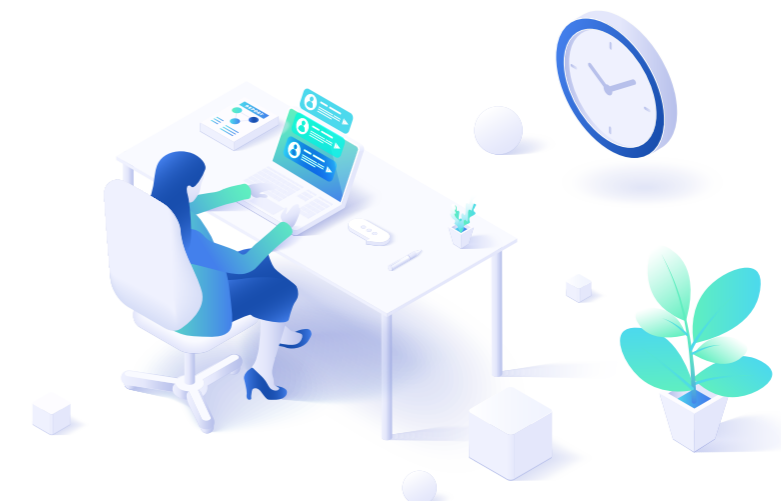
Below is the general process followed in the support committees and the Board of Directors:



Relevant Decisions Made by the Board of Directors

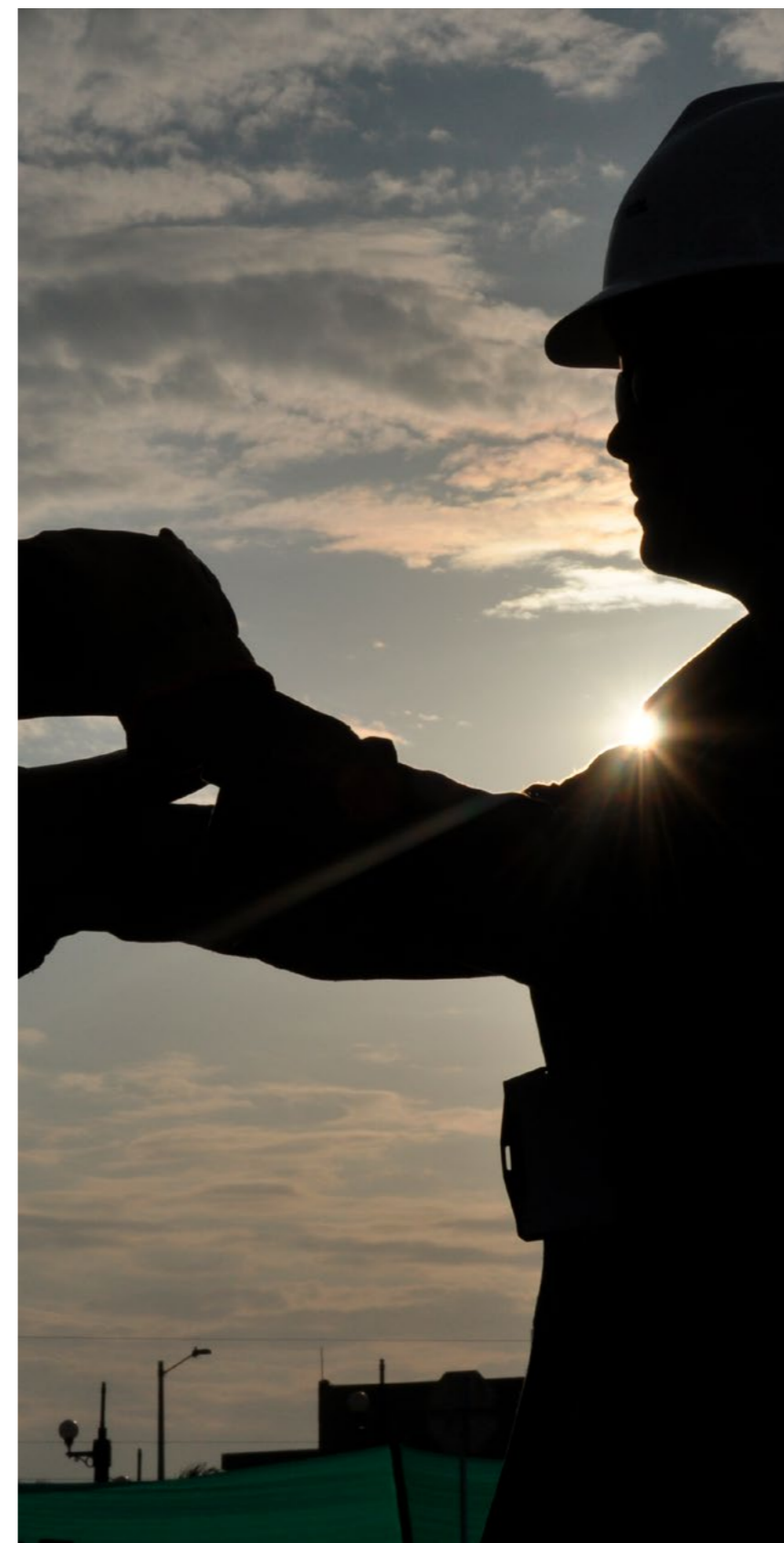
(GRI 2-9) (GRI 2-12) (SFC 7.4.1.3.1.ii) Below are some of the noteworthy decisions made by the Board of Directors in 2023:

- After closely monitoring the progress in the implementation of the EG's 2040 Strategy "Energy That Transforms" throughout multiple sessions in the year, some adjustments were approved. The other components remain as initially announced to the market in February 2022.
- Approval of the appointment of the CEO of Ecopetrol and several top-level Vice Presidents.
- Approval of the Financial Plan and Annual Investment Budget for fiscal year 2024.
- Approval of the capitalization plan for Upstream subsidiaries.
- Approval of updates to the 2023 Financing Plan, including the approval of financing transactions.
- Approval of the updated capital discipline criteria for portfolio development, along with assumptions for prices and macroeconomic variables.
- Approval of the Form 20-F Report and its submission to the Securities and Exchange Commission (SEC).
- Approval of interim and year-end financial statements, both separate and consolidated.
- Approval of Ecopetrol's participation in the tax-incentive for works mechanism as an income tax payment method for taxable year 2023, considering the contributions to the country and benefits obtained by the EG.
- Approval of resource allocations for various projects exceeding USD 150 million in the EG's investment plan, sanctioned in phase 3.
- To further enhance our capacity to attract and retain talent, and in light of the Company's 2023 performance, the following measures were approved: (i) an annual general salary increase for 2023 and 2024 for employees under Agreement 01, (ii) the disbursement of variable compensation for 2022, and (iii) the implementation of the GE's Balanced Scorecard (TBG) spanning 2024 – 2026, along with the goals for 2024, among other measures.
- For the ordinary General Shareholders' Meeting held on March 30, the Board approved:
 - The presentation during the meeting of the Annual Corporate Governance Report and the Integrated Management Report for 2022, along with their annexes.
 - The presentation of the audited separate and consolidated Financial Statements as of December 31, 2022, along with their respective Notes, for consideration and decision by the highest social body.



(GRI 2-12) (DJSI 1.9.1) (DJSI 2.6.1) (SFC 7.4.13.1.vi) Throughout 2023, the Board of Directors' committees convened regularly, focusing their discussions and analyses primarily, though not exclusively, on the following topics:

Number of sessions held in 2023	Committee
3 sessions	Technology and Innovation Committee <ul style="list-style-type: none"> • Cybersecurity. • Science, Technology, and Innovation Strategy. • Digital agenda.
14 sessions	Audit and Risk Committee <ul style="list-style-type: none"> • Evaluation of the Statutory Auditor, Internal Auditor, and the Audit and Risk Committee. • General audit plan for Ecopetrol S.A. • Ecopetrol's Enterprise Risk Map. • Quarterly and annual reserve reports. • Monthly financial results. • Separate and consolidated quarterly and annual financial statements. • Profit distribution project. • 20F Report. • Monitoring of actions taken at Ecopetrol and other Group companies regarding their Internal Control System, risk management system, and ethical reporting on corruption and fraud. • Monitoring of legal processes. • Statutory audit reports. • Updates to the 2023 Financing Plan. • Compliance program management results. • Guidelines for the retention, transfer, and mitigation of the EG's financial risks. • Monitoring of the Fuel Price Stabilization Fund (FEPC).
11 sessions	Business Committee <ul style="list-style-type: none"> • 2024-2026 Financial and Investment Plan and Financial Plan and Annual Investment Budget for fiscal year 2024. • Monitoring of investment in the Permian and the 2024 development campaign. • Resource allocation for the execution of various projects. • Update of capital discipline criteria.
18 sessions	Remuneration, Appointments, and Culture Committee <ul style="list-style-type: none"> • Succession planning for the CEO of Ecopetrol S.A. • Variable compensation for 2023. • Annual general salary increase. • 2023-2026 Collective Labor Agreement. • 2024-2026 Balanced Scorecard (TBG). • Long-term incentive plans.
11 sessions	Corporate Governance and Sustainability Committee <ul style="list-style-type: none"> • Evaluation of the Board of Directors. • Annual Corporate Governance Report. • Measures to ensure the protection of shareholders' rights for General Shareholders' Meeting sessions convened in 2023. • Candidates to join the Board of Directors. • Monitoring of the EG's Corporate Governance Model. • Training program for Leaders in Corporate Governance and Boards of Directors. • Human Rights (HR) and Company Strategy and management steps for 2023.
5 sessions	HSE Committee <ul style="list-style-type: none"> • Energy Transition and Hydrogen roadmaps. • HSE Digital Agenda. • Analysis of the methane emissions reduction target. • Reduction of GHG emissions. • Monitoring of HSE incidents in 2023. • Ecopetrol S.A.'s Healthcare system. • 2023 HSE Performance. • Reduction of GHG emissions and compliance analysis for emissions reduction by 2030.



Critical Communications to the Board of Directors

(GRI 2-16) In 2023, Ecopetrol's Board of Directors addressed seven (7) critical concerns spanning various topics, including:



Cybersecurity



Human rights



Energy transition and hydrogen roadmaps



Water neutrality



Decarbonization



Business risks

To tackle these pressing issues, the Board employed due diligence measures for risk prevention and mitigation, conducted scenario evaluations, and assessed risks and opportunities, ultimately formulating action plans.

Board of Directors' Committees

(GRI 2-9) (GRI 2-12) (SFC 7.4.1.3.1.xiii) Board of Directors' committees serve as support entities for its management efforts. Consequently, in carrying out their functions, their primary goal is to proactively analyze issues that require the attention of the Board of Directors and provide recommendations. To facilitate their operations, the committees, in addition to complying with relevant regulations, maintain internal guidelines delineating their objectives and functions.

These management support committees are comprised of Board of Directors members, designated by the Board itself. It is a requirement that at least one (1) member of each committee be independent, with the exception of the Audit and Risk Committee, which is exclusively comprised of independent members.

The Board oversees six (6) permanent committees:

1

Audit and Risk Committee:

Responsible for overseeing the management and effectiveness of the EG's Internal Control System, among other duties.

2

Business Committee:

Provides support concerning budget and investment plans, investment projects, establishment of subsidiary companies, and new business ventures, among other responsibilities.

3

HSE Committee:

Supports the monitoring of Ecopetrol's HSE management model and the Group's HSE strategy, among other responsibilities.

4

Remuneration, Appointments, and Culture Committee:

Tasked with studying and recommending the approval of the CEO's succession policy, the Company's worker compensation policy, compensation guidelines for the Group, and the top-level organizational structure to the Board of Directors.

5

Corporate Governance and Sustainability Committee:

Supports the good governance and sustainability of the Company. Its functions include recommending specific measures to the Board of Directors regarding the company's governance, sustainability agenda, and the applicable governance model for the EG.

6

Technology and Innovation Committee:

Provides support on matters related to business technology, development, and innovation in the use of emerging technologies and the Group's digital strategy, among other responsibilities.

Table 2.4.2.
Permanent Committees of the Board of Directors

Committee	Chairman (As of December 31, 2023)
Audit and Risks	Sergio Restrepo Isaza (Until March 2023) Luis Alberto Zuleta (As of March 2023)
Business	Saúl Kattan
Corporate Governance and Sustainability	Esteban Piedrahita (Until November 2023) Juan José Echavarría (As of November 2023)
Remuneration, Appointments, and Culture	Gabriel Mauricio Cabrera
HSE	Sandra Ospina
Technology and Innovation	Saúl Kattan



Related Party Transactions

(SFC 7.4.1.3.1.ix) The Board of Directors bears the responsibility of ensuring that Ecopetrol's economic relationships with its shareholders, including the majority shareholder, and its subsidiaries, adhere to the limitations and conditions set forth by laws and regulations governing the prevention, management, and resolution of conflicts of interest. Moreover, these relationships are to be conducted under market conditions.

The GFI-G-012 Transfer Pricing Guide between the economic affiliates of Ecopetrol¹⁴ establishes the parameters for determining remuneration in transactions involving goods or services between Ecopetrol and its subsidiaries. This ensures that the conditions established in the analyzed transactions align with those agreed upon with or among independent third parties, thus preventing any adverse impact on financial statements resulting from control or subordination relationships. Notably, the economic relationships with the Nation and

consolidated subsidiary companies during 2023, as evidenced by agreements or contracts, adhered to the aforementioned parameters.

In accordance with Ecopetrol's Bylaws, the Board of Directors receives semi-annual notifications ensuring that operations, contracts, and/or agreements between Ecopetrol and its economic affiliates during the reported period were conducted in accordance with the principle of fair competition.

The Corporate Compliance Vice Presidency maintains a related parties matrix for monitoring potential conflicts. Chapter 3.2.7 of the Accounting Policies Manual of the Business Group governs the treatment of related parties, encompassing their determination, disclosure requirements in separate and consolidated financial statements, as well as the duty and procedure for identification and disclosure requirements, among other aspects.

14. Last modification made on June 28, 2023.



Board of Directors Evaluation

(GRI 2-18) (DJSI 1.2.6) (SFC 7.4.1.3.1.vii) To ensure alignment between shareholder interests and the performance of the Board of Directors, Ecopetrol has implemented the following evaluation mechanisms, in accordance with best corporate governance practices:

Self-assessment (qualitative)	Annually, it assesses, both at the individual and collective levels, the desirable behaviors for its proper functioning, such as: knowledge, quality of information, management results, performance of functions, leadership, and relationships.
Quantitative evaluation through performance indicators	It annually measures the results of the indicators defined in the TBG.
Independent evaluation (external)	Every two (2) or three (3) years, an independent third party evaluates the management measures adopted. This alternates with the annual evaluations conducted by the Board of Directors itself.
Peer evaluation (qualitative)	Peer reviews are conducted annually to identify improvement opportunities.
360-degree evaluation	It seeks to gather the Administration's perception of the Board of Directors' performance.

Board of Directors' Evaluation Results

(GRI 2-18) (SFC 7.4.1.3.1.vii) In February 2023, the Board of Directors underwent an evaluation for the year 2022, facilitated by its Corporate Governance and Sustainability Committee. The results, derived from self-assessment, peer evaluation, and a 360-degree assessment, demonstrated an outstanding performance.

These outcomes reflect the members' expertise, access to information, meeting preparedness, directorial engagement, independence from the Administration, and the effectiveness of the support

committees' management. The evaluations also encompassed the performance of the Chairman of the Board of Directors and the secretary.

Concerning the management of the year 2023, the Board members conducted a self-assessment in February 2024. The Corporate Governance and Sustainability Committee received the evaluation results, encompassing self-assessment, collective assessment, and 360-degree evaluation, yielding an overall outstanding outcome.

Remuneration of the Board of Directors

(GRI 2-19) (SFC 7.4.1.3.1.i) (WEF 3E) Directors' fees for attending Board of Directors and/or support committee meetings are determined by the General Shareholders' Meeting, taking into account the Company's nature, the responsibilities associated with the positions, and prevailing market guidelines.

As of December 31, 2023, these fees were set at six (6) times the legal monthly minimum wage¹⁵, equivalent to COP 6,960,000 per session. The total value of fees disbursed to the Board of Directors in 2023 amounted to COP 4,983,360,000.

Directors do not receive any kind of variable compensation.

Senior Management

Senior Management Composition

(SFC 7.4.1.3.1.iii)

- CEO: Ricardo Roa Barragán.
- Sustainable Territorial Development Vice President: Sandra Lucía Rodríguez Rojas.
- COO: Alberto Enrique Consuegra Granger.
- Corporate Affairs Vice President and General Secretariat: Germán González Reyes.
- Strategy and New Business Corporate Vice President: Nicolás Azcuénaga Ramírez.
- Low Emission Solutions Vice President: David Alfredo Riaño Alarcón.
- Compliance Vice President: Luz Elena Díaz García.
- Science, Technology, and Innovation Vice President: Luis Felipe Rivera García.
- Upstream Vice President: Jorge Elman Osorio Franco.
- Legal Vice President: Rodolfo García Paredes (Acting).
- Finance and Sustainable Value Corporate Vice President: Ana Milena López Rocha.
- HSE Vice President: Mauricio Jaramillo Galvis.
- Commercial and Marketing Vice President: Felipe Trujillo Lopez (Acting).
- Human Resources Corporate Vice President: Victoria Irene Sepúlveda Ballesteros (Acting).
- Refining and Industrial Processes Vice President: Walter Fabián Canova.
- Procurement and Services Vice President: Jaime Ariolfo Pineda Durán.
- Corporate Internal Audit Manager: Ricardo Augusto Montes Gómez.

Senior Management Roles

(GRI 2-12) (SFC 7.4.1.3.1.iii)

- Define, guide, and evaluate the long-term strategy of the Company, the Business Group (EG), the function, segment, and/or business line, guided by the environment, Board of Directors' guidelines, and legal framework.
- Create future scenarios and opportunities for the sustainability of the Company and the Group.
- Formulate policies for the function, segment, and/or business line in the Company and/or the EG, anticipating future conditions and global complexities.
- Define, ensure, and guarantee compliance with established objectives and goals related to TESG, energy transition, occupational health, industrial and process safety, corporate responsibility, and operational environmental management within the purview of its

administration. Strive for sustainable operations by harnessing technology, aiming for a work environment free from occupational, process safety, and environmental incidents, all in harmony with the environment.

¹⁵ According to the decision documented in Minutes number 026 of 2012 of the General Shareholders' Meeting.

Composition and Roles of the Management Committee

(GRI 2-12) (SFC 7.4.1.3.iii) The Management Committee is the body through which monitoring and alignment on issues relevant to the CEO and the EG are carried out, achieving cross-cutting communication of these topics. Thus, this committee is the forum that allows its members and guests to communicate progress and developments on relevant matters to the CEO.

The members of the Management Committee are:

- CEO.
- COO.
- Upstream Vice President.
- Midstream Segment Vice President (Cenit CEO).
- Refining and Industrial Processes Vice President.
- Commercial and Marketing Vice President.
- Finance and Sustainable Value Corporate Vice President.
- Strategy and New Business Corporate Vice President.
- Science, Technology, and Innovation Vice President.
- Human Resources Corporate Vice President.
- Sustainable Territorial Development Vice President.
- Procurement and Services Vice President.
- Legal Vice President.
- Corporate Affairs Vice President and General Secretariat.
- Compliance Vice President.
- Low Emission Solutions Vice President.
- HSE Vice President.

Composition and Roles of the Executive Committee

The Executive Committee (ExCo) serves as the platform for:

- 1 Overseeing the pillars of the EG Strategy, the long and short-term Business Plan, and strategic, cross-cutting matters pertaining to business lines.
- 2 Approving the strategic plans for the business lines and those outlined in the Decision and Attribution Matrix. It is responsible for both approval and monitoring functions.

The members of the ExCo consist of the following:

- CEO
- COO
- Finance and Sustainable Value Corporate Vice President
- Corporate Affairs Vice President and General Secretariat
- Commercial and Marketing Vice President
- Legal Vice President
- Strategy and New Business Corporate Vice President
- Low Emission Solutions Vice President

Compensation Policy

(GRI 2-19) (GRI 2-20) (SFC 7.4.1.3.1.i) (WEF 3E) The compensation policy is designed to uphold a competitive framework in comparison to the Colombian sector and the industry, fostering the attraction and retention of top-tier talent to ensure the Company's long-term sustainability. To assess Ecopetrol's

standing in the market, an annual salary competitiveness study is conducted with a specialized firm, utilizing a quantitative job valuation methodology, best practices in compensation, and considerations for organizational factors.

In the case of Senior Management compensation, a comparative analysis is performed against a specific market comprising business groups and/or large national companies. This approach facilitates the ongoing evaluation of their competitiveness level.

Remuneration for Senior Management

(DJSI 2.6.3) (DJSI 3.4.3) (ECP 027) The overall compensation components for executives include:

Fixed compensation: encompassing guaranteed salaries, legal, and extralegal benefits.

Variable compensation: non-guaranteed incentives based on short and long-term performance outcomes.

Benefits, aimed at enhancing their quality of life and that of their families, covering aspects such as health, education, savings, and investment.



(DJSI 1.2.9) Consequently, the Company's compensation framework for senior executives consists of two (2) components tied to achieving business results:

Short-Term Variable Compensation	Long-Term Incentives (LTI)
<p>This compensation is granted to all eligible employees and is contingent upon achieving business results in three perspectives:</p> <ol style="list-style-type: none"> All eligible workers are acknowledged, and it is subject to the achievement of business results in three perspectives: Compliance with metrics defined in the Ecopetrol Group's Balanced Scorecard (EG); includes indicators and milestones aligned with the four pillars of the 2040 strategy (i. Growing with the Energy Transition, ii. Generate Value Through TEG, iii. cutting-edge knowledge, and iv. Competitive Returns) and the fundamental cultural principle known as "Life First". Impact of HSE events, such as human fatalities or high-impact environmental events. Internal Control Failures reported by the Statutory Audit processes, including Control Deficiencies, Significant Deficiencies, and Material Deficiencies. <p>The 2023 Balanced Scorecard includes indicators associated with material issues such as Climate Change, Water, and Sustainable Territories, representing 20% of the total:</p> <ul style="list-style-type: none"> Reduction of Greenhouse Gas Emissions (GHG) (5%) and the GHG Gap Closure Strategy by 2030 (2%). Efficiency in Water Management (3%). Compliance with Social Investment Goals for Sustainable Territorial Development (6%) and National Social Trust Level (4%). <p>Additionally, short-term variable compensation considers the fulfillment of each worker's Individual Performance Agreement, which includes specific indicators reflecting their contribution to achieving the Company's strategic objectives and goals related to material issues.</p>	<p>These incentives are awarded to the CEO, vice presidents, and other executive positions.</p> <p>(DJSI 1.2.10) Long-term variable compensation is assessed through Long-Term Incentives (LTI), encompassing triennial business metrics designed to expedite the energy transition, ensure the country's energy sovereignty, and generate incremental value for the EG and its shareholders. Funds for each plan are entrusted to an authorized financial entity for investment in Ecopetrol's ordinary shares in Colombia.</p> <p>The 2021-2023 LTIs are presently in the liquidation phase, while the LTI plans for 2022-2024, 2023-2025, and 2024-2026 are ongoing. With each edition of the LTI Plan, the target population is updated, and indicators associated with the corporate strategy and the financial plan for the period are incorporated.</p> <p>The Ecopetrol Board of Directors endorsed the 'Clawback' clause during the session on November 30, 2023, with its implementation set to commence in 2024, ensuring its inclusion in the 2024 – 2026 LTI Plan and its communication to employees.</p> <p>From a TEG perspective, the LTIs for 2021-2023, 2022-2024, and 2023-2025 encompass the following indicators:</p> <ul style="list-style-type: none"> Reduction of Greenhouse Gas Emissions (GHG), with an average weight of 15%. Furthermore, the 2023-2025 LTI includes the EG's specific commitment to methane gas reduction within the mentioned indicator. Hydrogen production. Integration of renewables.

(DJSI 1.2.9) The short-term variable compensation for the CEO includes the following indicators for 2023:

Free Cash Flow (FCF): This financial metric calculates the cash generated by the EG after covering operational (OPEX) and capital (CAPEX) expenses, assessing the Company's efficiency in cash generation, its capacity to manage debt, pay dividends, or explore new business opportunities. FCF was integrated into the EG's 2023 Balanced Scorecard (TBG) with a 15% weight.

Efficiencies: This metric gauges savings in OPEX and CAPEX, alongside increased revenue resulting from initiatives focused on enhancing cost efficiency in operations and investments. Aligned with the Competitive Returns pillar of the 2040 Strategy, it ensures strict capital discipline, efficient resource utilization, and the protection of the Company's liquidity. Efficiencies were incorporated into the 2023 TBG with a 10% weight.

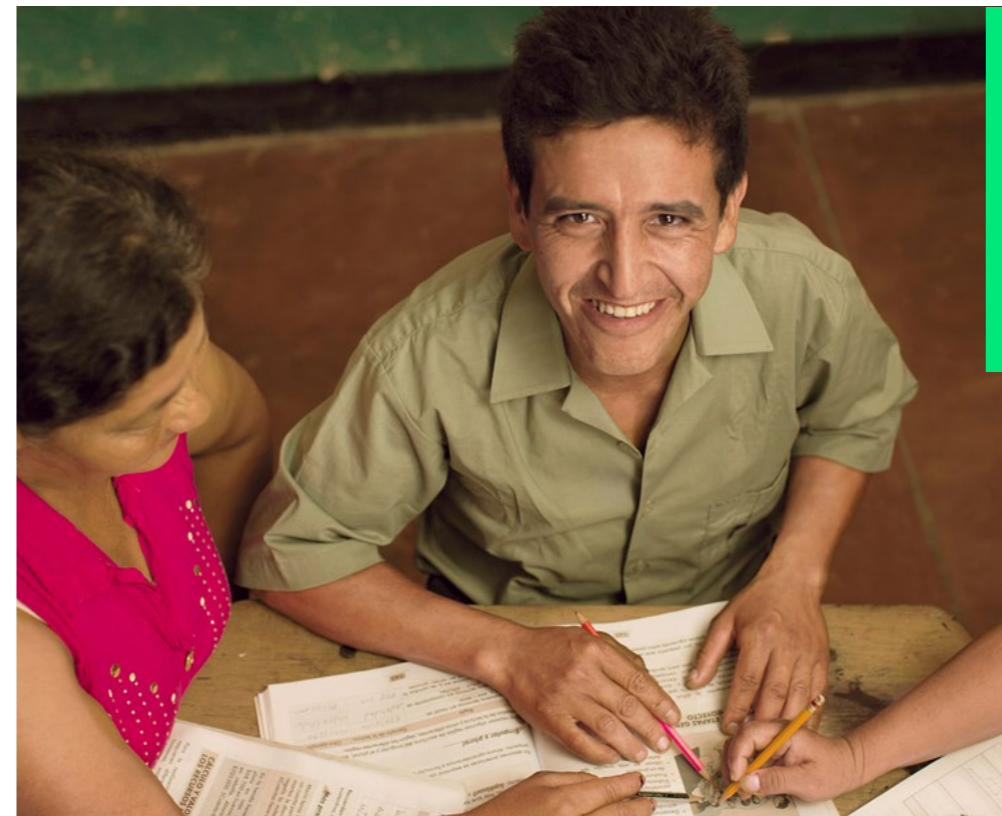
Value Generated from ST+i: This measures the creation of "Value" achieved through the implementation of initiatives, projects, innovation challenges, revenue from technology commercialization, service provision revenue, research and development studies, technical assistance, direct application of technologies, process improvement and transformation, organizational practices, and operational models. It also covers secure Digital Operation of Cybersecurity and Cyber Defense, and secure and available digital Operation and Infrastructure associated with Science, Technology, and Innovation (ST+i), with a 5% weight in the EG's 2023 TBG.

Additionally, the following indicators are part of the long-term variable compensation:

Free Cash Flow (FCF): with a 50% weight in the 2023-2025 LTI Plan.

Operating Cash Flow (OCF): Measures the cash generated from all operational income, deducting operational expenses and taxes. This indicator holds a 60% weight in the LTI Plans for 2021-2023 and 2022-2024.

For 2024, the financial indicator ROACE was incorporated into the 2024 TBG with a 10% weight. It is also part of the 2024-2026 LTI Plan with a 20% weight.

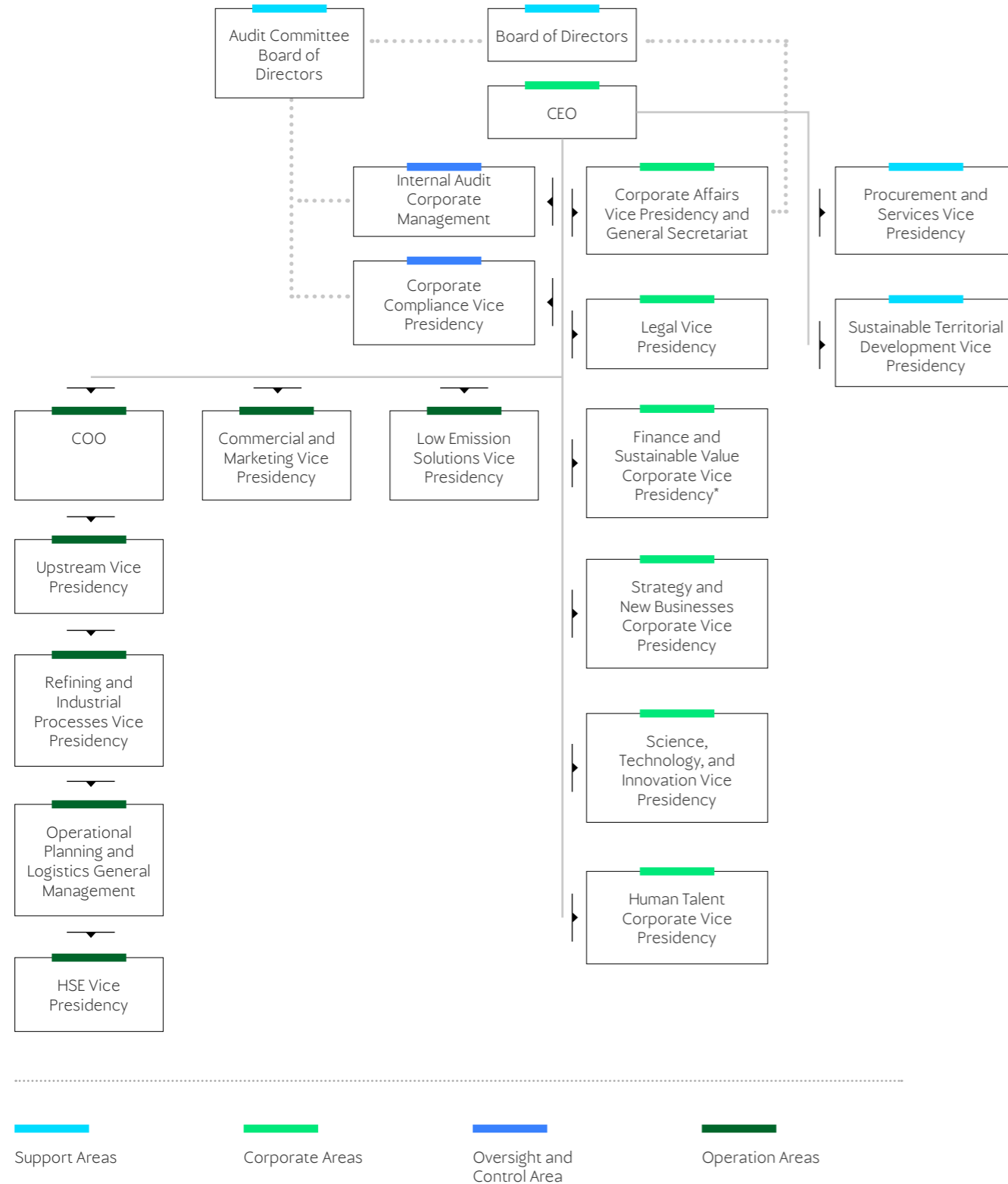


The total compensation for the CEO of Ecopetrol is estimated at a ratio of 43.5% in fixed compensation and 56.5% in variable compensation.

(GRI 2-21) (DJSI 1.2.15) (WEF 19E) In 2023, the fixed compensation for the CEO of Ecopetrol was 7.89 times higher than the average fixed compensation of a Company employee.

In 2023, the annual total compensation increase for the Company's CEO was 6.05%, while the median increase in annual total compensation for all employees (excluding the CEO) was 10.24%.

Organizational Structure of the Company



2040 Strategy

The Ecopetrol Group's 2040 Strategy, known as "Energy That Transforms," addresses the pressing challenges associated with the Just Energy Transition. This transition requires a delicate balance of four (4) key priorities: ensuring energy security, achieving cost-effective access to energy sources, committing to environmentally responsible resource management, and generating value for all Stakeholder Groups involved in Ecopetrol's operations. The strategy is designed to effectively confront both current and future challenges in technology, environmental concerns, social aspects, and governance, with a continued emphasis on creating sustainable value for the Company and its Stakeholder Groups.

This strategic approach aligns with Colombia's dedication to fostering a growing, clean, and diversified energy matrix. The organization positions itself as a foremost energy diversifier in the Americas, consolidating its three (3) core business lines: hydrocarbons, low-emission solutions, and transmission, roads, and telecommunications.

(SFC 7.4.1.1.1.i) To achieve its objectives, the 2040 Strategy underwent several assessments by the Board of Directors throughout the year. Three (3) adjustments were approved, communicated to the market, and shared with other Stakeholder Groups in September 2023:

- 1 The strategic lever of the Caribbean Offshore was fine-tuned to focus on maximizing the gas potential in the Colombian Caribbean Offshore.
- 2 The exploration of unconventional hydrocarbons in Colombia was discontinued.
- 3 The strategic objective of Energy Efficiency was replaced with the goal of optimizing internal energy consumption by 25 cumulative petajoules (PJ) by the period of 2018-2030.



Consequently, the strategy retained its four (4) fundamental pillars:



1

Growing with the energy transition:

Ecopetrol positions itself as an agile and dynamic organization, promptly adapting to the rapid evolution of the energy industry. This adaptation addresses the challenges of an increasingly consolidated market for the generation and use of clean energy.

- The strategic production aspiration of ~700-750 (kboed) by 2040 was maintained.
- Goals for the incorporation of renewable energy were accelerated, targeting 900MW by 2025 compared to the initial goal of 1,000MW by 2030.
- Anticipated growth in transmission and new energy businesses at ISA between 22% and 26% of the EG's EBITDA by 2040.



2

(GRI 2-22)

Generate Value Through TEsG:

The Company consistently creates value across its three (3) business lines, ensuring competitiveness while comprehending the impacts on its stakeholder groups and addressing challenges and opportunities within the framework of the energy transition.

- COP ~0.6 trillion invested annually in social initiatives for territorial transformation.
- 55% reduction in methane emissions by 2030.
- Energy efficiency, aiming to optimize internal energy consumption by 25PJ by 2030.



3

Cutting-edge Knowledge:

Ecopetrol is committed to developing Science, Technology, and Innovation solutions to tackle the strategic challenges faced by the Group, including decarbonization and the energy transition. The emphasis on Science, Technology, and Innovation (ST+i) underscores the pivotal role of the Innovation and Technology Center (ICP) in leading and shaping themes that enhance the competitiveness of EG companies. This includes areas such as automation, robotization, digital transformation, and knowledge and capability generation for the energy transition. This pillar harnesses the strengthening of ICP capabilities to address the challenges associated with the energy transition and decarbonization. It also involves the coordination of the Econova Network with strategic partners and the development of capacities in various territories.

- 20-30 billion USD of EBITDA enabled by Science, Technology, and Innovation accumulated by 2040.
- Incorporation of 'Big Data' and artificial intelligence (AI) to improve the recovery factor of our assets.
- Technological conversion of the generation fleet.



4

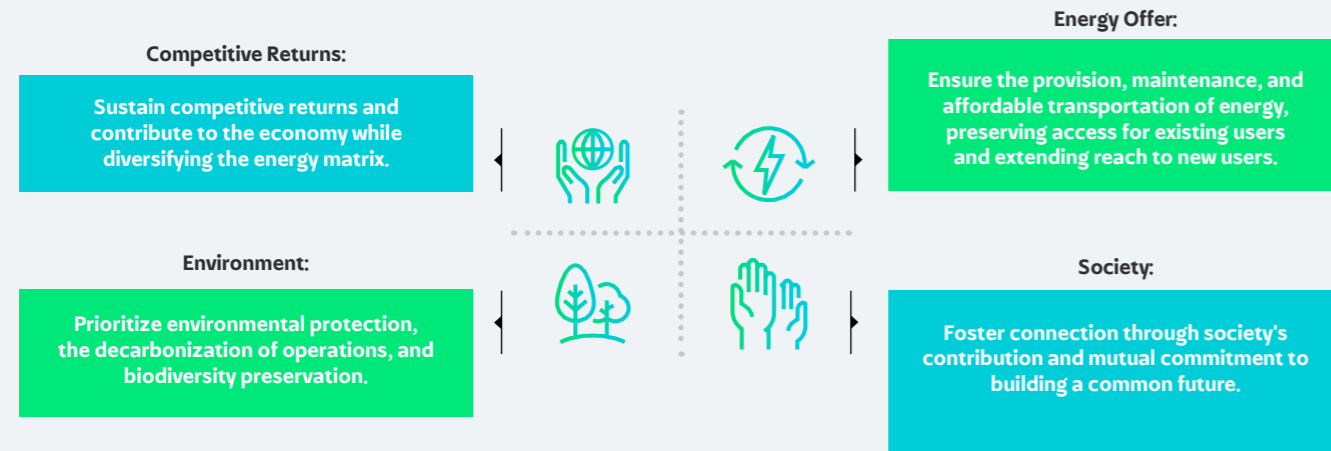
Competitive Returns:

Ecopetrol is committed to ensuring the profitable and sustainable growth of its business lines while generating value for all Stakeholder Groups. This involves maintaining rigorous capital discipline, establishing distinct criteria for each business line, and identifying emerging trends for the development of low-emission projects.

- EBITDA target of 13-14 million USD by 2040: evenly distributed between hydrocarbons and diversification.
- Annual transfers to the Nation will consistently range between COP 13-20 trillion from 2022 to 2040.
- Capital allocation by business line: 60% for hydrocarbons and 40% for low-emission projects by 2040.



To ensure that these pillars align with the principles of a fair and equitable energy transition, the 2040 Strategy embraces this model, employing a framework with four (4) enablers. This approach aims to deliver gradual and secure contributions.



Moreover, the company contemplates diversifying its portfolio, including the exploration and production of gas to enhance the country's energy security.

There is also a focus on implementing renewable energy projects to:

- 1 Improve the competitiveness of the hydrocarbon business by delivering cleaner barrels,
- 2 Enable low-emission solutions.

- 3 Contribute to achieving decarbonization goals. In this regard, the EG has committed to reducing greenhouse gas emissions through investments in technologies and businesses aligned with the Group's and the country's goals.

Implementation and Monitoring of the 2040 Strategy

To bring the 2040 Strategy to fruition, it is crucial for the Company to achieve operational, financial, and industrial safety results aligned with international standards, projecting the hydrocarbon business as a key lever to ensure the growth expectations in alternative businesses.

Ecopetrol ensures the direction and monitoring of necessary actions within the Company to meet the goals associated with the 2040 Strategy. Key mechanisms include:

Integrated Management Reports:

The Company annually publishes information on its performance in environmental, social, and governance issues, detailing progress in the implementation of the 2040 Strategy.

Approval and Supervision by the Board of Directors:

The Ecopetrol Board of Directors approved the 2040 Strategy and continually monitors its implementation.

External Evaluations:

Ecopetrol undergoes external evaluations, such as those conducted by S&P, to validate its management in sustainability and energy transition issues.

Long-Term Incentive Plans (LTI):

These plans align the Company's objectives with the performance of employees, encompassing financial competitiveness, production and reserves, and the decarbonization of operations. LTIs are updated annually and have a duration of three (3) years.

Implementation of the Strategy in Operations:

The Strategy is implemented at the EG level and across all areas of Ecopetrol S.A., spanning hydrocarbon exploration and production to the implementation of renewable energy projects. This maximizes the value and competitiveness of the businesses, considering the demands and opportunities of the energy transition and the environment.

Monitoring through Indicators and Metrics:

Ecopetrol uses a series of indicators and metrics within its Balanced Scorecard (BSC), applicable to the entire Ecopetrol Group, to monitor the Strategy's implementation. These indicators include, among others, energy efficiency, greenhouse gas emission reduction, and value generation for Stakeholder Groups.



Accomplishments

(SFC 7.4.1.1.1.i) Throughout 2023, Ecopetrol achieved significant milestones in line with the 2040 Strategy:

- In the "Growing with the Energy Transition" pillar, Ecopetrol continued incorporating new exploratory successes to define the gas potential in the Colombian Caribbean Offshore, contributing to sustainability goals in the traditional oil and gas business and leveraging the role of gas as the fuel for the transition.
- With regard to "Low-Emission Businesses," the business model for hydrogen-based electric mobility was approved by the Low-Emission Solutions Vice Presidency. Additionally, the Strategic Plan for Carbon Capture, Utilization, and Storage (CCUS) was approved, consolidating a portfolio that includes studies and developments for the use of mineralization.
- In "Transmission and Roads," new investments in the electric power business (transmission, connections, reinforcements, and expansions) amounted to \$1.935 billion, enabling 4,750 Megavolt-amperes that powered 8 projects and 718 kilometers of circuits.
- The Investment Plan for 2024-2026 amounts to \$20.2 billion, with 58% focused on energy security and sustainability in the traditional business and 42% in the Energy Transition, where investments in gas and the electric power transmission line play a crucial role.
- In terms of governance, Ecopetrol's Board of Directors presented the 2040 Strategy to the market during 'Investor Day' in New York, thus confirming that the outlined roadmap is maintained, incorporating three (3) adjustments to support the achievement of goals.
- In the "Generate Value Through T ESG" pillar, by the end of 2023, Ecopetrol maintained its comprehensive water management practices, reusing 38.8 million cubic meters of water in its operations and reducing pressure on water resources. Additionally, the Company achieved a reduction of 581,532 TonCO₂e, exceeding the annual plan by 140%.
- Benefits in Science, Technology, and Innovation (ST+i) amounted to \$777.97 million (vs \$595.67 in 2022).



- Within the realm of business technology, a significant 55% of benefits were centered around water polishing tests, while a substantial 41% of benefits were directed towards digital transformation initiatives. Notably, a staggering 75% of benefits within the Upstream sector were channeled into business technology, with a clear emphasis on themes geared towards augmenting production in assets such as Coiled Tubing Gas Lift, Speed Strings, PIAR, and Nanotechnology. Meanwhile, approximately 35% of benefits were allocated to endeavors in the digital transformation domain.
- In the "Cutting-Edge Knowledge" pillar, Ecopetrol continued its partnership with Accenture and AWS to develop an open data platform for water management, incorporating analytics and artificial intelligence capabilities and cloud storage, primarily for the Barrancabermeja Refinery.
- In Human talent, 25,621 people acquired cutting-edge skills in categories prioritized by the organization, including learning new skills such as agility, innovation, energy transition, digital transformation, and execution.
- During COP28, Ecopetrol expanded its ambition to achieve zero methane emissions by 2030 through the Aiming for Zero Methane Emissions Initiative under the Oil and Gas Climate Initiative (OGCI). The Company reaffirmed its commitment to climate action by joining the Oil and Gas Decarbonization Acceleration Commitment. This commitment was signed by more than fifty companies with operations in the five (5) continents and represents approximately 40% of the world's hydrocarbon production. Ecopetrol is one of the thirty national companies (60% of the adherents) and one of the three (3) South American companies that have adhered to it.
- With regard to the "Generate Value Through T ESG" pillar, the third specialized report on climate change management was presented, in consideration of TCFD recommendations.
- In the social dimension, COP 366.233 billion was allocated to social and relationship investment, a 20% increase from 2022, in projects associated with boosting local economies, education, and access to public services.
- In the "Competitive Returns" pillar, Ecopetrol achieved consolidated revenues of COP 143 trillion, a net profit of COP 19.1 trillion, an EBITDA of COP 60.7 trillion, and an EBITDA margin of 42.4% in the cumulative year.

Challenges and Opportunities

Ecopetrol is committed to creating value for all Stakeholder Groups while driving a Just and Equitable Energy Transition. To realize this commitment, the Company has outlined a plan to systematically integrate new energy sources into its business lines, safeguarding the competitiveness of its traditional operations.

Anticipating future challenges, the primary focus is placed on identifying opportunities for diversification that uphold the integrity and value of the core business.

This strategic initiative aims for EBITDA growth ranging from 13 to 14 billion USD by 2040, with approximately

50% contributed by the oil business and the remainder derived from diversified ventures. Achieving successful diversification requires ongoing efforts across various key factors, encompassing social, financial, legal, regulatory, and technical dimensions.

In light of these considerations, the EG maintains its unwavering commitment to fostering growth and value across its business lines. The Company is dedicated to maximizing shareholder returns and cultivating new ventures within a framework of disciplined capital management, competitive returns, and prudent cash protection.



03

Competitive
Returns



The 2040 Strategy comprehensively addresses industry challenges, with a steadfast focus on ensuring profitable growth through the gradual diversification of the portfolio and the sustainable generation of value for all Stakeholder Groups.

In the context of the Energy Transition, the Company anticipates maintaining investment intensity in the medium term (ranging from COP 20 trillion to COP 30 trillion / USD 5.0 billion to USD 7.0 billion).

Capital discipline within the EG has evolved, recognizing the value levers of the three (3) business lines and acknowledging the diversification of the EG along with the unique characteristics of each line.

Consequently, criteria are applied to ensure the Group's profitability in scenarios of low prices and higher discount rates.

Within the framework of this strict capital discipline, the objective is to identify profitable projects that secure a ROACE (Return on Average Capital Employed) between 8% and 10% in the long term while preserving the competitiveness of all business lines.

Ecopetrol's expectation is to generate an EBITDA between USD 13 billion and USD 14 billion by 2040, assuming a resilient Brent price scenario of \$55 US/Bl. This projection would increase to between USD 17 billion and USD 18 billion at a Brent price of \$80 US/Bl.

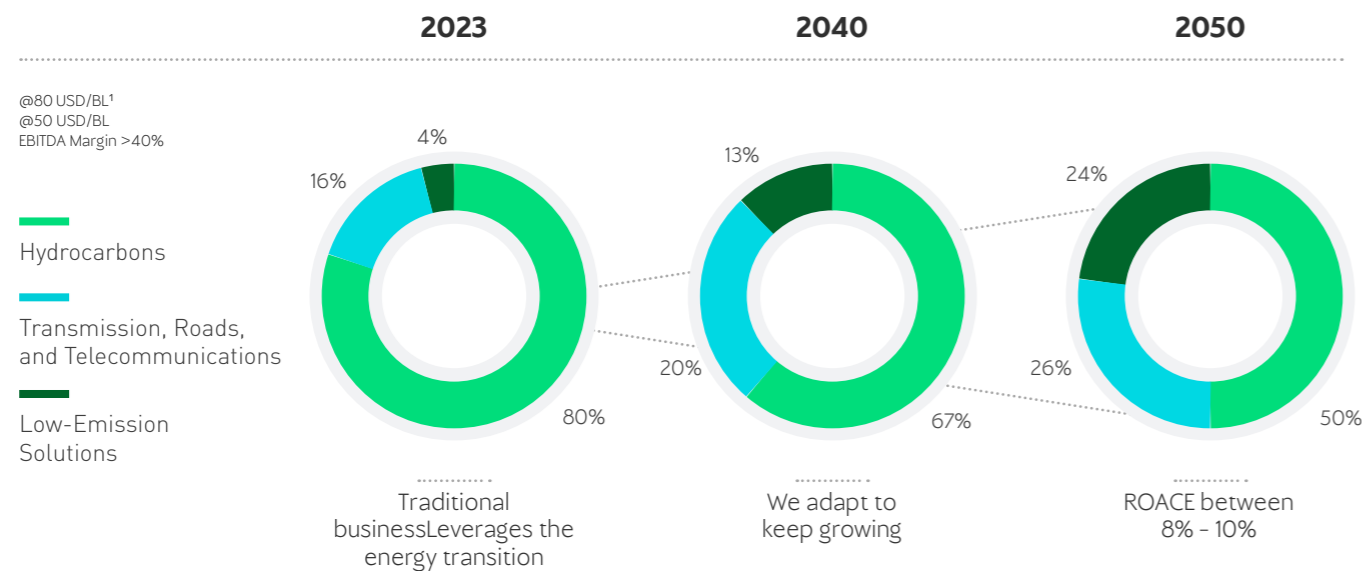
Moreover, there is a concerted effort to enhance the involvement of low-emission businesses, leveraging the fortification of the traditional business and ensuring an EBITDA margin above 40%.

Figure 3.11
Competitive Returns

EBITDA growth and increased diversification

Competitive returns, capital discipline, and cash protection

Growth through EBITDA diversification (Billion USD)



Sustainable capital structure

- Long-term **Gross Debt / EBITDA** ratio < 2.5%
- Incorporation of alternative financing sources
- Enhanced working capital conditions stemming from reduced FEPC impact

Committed to contributing to society
Generating T ESG value

Shareholders	Nation
Payout: 78%	Royalties + Taxes + Dividends
Average for the last 5 years	2023e: ~46 TRILLION COP
Dividends in line with operating results	2024-2040: 13-20 TRILLION COP / year

The Company remains committed to maintaining sustainable and prudent debt levels, aligning debt management with the financing requirements of the investment plan and the refinancing strategy. This approach is designed to be in accordance with the stand-alone investment grade, targeting a Gross Debt/EBITDA ratio below 2.5x in the long term.

Furthermore, Ecopetrol will steadfastly uphold its commitment to T ESG Value Generation, ensuring annual transfers to its majority shareholder, the Nation. This commitment results in a contribution ranging between COP 13 trillion and COP 20 trillion through royalties, taxes, and dividends.

Capital allocation focused on balance and efficiency

Capital discipline and efficient use of resources

Investments by line of business (BCOP)

Figure 3.12
Capital Allocation



Criteria differentiated by line of business

Discount rates

- Based on maturity and historical business returns.
- Adjusted for funding, seeking new sources of capital.
- Aligned with regulated businesses.
- Recognize challenges in technology maturity level (TRL).

Criteria transversales

CO₂ Internal Price: To enhance low-emission businesses

Geography: Maximize domestic value chain return (70% - 80%)

These corporate prospects necessitate not only a robust organizational structure backed by a risk system that facilitates transparent and effective performance but also a financial strategy capable of advancing the objectives of the 2040 Strategy within the context of a Just and Equitable Energy Transition.

Ownership structure of Ecopetrol S.A.

(SFC 7.4.1.2.2.) As of December 31, 2023, the number of Ecopetrol shareholders is 255,466, reflecting a -0.29% variation compared to December 2022.

Figure 3.1.3
Number of Shareholders

Evolution of the number of shareholders (thousands)

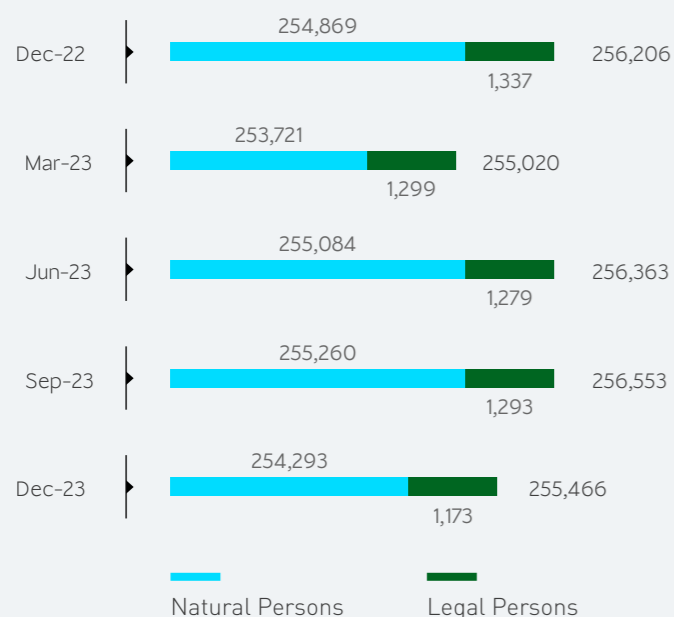
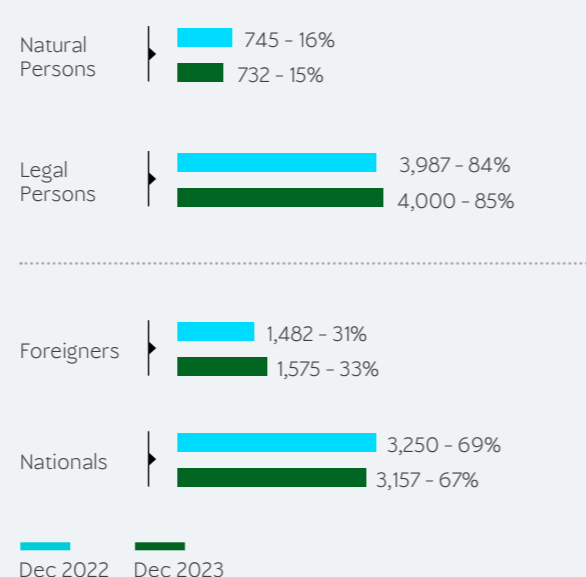


Table 3.1.1
Number of Shareholders

Shareholders	2020	2021	2022	2023
Number of shareholders	257,412	254,096	256,206	255,466

Figure 3.1.4
Floating Comparison by Shareholder Type

Millions of shares



The Ecopetrol shareholder structure as of December 31, 2023, shows a significant 6.3% increase in the involvement of foreign shareholders and a 1.8% decrease in the participation of individual shareholders.

Major shareholders

(DJSI 1.2.13) (SFC 7.4.1.2.2.) Below is a list of the top twenty-five (25) shareholders holding the highest number of Ecopetrol shares as of December 31, 2023:

Table 3.1.3
Major shareholders

No.	Investor	No. of Shares December 2022	% Share
1	STATE ENTITIES	36,384,788,417	88.49%
2	JPMORGAN CHASE BANK NA FBO HOLDERS OF DR ECOPETROL	1,214,515,640	2.95%
3	PORVENIR MANDATORY PENSION FUND - HIGH RISK	386,512,550	0.94%
4	ISHARES MSCI COLCAP STOCK EXCHANGE FUND	358,510,006	0.87%
5	PROTECCION MANDATORY PENSION FUND - HIGH RISK	271,188,921	0.66%
6	PORVENIR MANDATORY PENSION FUND - MODERATE	247,112,094	0.60%
7	PROTECCIÓN MANDATORY PENSION FUND - MODERATE	231,649,796	0.56%
8	COLFONDS MANDATORY PENSION FUND - HIGH RISK	104,256,569	0.25%
9	COLFONDOS MANDATORY PENSION FUND - MODERATE	101,082,297	0.25%
10	HORIZONS COLOMBIA SELECT S&P STOCK EXCHANGE FUND	78,770,077	0.19%
11	NORGES BANK	69,476,342	0.17%
12	CLOSED COLLECTIVE INVESTMENT FUND ASHMORE A C + LATAM	62,618,182	0.15%
13	VANGUARD TOTAL INTERNATIONAL STOCK INDEX FUND	62,128,907	0.15%
14	VOL-ECOPET PROTECCION PENSION FUND	49,495,630	0.12%
15	VANGUARD EMERGING MARKETS STOCK INDEX FUND	43,961,433	0.11%
16	SKANDIA MANDATORY PENSION FUND - MODERATE	40,150,488	0.10%
17	SKANDIA MANDATORY PENSION FUND - HIGH RISK	40,118,122	0.10%
18	PROTECCION MANDATORY PENSION FUND - RETIREMENT	38,749,771	0.09%
19	PORVENIR SEVERANCE FUND	34,323,990	0.08%
20	PROTECCION SEVERANCE FUND - LONG TERM	30,547,923	0.07%
21	PORVENIR SPECIAL FUND - SCHEDULED RETIREMENT	29,038,393	0.07%
22	PORVENIR MANDATORY PENSION FUND - CONSERVATIVE	22,349,648	0.05%
23	PROTECCION MANDATORY PENSION FUND - CONSERVATIVE	20,594,172	0.05%
24	JP MORGAN SECURITIES PLC	19,611,919	0.05%
25	COMPAÑIA DE SEGUROS BOLIVAR S.A.	18,685,870	0.05%

Aligned with the Colombian Corporate Best Practices Code, no Ecopetrol shareholder, apart from the Nation, individually possesses a "significant interest" (equivalent to 10% or more of the outstanding shares). As part of the authorized capitalization process, the Nation is obligated to maintain a minimum of eighty percent (80%) of the outstanding shares with voting rights¹⁷.

(DJSI 1.2.11) For further details on the value of shares held by the CEO and executives, please refer to the 2023 Annual Report on Form 20-F.

Share Trading

(SFC 7.4.1.2.2.) In 2023, no Ecopetrol administrator sought approval from the Board of Directors to sell company shares.

Share Capital

Ecopetrol's share capital as of December 31, 2023, remains unchanged compared to Ecopetrol's share capital as of December 31, 2022.

Ecopetrol's Authorized Capital	COP 36,540,000,000,000*
Total Shares	60,000,000,000
Nominal Value	COP 609**

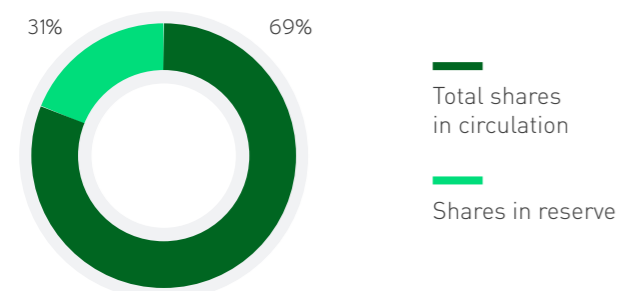
* Equivalent to US\$9,560,314,491

** Equivalent to US\$0.16

This information was calculated using the exchange rate as of December 31, 2023: \$3,822.05

Ecopetrol shares are nominative and ordinary, granting their holders equal rights in the corporate assets and benefits distributed. Each share entitles its holder to one vote in the deliberations of the General Shareholders' Meeting, subject to legal limitations. The company does not hold any of its own shares.

Ecopetrol S.A. Shares



In 2023, a total of
59,806
shareholder
requests were
received through all
assistance channels.

16. Financial Superintendence of Colombia, External Circular No. 028 of 2014

17. Article 2, Law 1118 of 2006.

General Shareholders' Meeting

(SFC 7.4.1.2.2.)

Assistance and Communication Channels for Shareholders and Investors

(SFC 7.4.1.3.1.xii) Ecopetrol ensures equitable treatment for all shareholders, avoiding favoritism towards any particular interest. The Company recognizes that each shareholder holds equal rights based on the class of shares they own. In commitment to the comprehensive exercise of these rights and the fulfillment of obligations towards investors and shareholders, Ecopetrol provides uniform treatment for requests, claims, and information. This approach remains consistent regardless of the value of their investment or the number of shares they hold.



96.53%
of the various
requests were
addressed promptly.

A total of **11,094** satisfaction surveys were conducted to assess the service provided to shareholders and investors.



Other shareholder loyalty activities undertaken in 2023 include:

- Distribution of a Shareholder Newsletter.
- Ecopetrol's visits to Bucaramanga and Cali, featuring discussions on the Ecopetrol 2040 Strategy, financial and operational results, and insights into the behavior and determinants of stock prices.
- Implementation of a data update campaign through various service channels, resulting in 4,586 pieces of information being updated.
- Ecopetrol holds the Investor Relations (IR) recognition granted by the BVC, underscoring our commitment to best practices in information disclosure and investor relations. This recognition can be reviewed at www.bvc.com.co.
- Participation in approximately (45) conferences and/or meetings with analysts and institutional investors.

Table 3.14
Shareholder Assistance Channels

National Shareholder Helpline

Toll-free Helpline for Shareholders nationwide	01 8000 113434
In Bogotá	6013077075
Email	accionistas@ecopetrol.com.co
Chat	To connect with one of our advisors, click here . Monday to Friday: 8 a.m. to 6 p.m. Saturdays: 8 a.m. to 2 p.m. Closed on Sundays and holidays

Investor Helpline

Investor Relations Department	Nicolás Ramírez Barrera investors@ecopetrol.com.co
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On the subject of disclosure of market-relevant information, the Company provides channels for disclosing relevant information, evidenced as follows in 2023:

Table 3.17
Information Transparency

Relevant Information	2023
Relevant Information Releases	70
Press Releases	404
Documents Published on the SEC	77
Total	551



External Controls – Statutory Audits

(SFC 7.4.13.1.x) The General Shareholders' Meeting, in its session on March 30, 2023, appointed statutory audit firm EY for the fiscal year 2023, with an option for fiscal year 2024. Their fees are detailed below:

Figures in COP (excluding VAT)

- 2023: 4,139,366,593
- 2024: 4,375,710,523

Throughout 2023, the firm fulfilled duties mandated by law and the Company's bylaws. This included evaluating and providing an independent opinion on the overall Internal Control System and specific

areas influencing the preparation of financial information, as required by the Sarbanes-Oxley Act and in accordance with Standard No. 5 of the Public Company Accounting Oversight Board (PCAOB). Regular reports on the results were presented to the Board of Directors' Audit and Risk Committee.

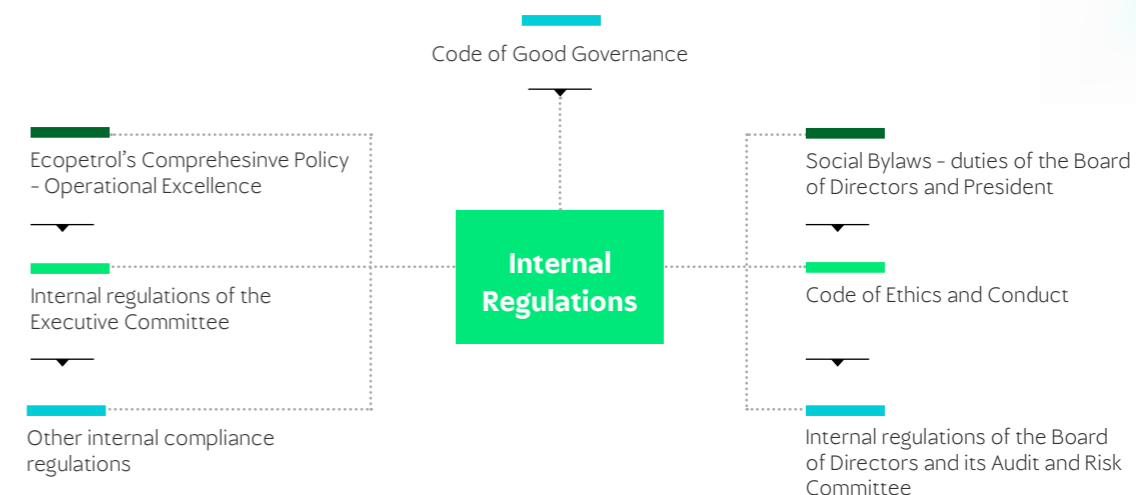
In alignment with best practices concerning the rotation of external audit/statutory audit firms, Ecopetrol's

bylaws stipulate appointments for four-year terms, allowing for consecutive reappointments for a maximum of 10 years. However, it is mandated that the designated partner undergo rotation after completing five (5) years of service. Following a 10-year tenure, the same firm may be eligible for rehiring after a mandatory one (1) year separation from the position.

Internal Control System (ICS)

(SFC 7.4.13.1.xi) Integrated risk management and internal control at Ecopetrol adhere to the ISO 31000 standard, as well as the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and Control Objectives for Information and related Technology (COBIT). Furthermore, they comply with the Sarbanes-Oxley Act (SOX) and the Foreign Corrupt Practices Act (FCPA), guided by the following internal regulations:

Figure 3.15
SCI internal regulations



These regulatory references establish the elements and general guidelines for risk management and the administration of internal controls, enabling the Ecopetrol Group to make informed decisions based on risk mitigation that may positively or negatively impact the Company's objectives.

In relation to the companies within the Ecopetrol Group, the Corporate Compliance Vice Presidency (VCU) exercises governance, issues guidelines, defines practices, and monitors risk management and internal control through regular compliance reports issued by each subsidiary. These reports are overseen by the Corporate Management of Integrated Risk Management and the Corporate Management of Internal Control Assurance. The goal is to standardize work practices, promote synergies and interaction,

enhance and ensure control, and facilitate timely and appropriate decision-making. The management conducted by VCU towards its subsidiaries is included in the regular reports submitted to the Board of Directors' Audit and Risk Committee.

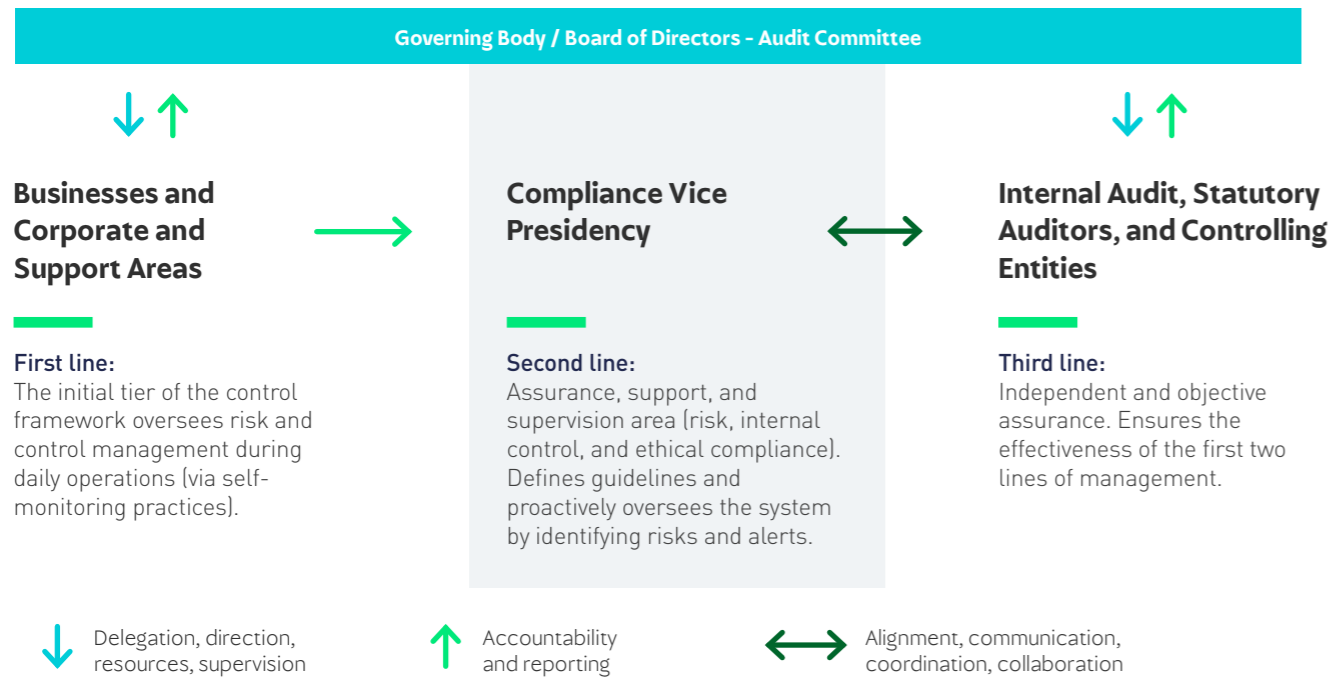
Ecopetrol's Internal Control System is fundamentally based on self-control, aiming to promote transparent and efficient performance to facilitate the achievement of organizational goals. As part of the self-control and supervision exercise, certifications and self-assessments are periodically conducted, declaring the effectiveness of controls, identifying additional risks, addressing relevant risk issues, implementing mitigation measures, and monitoring key risk indicators (KRI). This process involves the entire company and is overseen by the Board of Directors through

its Audit and Risk Committee, serving as the highest control body responsible for overseeing the management and effectiveness of the Internal Control System.

The Internal Control System seeks to provide reasonable assurance in achieving strategic, operational, information reporting, and regulatory compliance objectives through timely risk management and effective controls, thereby ensuring compliance with the Foreign Corrupt Practices Act (FCPA) (accounting provisions and financial controls over the company's books, records, handling, and management of assets, liabilities, and equity), the Sarbanes-Oxley Act (adequate internal controls over financial reporting), and the COSO framework (internal control reference).

All of the above based on the theory of the three (3) lines of defense, as presented below:

Figure 3.1.6
Lines of Defense



During 2023, the Corporate Management of Internal Control Assurance closely monitored the management of 395 risks and 1,041 process controls at Ecopetrol, along with 2,737 risks and 5,244 process controls in subsidiary companies. This oversight contributed to the Statutory Auditor issuing an opinion on the effectiveness of the Company's internal control for fiscal year 2023.

Integrated Risk Management System

(SFC 7.4.1.1.3.) Building on the recommendations of its Audit and Risk Committee, Ecopetrol's Board of Directors establishes guidelines and policies for risk management and internal control. The decision was made for Ecopetrol to adopt the standards of ISO 3100, COSO ERM 2017, and COSO 2013 for risk management, business risks, and internal controls, respectively. This commitment results in robust integrated risk and internal control systems within the Company, as outlined in the Code of Ethics and Conduct approved by the Board of Directors.

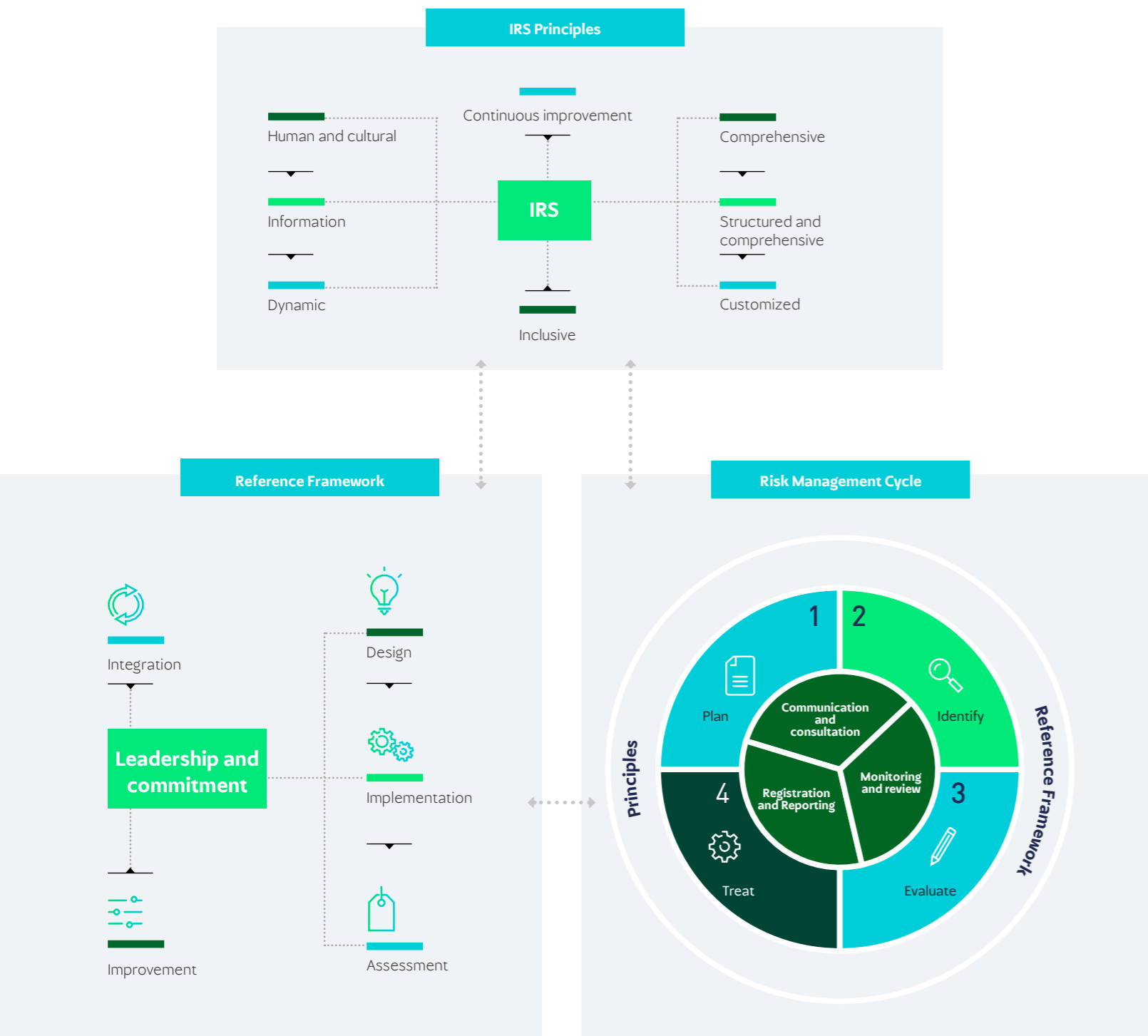
Through the Code of Good Governance, the Board defines risk management and administration as follows: "ECOPETROL's comprehensive risk management seeks to outline general guidelines for risk administration and consolidate a culture that allows for informed decision-making, considering possible events that may positively or negatively impact the Company's objectives. Similarly,

ECOPETROL is dedicated to establishing and maintaining an Internal Control System, understood as the process conducted by all individuals in the organization, supervised by the Board of Directors, top management, and control entities. This ensures reasonable assurance for the activities necessary to achieve goals, framed within the practices recommended by the international COSO framework."

Additionally, it introduces the risk appetite statement, delineating the framework within which the organization must ensure its long-term growth, sustainability, and value proposition. This complements the maximum risk exposure limits set for the organization, with the maximum tolerance and acceptance limits defined in the Risk Assessment Matrix (RAM) approved by the Board of Directors. These limits are used to assess the inherent and residual risks identified by the Company.



In alignment with these principles, Ecopetrol has an Integrated Risk Management System (IRS) that defines a set of principles, a framework, and a process (Risk Management Cycle) to be executed for the proper management of the effects of uncertainty on the achievement of objectives. This approach aims to maximize opportunities and assist in establishing strategies and making informed decisions, as illustrated below.



Responsibilities in Integrated Risk Management

At Ecopetrol, the responsibilities for risk management supervision, execution, and reporting are defined within the Integrated Risk Management System and the Internal Control Assurance System, as outlined below:

Board of Directors: Ensure the effectiveness of internal control and risk management systems.

Top Management Committees: Monitor, identify alerts, request actions, among other activities within the scope and competence of each committee, to oversee the Integrated Risk Management System.

Presidency: Establish and maintain the Company's Internal Control System, including risk assessment as one of the components of the Risk System.

Vice Presidencies and Management: As leaders of specific risk types, they are responsible for implementing the risk management methodology aligned with the principles and framework of the Integrated Risk Management System. Additionally, they must i) provide the necessary resources for applying methodologies to manage their assigned risks, ii) review and monitor measures for risk management, iii) report the required information to monitor the Integrated Risk Management System.

Board of Directors' Audit and Risk Committee:

- Verify the establishment of the Risk Management System, covering risk identification, assessment, treatment, and monitoring of the Company's risks, including analysis of potential risk materialization impacts.

- Analyze and recommend the Board of Directors to approve Ecopetrol's Business Risk Map, in line with strategic objectives, and monitor its management status.

- Recommend the approval of guidelines, policies, principles, models, and methodologies for internal control, verify the implementation of its structure following the COSO model, and ensure the proper adoption of financial reporting procedures. Also, monitor the correct functioning of the Internal Control System.

- Recommend Board approval for guidelines on the retention, transfer, and mitigation of financial risks, including insurance for the Ecopetrol Group.

- Approve the General Audit Plan (GAP) based on the business risk map, ensuring the adoption of internationally accepted audit standards and practices, and providing ongoing monitoring.

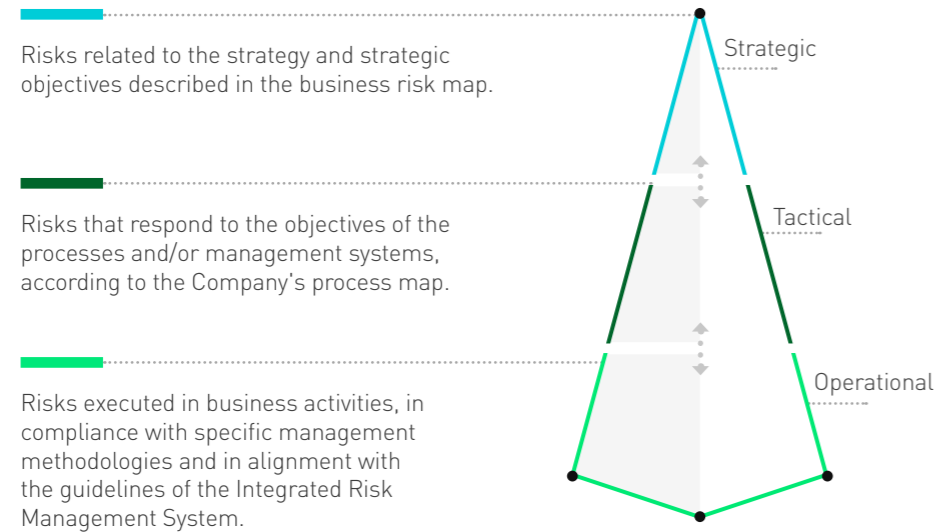
- Corporate Compliance Vice Presidency:** Lead the Integrated Risk Management System independently through the Corporate Management of Integrated Risk (GIR), ensuring the design, implementation, administration, sustainability, and continuous improvement of the IRS. Also, exercise governance, guide, issue guidelines, define practices, and monitor risk management for Group companies to unify guidelines, promote synergies, and ensure timely and appropriate decision-making processes.

- Integrated Risk Management:** Design, implement, manage, and sustain the Integrated Risk Management System for the Ecopetrol Group. Define guidelines for the System and risk management cycles at strategic and tactical levels.

- All Ecopetrol Employees:** Responsible for understanding and identifying risks within the scope of their functions and participating processes. Manage risks appropriately within their roles, following the principles, framework, and process of the IRS and adhering to the Code of Ethics and Conduct.

Risk Management Levels at Ecopetrol

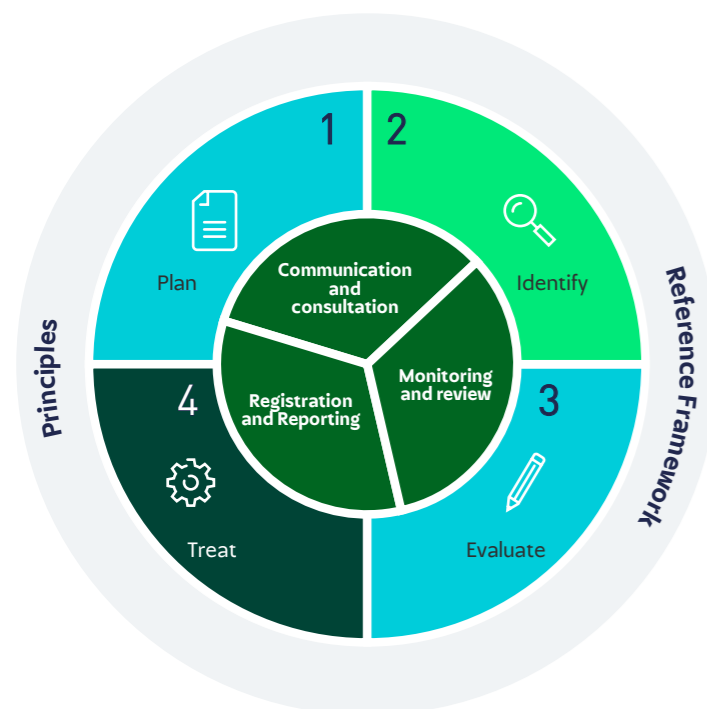
Within the framework of the Integrated Risk Management System, risks are classified into strategic, tactical¹⁸ and operational categories based on the level of administration. Each level encompasses various risk typologies in compliance with adopted regulations and specific standards, as illustrated below:



18. For the tactical level of risks, the Internal Control Assurance System considers the Risk Management Cycle for the objectives of the Company's processes.

19. Ecopetrol has a Corporate Insurance Program that is integral to the EG risk retention and transfer strategy. The program aims to minimize the impact of potential losses resulting from the realization of a risk.

The Integrated Risk Management System (IRS) functions by implementing the Risk Management Cycle, commencing with the identification of risks based on objectives to maximize opportunities, handle uncertainty, and address risks through avoidance, acceptance, transfer¹⁹, reduction, mitigation, or exploitation. This cycle encompasses the following stages:



Plan: Defining the scope of activities and analyzing the internal and external context.

Identify: Identifying risks based on input from stakeholders and thorough analysis of information.

Evaluate: Analyzing causes and consequences and assessing based on probability and impact.

Treat: Selecting and implementing options to mitigate risks.

Communication, monitoring, and recording: Facilitating information exchange, providing feedback, continuously monitoring, and periodically reviewing risk exposure. This includes identifying alerts, verifying the implementation of mitigating measures, and ensuring actions against materializations to maintain risks within defined tolerance and acceptance levels.

(WEF 6) Business Risk Management at Ecopetrol

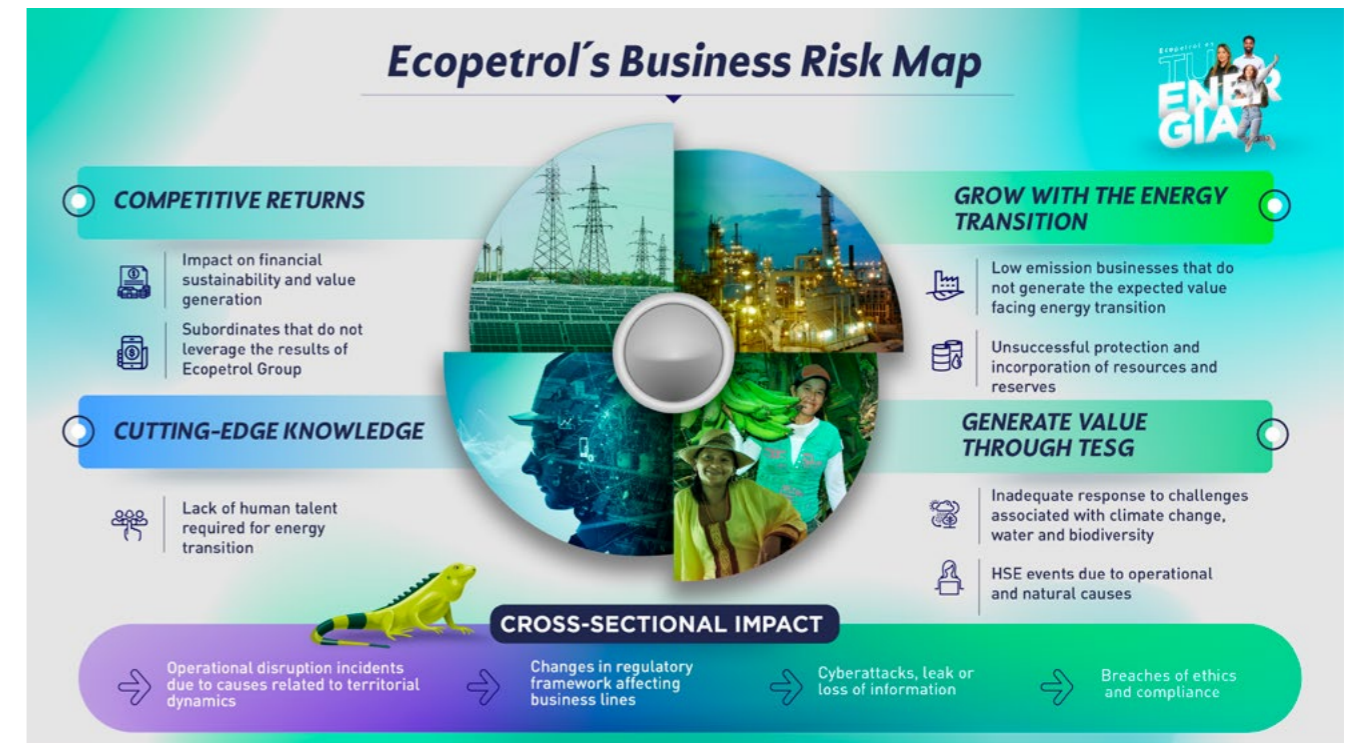
The construction and regular updating of the business risk map are carried out collaboratively through continuous analysis of alerts, environmental trends, risks from companies in the sector and the Group, national and international trends, market requirements, and measurement elements utilized by sustainability indices and radar systems such as DJSI, CDP, MSCI, TCFD, among others. This meticulous process is

designed to identify risks that might impact the company's strategic objectives and overall strategy.

Business risks²⁰ undergo thorough development and validation in coordination with the Company's executive level. They are then presented to the Board of Directors' Audit and Risk Committee and subsequently receive approval from the Board of Directors.

Below is Ecopetrol's Business Risk Map approved for 2023:

Figure 3.1.9
Ecopetrol's Business Risk Map



As a result of this process, for fiscal year 2023, Ecopetrol is actively managing business risks through 27 Treatment Actions (TAs) aimed at preventing the materialization of specific identified causes. Additionally, there are 31 Key Risk Indicators (KRIs) in place to identify preventive alerts of potential materializations. In the event of materializations, the following activities are initiated:

- 1 Analysis and actions taken in crisis committees.
- 2 Root cause analysis workshops.
- 3 Definition and monitoring of actions designed for mitigation.
- 4 Updating of events and impacts in risk assessments.

To access the matrix of strategic risks at Ecopetrol, please scan the provided QR code:



20. Significant risks to which the issuer is exposed and which have the potential to impact the advancement of the corporate mission, strategy, financial standing, investment plan, operational outcomes, cash flow, and growth outlook.

Business Risks and Procedure to Assess and Measure their Degree of Exposure

(SFC 7.4.1.1.3.VII)

The assessment and measurement of the degree of exposure involve a quantitative and qualitative analysis of these risks²¹ using the Risk Assessment Matrix, which contains risk acceptance and tolerance thresholds approved by the Ecopetrol Board of Directors. This matrix includes descriptive scales of the probability of occurrence and impacts on dimensions such as people, the environment, economic resources, reputation, and clients. Based on the combination of probability and impact, risk levels are categorized as Very High, High, Medium, Low, and Very Low. This assessment enables decision-making regarding the treatment of each risk.

Below are the estimates of probability and the level of economic impact (quantitative) for business risks:

Table 3.16
Assessment and Measurement of the Degree of Exposure

Business Risk ²²	Residual Assessment	Probability	Level of Economic Impact ²³
1 Inadequate response to challenges associated with climate change, water, and biodiversity.	High	Possible	Level 5
2 Low-emission businesses that fail to generate the expected value in the face of the energy transition.	Medium	Improbable	Level 3
3 Lack of human talent required for the energy transition.	Medium	Improbable	Level 4
4 Impact on financial sustainability and value generation.	Medium	Possible	Level 4
5 Subsidiaries that do not leverage the results of the Ecopetrol Group.	High	Certain	Level 3
6 Ethical and compliance breaches.	Medium	Probable	Level 4
7 Changes in the regulatory environment affecting business lines.	High	Possible	Level 5
8 Unsuccessful protection and incorporation of resources and reserves.	High	Improbable	Level 5
9 Operational disruption incidents due to territorial dynamics.	Medium	Probable	Level 3
10 HSE events due to operational or natural causes.	Medium	Probable	Not Applicable (NA)
11 Cyberattacks, data leaks, or information loss	Medium	Possible	Level 4

Business Risks at Ecopetrol are effectively controlled through measures implemented in processes, treatment actions, and Key Risk Indicators (KRIs).

21. Procedure for evaluating and quantifying the level of exposure to these significant risks.
22. For more information on business risks, please visit [Microsoft PowerPoint - Resumen fichas riesgos empresariales 2023 \(ecopetrol.com.co\)](#)
23. 1 being the lowest level and 5 the highest level.
* The impact level is determined by qualitative estimates (e.g., people, environment, reputation)

The following provides a detailed description of the identified nature of business risks, the implemented mechanisms for monitoring and mitigation, along with a concise explanation of risk materializations that took place during the year 2023:

Table 3.17
Nature of Business Risks

1. Inadequate response to challenges associated with climate change, water, and biodiversity	2. Low-emission businesses that do not generate the expected value in the face of the energy transition	3. Lack of required Human talent for the energy transition
<p>Risk Description</p> <p>Company's vulnerability to adverse impacts arises from a limited ability to respond promptly, efficiently, and effectively to commitments, obligations, and expectations associated with climate change, water, and biodiversity.</p>	<p>Risk Description</p> <p>There is a risk of falling short in delivering the promised value outlined in business cases and meeting the energy transition goals of low-emission business lines within the portfolio.</p>	<p>Risk Description</p> <p>Another risk involves the potential failure to meet the knowledge, skills, and behaviors required by the strategy. This should align with the operational model, processes, and cultural statement necessary for progressing along the path of the energy transition.</p>
<p>Management, Monitoring, and Mitigation Mechanisms</p> <ul style="list-style-type: none"> Implementation of projects, actions, and initiatives aimed at reducing greenhouse gas emissions, along with compensation measures through carbon credits. Implementation of actions focused on the management of natural capital through the utilization of technology, tools, and training to positively impact biodiversity. Structuring and regular updates of the portfolio to facilitate decarbonization and comprehensive water management. Development of a reference framework for implementing the adaptation component of the comprehensive Corporate Climate Change Management Plan. 	<p>Management, Monitoring, and Mitigation Mechanisms</p> <ul style="list-style-type: none"> Reviews of budget reallocations among segments/business lines. Scenarios for prioritizing the Science, Technology, and Innovation portfolio. Design and implementation of the Corporate Governance model. Ex-post analysis of results from new business ventures. Projects and initiatives for social investment and relationship-building. 	<p>Management, Monitoring, and Mitigation Mechanisms</p> <ul style="list-style-type: none"> Cross-Cultural Transformation Plan and knowledge upgrade program (people retooling). Verification of the quality of the Performance Management process in planning, monitoring, and evaluation. Verification of compliance with alignment parameters for individual performance objectives and Ecopetrol's strategic objectives.
<p>Materializations</p> <p>No materializations were reported during the year.</p>	<p>Materializations</p> <p>No materializations were reported during the year.</p>	<p>Materializations</p> <p>No materializations were reported during the year.</p>



4. Impact on Financial Sustainability and Value Generation	5. Subsidiaries that do not leverage Ecopetrol Group Results	6. Violations of Ethics and Compliance
<p>Risk Description</p> <p>Financial sustainability is at risk, defined as the failure to achieve the required cash level to meet the operational and investment needs of Ecopetrol, impacting the value generation according to expected returns as defined in the business plan.</p>	<p>Risk Description</p> <p>Non-compliance by subsidiaries that affect the performance of the Ecopetrol Group in financial terms (operating profit, net profit, EBITDA, and liquidity) and operational aspects.</p>	<p>Risk Description</p> <p>Confirmed behaviors in employees, partners, or third parties during the course of their activities related to compliance typologies (fraud, corruption, bribery, conflicts of interest, money laundering, and violations of the FCPA).</p>
<p>Management, Monitoring, and Mitigation Mechanisms</p> <ul style="list-style-type: none"> Implementation of methodologies for price and TRM projections. Analysis and monitoring of the Group's cash flow projections and accounts receivable from the Fuel Price Stabilization Fund. Implementation of guidelines for structuring hedge operations. 	<p>Management, Monitoring, and Mitigation Mechanisms</p> <ul style="list-style-type: none"> Monitoring the progress of the strategy and analyzing business performance through comprehensive monitoring of the Group's objectives and performance indicators. Quarterly monitoring of compliance with EBITDA, minimum cash, and financial debt ratios. 	<p>Management, Monitoring, and Mitigation Mechanisms</p> <ul style="list-style-type: none"> Preventive and corrective actions derived from monitoring ethical performance, tracking behavior management, and the organization's ethics and compliance program. Periodic evaluation of the design and effectiveness of controls managing compliance risks (fraud, corruption, bribery, and money laundering). Management of inquiries, dilemmas, and/or reports received through established channels.
<p>Materializations</p> <p>No materializations were reported during the year.</p>	<p>Materializations</p> <p>Non-compliance with financial and operational indicators in 3 subordinated companies.</p> <p>Response Measures</p> <ul style="list-style-type: none"> i) Fundamental project evaluations. ii) Subsidiary transformation plan. iii) Raw material and production cost reduction, renegotiation of clauses, and implementation of hedges. 	<p>Materializations</p> <p>No materializations were reported during the year.</p>

7. Changes in the regulatory environment affecting business lines.	8. Unsuccessful protection and incorporation of resources and reserves.	9. Incidents of operational interruption due to causes associated with territorial dynamics.
<p>Risk Description</p> <p>Changes resulting from decisions made by ministries, state agencies, special administrative units, technical bodies, Regional Autonomous Corporations, territorial entities, the Congress of the Republic, and judges, as well as international regulations issued by organizations of which Colombia is a part, can have a detrimental impact on operations or financial results related to the regulatory environment.</p>	<p>Risk Description</p> <p>Deviations in safeguarding and incorporating crude and gas resources and reserves within the context of energy transition, regulatory provisions, project management, and new opportunities may adversely affect the exploratory and production portfolio.</p>	<p>Risk Description</p> <p>Incidents linked to territorial dynamics (such as actions by illegal groups, attacks, public hearings, blockades, cessation of activities, commemoration of special dates, public consultation, complaints, spills/leaks, court/decrees, citizen forums, strikes, unauthorized personnel entry, land invasions, written and/or verbal protests, marches, indigenous minga, rallies, neutralization, sit-ins, license revocations, and illegal valves, among others) and public order can disrupt the normal development of company operations.</p>
<p>Management, Monitoring, and Mitigation Mechanisms</p> <ul style="list-style-type: none"> Monitoring legislative acts and bills pending before Congress, as well as regulatory projects that could impact Ecopetrol. Establishing and maintaining relationships with ministries and tax authorities (DIAN). Monitoring regulatory initiatives for new business areas: i) low emissions, ii) liquid fuels, iii) offshore discoveries. 	<p>Management, Monitoring, and Mitigation Mechanisms</p> <ul style="list-style-type: none"> Implementing control and monitoring committees for the exploration and production portfolio. Regular monitoring and reporting on reserve balances. Tracking project milestones contributing to reserves (Reserve Replacement Ratio). 	<p>Management, Monitoring, and Mitigation Mechanisms</p> <ul style="list-style-type: none"> Monitoring the operating environment to generate early alerts about potential situations affecting operations. Strengthening relationships with stakeholder groups. Ensuring effective land management in the territory.
<p>Materializations</p> <p>Financial impact due to the 15% income tax surcharge.</p> <p>Response Measures</p> <ul style="list-style-type: none"> Designing and implementing a fiscal strategy to ensure compliance with legal frameworks, fostering growth and effective risk management for the group. 	<p>Materializations</p> <p>No materializations were reported during the year.</p>	<p>Materializations</p> <p>42 blockades, 44 attacks, and 966 illicit connections were reported in the EG throughout the year⁽¹⁾</p> <p>Response Measures</p> <ul style="list-style-type: none"> Coordinating interinstitutional efforts led by Ecopetrol, involving the Police, Army, Navy, Prosecutor's Office, Ombudsman, and Public Defender, to review joint actions. Conducting ongoing analysis of the dynamics of illicit connections in EG transport assets in the most affected areas. Monitoring with community leaders, communal actions, and regional government. <p><small>(1) The blockades are categorized as follows: 13 attributed to Ecopetrol, 3 to ODL, 1 to ODC, and 5 to Ocesa. In terms of attacks, there are 5 linked to Ecopetrol, 37 to Cenit, and 2 to ODL. The 966 illicit connections are attributed to Cenit.</small></p>



10. HSE Events due to operational or natural causes

Risk Description

Unanticipated incidents stemming from operational or natural causes that have the potential to impact individuals, assets, infrastructure, the environment, the company's reputation, and/or commercial commitments.

Management, Monitoring, and Mitigation Mechanisms

- Implementation of an incident investigation procedure linked to human and organizational factors.
- Deployment of a checklist as an assessment tool to ensure structured operational practices.
- Formulation of a standard procedure guiding the implementation of mitigation and adaptation measures associated with variability and climate change.
- Execution of programs focused on process safety, industrial safety, and key HSE management capabilities.

Materializations

Three fatalities and three service interruptions were reported in the EG due to operational events⁽²⁾.

Response Measures

- Activation of the Medevac (Medical evacuation plan).
- Analysis and investigation of causes and risks to define and monitor action plans.
- Fire control and assurance, including the shutdown of operational equipment.
- Deployment of oleophilic barriers and preventive adsorbent material.
- Implementation of road safety awareness plans.

⁽²⁾ Fatalities involve 2 Ecopetrol SA workers and 1 ISA contractor. Service interruptions include 2 from Alcanos and 1 from Progasur.

11. Cyberattacks, leakage, or loss of information.

Risk Description

Potential repercussions on the Company's operations or critical infrastructure, as well as unauthorized access to digital information, extraction, or unauthorized modification of assets containing classified or confidential information. This may occur through information systems, technological devices, or insecure cybersecurity practices by employees, contractors, or actions by third parties.

Management, Monitoring, and Mitigation Mechanisms

- Implementation of the Cybersecurity 2.0 Program, encompassing:
- Safeguarding business operations (TO).
 - Protecting the supply chain.
 - Safeguarding data and privacy.
 - Enhancing the effectiveness and efficiency of the cybersecurity operational model.
 - Managing technological advancements in IT/OT.

Materializations

No materializations have been reported this year.



Monitoring and Evaluation of Risk Management

The assessment of risk exposure encompasses continuous monitoring and regular feedback. Monthly risk monitoring is conducted to identify alerts, verify the implementation of mitigating measures, and formulate responses to potential materializations, all with the aim of maintaining risks within defined tolerance and acceptance levels. The pertinent outcomes of this evaluation are communicated to the Board of Directors' Executive Committee (ExCo) and Audit and Risk Committee. This comprehensive analysis involves:

Key Risk Indicators (KRIs) and alerts, serving as metrics to signal increased risk exposure early on and prevent materializations.

Monitoring of controls and treatment actions, ensuring the proper execution of risk management measures and the attainment of expected risk effects.

Analysis of realized risk events.

Examination of potential changes in the risk landscape.

Reassessment of risks based on tolerance and acceptance levels in the Risk Assessment Matrix, considering business impacts and the likelihood of occurrence.

In alignment with the above, the Board of Directors' Audit and Risk Committee receives regular briefings and oversees risk exposure at least twice a year, utilizing information from semi-annual management reports and presentations. More frequent updates are provided as needed by the Corporate Compliance Vice Presidency.

Furthermore, Ecopetrol conducts sensitivity analyses of risks associated with both financial and non-financial outcomes that may be impacted by changes in:

- Exchange rate fluctuations:**
Analyzing the impact of variations in the Colombian peso against the US dollar.
- Interest rates:**
Examining the impact on results and other comprehensive income for the next 12 months due to variations in the interest rate by 100 basis points.
- Sensitivity analysis of results:**
Examining the impact on the Company's results due to variations in ICE Brent crude oil prices and exchange rates.
- Oil and gas reserves and results/Oil prices:**
Conducting an analysis of oil and gas reserves, considering Brent ICE crude prices that reasonably reflect the management's opinions on crude prices given prevailing market conditions and costs.
- Discount rates of pension plan assets and liabilities:**
Analyzing the impact of possible changes on obligations for defined benefits due to variations in the discount rate, inflation rate, wage growth rate, and cost evolution.



Risk Management Evaluation/Audit

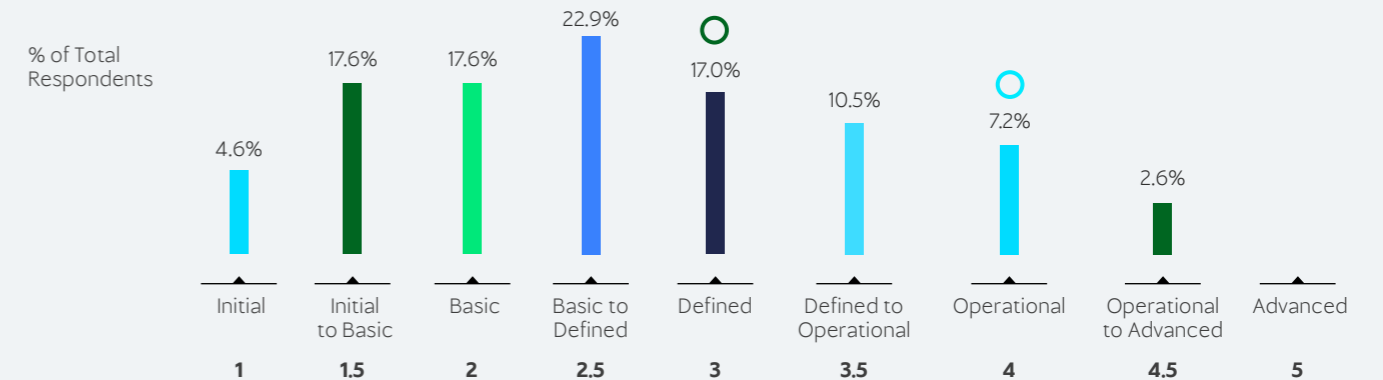
Review of the maturity of integrated risk management:

In 2023, with the support of an independent expert consultant, the maturity and adherence of Ecopetrol's Integrated Risk Management System were measured through i) the maturity index measurement; ii) a documentary review supporting the system; and iii) a measurement of adherence to ISO 31000 standards. The conclusion was that the company's risk management is at level 4 (Operational) compared to a maximum possible rating of 5, as illustrated below:



Risk Maturity Index Distribution

Percentage of Total Respondents with each Risk Maturity Index



This assessment pinpointed opportunities for improvement that the Integrated Risk Management team can leverage to continuously enhance the system.

Source: Aon Risk Maturity Index 2023

Internal control self-assessments:

Ecopetrol conducts a quarterly self-assessment exercise as part of the Internal Control Assurance System. Through this mechanism, senior management, managers, and control executors evaluate business and process risk management. This evaluation covers the operability of risk mitigation measures, risk sufficiency, materializations, potential new risks, and other factors providing feedback to the Integrated Risk Management System and the Internal Control Assurance System.

Management testing:

In 2023, Deloitte conducted a review of the risk management cycle, focusing on assuring financial report controls. This entailed verifying the relevance and sufficiency of risks and the design and effectiveness of controls supporting the Internal Control System for financial information, in line with the COSO 2013 framework and to ensure compliance with the Sarbanes-Oxley Act (Sox).

External audit for the renewal of the HSE and Quality Management Systems:

Ecopetrol underwent an external audit to renew certifications under ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018 standards by ICONTEC. The audit scope covered strategic, tactical, and operational levels, including a comprehensive review of Ecopetrol's processes. Risk management actions (avoid, assume, eliminate, mitigate, transfer) were evaluated, and the audit concluded that no risk management findings were identified against the assessed standards.

Emerging Risks

Ecopetrol defines emerging risks as those with a potential long-term impact on the Company (3-5 years or more) or, in some cases, risks that may have already started affecting the Company. These risks are of interest to third parties, such as investors and sustainability index evaluators, as they provide insights into the potential impact on Ecopetrol and its ability to manage long-term risks and mitigation measures effectively, thereby boosting confidence in the Company.

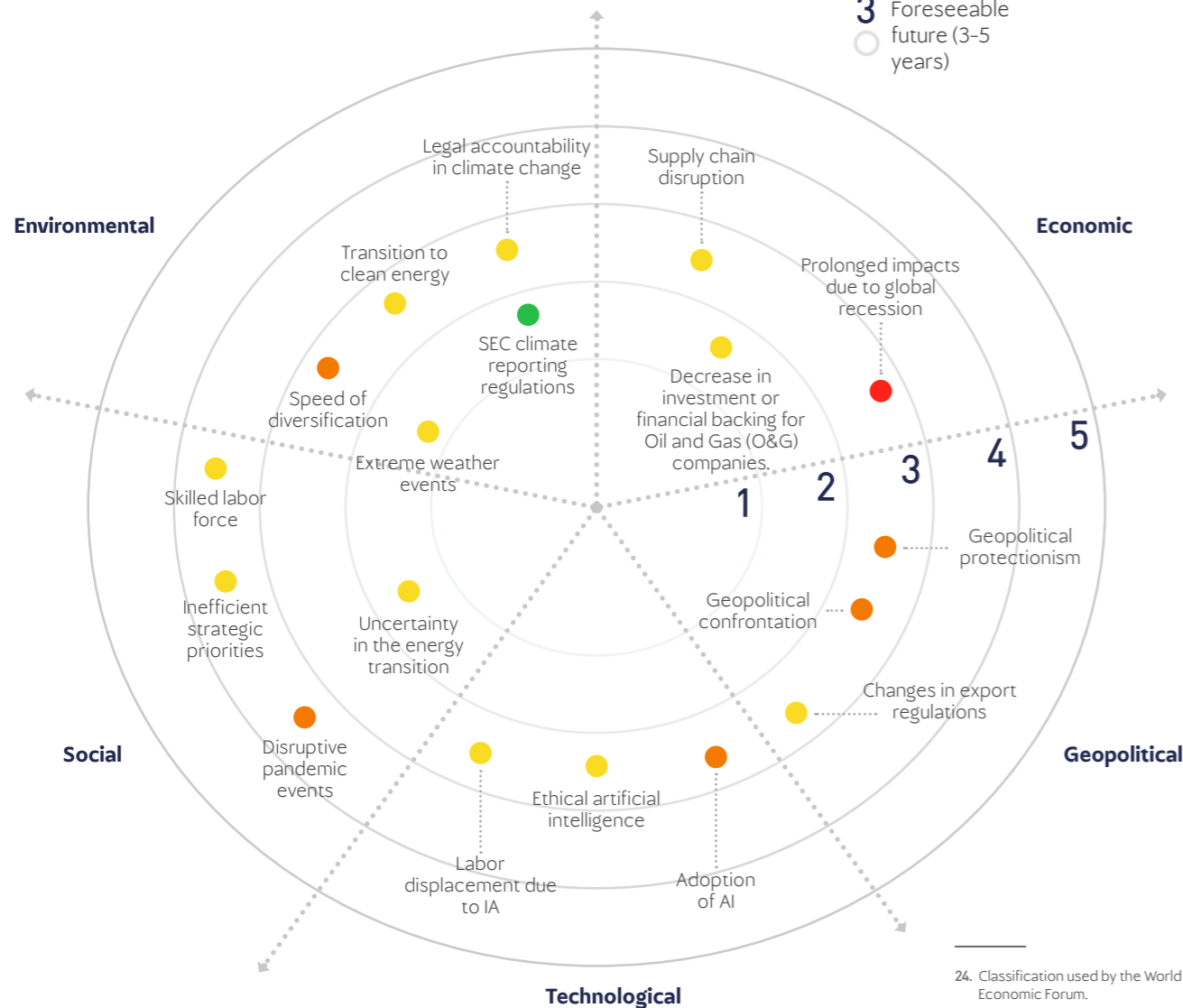
In the 2023 analysis, seventeen trends were identified and categorized into Social, Environmental, Economic, Technological, and Geopolitical²⁴ domains. From these trends, eighteen emerging risks were identified and evaluated based on potential impact and speed of emergence, as depicted below:

Potential impact:

- Very high
- High
- Moderate
- Low
- Very low

Time horizon:

- 1 Currently – in the context of Ecopetrol
- 2 Near future (1-3 years)
- 3 Foreseeable future (3-5 years)
- 4 Distant future (5-10 years)
- 5 Unknown future (10+years)



²⁴ Classification used by the World Economic Forum.

In light of the analysis of emerging risks, considering their speed of emergence and potential long-term impact, the following represent the key emerging risks for fiscal year 2023:

Geopolitical confrontation:

The risk of a new large-scale war disrupting global supply chains and international markets.

Prolonged impacts from a global recession:

The risk of a severe global and/or Colombian economic crisis manifesting without a timely or effective response, leading to normalization challenges in macroeconomic indicators.

Adoption of artificial intelligence:

The risk that competitors may develop new artificial intelligence technologies at a significantly faster pace than Ecopetrol.

Diversification speed:

The risk of diversification and the incorporation of renewable energies by peer companies occurring at a faster pace than defined by Ecopetrol.



Risk Culture

Ecopetrol recognizes the profound impact of culture on risk management across all levels and facets of the organization. To instill a set of desired behaviors aligned with our cultural values, the Company facilitates access to a QR code for visual reference.



In order to fortify the risk-aware culture, the organization incorporates specific indicators that influence the variable compensation of Ecopetrol employees annually. These indicators are integral components of the performance evaluation criteria at all hierarchical levels:

1 Fatalities or environmental incidents
(5% to 10%).

2 Internal control failures reported by the external auditor:
(2.5% to 100%).

3 Ethical events or disciplinary failures:
(100%).

Training and Development for the Board of Directors

(GRI 2-17) (DJSI 1.4.1) To ensure a risk-centric culture, the nine non-executive members of the Board of Directors undergo periodic training in risk management. In 2023, expert consultants and the Corporate Compliance Vice Presidency team conducted the following training sessions:

- 1 FCPA and OFAC Sanctions.
- 2 Construction of Ecopetrol's Business Risk Map, Regulation and Norms applicable to the Business Group, Foreign Corrupt Practices Act (FCPA) - Scope, Coverage, and Main Sanctions, the SOX Law, Responsibilities of the Board of Directors according to Applicable Regulations, and the Compliance Program.

- 3 The Board of Directors as a key actor in Risk Oversight.

Table 3.9.
Number of Non-Executive Board Members with Experience in (Business) Risk Management

2020	2021	2022	2023
0	4	4	4

Training and Development for Ecopetrol Personnel

Throughout 2023, various training sessions on risk-related topics were conducted for all company employees. The training covered subjects such as:

Recommendations and improvements in agile process risk management cycle methodologies.

Positive risk cycle.

Business Risk Cycle.

New risk management reporting, and v) Concepts of the Integrated Risk Management System, among others. Additionally, the following elements of virtual training, related to the Integrated Risk Management System, framework, principles, and the single risk management cycle, were highlighted in alignment with ISO 31000.

Table 3.10.
Employee Training on Risk Matters

Training Element Name	Participants
What is the importance of the Integrated Risk Management System?	1,496
At what levels are risks managed?	1,495
What is the Integrated Risk Management System?	1,498
Integrated risk management cycle	1,505
How to identify the risks to which you are exposed in your role	1,499
Corporate management of integrated risk management	1,510
The eight principles of the Integrated Risk Management System	1,503
Reference framework: Integrated Risk Management System – IRS	1,503
Roles and Responsibilities of Business Risk Management – Infographic	1,498

Accomplishments

Throughout the 2023 risk cycle, all 45 Ecopetrol processes saw updates to their risk and control matrices, incorporating pertinent improvements and changes. The oversight included the monitoring of 395 risks and 1,041 controls.

In the realm of training, 376 Group collaborators underwent specialized training, encompassing 9 elements of virtual training, with an average of 1,400 participants and 4,907 visits to the integrated risk management community microsite.

The annual management report concerning the internal control assessment of financial information for fiscal year 2022 has been officially issued and is comprehensively outlined in Chapter 7.8 of the 20F report, submitted to the SEC on March 29, 2023. This report, substantiated by rigorous management testing, unequivocally demonstrates the operational effectiveness of the controls.

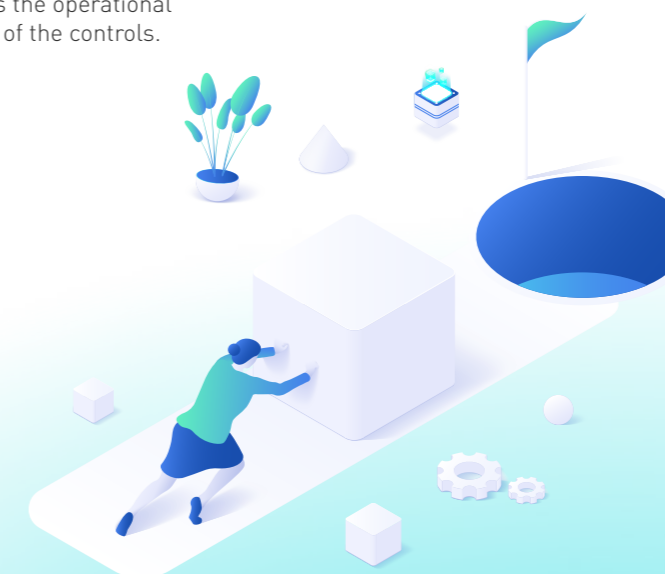
Collaboration with the CGR in the past year facilitated a clear understanding of the scope of Circular 005 of 2020, as issued by the CGR, particularly regarding the incorporation of Directors and Officers (D&O) insurance policies. This clarification was articulated through the CGR-OJ-050 concept dated March 30, 2023, from the Legal Office of the CGR. It streamlined the settlement of claims with insurers not tied to fiscal responsibility processes, resulting in Ecopetrol recovering **COP \$21,820 million** to date.

Robust support and preventive assurances were diligently provided for novel transactions and the commencement of operations in newly established companies. Additionally, the assurance of a controlled environment was steadfastly maintained during the implementation of information system changes across the Ecopetrol Group.

Data analysis exercises were conducted, yielding predictive models for preventive risk management.

In the first quarter of 2023, the evaluation of internal control effectiveness for fiscal year 2022 was concluded by the Statutory Auditor/External Auditor. There were 9 low-impact deficiencies identified in the Ecopetrol Group, 1 for Reficar, and 8 for ISA. Considering it was the inaugural year of SOX implementation, the outcome was notably positive compared to companies with similar implementation conditions.

The inception and implementation of technological innovations played a pivotal role in fortifying the identification of potential alerts or risks within various business processes.



TESG Value Generation

Under the banner of competitive returns, Ecopetrol's TESG Value Generation achieved the second-best financial results in its history in 2023. This encompassed COP 143.1 trillion in revenues, a net profit of COP 19.1 trillion, EBITDA of COP 60.7 trillion, and an impressive EBITDA margin of 42.4%.

As of the close of 2023, the Return on Average Capital Employed (ROACE) reached 11.5%. Coupled with a gross debt/EBITDA indicator at 1.7 times, this contributed to an exceptionally favorable financial outcome. The success was further amplified by outstanding operational performance across all business segments, marked by heightened production, substantial refinery loads, increased transport volumes, and robust sales of crude oil and products.

Consequently, the Ecopetrol Group's contribution to the country reached an unprecedented pinnacle. A total of COP 58.3 trillion was delivered to the Nation through dividends, royalties, crude oil and gas purchases from the ANH, and self-generated and third-party taxes, a significant increase from COP 42.4 trillion in 2022. Additionally, COP 2.8 trillion was distributed to minority shareholders.

Noteworthy is the effective resource management in 2023, which included: i) the unprecedented mobilization of liquidity surpluses from subsidiaries to the EG, along with ii) proactive initiatives proposing measures to secure FEPC collections, address IVA credit balances, and provide incremental financing.

In terms of financing, the management's actions included: i) the refinancing of 2024 maturities amounting to USD 3.5 trillion, the highest in the Company's history, safeguarding Ecopetrol's credit rating; ii) external funding was secured to cover the operations and investments of the Ecopetrol Group; and iii) alternative financing structures were successfully executed, such as securing funding for Ecopetrol USA's investments in the Permian Basin. This not only freed up resources but also expanded credit limits at the corporate level for other strategic projects.

These endeavors earned Ecopetrol recognition at the "Bonds, Loans and ESG Capital Markets Latin America & Caribbean Awards 2023" for having the best financing and treasury team among quasi-sovereign issuers.

Financial Strategy and Results

The Ecopetrol Group concluded 2023 by achieving the second-best financial results in its history. The Company recorded a net profit of COP \$19.1 trillion and an EBITDA of COP \$60.7 trillion, with an impressive 42% EBITDA margin. This success was driven by excellent operational performance across all business segments, including increased production, refinery loads, transported volumes, and sales of crude oil and products. This achievement is notable despite challenges such as:

- 1 Price fluctuations.
- 2 Inflationary effects.
- 3 Higher effective tax rates.

Cumulative sales revenues at the close of 2023 showed a 10.3% decrease, influenced by factors such as:

A lower average weighted selling price of crude oil and products, a reduced Brent reference price, and deteriorating differentials versus the Brent, mainly for refined products.

Higher sales volumes due to: a) operational performance in the Cartagena Refinery, b) increased production of crude oil and products, and c) expanded trading operations.

Higher service revenues, driven by better results in energy and road transmission, transportation services, and other services.

An increase in the average exchange rate.

The cost of sales decreased by -1.4% at the close of 2023 compared to 2022. This includes a 15.7% increase in depreciation and amortization due to higher production and increased capital investment. Variable costs decreased by -9.0%, primarily due to lower purchase values for crude oil, gas, and products, influenced by factors such as:

1 Lower average weighted national and import purchase prices.

2 Reduced purchased volume of refined products.

3 Increased volume of crude oil and gas purchases.

4 An increase in the average exchange rate for purchases and fixed costs increased by 14.6%, driven by: i) higher maintenance costs, contracted services to support operations, material consumption, and other costs, reflecting increased activity levels, ii) inflationary effects on costs, and iii) higher labor costs, mainly associated with salary increases compared to the previous year.

Operational and exploratory expenses experienced a 15.8% increase in 2023 compared to 2022, attributed to:

- 1 A reduction in exploratory assets.
- 2 Higher labor expenses.
- 3 An increase in customs operation costs, primarily due to the higher volume of sales under the DAP (Delivered at Place) Incoterm.
- 4 An increase in commissions, fees, and services due to inflationary effects on costs and increased operations, particularly in subsidiaries such as ISA and Permian.



Financial expenses at the end of 2023 decreased compared to 2022 due to:

- 1 Income from exchange rate differences, mainly associated with the revaluation of the peso against the dollar in 2023 and its impact on the valuation of the Group's net dollar-denominated position.
- 2 Higher returns and valuation of the investment portfolio and bank accounts due to increased profitability rates in 2023.
- 3 Increased interest expenses on debt due to higher Group indebtedness and higher interest rates.
- 4 Recognition of interest related to a judgment against a tax litigation.

As a result of the annual exercise of comparing book values of assets against market values under IFRS standards, an increase was recorded in the impairment expense for long-term assets compared to 2022.

Investment Analysis

The Ecopetrol Group made investments totaling USD 6,288 million (COP 27.2 trillion) during 2023, reflecting a 14.6% growth compared to investments made in 2022 and falling within the targeted range of COP 25.3 to COP 29.8 trillion. Of the total Group investments in 2023, 63% were concentrated in Colombia, followed by the United States and Brazil with 31%, and the remaining 6% in countries such as Chile, Peru, Argentina, Bolivia, among others.

Hydrocarbon-related investments amounted to USD 4.4 billion (COP 19.0 trillion), representing 70% of the Group's total, primarily executed in the exploration and production business (USD 3.484 billion). Transport-related investments reached USD 393 million (COP 1.7 trillion), focusing on intervention and maintenance activities, remote valve operation, and unit maintenance.

In the refining business, investments totaled USD 420 (COP 1.8 trillion), directed towards scheduled shutdowns and asset reliability improvement initiatives, contributing

to an operational availability of 95.3% for the Barrancabermeja and Cartagena refineries.

For the Low Emissions Line, including natural gas, investments amounted to USD 803 million (COP 3.5 trillion), accounting for 12.7% of Ecopetrol Group investments. Investments in the gas chain's growth represented 11% of total Ecopetrol Group investments in 2023, primarily in assets in

the Piedemonte (Floreña and Cupiagua), Tayrona blocks, Col-5 offshore Colombia, and in the Permian in the United States.

Investments in the Transmission and Roads segment reached USD 1.086 billion (COP 4.7 trillion), contributing 17.3% to the Group's total investments, with 81% allocated to energy transmission, 16% to roads, and 3% to telecommunications.

Table 3.11.
Investments by Business Line – Ecopetrol Group

Millions (USD) Business Line	Total 12M 2023	% Part.
Hydrocarbons	4,400	70.0%
Low Emissions	803	12.8%
Transmission and Roads	1,086	17.3%
TOTAL	6,288	100.0%

*Includes the total amount of investments in hydrocarbon transportation by each of the companies in the Ecopetrol Group (Ecopetrol S.A. and non-controlling interest).

Average Exchange Rate (TRM) as of 2023: 4,325.05.

**Includes investments in gas and LPG

Financial Results

The Group's assets totaled COP 282.2 trillion, marking a decrease of COP 24.1 trillion compared to 2022. This decline can be attributed mainly to: i) a reduction in accounts receivable, primarily resulting from the offset between the receivable balance of the Fuel Price Stabilization Fund (FEPC) and dividends owed to the Nation, along with additional resources received. Moreover, a lower accumulation in the FEPC account was noted due to the gradual increase in gasoline prices in Colombia and the decrease in reference prices, ii) a decrease in property, plant, equipment, natural resources, and intangibles, iii) reduced taxes, primarily due to the adjustment of the deferred tax asset considering the exchange rate effect, and iv) a decrease in inventories, mainly influenced by price effects, increased loads on refineries, and higher sales during the period.

The liabilities of the Group amounted to COP 179.2 trillion, reflecting a decrease of COP -8.1 trillion. This reduction can be mainly attributed to the net

effect of: i) a decrease in financial obligations, resulting from the interplay between higher debt and the revaluation of the peso against the dollar, ii) a decrease in current tax liabilities linked to lower net income, iii) an increase in labor liabilities due to a decline in discount rates in the actuarial liability update, and iv) higher provisions and other liabilities.

The total equity of the Group at the end of 2023 stood at COP 103.1 trillion, with equity attributable to Ecopetrol shareholders totaling COP 78.4 trillion.

For detailed information on Ecopetrol's financial statements (consolidated and non-consolidated), please refer to the [Ecopetrol website](#).

Table 3.12.
Government Aid Received
(GRI 201- 4) (GRI 11.21.3) (WEF 18)

Financial Aid	Unit of Measurement	2023
Tax Deductions	COP	NA
Tac Credits	COP	731,912,017,556
Financial Aid from Export Credit Agencies (ECA)	COP	0
Total	COP	731,912,017,556

Note: Current tax regulations do not include tax deductions that can be utilized by the Company. On the other hand, tax regulations include tax credits that can be used by the Company in determining income tax. As of December 31, 2022, Ecopetrol has \$860 billion in tax credits, which will be used in determining the income tax payable in the year 2023.

Additionally, in 2023, no financial aid was received from Export Credit Agencies (ECA).

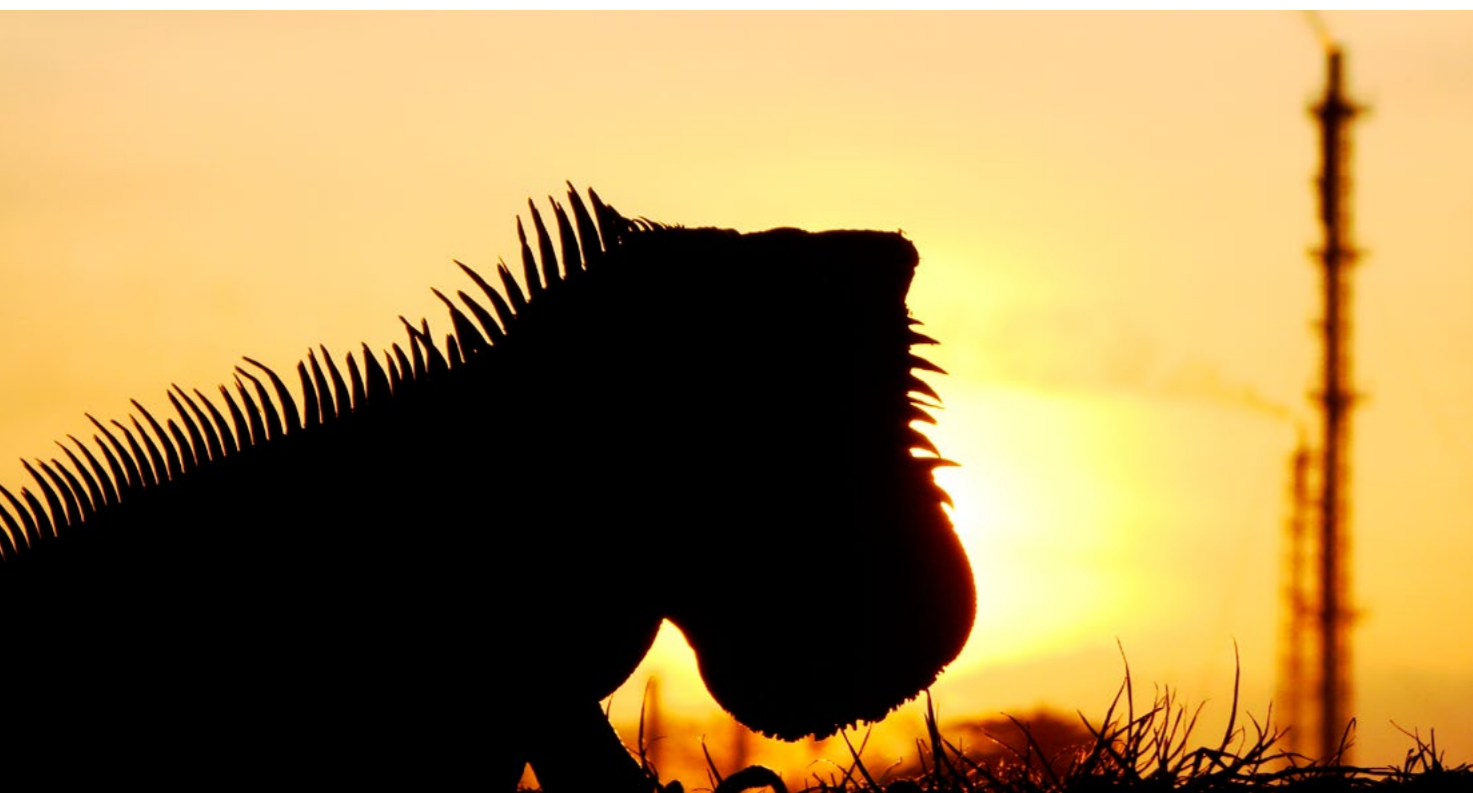


Table 3.13.
Direct Economic Value Generated and Distributed – Ecopetrol Group
(In millions of pesos)
(GRI 201-1) (WEF 18) (WEF 21) (WEF 32E)

Economic Value	Unit of Measurement	2023	2022**	2021*	2020**
Direct economic value generated (Revenue)	COP	145,399,715	160,791,100	92,147,671	51,127,990
Generated economic value	COP	145,399,715	160,791,100	92,147,671	51,127,990
Operating costs (Cost of sales and Operating expenses)	COP	101,294,356	99,381,325	62,183,497	43,014,342
Employee salaries and benefits (expense)*	COP	2,422,705	2,027,302	1,577,110	1,968,585
Payments to capital providers	COP	12,151,622	18,849,198	6,104,841	11,080,034
Payments to the Government	COP	58,262,499	42,437,114	16,771,372	19,389,423
Investments in the community	COP	330,521	284,400	199,057	226,295
Distributed economic value	COP	174,461,703	162,979,340	86,835,877	75,678,679
Retained economic value	COP	(29,061,988)	(2,188,240)	5,311,794	(24,550,688)

* Includes recognition for 2021 of the new voluntary retirement plan for 94 employees.

** The values for the years 2022 and 2020 were restated for presentation purposes.



Financial Indicators

In 2023, Ecopetrol's financial performance was reflected through various indicators:

Liquidity Indicators.

These metrics signify the resources essential for the Ecopetrol Group to operate in the short term, ensuring a margin to cover cash fluctuations arising from the dynamics of current assets and liabilities.

At the close of 2023, current assets declined by 11.2% compared to the preceding year, primarily attributed to: i) a reduction in accounts receivable from the Fuel Price Stabilization Fund, and ii) a decrease in inventories.

Conversely, the reduction in current liabilities was 23%, primarily resulting from: i) a decrease in financial obligations due to the net effect between increased debt and peso revaluation, and ii) reduced current taxes in tandem with declining results.

Debt Indicators.

These metrics depict the proportion of the Company's investment financed by debt, i.e., utilizing third-party resources.

Total obligations to third parties relative to the level of assets were 63% in 2023 and 61% in 2022. Additionally, for 2023, the concentration of short-term debt was 24%, with long-term debt at 76%.

Profitability Indicators.

The EBITDA margin in 2023 was 42.4%, a decline from 47.2% in 2022. The return on assets (ROA) for the Ecopetrol Group in 2023 was 7.8% (compared to 13.6% in 2022), and the return on average capital employed (ROACE) was 11.5% (compared to 18.8% in 2022). This reduction is predominantly attributed to lower margins influenced by market variables impacting prices.

2024 Business Plan

(SFC 7.4.1.2.1) (SFC 7.4.1.2.2) (SFC 7.4.1.2.3) (SFC 7.4.1.2.4) (SFC 7.4.1.2.4.1) (SFC 7.4.1.2.4.2)

A pivotal achievement in 2023 was the unveiling of a business plan that outlines Ecopetrol's vision as a leading group in energy diversification, emphasizing profitable operations aligned with decarbonization objectives. The Board of Directors has approved an investment ranging between 23 and 27 trillion pesos, underscoring its commitment to the nation's safety and energy transition, in line with the 2040 Strategy.

This plan allocates approximately 19.3 trillion pesos to sustain profitable production levels,

ranging between 725 and 730 thousand barrels equivalent per day, with an average refinery load between 420 and 430 thousand barrels per day, and daily transportation exceeding one million barrels.

Moreover, over 42% of the plan is designated for energy transition projects, encompassing low-emission solutions, natural gas supply, decarbonization, electric transmission, and road infrastructure.

Around COP 3.7 trillion pesos will be directed towards TESSG initiatives, primarily focusing on territorial development, Climate Change, and Science, Technology, and Innovation.

According to the Plan, over the next three years, the Ecopetrol Group aims to generate over 7 trillion pesos in commercial efficiencies, savings, and expense control. Additionally, in 2024, competitive returns will be ensured at Brent levels of US\$ 75 per barrel, with an ROACE of around 9%, an approximate EBITDA margin of 38%, and transfers to the Nation exceeding 38 trillion pesos.

Achieving these objectives involves continuous monitoring through the business plan to provide early alerts for strategy compliance.



04

Growing with
**the Energy
Transition**



(SFC 7.4.1.1.1.iv) (DJSI 2.6.12)

The 2040 Strategy, known as "Energy That Transforms," positions Ecopetrol as a diversified energy group engaged in all facets of the hydrocarbon chain, including exploration, production, transportation, refining, and marketing. Furthermore, it extends its reach into the development of businesses in energy transmission, roads, and telecommunications. A key aspect of this strategy is the emphasis on diversification through the establishment of businesses that reinforce the company's commitment to reducing its carbon footprint and achieving the ambitious goal of net-zero carbon emissions by 2050 (scopes 1 and 2).

One fundamental pillar of this overarching strategy is "Growing with the Energy Transition." This pillar considers the hydrocarbon business as a vital lever for the Ecopetrol Group's growth. The aspiration is to maintain long-term production levels between 700 and 750 kboed by 2040, with a focus on efficient basic production management. This is complemented by factors such as the profitability of the Permian Basin in the United States, enhanced oil recovery programs, and the development of offshore gas discoveries in the Colombian Caribbean. Additionally, there is a commitment to improving productivity in the fields located in the Piedemonte and Eastern

Plains. Ecopetrol manages a broad portfolio, facing challenges in capturing its full potential and volumes corresponding to the technical potential of the current asset portfolio, subject to capital allocations in each fiscal year.

In this context, Ecopetrol's significant ambition within this pillar is to diversify hydrocarbon production, targeting a sustained 30% share in gas production by 2040.

From the perspective of this diversification, the successful integration of ISA into the Ecopetrol Group is highlighted. This integration contributed to 12% of the EG's EBITDA in 2023, solidifying its presence in the electric transmission segment. The long-term objective is to continue organic and inorganic growth in the transmission business and venture into large-scale energy storage projects. The strategic aim is for this business to represent between 22% and 26% of the EG's long-term (2040) EBITDA.

By fortifying this pillar, Ecopetrol will persist in consolidating itself as a regional energy leader, enhancing and integrating its three business lines: Hydrocarbons, Low Emission Solutions, and Transmission, Roads, and Telecommunications.

Hydrocarbons Business Line

This business line encompasses activities related to the exploration, exploitation, refining, transportation, and marketing of hydrocarbons, products, and derivatives. Its purpose is to maximize value through efficiency and competitiveness, ensuring safe, ethical, and responsible operations in the territories, with a particular emphasis on decarbonization initiatives.

This segment pursues a robust growth strategy in harmony with the energy

transition, focusing on decarbonizing operations and strengthening the gas portfolio. The objective is to create sustainable value for Stakeholder Groups while safeguarding competitive returns for the Company.

In the context of the segments within the Hydrocarbons Business Line, particularly the Upstream segment, value generation is orchestrated through a carefully structured strategic alignment involving:

- 1 The pivotal role of the Upstream Vice President.
- 2 The Boards of Directors of the companies constituting the segment.
- 3 The meticulous execution of activities outlined in the EG's relationship model.

Exploration

As the inaugural link in Ecopetrol's Value Chain within the Hydrocarbons Business Line, the Exploration segment aims to identify and define hydrocarbon accumulations, advancing technical volumes from leads and prospects to reserves essential for the Ecopetrol Group's sustainability.

Production and Development

The second link in the Value Chain focuses on extracting hydrocarbons through optimal field development, either directly or in collaboration with other companies. Activities in this segment encompass the production of crude oil, gas, and refined products (gasoline, naphtha, kerosene, and diesel, i.e., high-end distillation process products).

Transportation

The third link in Ecopetrol's Value Chain pertains to the transportation business, responsible for conveying crude oil from production fields to refineries or export ports. This is accomplished through pipeline systems, pipelines, and multimodal transportation (river fleet and tanker trucks). Since 2013, the EG's transportation business has been overseen by Cenit, a subsidiary fully owned by Ecopetrol S.A.

Refining and Industrial Processes

The fourth link in the Value Chain involves refining and petrochemical activities originating from the Barrancabermeja and Cartagena refineries. Here, crude oil from the fields is transformed into value-added products (fuels, raw materials, and petrochemical products). This is also where raw materials are processed to obtain products meeting the quality standards required by customers, in compliance with environmental legislation.

Marketing

The commercial function serves as the final link in the Value Chain, bridging Ecopetrol to markets in Colombia and around the world. It aims to maximize value aggregation for the Ecopetrol Group by excelling in the marketing of crude oil, products, petrochemicals, gas, and energy in a clean, safe, and sustainable manner. This is achieved through leveraging human talent, internal optimization, digital tools, and establishing long-term relationships with customers.



Exploration and Production Management (Upstream)

The objective of this segment's strategy is to Grow with the Energy Transition by decarbonizing operations and enhancing the gas portfolio, with a focus on sustainable value creation for Stakeholder Groups while safeguarding competitive returns for the Company.

Key focuses for implementing the exploration and production strategy include:

- High competitiveness and resilience: Concentrating on viable opportunities with competitive breakeven prices and abandoning unprofitable ventures.
- Rapid commercialization: Directing efforts toward short-cycle opportunities with optimal early production for the swift incorporation of early reserves.
- Hydrocarbons favorable to the Energy Transition: Placing greater emphasis on light crude and gas projects, aiming to increase the latter's share in the product mix.
- Low execution risk: Focusing on opportunities with a high probability of execution and adopting risk mitigation measures for strategically valuable opportunities with a low probability of materialization.
- Development of Green Fields such as Caño Sur and Akacías.
- Value maximization from the enhanced recovery program, primarily in heavy crude and in the Magdalena Medio region.
- Closing the production gap in unconventional reservoirs (YNC, as per its Spanish acronym) in Colombia, particularly through secondary and tertiary recovery options in fields like Castilla, Chichimene, and CPO09.
- Protection of the basic curve by mitigating the natural decline of fields. Primary recovery will persist, mainly in the Rubiales field.

Operational Model

To effectively implement the strategy, the Upstream segment has an operational model with the following main objectives:

- Strengthening the integrated vision of the Value Chain through improved integration and coordination of segment areas.
 - Establishing a more efficient relationship with subsidiaries and partners to align objectives and facilitate knowledge exchange.
 - Accelerating and streamlining the maturation of opportunities to reach the market more swiftly.
- To expedite goal achievement, adjustments were made to processes, and new workflows were launched during the 2022-2023 periods. In the second half of 2023, this led to recertification and acknowledgment by auditors for innovation and optimization of approval times.

Exploratory Drilling

In 2023,
Ecopetrol and its partners drilled 23 exploratory wells in Colombia, with eight (8) deemed successful, and success declared for three (3) more wells drilled in 2022.

Of the remaining fifteen (15), eight (8) are under evaluation, and seven (7) were declared dry.

Table 4.1.
Exploratory Wells Ratio

N°	Well	Operator/Partner	Contract/Block	Result
1	ZORZAL-1	Geopark 50% (Operator), Hocol 50%	LLA 87	Successful
2	KIMERA-1	Ecopetrol 55% (Operator), Repsol 45%	CPO 9	Successful
3	SALTADOR-1	Geopark 50% (Operator), Hocol 50%	LLA 123	Successful
4	GLAUCUS	Shell 50% (Operator), Ecopetrol 50%	COL 5	Successful
5	TORITOS-1	Geopark 50% (Operator), Hocol 50%	LLA 123	Successful
6	ZORZAL ESTE-1	Geopark 50% (Operator), Hocol 50%	LLA 87	Successful
7	BISBITA CENTRO-1	Geopark 50% (Operator), Hocol 50%	LLA 123	Successful
8	MAGNUS-1	Ecopetrol 55% (Operator), Repsol 45%	CPO 9	Successful
9	LEVENDA-1	Ecopetrol 55% (Operator), Repsol 45%	CPO 9	Under Evaluation
10	POLLERA NORTE-1	Lewis 50% (Operator), Hocol 50%	SSJN 1	Under Evaluation
11	SABANALES-1	Hocol 100%	SN 18	Under Evaluation
12	AQUILA-1	Ecopetrol 100%	Apiay	Under Evaluation
13	ARAUCA-15 ST2*	Parex 50% (Operator), Ecopetrol 50%	Arauca	Under Evaluation
14	ARAUCA-8*	Parex 50% (Operator), Ecopetrol 50%	Arauca	Under Evaluation
15	ZORZAL ESTE-2	Geopark 50% (Operator), Hocol 50%	LLA 87	Under Evaluation
16	ORCA NORTE-1	Ecopetrol 100%	Tayrona Orca	Under Evaluation
17	CUPIAGUA XD-45V	Ecopetrol 100%	Santiago de las Atalayas	Dry
18	CUSIANA V31	Ecopetrol 100%	Santiago de las Atalayas	Dry
19	TURUPE-1 ST1	Ecopetrol 100%	LLA 9	Dry
20	PICABUEY-1	Geopark 50% (Operator), Ecopetrol 50%	LLA 87	Dry
21	KOALA-1	Geopark 50% (Operator), Hocol 50%	LLA 87	Dry
22	CUCARACHERO-1	Geopark 50% (Operator), Hocol 50%	LLA 124	Dry
23	INFANTAS ON-1	Ecopetrol 48% (Operator), Sierracol 52%	La Cira Infantas	Dry

* The Arauca-15 ST-2 and Arauca-8 wells, initially designated as Development Wells (AO) in the documents from the Ministry of Mines and Energy (MME), underwent deepening to explore additional targets. Consequently, they have been incorporated into the ongoing exploratory campaign.



Gas Portfolio

The offshore exploratory endeavors have yielded notable outcomes: i) The successful exploration of Glaucus-1 in the COL-5 block operated by Shell, affirming the existence of a gas reservoir; ii) The Orca Norte-1 well, drilled in 2023 and evaluated in January 2024, confirming two gas accumulations in reservoirs distinct from the Orca-1 discovery. This prompts a reassessment of the original project, expanding the gas potential of La Guajira Offshore. Notably, Orca Norte-1 marked the first 100% Ecopetrol S.A.-operated deepwater well, adhering to the highest industry standards; iii) The delineation process for the Uchuva discovery in the Tayrona block continues.

Concurrently, Ecopetrol's subsidiary, Hocol, conducted activities in the North Onshore area in Colombia, with significant drilling in three wells: Bullerengue Oeste-5, confirming the presence of gas and crude; Pollera Norte-1 and Sabanales-1 are currently in the abandonment process due to unsuccessful results.



Seismic Information

In 2023, Ecopetrol, in collaboration with its subsidiary Hocol and partners, acquired 210 km of 2D seismic information and 440 km² of 3D seismic (equivalent to 958 km), distributed across various programs: 312 km² Flamencos 3D (completed), 98.5 km² Cesar 2023 3D (97% progress), 10.5 km² Inor 3D (completed), and 19 km² Llanos 104 3D (in progress). Additionally, previously acquired information from the Colombian Geological Service included 6,265 km of 2D seismic by Ecopetrol, 540.16 km of 2D seismic, and 104.8 km² of 3D seismic by HOCOL. Furthermore, 6,709.8 km² of 3D seismic and 5,972.19 km of 2D seismic were reprocessed. In non-seismic methods, 27,503 km of iFTG aerogravimetry data were acquired and processed. The acquisition, processing, and interpretation of these data will enhance subsurface imaging, aiding in the identification and evaluation of potential new accumulations in the regions where Ecopetrol operates.



Contracts and Exploratory Areas

As of the conclusion of 2023, Ecopetrol holds a portfolio of 99 exploratory assets distributed across various entities within the Ecopetrol Group, as delineated below:

- 29 Ecopetrol S.A.*
 - 19 Hocol S.A.
 - 42 Ecopetrol America-EA
 - 8 Ecopetrol Brazil
 - 1 Ecopetrol Hidrocarburos México
- *This encompasses the Río Magdalena partnership contract, presently in the process of finalizing an agreement.

Several of these contracts involve collaborative efforts with either operating or non-operating partners.

As of the conclusion of 2023, one (1) asset was in the process of divestment in Mexico. Moreover, within 33 assets located in production areas, exploratory opportunities have been identified, contributing to the portfolio of projects in maturation (27 belonging to Ecopetrol S.A and 6 to Hocol.)

Area in Exploratory Assets (millions of hectares)

The 99 exploratory assets cover a total of 6,910 million hectares, distributed across various subsidiaries and areas of interest:

- 4,789 Ecopetrol S.A.
- 597 Ecopetrol Brazil
- 1,368 Hocol S.A.
- 59 Ecopetrol Hidrocarburos México
- 95 Ecopetrol America-EA



Production (DJSI 2.8.1)

In 2023, the Ecopetrol Group achieved a production milestone of 736.6 thousand barrels of oil equivalent per day (kboed), with Ecopetrol contributing 627.9 kboed and the subsidiaries adding 108.7 kboed. Enhanced recovery technologies were instrumental, constituting 40.6% of the Ecopetrol Group's total production.

Reserves (DJSI 2.8.2)

Due to market strategy, Ecopetrol only makes public its proven reserves.

Compared to the 2022 period, a notable increase of 27.1 kboed was recorded (2.4 kboed from Ecopetrol and 24.7 kboed from subsidiaries). This growth can be attributed to several factors, including improved performance driven by (i) the initiation of operations of the first fluid treatment unit in the Caño Sur field during the latter half of 2022, resulting in a production surge of 40.6 kboed by December 2023; (ii) incremental production from Permian; and (iii) enhanced water handling capacity in Rubiales.

Table 4.2.
Number and Type of Contracts

	Partnership	Concession	E&P contracts	TEA	E&P agreements	CRC	PSC	Royalty/tax agreement
Mexico							1	
Brazil		7					1	
Hocol	1		17		1			
Ecopetrol	2		20	3	3	1		
EA								42

Note: TEA: Technical Evaluation Agreement
CRC: Risk-Sharing Contracts
PSC: Production Sharing Contract
EA: Ecopetrol America (Gulf of Mexico)

Table 4.3.
Proven and probable reserves in countries with the 20 lowest rankings on the Transparency International Corruption Perceptions Index (SASB EM-EP-510a.1)

	2021	2022	2023
Proven reserves in countries with the 20 lowest rankings on the Transparency International Corruption Perceptions Index (MMbbbls)	0	0	0
Total proven reserves (MMbbbls)	1,214.83	1,291.95	1,586*
Percentage of proven reserves in countries with the 20 lowest rankings on the Transparency International Corruption Perceptions Index	0	0	0

* Figures for Ecopetrol S.A.: Total proven reserves for the Ecopetrol Group amount to 1,883 million barrels (Mmbbls)

Table 4.4.
Proven and probable reserves in or near conflict areas
(SASB EM-EP-210a.1)

Proven and probable reserves in or near conflict areas	2023
Proven and probable reserves in or near conflict areas	0
Total quantity of proven reserves	1,586
Percentage of net proven reserves located in or near active conflict areas	0

Table 4.5.
Sensitivity of hydrocarbon reserve levels to future price projection scenarios that consider carbon dioxide emission prices
(SASB EM-EP-420a.1)

Sensitivity analysis of reserves

	Oil / NGL (mmb)	Natural Gas (bcf)	Total oil and gas (mmboe)
Reserves as of December	1,471	2,346	1,882
Sensitivity scenario	1,466	2,359	1,880
Difference (mmb)	-5	13	-2
Difference (%)	-0.3%	0.6%	-0.1%

The conversion rate utilized is 5,700 cf = 1 boe.
Assumptions for the sensitivity analysis of reserves:

- The base scenario for the sensitivity analysis encompasses 99.98% of Ecopetrol's oil, LNG, and natural gas reserves as of December 31, 2023, as detailed elsewhere in this report.
- The Ice Brent crude oil price and gas prices mirror management's price perspectives, considering prevailing market conditions and portfolio management costs.
- The sensitivity analysis presupposes Ice Brent prices of USD 83.4 per barrel in 2024, USD 72.9 per barrel in 2025, USD 75.7 per barrel in 2026, and a range between USD 79.8 and USD 77.3 per barrel in the period of 2027-2040.



Percentage of (1) proven and (2) probable reserves located in areas with a protected conservation status, habitats of endangered species, or in close proximity to them.
(SASB EM-EP-160a.3)

	Proven reserves
Protected areas	164.00 *
Total quantity of reserves	1,586.32
% reserves in sites with protected conservation status or endangered species habitats	10.34%

* Protected natural areas registered in the National Natural Parks Authority's Single National Registry of Protected Areas, updated as of November 2023

Percentage of (1) proven and (2) probable reserves in indigenous territories or in close proximity to them.
(SASB EM-EP-210a.2)

	Proven reserves
Indigenous reserve	64.80
Total quantity of reserves	1,586.32
% of reserves in indigenous reserve areas	4.08%*

* The calculation for 2022 has been restated as a result of a precision review of the geographical limitation concerning the influence area over the Unuma community in Campo Rubiales.

Table 4.6.
Estimation of integrated carbon dioxide emissions within proven hydrocarbon reserves.
(SASB EM-EP-420a.2)

Unit	2021	2022	2023
tonCO ₂ e	686,267,563	700,617,243	666,483,173.7

International Portfolio

The Upstream is comprised of four (4) international subsidiaries located in the United States, Mexico, and Brazil.

United States - Permian

- In the Permian, the world's most prolific basin, Ecopetrol holds approximately 99,500 acres in development, operated by a top-tier company such as OXY. It is noteworthy that these operations take place within a stable regulatory framework with low exploratory risk.
- The business dynamics are characterized by several key aspects: i) a steady increase in production, ii) agile and cost-effective operations, iii) short investment recovery periods in annual campaigns (2-3 years), and iv) cash generation.
- The produced volumes are light (40 degrees API), contributing to portfolio diversification in a low CO₂ emissions and water management environment.
- Highlights for 2023 include:
 - Record average production for 2023 of approximately 66.4 kboed (Ecopetrol's share before royalties).
 - In terms of TEGS, a low CO₂ emissions intensity of < 8 kgCO₂e/bbl, coupled with recycling over 17 MMbbl of water and substituting an average of 36% of diesel used in drilling and completion activities with compressed natural gas.

Ecopetrol América:

- Ecopetrol aims to be a non-operating partner, focusing on medium-risk environments in the Gulf of Mexico, providing a geographical diversification alternative with access to high-quality reserves. The company partners with top-tier operators such as Murphy, Hess, OXY, and Quarter-North.
- The deepwater strategy in the Gulf of Mexico in the United States (USGoM) focuses primarily on optimizing the development and production of strategic assets in the Miocene plays.
- Continuous learning is derived from the team, sharing knowledge in technical competencies for deepwater exploration and production.
- Average crude production occurs in a low CO₂ emissions environment.
- Highlights in its management during 2023 include:
 - The successful completion of operations in the Gunflint field's MC 992 ST-1 development well.
 - The successful completion of the DC90 development well in Dalmatian.

Mexico:

The company continues the orderly process of divesting its Upstream portfolio in Mexico, aligning with the focus of the 2040 Strategy, with the following progress:

- Block 8: The National Hydrocarbons Commission approved the transfer of Ecopetrol's participation in the Production Sharing Contract to PEMEX, and the commercial relationship with PEMEX was concluded.
- Block 6: The joint relinquishment process is in its final stage, awaiting the conclusion of the Final Transition Phase to be granted by the National Hydrocarbons Commission (CNH), expected to be approved in 2024.

Brazil:

The company was established to diversify the geographic position of the Business Group by entering a country with recognized oil potential and notable regulatory stability, focusing on exploration and offshore opportunities. This aligns with the strategic internationalization goal of the Ecopetrol Group by: i) capturing, maturing, and drilling opportunities in highly attractive exploratory accounts, ii) building a solid learning curve in offshore project development, and iii) incorporating reserves in materially significant basins to enhance the Company's reserves and production. Currently, Ecopetrol Brazil has a portfolio centered on three projects in the Santos Basin, involving the following activities:

1. Maturation of the Gato do Mato project (ECP participation 30%, Shell operator 50%, and Total Energies 20%), located in the prolific presalt play, with certified contingent resources of 163 MMBPE.
2. Planned drilling in the 1st semester of 2024 for the Pau Brazil 1 well (ECP participation 20%, BP operator 50%, and CNOOC 30%), also in the presalt play of the Santos Basin.
3. Acquisition of approximately 10,800 km² of 3D seismic in seven blocks in the southern Santos Basin through a consortium formed by Shell operator (70%) and ECP (30%). This information will validate the prospectivity originally identified in the block, in order to define future drilling opportunities.



National Portfolio



The Company aims to drive growth primarily in gas, aligning with Ecopetrol's strategy in Colombia, with an operational model based on cost efficiency, technical capacity, differentiated environmental management, and agility.

It boasts high exploratory capacity, with around 60% of current production coming from discoveries in the last 15 years.

Highlights for 2023 include:

- Discoveries in the Eastern Plains with partner Geopark (50% participation) in the Meta and Casanare departments.
- Discovery of the Bullerengue Oeste-5 well in the Atlántico department. This Near Field development well, drilled with partner Lewis (WI 50%), confirmed the presence of gas and 24 °API crude.
- Presence of gas in the Sabanales-1 well in the Córdoba department. The well is located in the SN-18 border block with high geological complexity.

Well Drilling

In 2023, a total of 469 development wells were drilled and completed, 217 by Ecopetrol's direct operation, 122 executed in partnership, 111 through Permian, 17 by Hocol, and 2 by Ecopetrol America, as detailed in the following table:

Table 4.7.
Well Drilling 2023

Company	2023
Ecopetrol Direct Operation	217
Ecopetrol Operation with Partners	122
Permian	111
Hocol	17
Ecopetrol America	2
Total Development Wells Ecopetrol Group	469

Note: The reported wells are those that underwent the completion process in the 2023 period.

Hocol: Includes the Bullerengue Oeste-5 well, which transitioned from exploratory to development status according to ministerial form.

Permian: Does not include OBO wells (Operated by others).



Exploration and Production Partners

Upstream partners collaborate with Ecopetrol on joint businesses and/or projects in the exploration, production, and development phases, with the aim of creating value in achieving shared goals within a framework of transparent, reliable, efficient, and mutually beneficial relationships. This underscores competitiveness and emphasizes the energy transition. The relationship with partners is regulated through formal agreements that define participation through contributions from both parties. As part of the relationship model, the Maximization of Value

in Assets with Subsidiaries and Partners – MFS (as per its Spanish acronym) process flow has been implemented.

Both the Exploration Vice Presidency and the Subsidiaries and Assets with Partners Vice Presidency are responsible for managing relationships with exploration and production partners, respectively. At the close of 2023, Ecopetrol maintained relationships with 25 partner companies, as illustrated in the table below:

Table 4.8.
Partner Companies/Ecopetrol S.A. Partners

Partner Companies/Ecopetrol Partners	
1. CEPESA COLOMBIA S.A.	14. PETROSOUTH ENERGY CORPORATION.
2. COLOMBIA ENERGY DEVELOPMENT CO (CEDCO).	15. SAINT – AUBIN INTERNATIONAL S.A.S.
3. EMERALD ENERGY PLC.	16. REPSOL.1
4. FRONTERA ENERGY.	17. SIERRACOL ENERGY.1
5. GRAN TIERRA ENERGY COLOMBIA LTDA.	18. TEXICAN OIL & GAS LTDA.
6. HOCOL S.A.	19. UNIÓN TEMPORAL ISMOCOL – JOSHI – PARKO (UT IJP).
7. LEWIS ENERGY.	20. SAN AGUSTIN ENERGY CORP SUCURSAL COLOMBIA.
8. NEXEN PETROLEUM COLOMBIA LTDA (CNOOC).	21. CPVEN. 2
9. NIKOIL ENERGY CORP.	22. SHELL EP OFFSHORE VENTURE.2
10. PAREX RESOURCES.1	23. PETROBRAS. 2
11. PERENCO.	24. ANADARKO COLOMBIA.2
12. PETRÓLEOS COLOMBIANOS (PETROLCO S.A.).	25. DRUMMOND ENERGY.2
13. PETROSANTANDER COLOMBIA INC.	

Current Ecopetrol S.A. partners as of December 31, 2023, do not include subsidiary partners.

1. Partners with assets in the exploitation phase, engaged in exploratory activities.

2. Partners with assets in the exploration phase.

Relationships with partner companies are established through collaboration contracts (association, Joint Operating Agreement – JOA, Overriding Royalty Interest – ORRI, Incremental Production Contract – CPI, Risk Sharing Contract – CRC, etc.), Exploration and Production (E&P) agreements, and agreements with the National Hydrocarbons Agency (ANH). Additionally, strategic relationships with contractors support the achievement of objectives in abandonment and dismantling processes (subsurface team, communications, SES, clearing, dismantling, cleaning, environmental training, ambulances, firefighting, among others).

The EG does not engage in exploration and extraction operations in the Arctic region within its portfolio.

Table 4.9.
Contracts with Partners

Type of Contract	Total
Partnership Contract (includes only risk and ORRI)	36 ¹
Exploration and Production Contracts with JOA	3
Incremental Production Contract	2
Business Collaboration Contract	2
Risk Sharing Contract	1
Business Collaboration Agreement	1

Note: As of December 31, 2023, Ecopetrol managed 45 contracts with Ecopetrol S.A. partners. This does not include contracts with the partners of the subsidiaries.

1. Five (5) partnership contracts transferred to Hocol S.A. as of July 1, 2018, in which Ecopetrol has the area assignment.



In 2023, the Subsidiaries and Assets with Partners Vice Presidency, along with the Exploration Vice Presidency, collaborated with other business units and cross-functional areas to develop a strategy for managing relationships with partners. This strategy encompassed various initiatives:

1

TESG:

With the aim of identifying synergies and fostering conversations on energy transition, various collaborative platforms were established, with notable emphasis on:

- The first TSEG fair with partners.
- A workshop on Resolution 40066 of 2025²⁵, addressing its main challenges and how the industry can tackle them.
- Discussions on decarbonization, integrated water management, and the circular economy.

5

Human Rights:

A discussion on the commitment to respecting human rights in management with partners.

2

Relationship Building:

Conducting the second Ecopetrol Partners Meeting in 2023, involving high-level representatives from both Ecopetrol and partners. The aim was to strengthen relationships through the exchange of ideas and knowledge, maintain the value of traditional business, promote the generation of alternatives and growth opportunities for the environment, and support the Just and Equitable Energy Transition.

6

Magdalena Medio Territorial Development:

A workshop on "Magdalena Medio Territorial Development," strengthening dialogue between partner companies and partners regarding social investment, physical security, and community relations.

3

Environmental:

Management under the Environmental Strategy with partners included spaces focused on monitoring and supporting legal environmental compliance. It also involved identifying and proposing the implementation of best practices for incident management. Technical meetings were held with environmental authorities to define criteria, such as the closure of Unresolved Environmental Impacts – IANRs, as per its Spanish acronym.

7

Diversity and Inclusion:

Formulating and disseminating messages related to the thematic area.

4

Ethics and Compliance:

Providing training to partners on Ecopetrol's Code of Ethics and Conduct, sharing reflections and ethical pieces, and reaffirming the commitment to ethical and compliance criteria in procurement and contracting processes.

8

Tesoro-29 Incident Disclosure:

A dissemination session with partners as part of Ecopetrol's commitment to industrial safety and occupational health.

25. Resolution 40066, dated February 11, 2022, delineates technical requisites for detecting and remedying leaks, as well as addressing the utilization, combustion, and venting of natural gas

in the course of hydrocarbon exploration and exploitation activities. (Ministry of Mines and Energy).

9

Workshops for Life with Direct Operation Partners:

The "Partners for Life" workshop aimed to reinforce the "Life First" principle in partners and recognize contractors' management efforts in compliance with the Company's fundamental principles. Additionally, a workshop, under the title of "Partners for Life, Safe and Healthy Year-End Program", was conducted with the contractor OMIA to identify opportunities for prevention and/or assurance of good practices in critical activities in the fourth quarter or activities that had experienced high accident rates during the year 2023.

10

Methane Measurements:

Scheduled overflights with airborne sensors were conducted over some assets operated by partners, allowing the monitoring and measurement of methane emissions from the fields included in the initiative. The goal was to conduct initial diagnoses and characterizations of these areas.

11

Social Investment of Assets with Partners:

Each partnership involving Ecopetrol S.A. includes a Social Investment Plan informed and managed by the Partner-Operator, monitored by the parties under different contractual scenarios. These plans incorporate voluntary initiatives focused on addressing needs such as recreation, health, education, entrepreneurship, ecology, art, culture, among others.

12

In keeping with tradition, during the final quarter of each year, a comprehensive consultation on annual perceptions and expectations was carried out with our partners. This encompassed a range of key attributes vital to the integrated management of our partnership with Ecopetrol, which will play a pivotal role in shaping the relationship management strategy with this Stakeholder Group for the year 2024.

Asset Disincorporation

(ECP 018) As part of the application of the Comprehensive Asset Disincorporation Model (MIDA), functional assets retired from operation are identified, and their immediate or future reuse is managed by circulating them to other areas of the Company. In 2023, 151 assets were reused for COP\$4.56 million, and 46 assets were defined for future use in the amount of COP\$1.78 million.

In addition to the 4,334 disincorporated assets, accounting write-offs were made for 1,432 records amounting to COP\$604 million, which do not require

physical disposal. One record for COP\$595 million corresponds to an intangible asset - Right of Use 3000090 CENIT Transport and Logistics.

The disincorporated assets correspond to the application of the fixed asset disincorporation procedure GSE-P-014, which begins with the definition of assets not required in the operation by administrators. Then, the functional state is defined, and according to that state, accounting records are managed, and the final physical disposal is initiated.

Table 4.10.
Asset Disincorporation

Asset Disincorporation	Unit of measurement	2020	2021	2022	2023
Quantity	#	2,672	4,718	8,429	4,334
Net Book Value	COP	9,854,979,248	45,276,886,507	27,273,255,799	29,302,672,156

● Technical Well Abandonment

In 2023, Ecopetrol carried out 259 technical well abandonments, demonstrating its steadfast commitment to complying with current legal regulations governing well abandonment. These regulations, outlined in Resolution 40622 of 2023 by the Ministry of Mines and Energy (MME) and Decree 1076 of 2015 by the Ministry of Environment and Sustainable Development (MADS), encompass environmental recovery practices aligned with internal guidelines detailed in the Well Integrity Management System (WIMS) and the Asset Disincorporation Guide.

Complementary to well abandonment, activities included the dismantling of facilities and environmental recovery efforts.

Facility dismantling involved the disassembly or removal of assets such as flow lines, electrical systems, electromechanical equipment, and civil works associated with abandoned wells.

This final intervention in an asset's operational life adhered to applicable regulations, with 1,364 facility dismantlements in 2023, 166 of which were associated with wells.

For its part, environmental recovery activities focused on ensuring environmental protection, incorporating guidelines from environmental instruments and legal standards. These activities comprised erosion control, slope management, maintenance of recovered areas, waste management, revegetation or land reforestation, and the management and control of runoff water. In 2023, 129 environmental recoveries were successfully executed.

● Accomplishments

**In 2023,
Ecopetrol achieved its highest production in the last eight years, reaching 737 kboed by year-end, accompanied by the highest annual gas and oil sales in the Company's history.**

- Exploration success soared to a 50% rate, surpassing the industry standard of 30%-38% and outperforming the averages of National Oil Companies (NOCs) (30%) and Major Companies (38%) for 2017-2022.
- The Upstream sector played a pivotal role, contributing 84% to the total greenhouse gas emission reduction of the Ecopetrol Group (EG). A reduction of 485.7 KTon CO₂e was achieved, totaling over a million tons of CO₂e between 2020 and 2023.
- Eleven exploratory successes were declared in basins of great interest, contributing significantly to the country's energy sovereignty, with eight wells drilled in 2023 and three in 2022.
- In the Offshore sector, confirmation of a gas field in the KGG block through the drilling of the Glaucus-1 well. Additionally, Ecopetrol successfully completed the drilling of its inaugural deepwater well, Orca-Norte-1, marking a significant milestone as it was entirely operated by the Company.
- In 2023, the Upstream reported COP 2.7 trillion in efficiencies, representing 61% of Ecopetrol's total efficiencies. This success, fueled by technology and business insight, particularly in Lifting Cost efficiencies, prevented a \$0.33 USD/Bl increase.
- Execution of USD 4.2 trillion in 2023, the highest since 2014.
- In 2023, \$276 million were generated in benefits, meeting the goal in the Technology and Innovation Value Added indicator. This success was supported by the implementation of Business Technologies focused on increasing production in assets (Coiled Tubing Gas Lift, Speed Strings, PIAR, Nanotechnology), alongside initiatives related to integrated water management, circular economy, and emerging CO₂ technologies.



● Recognitions

- Ecopetrol received the prestigious Gold Standard recognition from the United Nations Oil and Gas Methane Partnership (OGMP 2.0) for its advancements in measuring, reporting, and reducing methane emissions during the Conference of the Parties to the Climate Change Convention (COP28) in Dubai, United Arab Emirates.
- The Orinoquía Regional Vice Presidency garnered international acclaim at the Lighthouse Awards in Edinburgh (Scotland) in the Water Stewardship category for its innovative strategy of reusing hydrocarbon production water, showcasing visionary approaches to responsible and sustainable water use.
- United Nations recognition for good sustainability practices contributing to Sustainable Development Goal #9. This recognition highlighted efforts to revive and strengthen ethnic and cultural expressions in Afro-descendant communities through the metaverse.
- ACP's recognition in the Sustainability Facts forum lauded Ecopetrol's biodiversity protection efforts in the Ocelote field natural reserve and the safeguard of umbrella species.
- Hocol's management received certification from the International Organization of Human Capital Directors and AON technical experts for its good practices in promoting the physical and mental health of individuals.
- Global Compact recognition acknowledged Ecopetrol's human rights practices in industrial protection processes and partnerships with law enforcement.
- Recognition from the Governorship of Antioquia and a commendation from the Senate of the Republic (Commander Grade) highlighted Ecopetrol's leadership in the Works for Taxes mechanism.

● Transport Management

CENIT, established in 2013 as a subsidiary of Ecopetrol, is a simplified joint-stock mixed-economy commercial company operating at the national level. CENIT leads the transport and logistics segment for hydrocarbons, derivatives, and related products within the EG - Midstream, boasting a comprehensive network of transport and storage systems. CENIT stands out as the primary company responsible for transporting the majority of crude and refined products in the country—an indispensable energy source for Colombia's economic and social development.

Through its extensive pipeline and network, CENIT ensures compliance with volumetric and quality commitments with customers. This involves guaranteeing the evacuation of the country's crude oil from production facilities to refineries in Barrancabermeja and Cartagena, as well as exportation to ports.

Furthermore, CENIT plays a crucial role in ensuring the supply of refined products (motor gasoline and extra, BXE diesel blend - Biodiesel, Jet A-1, LPG, and Naphtha), making significant contributions to the country's energy security.



Table 4.11.
CENIT 2023 Results

Transportation Metrics	
KBPD ²⁶ of crude oil transported	302,408
KBPD ²⁷ of refined petroleum transported	305,884
KM of crude oil transported	1,514
KM of refined petroleum transported	958.7
Volume transported KBPD - Pipelines (Country evacuation - consolidated midstream)	807,044
Volume transported KBPD - Multipipelines (Country evacuation - consolidated midstream)	305,884
Maritime / Port Operation	
Number of ports (KBPD)	3
Ships serviced (KBPD)	255
Export capacity (KBPD)	3,126
Coveñas segment	460.9
Tumaco	8.9
Spills	
Number of spills	380
Volume of spills (bbls)	12,717
Volume of spilled hydrocarbons removed from the environment (bbls)	12

During this period, a comprehensive decarbonization strategy was formulated, encompassing the ambitious target of attaining 150 MW of energy from non-conventional renewable energy sources (NCRE) by 2030. In tandem with completing the installation of solar parks in Copey, Vasconia, and Ayacucho—contributing approximately 15.7 MW to the Company's energy portfolio—two onshore wind potential measurement towers were erected at the Pozos Colorados and Albán stations. This initiative aimed to explore the potential of integrating NCRE from wind sources for self-generation.

Simultaneously, a study assessing the energy potential of the sea in CENIT's operational ports was finalized, uncovering significant opportunities for power generation, particularly in Buenaventura and Tumaco. Furthermore, the proof of concept for hydrogen mobility in Bogotá was successfully concluded. This initiative, aimed at promoting the decarbonization of public transportation, also sought to stimulate the development of operation and maintenance (O&M) capabilities within the country's burgeoning hydrogen market.

In 2023, CENIT transported 83% of the products demanded by the country and achieved a historic annual evacuation of products, reaching 305.9 kbd.

26. KBPD: Daily average crude oil production.

27. KM: Kilometers.

Refining Management

Ecopetrol is steadfastly dedicated to the energy transition and the decarbonization of its operations, aligning with sustainability goals. The challenges presented by climate change and Colombia's multilateral commitments adopted in COP 26, COP 27, and COP 28 have reinforced Ecopetrol's commitment to intensifying efforts toward a greater reliance on renewable energy sources and alternative fuels. These commitments have ushered in notable changes in the Company's landscape, emphasizing elevated fuel quality standards, reduced emissions, and adherence to environmental regulations.

Ecopetrol's sustained commitment to Air Quality underscores its pledge to provide cleaner fuels as an integral part of its strategic vision.

To fulfill this commitment, Ecopetrol holds various certifications, including ISO 9001 and ISO 14001. The Company rigorously manages

lessons learned through the PVHA cycle, overseeing competence, risks, processes, and continuous improvement and seamlessly integrating these insights into its management structure.

Additionally, within each refinery, Ecopetrol actively applies, leads, and participates in first, second, and third-party audits to ensure the robustness of its processes and practices.

The strategic focus on fuel quality management culminated in the achievement of significant milestones in 2023:

- Attained a historic load of 420 kbd in Ecopetrol's refineries.
- Implemented essential investments in the refineries to ensure the reliability, availability, and supply of the majority of fuels in Colombia.

- Executed operational, maintenance, and logistical measures to consistently produce and deliver regular gasoline with sulfur content below 50 ppm. The national annual average sulfur content in regular motor gasoline remained below 45 ppm.
- Initiated the delivery of extra gasoline with sulfur levels below 15 ppm from Ecopetrol's refineries.
- Received recognition from environmental authorities in Bogotá and Medellín for contributing to the improvement of air quality.
- Executed cumulative investments through 2023 totaling MUSD 30 as part of the Phase III development of the LBCC Project, ensuring gasoline quality in compliance with the requirements of Resolution 40444 of 2023.

Furthermore, the Barrancabermeja Refinery secured a position in Q1 of the Solomon Associates' Energy Intensity Index (IIE). This indicator enables the Company to monitor and manage energy consumption in its refineries by illustrating the ratio between actual energy consumed and the standard energy the refinery should consume. Solomon's official study periodically categorizes performance into four (4) quartiles, with the most energy-efficient refineries ranked in the first quartile (Q1).

The management efforts in the refineries resulted in an accumulated EBITDA of COP 7.1 trillion (projected as the second-best historical year), a period characterized by favorable prices and margins. The business units successfully achieved a CAPEX execution of over 95% (year projection).

An important milestone is the favorable outcome of the arbitration in favor of the Cartagena Refinery in the case against Anglo American Chicago Bridge

& Iron Company, potentially resulting in an increase of approximately +1000 MUSD for the Company.

With regard to the "Generate Value Through T ESG" pillar of the 2040 Strategy, notable actions by the end of 2023 include:

- No Level I process safety events occurred in refineries.
- Completed the update project of the wastewater treatment plant (PTAR) at the Barrancabermeja Refinery, with the aim of improving the quality of discharges into water bodies near the Magdalena River.
- Subsidiary Ecodiesel achieved certification as a carbon-neutral company, becoming the first biodiesel company with this accreditation in Colombia.
- Successfully conducted a pilot test of pyrolytic oil at FCC Barrancabermeja, resulting in the circular production of propylene in Esenttia.

- Contributed to the decarbonization and diversification goals of the EG's energy matrix at the Cartagena Refinery by generating the first 4 MW of photovoltaic energy.
- Initiated the production of cleaner extra gasoline with 15 parts per million (ppm) of sulfur, a significant improvement from the previous 50 ppm. This will enhance the efficiency of emissions control systems, leading to a 25% reduction in emissions compared to Euro 4 technologies, effective management of particulate matter emissions, and improved vehicle engine performance and lifespan.
- Certification of the water footprint at the largest facilities of the Company in the country, conducted by ICONTEC, including the Cartagena and Barrancabermeja refineries, as well as the La Cira-Infantas fields in Santander and the Castilla fields in the Department of Meta.

Table 4.12.
Produced and Purchased Fuels
(ECPO29)

Biofuels	Unit of measurement	2020	2021	2022	2023
Volume of B2 sold	mbbls	28,827	32,987	39,722	46,406
Volume of biofuel purchased	mbbls	563	639	835.1	969.2

Note 1: B2 sales volume for 2023, as of December 31, represents the cumulative volumes sold at both the Barrancabermeja Refinery and the Cartagena Refinery. Similarly, the purchased volume of biofuel (Biodiesel) for 2023, also closing on December 31, corresponds to the total volumes acquired from both the Barrancabermeja Refinery and the Cartagena Refinery.

Note 2: (DJSI 2.6.10) As per the Low Carbon Investment Registry, Biodiesel is classified as a low-carbon product.

Similarly, 2023 marked a year of remarkable financial accomplishments for the refining segment, achieving an unprecedented performance exceeding COP 7.6 Billion (as of September 22). Moreover, a combined load of 414 KBD (a projected record for 2023) and operational availability exceeding 95% were realized, bolstered by enhancements in the major maintenance process.

Marketing

(GRI 2-6) (SFC 7.4.1.1.1.ii)

Ecopetrol generates value through commercial excellence, distinguished by the quality, timeliness, and efficiency of operations, and is committed to the Energy Transition with a strong relationship with its Stakeholder Groups. Key traded products include:

- Crude oil
- Low-sulfur diesel
- Fuel oil
- JET fuel
- Regular and extra motor gasoline
- Kerosene
- Aviation gasoline or avigas
- Petrochemicals, chemicals, and industrial products
- Carbon credits

Additionally, through subsidiaries Ecopetrol Trading Asia and Ecopetrol US Trading, the company aims to diversify its customer base, open new markets in Asia, the United States, and South America, consolidate third-party marketing with existing clients on the continent, explore sustainability business opportunities, and engage in carbon credit markets.



Crude oil:

(GRI 2-6) Presently, Ecopetrol's international clientele for crude comprises 24 active companies, with three (3) from EUST, nine (9) managed by Ecopetrol S.A., and the remaining 12 overseen by Ecopetrol Trading Asia Pte. Among these, 64% are refining entities utilizing crude as a primary raw material to fuel their refineries and manufacture refined products for diverse applications. The remaining 36% act as traders, serving the role of commercial intermediaries to tap into new markets and clientele.

As of the onset of 2023, the demand for crude faced challenges due to: i) Mobility restrictions in China, ii) Economic downturn in Europe, iii) High uncertainty in the U.S. driven by elevated interest rates, and iv) the Russia-Ukraine conflict. This scenario adversely affected heavy crude prices, resulting in a differential of US\$20/b compared to Ice Brent. The silver lining supporting the market was the sustained high refining margins, remaining historically robust although not anticipated to mirror the previous year. In the latter part of the year, the

market witnessed an increased supply of Venezuelan crude following the lifting of U.S. sanctions on the country. However, owing to enhanced demand, the price of heavy crude stands at approximately ~US\$-12.4/bl compared to Ice Brent.

These contextual factors influenced outcomes, including an approximate 12% reduction in Ecopetrol's overall revenues for 2023 compared to the previous year, calculated at 26.5356 billion US dollars.



Liquid Fuels:

(GRI 2-6) Presently, Ecopetrol caters to 94 clients, with 30 operating domestically and 64 internationally. Five (5) companies directly engage with EUST, procuring gasoline, low-sulfur diesel, jet fuel, marine diesel, fuel oil, kerosene, and Avgas. Domestic clients require authorization from the Ministry of Mines and Energy (MME).

Petrochemical margins even dipped into negative territory, offering little support to this market. The reorganization of Russian naphtha flows influenced various markets, affecting prices, especially in the Asian region, which proved advantageous for Ecopetrol as its imports benefited from reduced differentials.

As for Jet fuel, global demand has yet to reach pre-pandemic levels, expected to return by the end of 2025, primarily due to the resumption of long-distance international flights.

Finally, concerning Fuel Oil, the first half of 2023 posed challenges in finding customers for Ecopetrol's high sulfur content fuel oil (HSFO), given the oversupply in the market from Russian barrels at significant discounts, closing the arbitrage to Asia and limiting sales in the West. In the second half, heightened demand from the Middle East, coupled with production cuts by the Organization of the Petroleum Exporting Countries (OPEC) and increased imports by China, reduced the market surplus. This situation was capitalized on by Ecopetrol and the Cartagena Refinery, securing contracts for HSFO from November 2023 to October 2024.

In 2023, challenges stemming from market disruptions caused by the Russia-Ukraine war persisted, impacting international product flows and resulting in a shortage of high-octane products in the Atlantic basin. Simultaneously, a robust international demand recovery led to heightened gasoline prices.

Likewise, 2023 witnessed low inventories and shifts in diesel flows in international markets, creating specific opportunities to position RCSAS diesel in the USGC and the Caribbean, which are natural markets for the product. Russian export restrictions from February impacted product availability in Europe, prompting the continent to turn to diesel sources from Asia, the Middle East, and the USGC. Furthermore, Brazil, traditionally an importer of diesel from the USGC, started importing predominantly from Russia.

Conversely, the naphtha market experienced a downward trend, attributed to most refineries maintaining high refining loads, causing an oversupply of naphtha.



Petrochemicals and Industrial Products

In 2023, the global market observed international prices for aromatic and aliphatic indicators ranging from -13% to -18% below those of 2022. This decline can be attributed to i) global inflationary pressures impacting chemical demand due to reduced discretionary spending by end consumers and ii) disruptions in the global energy and derivatives supply caused by the Russian invasion of Ukraine, which exponentially elevated prices in 2022, returning to normal levels in 2023. In Colombia, solvent demand was also adversely affected by high inflation and high housing credit interest rates.

had a more significant impact. Simultaneously, a drop in aluminum prices, a major demand source for soda, exacerbated the situation. In the domestic market, aggressive competition was observed from regular market players, leveraging their logistics with own vessels and nearby sources of supply (Venezuela and Trinidad & Tobago) for methanol and from low-cost domestic production for soda.

consumption of final goods, led to a 29% decline in the accumulated price of low-density polyethylene by November 2023 compared to 2022. This resulted in an oversupplied market throughout the year in major regions such as the U.S., Asia, and Europe. Plants had to lower their operating rates, with particularly low margins in Europe and Asia, mainly due to their naphtha-based production. The same situation posed a high-risk scenario for product imports due to high inventories and a downward trend in the market for most of the year.

Additionally, last year was marked by bearish²⁸ trends in international prices for methanol and caustic soda. Weak demand from China's Methanol-To-Olefins sector, coupled with reduced consumption of final goods and oversupply due to increased production capacities, contributed to the decline in methanol prices. Although caustic soda saw systematic global production cuts to counter falling prices, weak demand due to global inflationary pressures

Regarding asphalt, demand in 2023 improved compared to 2022 due to the paving season and construction projects, supported by lower prices. However, the demand in the U.S. did not meet expectations, despite an increase in the transportation budget. National asphalt sales prices improved, starting 2023 with an import parity price of 85% and reaching 98% by November 2023. Additionally, there was continued growth in the asphalt market share in the Americas, particularly in the Caribbean, which is one of the markets with higher value.

(GRI 2-6) For Petrochemicals and Industry products, Ecopetrol boasts 126 clients, consisting of converters and marketers. Among the products purchased by clients are solvents, lubricating bases, paraffins, polyethylene, asphalt, sulfur, propylene, aromatic extracts, and coke, serving as raw materials for manufacturing various consumer end-products such as adhesives, paints, plastics, candles, automotive lubricants, and asphalt for construction and road maintenance.

Finally, the impact on the global demand for polyethylene and petrochemicals in 2023, driven by inflation in the



²⁸ Bearish is a term used in the trading world to describe a situation where market prices are falling, and investors are pessimistic.



Transportation of Fuels:

Carriers are obligated to adhere to the specifications outlined in Decree 1609 dated July 31, 2002, or any subsequent regulations that amend, supplement, or supersede it. The conveyance of liquid fuels derived from petroleum through pipelines will be subject to the transportation guidelines established by the Ministry of Mines and Energy (MME). Additionally, vessels transporting liquid fuels derived from petroleum through maritime or river routes must be equipped with the Single Transport Guide.



Sale of Controlled Products

According to current regulations, as a national public entity, Ecopetrol is not required to hold a Certificate of Absence of Narcotics Technical Reports (CCITE). The company is not obligated to control the agents in the fuel distribution chain registered in SICOM, nor is it responsible for verifying the CCITE of its customers.

However, Ecopetrol has implemented actions regarding these products, such as requesting a Certificate of Absence from customers before the signing of a contract or sales order and periodically verifying the reported quota against the quantities dispatched. The Company has also implemented a detailed procedure for the marketing of controlled substances and chemical products.



Labeling and Product Delivery Regulations

In line with the National Action Plan for the Management of Chemical Substances in Colombia established by the MADS, in 2023, Ecopetrol continued its implementation plan for the globally harmonized system. This involved updating safety data sheets for chemical products and providing training to workers. During this period, participation took place in the Socialization Sessions of the Web Application of the National Inventory of Industrial Chemical Substances – INSQUI. It is worth noting that during the last quarter of 2021, the work lines of the chemical risk management operational plans for 2022-2024 were reviewed and structured, and the planning and scheduling exercise for said plans are currently being finalized.



Carbon Credits

Uncertainty and stagnation in the voluntary carbon market due to various studies questioning the integrity of REDD+ projects, with inflated results, failed safeguards, and low environmental integrity for vulnerable forest communities.

In 2023, the commercial management team at Ecopetrol worked on different strategies to continue contributing to the EG's value generation. Some of the notable results derived from this management include:

Exports for 2023 reached a value of **11.1434 billion US dollars, a 15% growth compared to the previous year.**

National sales in Barrels Per Day (BPD) for 2023 are:

117,989	111,627	22,407
Gasoline	Diesel	Jet

- In 2023, crude oil sales accounted for 64% of total sales, products for 35%, and petrochemicals for 1%.
- Revenues amounted to COP \$86 trillion, with VCM contributing 79% of the EG's income (COP \$108 trillion).

The launch of the trading company in Houston generated a value of USD \$ 14 million in EBITDA for the EG.

- Asset Back Trading (ABT) operations were conducted in crude oil, products, and petrochemicals, totaling USD \$56 million.
- Over 14 projects involving Asphalt modified with post-consumer plastic, including civil works, exports, and domestic sales.
- Awarded the Portafolio 2023 recognition in the Innovation category for the circular economy project using asphalt modified with post-consumer plastic.

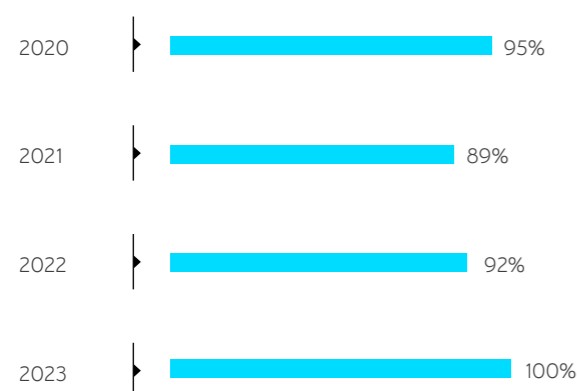
Through the strategic lines outlined in the commercial business plan, the impact in 2023 was as follows:

- 694.8 million US dollars in Commercialization Margin. Achievement exceeding 130%.
- 174.8 million US dollars in EBITDA from subsidiaries Ecopetrol Trading Asia (ECPTA) + Ecopetrol US Trading (USTC). Achievement exceeding 160%.
- 42.6 million US dollars in internal optimization. Achievement exceeding 200%.

Table 4.13.
Number of products or services provided or rendered

2021	2022	2023
110	109	112

(GRI 2-29) In assessing the satisfaction level of Ecopetrol customers, the performance over the past four (4) years has delivered the following outcomes:



The Portafolio 2023 award was obtained in the innovation category for the circular economy project with the post-consumer plastic-modified asphalt product.



Finally, looking ahead to the 2024 – 2027 period, the following opportunities are foreseen from the marketing perspective:

Crude Oil:

Medium-term opportunities are centered around customer and market diversification. Given that the energy transition still relies on resources generated by fossil fuel sales, leveraging subsidiaries as vehicles to identify commercial opportunities for our crude and export products is crucial.

Products:

- **Gasoline:** Significant efficiency opportunities have been identified in gasoline. This year saw the initiation of RON 90 gasoline imports, resulting in efficiencies exceeding \$32 million USD. Import pilots for RON 88 gasoline are expected to commence in 2024, with continuous monitoring to capitalize on opportunities to import gasoline from China during specific times of the year.
- **Naphtha (Diluent):** Considering the weakness of the Naphtha market in 2023, potential Naphtha contracts for the first half of 2024 are under consideration, aiming for improved differentials.
- **Diesel:** Anticipating more balanced prices in the market next year after two years of peaking, the maturity of the business group's commercial structure with trading subsidiaries in Houston and Singapore will be pivotal in capturing market opportunities.
- **Jet:** Leveraging the refinery's location in the Caribbean to continue exploring opportunities in that market, studying load options, and maximizing product value through bundled sales with ULSD.
- **Fuel Oil:** The Houston subsidiary will serve as leverage for the sale of HSFO from ECP and RCSA, particularly as global HSFO demand decreases in the maritime sector due to the impact of IMO2020 and the entry of the shipping industry into the EU's ETS starting 2024.

Petrochemicals and Industrial Products:

- **Solvents:** Aliphatic solvents found an opportunity in the new product Ecospirit40. Engaging with potential customers confirmed interest in the export market for such specialized products (non-commodities), outlining the approach to developing the market in the region from both commercial and technical perspectives.
- **Methanol and Caustic Soda:** Third-party trading of methanol and caustic soda was strengthened through term contracts with strategic partners in the Gulf of the United States, identifying optimizations in pricing formulas to compete more effectively in the domestic market.
- **Asphalt:** Ecopetrol will continue participating in the 2.3 million tons per year Americas market, with possibilities to enter other regions worldwide by leveraging the presence of subsidiaries in Houston and Singapore in a market with significant import flows.

Carbon Credits:

There is a likelihood of carbon market liquidity recovering in the second half of the 2020s. Improved integrity standards and policy clarity are crucial factors. The Integrity Council for the Voluntary Carbon Market (ICVCM) expects to make final decisions on the certification of carbon credit categories next year. Market participants are eagerly awaiting the results of the United Nations Climate Change Conference to address uncertainties and potentially strengthen sentiments in the carbon market. The implementation of Article 6.4 will provide a new structure for a global carbon market, creating new demand for credits and favoring carbon trading operations.

Low Emission Solutions Business Line

The 2040 Strategy, "Energy That Transforms," addresses the current challenges associated with the Just Energy Transition, requiring a delicate balance of four (4) priorities: ensuring energy security, achieving cost-effective access to energy sources, committing to responsible resource management, and generating value for all Stakeholder Groups

According to the definitions of this strategy, low-emission businesses are estimated to constitute between 30% and 50% of the EG's EBITDA by the year 2040.

In September 2023, Ecopetrol reaffirmed its commitment to the 2040 Strategy before the Securities Market and its Stakeholder Groups, underscoring a significant milestone within the Growing with the Energy Transition pillar. The Company announced an acceleration of its renewable energy incorporation targets, aiming to achieve 900 MW of capacity in construction and operation by 2025, in contrast to the initial goal of 1,000 MW by 2030. Additionally, the EG set a target to optimize internal energy consumption by 25 petajoules (PJ) over the period 2018-2030.

In pursuit of this objective, it is noteworthy that the Energy Efficiency program achieved remarkable savings in 2023, up to 2.5 times the optimized energy in 2022 (3.89 PJ vs. 1.54 PJ), avoiding an impact of 274 thousand tons of CO₂, with a cumulative progress of 10.86 PJ compared to the targeted goal for 2030.



Management efforts in the Low Emissions sector enabled Ecopetrol to reach a capacity of 472 MW of renewable energy through projects in execution, construction, and operation by the end of 2023. This capacity is more than double what was recorded at the end of 2022, which stood at 208 MW. This significant progress contributes to the continued strengthening of EG's self-generation capacity with renewable sources, leveraging a diversified portfolio of projects based on solar photovoltaic energy, wind energy, geothermal sources, biomass, among others.

During the same period, the Company achieved notable milestones, such as: 1) conducting wind potential measurements in the departments of Huila and Casanare; 2) signing a Memorandum of Understanding with Baker Hughes and the Caldas Hydroelectric Plant to explore possibilities for geothermal energy generation in Valle de Nereidas; and 3) reaching an agreement with EDF Colombia and Refocosta, enabling Ecopetrol to purchase energy from a forest biomass power generation plant in the municipality of Villanueva, Department of Casanare.

Similarly, in 2023, the EG announced the initiation of the first low-emission hydrogen-powered sustainable mobility project in public transportation in Colombia. This project involves a bus in the Integrated Public Transportation System (SITP) in Bogotá, currently undergoing testing and preparation for future operation.

Among other advancements in the management of low-emission solutions, noteworthy accomplishments include:

- Launch of the hydrogen mobility park in Cartagena and participation as partners in the launch of the first green hydrogen corridor in Colombia organized by the National Business Association of Colombia (ANDI) and the Colombian Natural Gas Association (Naturgas).
- The EG's leadership stands as a pioneer in Colombia's low-emission hydrogen development, backed by a comprehensive roadmap and a portfolio of projects in maturation. These initiatives will facilitate the industrial-scale production of green hydrogen at the Barrancabermeja and Cartagena refineries before the year 2030.

Leveraging Cutting-edge Knowledge and innovation, the EG also advances in proof of concept and studies to validate various initiatives, such as the blending of hydrogen with natural gas in a mobile laboratory at the Caribbean Innovation Center and strategic planning for the development of Carbon Capture, Utilization, and Storage (CCUS).

Proof of concept tests are expected to commence in 2024 to advance in the learning practice and adopt new carbon capture processes in the refining segment as part of the Company's decarbonization strategy.

In support of Colombia's Just Energy Transition, the Company is promoting the development of energy communities, where energy serves as a means to drive the sustainable development of territories.

Under this understanding and commitment to society, six (6) energy community projects were structured in 2023 to catalyze productive activities and ecosystem conservation with socio-environmental and economic collective benefits. In 2024, the projects will enter the implementation phase.

Within the Low Emissions Line, we persistently drive the technical and economic maturation of diverse gas exploration and production opportunities, steadfastly working towards the integration of reserves. The ongoing development of natural gas opportunities remains a key driver aligned with the four (4) pillars of the 2040 Strategy. Additionally, it plays a pivotal role in advancing sustainability, extending its impact to Colombian households, the industry, and the mobility sector, reinforcing its leadership in contributing to a sustainable future.

In 2023, the notable milestone of delivering the first vehicle through the Gastrack program, a collaborative initiative with multiple partners, marked a significant step forward. The program aims to provide funding for up to 75% of the purchase value of factory vehicles running on 100% natural gas for heavy-duty transportation. This venture is poised to benefit over 13,000 independent transporters in the next decade. Simultaneously, a partnership with Expreso Brasilia and other stakeholders saw the introduction of a new bus featuring a Euro 6 standard natural gas engine in 2023, servicing the Barranquilla - Valledupar route.



(DJSI 2.8.4)
Progress in managing the Gas Social program was also noteworthy. Between 2019 and 2023, the program facilitated the connection of over 40,000 new users to domestic gas service in 32 municipalities across 9 departments in the country, with an investment of COP 85,000 million.

Executed in collaboration with various government entities and other institutions, the program has made direct contributions to enhancing the quality of life for users previously unconnected to the system. Households integrated into the gas network have transitioned from the use of firewood and other hazardous fuels to a more efficient, secure, environmentally friendly, and healthier energy resource.

Ecopetrol, under the stewardship of its Low Emissions Vice Presidency, aspires to be a driving force in the decarbonization of our operations by reducing carbon intensity and implementing energy efficiency initiatives. The Vice Presidency's stewardship includes supporting the definition of mega challenges and innovation initiatives to achieve these goals. Collaborative efforts with the VTI have been undertaken during this period, laying the groundwork for future initiatives and plans:

- Updating and integrating energy information.
- Optimization of short and long-term energy demand projections.
- Agua Guajira (Water Guajira).
- Analysis of energy efficiency alternatives in the business group.

- These initiatives, along with others implemented between the VSE and VTI Vice Presidencies, are outlined in the 2024-2026 portfolio.

In addition, the Low Emissions Vice Presidency (VSE) played a pivotal role in STORM, a project driving Ecopetrol's digital transformation. This initiative successfully implemented an industry-specific Oil & Gas solution based on SAP S4Hanna, strategically aligning with the TESG strategy across commercial and logistical processes. This integration is particularly evident within the Low Emissions Solutions Vice Presidency for Energy, Natural Gas, and LPG products. The implementation of this cutting-edge solution not only achieved seamless operations but also delivered substantial benefits:

- Efficiencies in the utilization of electric self-generation assets that enhance the procurement of energy from the EG's assets, ensuring efficient resource allocation in each operational area.
- Streamlining the management of energy-related contracts (self-generation, connection contracts, surplus sales, marginal producer, and new businesses) overseen by GEN.

- Reduction of the time required for formalizing interruptible gas sales contracts, thus enabling early marketing opportunities.

- Enhanced efficiency in self-consumption purchases through consolidated information derived from operations and inventories.

In the realm of public policy, Ecopetrol played a proactive role in shaping the National Development Plan, successfully advocating for the incorporation and reinforcement of key proposals centered on bolstering and defining green and blue hydrogen, CCUS (Carbon Capture, Utilization, and Storage), and exploring opportunities for financing and co-financing internal fuel gas connections. Ecopetrol also joined the Ministry of Mines and Energy (MME) in orchestrating social and business dialogues, in alignment of the structured timeline for constructing the Just Energy Transition Roadmap. Additionally, Ecopetrol has been actively involved in reviewing the initial documents published by the ministry.

Accomplishments

- Gas and LPG EBITDA accumulated at COP 3.5 trillion as of November 2023.

- Commercialization of 162 KBED, with 87% corresponding to Natural Gas and 13% to LPG.

- Reduction of approximately 19,000 tonCO₂ and COP 28 billion in savings through competitive rates in solar parks and Small Hydroelectric Plants (SHP).

- 7.3% electrical energy optimized between 2018 and 2023 versus a target of 6.3%, reducing 165,110 tonCO₂ and achieving COP 170.8 billion in savings.

- 20,213 physical connections through the Gas and LPG Social program, in collaboration with the Sustainable Territorial Development Vice Presidency. More than 44,300 families have been connected since 2019.

- Launch of the Hydrogen Mobility Park in Cartagena and announcement of the mobility project in Bogotá.

- Financing commenced for heavy-duty vehicles dedicated to natural gas for independent transporters.

- The MicroLNG trial project was executed in Buenaventura until November 2023, ensuring support and reliability of gas supply for approximately 40,000 families in this area of the country.

- Commercialization of flare gas, reducing emissions and offering new volumes to the market.

- Accumulated capacity of over 472 MW of self-generation and purchases from unconventional renewable energy sources by the end of 2023, including projects in operation, construction, and execution.

- In terms of green H₂, the Bogotá hydrogen plant produced 150 kg in 2023, corresponding to 10 days of operation, mainly for testing and equipment commissioning activities.

- Worked with the National Government (ANH, ANLA) on building a collaboration and knowledge transfer strategy related to Green Hydrogen and CCUS.

- Ecopetrol, along with natural gas transporters, TGI, and Promigas, initiated bidirectional transportation on the Ballena-Barranca stretch, and enabled gas supply from the Cusiana source (~8 GBTUD²⁹) to Reficar.



29. GBTUD: Giga BTU. BTU: A BTU (British Thermal Unit) is a measure of energy equivalent to 0.29 watts/hour. 1 GBTUD is equivalent to 1,000 MBTUD, and 1 MBTUD is equivalent to 1 million BTU per day.

Transmission, Roads, and Telecommunications Business Line

This line is led by ISA, with the purpose of optimizing performance and leveraging synergies with other business lines, maximizing the value of enterprises characterized by well-established operational models and regulated returns.

ISA operates in Electric Power, Roads, Telecommunications, and IT sectors, with subsidiaries present in six (6) South American countries and in Central America.

In 2023, approximately COP 10 trillion were collectively awarded to energy transmission projects in Colombia, Brazil, Chile, and Peru.

ISA's Financial Performance in 2023

Table 4.1.10.
ISA 2023 Results

Consolidated Financial Figures (COP trillion)	2023	% Variation 2023 vs 2022
Operating Revenue	14	6
Net Profit	2.5	12
Ebitda***	9.1	6
Ebitda Margin	64%	-0.2
Assets	71.2	-9.5
Liabilities	44.9	-9

Separated Financial Figures	2023	% Variation 2023 vs 2022
Net Profit	2.4	12

Figures by Business	Income**	%	Ebitda***	%	Assets	%
Electric Power*:	10.9	77	7.41	81	58	82
Roads	2.8	19	1.5	16	12	17
Telecommunications and ICT	0.5	3	0.20	2	0.7	1
Total	14	100	9.1	100	71.18	100

Note: EBITDA figures restated since 2018 for calculation standardization with Ecopetrol

* Includes XM.

** Includes revenues from the periodic tariff review in Brazil.

Conexión Jaguar Program

"Conexión Jaguar" is ISA's sustainability initiative, along with its affiliated companies, dedicated to fostering biodiversity conservation, climate change mitigation, rural community development, and the preservation of natural habitats for jaguars (Panthera onca) across Latin America. In regions like Chile, where jaguars are not present, the program is designed to safeguard the natural habitats of pumas (Puma Concolor).

This comprehensive program offers technical and financial support to empower rural communities with

top-notch forestry initiatives. These initiatives can then issue and trade certified carbon credits, providing a sustainable source of funding for conservation projects adhering to the highest international standards. Aligned with the global objectives outlined in the 2030 Agenda, including the Paris Agreement, the Convention on Biological Diversity, and the Sustainable Development Goals (SDGs), the program specifically targets Goals 13, 15, and 17: Climate Action, Life on Land, and Partnerships for the Goals, respectively.

Accomplishments

- Over 854,000 hectares are currently undergoing conservation or restoration initiatives.
- There is a potential to reduce emissions by approximately 6.7 million tCO₂e.
- Documentation of more than 180 wildlife species using camera traps in project areas, with 14 of them classified by the International Union for Conservation of Nature (IUCN) as being endangered to some degree.
- Support provided to 322 families in Colombia, Peru, and Brazil through a variety of activities.
- Enhancements to soil and water conditions.





05

Cutting-Edge
Knowledge



The success of the EG's 2040 Strategy hinges on robust foundations in knowledge, technology, innovation, and human talent, fostering competitiveness in the traditional business, diversification of the portfolio, decarbonization of operations, and the realization of TEGS goals. Within this paradigm, Cutting-edge Knowledge stands as one of the pivotal pillars of the 2040 Strategy "Energy That Transforms". This encompasses the technologies and skills within the workforce required by Ecopetrol to execute projects, run businesses, and implement the overarching strategy.

Cutting-edge Knowledge is the driving force behind Ecopetrol's efforts to develop solutions in Science, Technology, and Innovation, to address the strategic challenges faced by the Group, including decarbonization and the Energy Transition.

Initiatives under this pillar are geared towards enhancing operational efficiency, fostering TEGS value generation, and sustaining and advancing the competitive edge of businesses through process automation and the incorporation of state-of-the-art technologies.

This pillar is actualized through the implementation of the Ecopetrol Group's **Science, Technology, and Innovation Strategy (ST+i)**.

Alongside Knowledge and Learning Management initiatives that are strategically designed to fortify the human talent within the Group



Science, Technology, and Innovation Strategy

The EG's ST+i Strategy is responsive to global trends in the field and aligns with the Corporate Strategy. It leverages a commitment to generate an incremental EBITDA of 20-30 BUSD by 2040 through portfolio unification, collaborative planning with the business, and effective execution systems.

To tackle this challenge, Ecopetrol has positioned itself as a facilitator of ecosystems, concentrating

on clusters that propose disruptive solutions through cutting-edge technology, thus addressing the primary challenges presented by the 2040 Strategy. These challenges are materialized in 19 strategic objectives jointly identified by the Science, Technology, and Innovation Vice Presidency (VTI) and the business units, guiding and concentrating the Group's efforts into the following thematic areas:

Decarbonization	Energy Transition
<p>Achieving net-zero emissions (100% Scopes 1 and 2, and 50% Scope 3) vs. 2019 by 2050:</p> <ul style="list-style-type: none"> • Energy efficiency • Advanced biofuels • CCUS • Natural climate solutions 	<p>Leverage 6% of the business diversification target with low-emission hydrogen by 2040:</p> <ul style="list-style-type: none"> • Hydrogen • Photovoltaic • Wind • Storage • Petrochemical 2.0 • Distributed generation • Geothermal
TEGS	Resilient Assets
<p>Boosting economies, education, and access to public services by 2040:</p> <ul style="list-style-type: none"> • Smart territories • Impactful innovation • Regional showcase • Transparency • Government 	<p>Contribute to the growth of production by 750 kbpe through enhanced recovery, exploration, and international growth by 2040:</p> <ul style="list-style-type: none"> • Dilution • Transport diversification • Smart grids • Reserves and production • Operational availability • Cost efficiency
Circular Economy	Industrial Revolution 5.0
<p>Reduce freshwater catchment by 66% and achieve zero discharges by 2045:</p> <ul style="list-style-type: none"> • Water • Chemical recycling • Waste utilization 	<p>Achieve 100% process automation by 2030:</p> <ul style="list-style-type: none"> • Robotics and automation • Digitalization • Cybersecurity • 5G • Quantum • Advanced materials

Ecopetrol has two (2) levers to manage these clusters:

- **The ICP's Innovation and Technology Center**, with the capabilities to address the challenges of Energy Transition and decarbonization.
- **The Econova Network**, for coordinating with strategic partners and building capabilities in the territories.

Strengthening the ICP

For more than 35 years, ICP has been responsible for researching and developing solutions that enable technological competitive advantages and knowledge for the Group, with increased efficiency in its operations and high-value results.

Ecopetrol draws upon extensive scientific expertise, guided by the ICP through collaborative ventures with universities, research centers, and technology-driven enterprises. Consequently, it has delineated a technological portfolio encompassing initiatives for process optimization, energy efficiency, carbon capture, the valorization of new energy vectors, and the development of low-carbon products.

The endeavors of the ICP are strategically aligned with the following lines of work:

The overarching objective of the ICP is to support both present and future ventures of the Group in creating value through TESG, synergizing with Cutting-edge Knowledge, and ensuring growth amidst the Energy Transition, thereby fostering Competitive Returns.

Mitigation and decarbonization alternatives

Ecopetrol's research and development portfolio for the Energy Transition



Concurrently, the ICP employs an open innovation strategy through the **Econova Network**, taking the lead in directing research for the Energy Transition and the industry. This approach capitalizes on the expertise of over 200 researchers spanning 40 experimental areas.

2023 Results

	Impact (real or expected)
A mobile laboratory was constructed to evaluate the impact of using hydrogen and natural gas mixtures in different proportions on the performance of end-use devices in residential and commercial sectors.	This system will facilitate the establishment of operational limits and/or strategies to ensure the safe use and operation of blends, with the goal of promoting the widespread adoption of hydrogen throughout the value chain in Colombia.
Technical and economic analyses were conducted for offshore wind power generation in the Galerazamba region (First Step) in the Colombian Caribbean region.	It allows for the direct utilization of 'flue gas' and the production of higher value-added products, serving as a decarbonization and valorization strategy for the CO ₂ derived from Ecopetrol's operations.
Implementation of injection protocols for CO ₂ , carbonated water (Water + CO ₂), and alternate injection of water and CO ₂ into rocks and selected reservoir fluids.	Potential involvement of Ecopetrol in the initial round for the allocation of Temporary Occupation Permits in maritime areas designated by the National Government (ANH-DIMAR-MinEnergía).
The FACSAT2 - Chiribiquete nanosatellite was launched in partnership with the Colombian Air Force, carrying a payload to measure CO ₂ and methane.	These dynamic assessments will support the development of integrated recovery concepts and the exploration of potential uses and storage of CO ₂ in prioritized fields.
Within the AQUA project, two successful pilot tests were executed (with CENIPALMA and AGROSAVIA), evaluating the response of different plant models to the application of nanofertilizers, ECONANO, under nursery conditions at different doses.	Analysis of land cover and greenhouse gas emissions.
The TPH Polishing pilot test was developed, operating for 60 days at the Acacias station, achieving water quality and compliance with environmental regulations for agroforestry irrigation. Additionally, the Tukano technology pilot test was carried out in the Chichimene, Castilla, and CPO fields, ensuring water quality at the injector wellhead.	The effectiveness of the ECONANO technology at low doses was evident, promoting increased biomass and demonstrating significant improvements in agronomic performance compared to conventional fertilizers.
DOWS technology surface-level test was carried out at the wellhead.	The removal of fats, oils, and suspended solids exceeded 95%, with the retention of solids of particle sizes greater than two (2) microns.
A comprehensive characterization of pyrolysis oils from various international and national technologies was conducted to determine the suitable oil characteristics for loading into the UOP-II at the Barrancabermeja Refinery.	Significant advancements were made in the efficient separation of free water, achieving removal rates exceeding 99% of crude from well fluid. The water outlet stream exhibited a concentration of fats and oils averaging between 30-50 ppm, while water cuts for the crude stream ranged from 84% to 88%.
An Isotopic and Hydrochemical Model of the Central Sector of the VMM was developed. Additionally, the hydraulic potential was tested with the intervention of well CSBE-1327.	The implementation of industrial testing for loading pyrolysis oil led to the production of Refinery Grade Propylene (PGR, as per its Spanish acronym), a milestone marked by its subsequent polymerization at Esentia, making it the first circular polymer produced in Latin America.
The Evolution IT/OT project brought the Moriche, Jazmín, and Nare Sur fields into the new technological era in networks through technological renewal (dynamic segmentation, network equipment renewal, among others).	Confirmation of a key research hypothesis validated the shift in water quality towards the southern sector of the VMM aquifer system.
	This confirmation enabled the establishment of a robust, secure, reliable, scalable, and high-speed network, enhancing current operations and positioning Ecopetrol to meet emerging technological challenges.

	Impact (real or expected)
Transformation in the supply chain, making it more efficient and profitable, improving integrated operational programming decision-making.	Greater anticipation in decision-making processes, including buying, selling, and logistics, resulting in reduced logistical costs, optimized management of hydrocarbon inventories, enhanced information synergies, and improved optimization of sources and uses of self-produced gas through the Prodigio digital scheduler.
Leveraged the TEGS and digital transformation strategies in commercial and logistical processes.	Response times saw improvement, with centralized information, reduced error margins, and automated reporting in Ecopetrol's national operations through "STORM," a pivotal platform for the international expansion of the Group's marketing efforts.
Contributed to the reduction of exploratory risk through biostratigraphic analysis and reservoir quality petrography for the N sandstone of the Alqamari-2 discovery well.	This initiative facilitated the initiation of a new exploration 'play' in the western Caguán-Putumayo basin, allowing for the incorporation of hydrocarbon reserves to achieve energy self-sufficiency.
Progress was made in the Chemical Conformance campaign in the Central Regional Vice Presidency (VRC). The injection of BW (Bright Water) microgels reached 21 KBOI (thousands of incremental barrels) in 2023, while the injection of rigid gels in the REPAT 1 campaign in the CSBE field exceeded 100 KBOI in 2023.	The VRC's Conformance program reported increments of 125 KBOI in 2023, contributing to a cumulative production of 210 KBOI since 2021.
A strategy was proposed for optimization in the production chemistry of the air injection pilot in the Chichimene field, mainly focusing on the use of non-nitrogenous H ₂ S scavenger.	This could potentially lead to the reduction or elimination of scale inhibitor use, addressing precipitation issues observed in CIS pilot wells. Moreover, dilution with water (30%) showcased enhanced efficiency, representing optimizations and cost reductions, with the proposed strategy set for testing in 2024.
For the Moriche field, a coupled heat exchanger system with Organic Rankine Cycle (ORC) technology was designed to harness the thermal energy of the oil (200°F) and convert it into electrical energy (28 MW annually).	The utilization of hot fluids resulted in improved energy efficiency (0.8%) and emission reductions (6,875 tons CO ₂ eq/year).
Real-time remote geomechanical monitoring was led from the ICP's RTO room to critical wells with high potential for the materialization of geomechanical risk in the Pauto, Pauto Sur, Floreña, Castilla, Chichimene, and Akacias fields.	Geomechanical risks were identified and mitigated during well planning and drilling, impacting optimization or avoided costs, reducing NPT, and minimizing drilling costs associated with geomechanics.
Wells in the Castilla, Apiay, and Chichimene fields were stimulated using nanofluids developed by the technical team, including NanoRPM (Relative Permeability) and NWW (Nano Water Weather).	Designed with the objective of reducing water cut and, consequently, enhancing oil productivity in wells.

In terms of scientific infrastructure, notable highlights include:

The laboratories successfully established effective development and production strategies, using the gas chromatography methodology to determine the 'Production Allocation' for 485 'commingled' wells. **This approach yielded a substantial total cost avoidance of USD 7.12 million,**

ensuring compliance with regulatory Resolution 181495 of 2009 of the National Hydrocarbons Agency (ANH). Furthermore, advisory support was extended for the implementation of a physicochemical monitoring laboratory, contributing to the on-site Combustion pilot project in the Teca-Nare Train.

The ongoing Major Maintenance of the thermal recovery combustion system, slated for completion in the second quarter of 2024, will facilitate the continued evaluation (analysis) of air injection performance in various Company assets.

Seven (7) automated solutions were successfully deployed in ICP's laboratories and pilot plants, **significantly enhancing the optimization of man-hours, reducing exposure time to risks, and increasing experimental capacity.** Noteworthy implementations include the introduction of the online chromatography network, the upgrade of the control system for OPTO 22, Honeywell, and Foxboro pilot plants, as well as the design and construction of automated equipment to improve efficiencies and reduce HSE risks.

Substantial improvements were achieved in the ICP's industrial and domestic wastewater treatment and reuse system, leading to the construction and operation of the tertiary filtration system. This innovative system **ensures zero (0) discharges, reducing freshwater intake for industrial use by 10%, and achieving an impressive 25% reuse/recycling of industrial wastewater.**

For more detailed information on these accomplishments, refer to the "Science, Technology, and Innovation" chapter of this report.

As of December 31, 2023, collaborative efforts between the ICP and VTI included engaging in workshops and activities aimed at fostering close working relationships in terms of Research and Development (R&D) with ISA. This collaboration seeks to bolster the transmission, electricity, and linear connectivity business agenda within the Group's pillars.





(SFC 7.4.1.1.1.v) The Superintendence of Industry and Commerce (SIC) granted Ecopetrol the following patents in 2023:

- | | | |
|---|---|--|
| <p>1 Rail structure for an interactive real-time object visualization system.</p> | <p>2 Fixed and mobile equipment for the measurement of mechanical degradation of polymeric solutions through flow control and regulating valves in injector wells, as well as the corresponding operating procedure.</p> | <p>3 Method for obtaining quantum dots from asphaltenes.</p> |
| <p>4 Methodology for generating preformed foam at the wellhead for the self-selectivity of steam injection.</p> | <p>5 Dual cartridge filtration unit with functionalized metal-coated membrane and ceramic granular bed.</p> | <p>6 Multifunctional mobile trailer-type laboratory for applications in the health and industrial sectors.</p> |
| <p>7 Process for obtaining a pipeline transportable hydrocarbon composed of heavy and extra-heavy crudes with unconventional diluents.</p> | <p>8 Transesterification process of oils for the removal of polar components, to improve the low-temperature performance of biodiesel, which involves, after washing, an adsorption stage of wet biodiesel with solid aluminosilicates, both in solid and wet bed.</p> | <p>9 Nanocatalyst from lanthanide oxides and transition metal oxides for on-site improvement of heavy and extra-heavy crudes.</p> |
| <p>10 Process for the production of propylene and ethylene from ethanol, using a zeolitic catalyst.</p> | <p>11 Apparatus and method for the simultaneous recovery of solvent, improved crude, and dry asphaltic solid in a de-asphalting process.</p> | <p>12 Tool system for the repair of progressive cavity pump units and its corresponding operation method.</p> |

Also, 14 patent applications were submitted to the Superintendence of Industry and Commerce (SIC) in 2023, with the following still pending review as of December 31, 2023:

- | | | |
|--|--|--|
| <p>1 Air and water alternating injection methodology through a singular injector well in deep reservoirs housing heavy crude enriched with gas in solution.</p> | <p>2 Electrochemical alkalization system for the discerning removal of robust cations from water deriving from the oil and gas industry.</p> | <p>3 Method for producing biocera with an elevated concentration of waxy esters.</p> |
| <p>4 Spherical apparatus designed for precision pressure control and high-flow injection of polymeric solutions for enhanced oil recovery.</p> | <p>5 Electrochemical technique that expels hard cations while concurrently decarbonizing, specifically tailored for softening injection waters in the oil and natural gas sector.</p> | <p>6 Device for separating water and hydrocarbon at the well bottom ('ecodows').</p> |
| <p>7 Basket engineered for the efficient dispatch and retrieval of solids, varying in shapes and geometries, within scraper traps.</p> | <p>8 Filtration unit featuring selective oleophilic membranes.</p> | <p>9 Multithematic nano-particulate materials, encompassing innovative methods for extraction and formulation of metallic elemental content to be used as nano fertilizers.</p> |
| <p>10 Vapor generation process beneath the surface through mist injection, strategically tailored for the recovery of heavy crude.</p> | <p>11 System dedicated to measuring corrosion and scaling phenomena in the bottom of injector wells.</p> | <p>12 Synthesis technique for anion exchange resin.</p> |
| <p>13 Production of a carbonaceous composite that can be used as a cation exchange resin.</p> | <p>14 Spent hydroprocessing catalysts to develop materials adept at removing hydrogen sulfide in gas streams.</p> | |



Challenges in 2023

The primary challenges faced by the ICP revolved around the following key areas:





- Globally, the technologies propelling the Energy Transition are still in the developmental phase, thereby exposing pioneering initiatives to inherent risks associated with the learning process. This encompasses facets such as the procurement, installation, operation, and maintenance of equipment and technology that diverge from the conventional scope of the oil and gas industry.
- In the current landscape of the strategic framework, the portfolio of initiatives displays significant heterogeneity in terms of risks, anticipated returns, and investments. Effectively managing the Research and Development (ST+i) portfolio necessitates a distinctive approach to measuring and capturing value, considering factors like materiality, timing, risks, and deployment within the organization. Taxonomies and models within the capital discipline have been proposed to facilitate a comprehensive analysis of the ST+i portfolio, addressing decision-making dynamics and resource competition.
- The prevailing model of operating cost distribution for ST+i compels the presentation of short-term results within a strategic agenda that is geared towards ensuring the sustained viability of the organization in the medium and long term. A recommended course of action involves reviewing the model of cost allocation and distribution to align with the strategic priorities assigned to ST+i.
- Ensuring a scalable trajectory with the assets of the Orinoco Regional Vice Presidency (VRO) involves leveraging proven technologies for polishing and water separation. Workshops were conducted in collaboration with assets, the development management, and engineering departments to secure the seamless progression through scaling stages and investment allocations.
- In addressing Health, Safety, and Environment (HSE) challenges, the ICP's primary objective is to uphold a healthy and secure operation, as evidenced by the sustained 100% rating in the TRIF indicator, reflecting an absence of incidents. Furthermore, the organization aspires to maintain elevated standards in environmental management, sound waste practices, gradual discharge reduction, responsible biodiversity management, effective minimization of freshwater intake, and enhancements in air quality.
- The articulation of the ICP's Plan for the Evolution of the Technological and Scientific Capacity for the period 2023-2030 involves a comprehensive identification of needs in terms of equipment, infrastructure, automation, robotization, digital transformation, and cutting-edge knowledge, all centered around the Energy Transition. This plan is strategically aligned with corporate pillars and contributes to the realization of Ecopetrol's 2040 Strategy.



Additionally, the ICP aims to support the EG in its overarching mission of advancing a Just and Equitable Energy Transition in Colombia, particularly through the ST+i component. To accomplish this, the ICP must define and implement a retraining process for its human talent and collaborate with higher education institutions to outline competencies and staff training programs.

Goals

The primary opportunities in the short and long term for the ICP revolve around six (6) key elements:

-  Enhance access to capital for innovation and technology through co-development and investment partnerships.
-  Strengthen the establishment of enduring collaborations to co-create solutions with diverse partners, addressing their strategic challenges.
-  Advance in the configuration of the scaling capacity of technologies with partners and by exploring new business models.
-  Empower talent and the global laboratory network for the Energy Transition, ensuring a swift response to this challenge.
-  Monetize technologies developed by the ICP, leveraging their robust competitive advantages and identifying opportunities in the global Oil & Gas³⁰ (O&G) industry and other sectors.
-  Establish technological and knowledge competitive edges in critical segments of the business value chain, considering factors like risk, cost impact, profitability, or strategic importance (e.g., 'end-to-end' water management, hydrogeological models, ecosystems, natural carbon sinks, and thermal recovery).

³⁰. It refers to the oil and gas industry.

Econova Network

Econova is an intentional and collaborative network of actors of national and international ST+i ecosystems. It aims to exchange, promote, and develop disruptive solutions for energy security, efficient access to energy sources, commitment to environmentally responsible resource management, and value generation for the EG's Stakeholder Groups.

Through the Econova Network and under the scientific and technological leadership of the ICP, the Ecopetrol Group aims to consolidate a knowledge ecosystem around energy. This focus is designed to address the challenges and missions of the Group, the industry, and the territories.

The Econova Network is committed to achieving various objectives, including the following:

- Generating installed ST+i capacity in the country to drive the Energy Transition.
- Developing qualified human talent capable of addressing the challenges of a Just Energy Transition.
- Consolidating the 'Energy Human Tech' Ecosystem.
- Developing new solutions to industry challenges.
- Identifying and seizing emerging opportunities.
- Enhancing competitiveness through the timely incorporation of technological management and Cutting-edge Knowledge.

The Econova Network comprises five (5) regional Innovation Centers, each focused on the clusters of the ST+i Strategy. Each center gathers a network of partners to enhance its capacity, including chambers of commerce, academic institutions, entrepreneurs and business owners, associations, government representatives, students, and communities.

Regional Innovation Centers under the Econova Network



Econova Bogota
(Bogotá D.C.)

Cluster: Industrial Revolution 5.0

Focuses on adapting and advancing state-of-the-art technologies, such as robotics, high-performance computing, artificial intelligence, cybersecurity, and immersive technologies. This emphasis aims to systematically scale intelligent, secure, and sustainable products and processes for the EG.



Econova Caribe
(Cartagena)

Clusters: Energy Transition and Circular Economy

Oversees technological initiatives that support low-emission businesses within the EG, with a specific focus on hydrogen-related matters; also concentrates on reducing industry waste and creating value through the exploration of new uses and opportunities.



Econova Antioquia
(Medellín)

Addresses electric power projects.



Econova Santander
(Bucaramanga)

Cluster: Decarbonization

Aims to leverage solutions and innovative models to optimize resource utilization in the EG's operations, thereby reducing the carbon footprint and fostering the development of renewable energies.



Econova Meta
(Villavicencio)

Clusters: TSEG and Resilient Assets

Advocates for access and technological advancements to foster sustainable development and connections with the territories, in order to co-create opportunities within communities, establishing spaces for training, innovation, and entrepreneurship to generate wealth in both directions. Similarly, it actively pursues the identification, piloting, and scaling of technologies that enhance and extend the economic-technical boundaries of EG assets.

Territories impacted by the Econova Network

- Bolívar.
- Santander: Bucaramanga and Barrancabermeja.
- Antioquia.
- Meta.
- Cundinamarca.
- Atlántico.
- Cesar.
- La Guajira.
- Bogotá.
- Valle del Cauca.

Among Econova's product and service offerings, the following key elements stand out:

Econova Conferences: These are dedicated spaces for meetings, learning, and dialogues aimed at generating critical mass and reflections associated with the prioritized themes in the centers and the Energy Transition.

Econova Workshops: These spaces facilitate the construction and transfer of knowledge among network actors, with the goal of generating knowledge and expediting the learning curve.

Strengthening the Business Fabric:

- Incubation of companies.
- Acceleration.
- Startup scaling.
- Rapid prototyping of products and services.

Innovateams: This involves awareness activities targeting children and adolescents to underscore the importance of the Energy Transition.

Econova Projects: This encompasses an open innovation program designed to co-develop high-impact ST+i solutions in the territories, ultimately reducing gaps and addressing the economic, social, and environmental issues in the regions. It contributes significantly to achieving the SDGs and aligns with the Group's strategy.

Open Innovation Program: This initiative from the Econova Network aims to interact and co-develop agile and disruptive solutions with the innovation ecosystem, offering a proper response to the challenges faced by the Group, the industry, and the territories where the organization holds influence.

- **Ecopetrol Group Challenges:** These are challenges focused and aligned with the clusters prioritized by the ST+i Strategy.
- **Industry Challenges:** These challenges address cross-cutting issues, enabling solutions or closing gaps in the energy industry at large.
- **Territory Challenges:** This involves identifying and characterizing the socio-economic challenges in the territories within the area of influence of Ecopetrol, mobilizing the innovation ecosystem to address these challenges.



2023 Results

In 2023, the Econova Network achieved noteworthy results, including:

- The generation of 123 direct and indirect non-oil jobs.
 - Mobilization of \$11.5 million USD in in-kind resources and money through orchestrated partners.
 - A remarkable 226% achievement of the goal for stakeholders linked to the Network, equivalent to 113 articulated actors, distributed as follows:
- | Econova Network Actors | # |
|-----------------------------|------------|
| Companies | 45 |
| Universities | 23 |
| Innovation Support Entities | 18 |
| Associations/Guilds | 12 |
| Government Entities | 11 |
| Subsidiaries | 4 |
| Total | 113 |
- Over 2,500 entrepreneurs, students, and members of the general community have received training on topics pertaining to the pillars of the EG's 2040 Strategy.
 - Additionally, more than 100 SENA instructors have been trained in Energy Transition, decarbonization, circular economy, TSEG, and the Industry 5.0 as part of the V National Pedagogical Research Meeting "Innovate to Transform."
 - 10 awareness-raising activities were conducted to address the challenges of the Energy Transition and the circular economy within the framework of Innovateams.
 - Five (5) innovation centers are currently operational:
- | Econova Innovation Center | Operational % |
|---------------------------|---------------|
| Santander | 88% |
| Caribbean | 88% |
| Meta | 88% |
| Bogota | 67% |
| Antioquia | 42% |
- 38 challenges launched within the Open Innovation Program³¹, with the participation of more than 400 local and national startups and enterprises.
 - 12 Econova Projects identified in different territories, three (3) of which have commenced execution.
 - 33 startups in the acceleration process.
 - 33% of the impacted startups are led by women.
 - Activation of a ST+i community at Ecopetrol (ST+i Natives Network), identifying 19 ST+i leaders in the Group and more than 100 engaged employees.
 - Launched the ST+i Culture strategy, featuring 50 contents.
 - More than 40 Econova Conferences held on subjects prioritized by the centers.
 - 30 events related to the clusters of the ST+i Strategy promoted during the Science, Technology, and Innovation month.
 - Second place in '100 Open Startups' as a company that invests in open innovation in the country.
 - Participation in events and congresses, such as the most important International Congress of Information and Communication Technologies (ICT) in the region, "ANDICOM 2023"; the eighth edition of the Colombian Business Congress, and the Hydrogen and Energy Efficiency Congress.

31. Econova Santander: 14 challenges, Econova Caribbean: 11 challenges, Econova Bogota: four (4) challenges, and Econova Meta: four (4) challenges.

2023 Challenges

In 2023, the Econova Network faced and successfully managed the following challenges:

Construction of a Purpose, Objectives, and Key Results

In 2023, one of Econova's most significant challenges was consolidating a purpose and defining objectives while ensuring specific results that aligned the interests of the Company, key stakeholders, the industry, and the community.

Initially, a shared purpose was established to bring together the interests, vision, and needs of all network members for a Just Energy Transition. To achieve this, key actors were identified to complement the capabilities provided to the country by Ecopetrol, and physical infrastructure was developed through the establishment of five (5) centers in different strategic regions of Colombia.

Furthermore, to sustain an orchestrated and active network, a diverse range of products and services were introduced to enhance Econova's local, regional, and national positioning. Clear, measurable objectives and targets were defined for this comprehensive set of elements, all of which aligned with the Group's 2040 Strategy.

Orchestration of Actors

The Econova Network has successfully brought together more than 113 organizations, encompassing academia, businesses, innovation support entities, government bodies, subsidiaries, and associations. In tandem with ecosystem actors, it initiated approximately 38 challenges related to Energy Transition, impacting over 400 companies across diverse sectors. Additionally, it identified 12 Econova Projects, with advancement in four (4) projects tied to TSEG and the utilization of green hydrogen as a pivotal element in the Energy Transition.

This undertaking involved adeptly managing key players within the country's ST+i ecosystems, fostering collaboration for a Just Energy Transition. The process entailed workshops, calls for tenders, conferences, and active participation in significant national and international fora dedicated to energy, STI/ICT, and ST+i. As a result of these concerted efforts, the Econova Network surpassed its goal, achieving a remarkable 226% fulfillment in terms of network actors involved.

Resource Mobilization

From the outset, Econova embarked on the challenge of attracting capabilities and resources to enhance Cutting-edge Knowledge, encompass the elements of the TSEG agenda, and achieve goals associated with the relevant areas of the EG's ST+i Strategy. Upon establishing partnerships, agreements, joint projects, and coordinated activities, the Econova Network successfully mobilized around 11.5 million USD in 2023:

- **Contributions from Network actors:** Primarily composed of financial transactions related to space rental, the utilization of skilled work teams for project implementation, procurement of equipment, coordination of events, and the overall management of physical spaces within Innovation Centers, among various other operational activities.
- **Resources managed through the National Science, Technology, and Innovation System:** Contributions from organizations to finance innovation challenges, such as the Mission of Wise Men.
- **Innovation management:** Leveraging resources with the aim of developing initiatives or mechanisms that generate benefits or positive impacts, managed by an associate of the Econova Network.

Cultivating a ST+i Culture

For Econova, a ST+i culture is pivotal for building trust, a shared vision, and knowledge flows that foster an environment conducive to Energy Transition and TSEG.

In this context, Econova formulated a strategy with the purpose of adapting and harnessing the benefits of the ST+i culture, understanding its value, and making it the DNA of individuals and the Company to strengthen the EG's ST+i ecosystem.

The strategy comprises five (5) lines:

- Identifying the components and benefits of the ST+i culture.
- Understanding the benefits of implementing a ST+i culture.
- Adapting the ST+i culture to enable conscious use of ST+i.
- Promoting the ST+i culture in the community, team meetings, and the organization.
- Fostering people's loyalty to encourage collaboration within the ecosystem.

Results obtained in 2023 include:

- Creation of an activated Science, Technology, and Innovation community within Ecopetrol: the ST+i Natives Network.
- Identification of successful project cases orchestrated in the network and visibility within the EG of the results and impact of ST+i.
- Generation of content, pieces, and artifacts to strengthen and disseminate the ST+i culture within the Group.

Econova also developed a strong presence on social media to address the challenges of the digital world:

Measurement	LinkedIn	Instagram	Facebook	X	Total
Followers	3,853	1,199	21,078	343	26,473
Impressions	281,431	1,502,470	27,967,703	92,852	29,844,456
Engagements	26,486	3,994	1,735,234	4,927	1,770,641
Engagement Index per Impression ³²	9.5	0.2	6.2	5.3	5.3

On the [Econova.co](https://econova.co) website, the Econova Network boasts a user base of 227,000 individuals, with a noteworthy 106,000 conversions and a of over 396,000 views.



32. The engagement index is a measure that evaluates how many people interact with a post compared to how many saw it. It helps understand how effective a post is in generating interactions relative to its visibility.

Goals

Medium term (2024 - 2025)

Strategic Lines	Strategic Partnerships
Econova Innovation Centers	<ul style="list-style-type: none"> Promote and capitalize on technology-based opportunities that support the Energy Transition in the EG. Orchestrate the ST+i ecosystem to ensure TSEG for the EG, the industry, and the territory. Develop ST+i capabilities and talent to lead the Energy Transition at the regional and national levels.
Open Innovation	<ul style="list-style-type: none"> Explore the challenges of the EG, the industry, and the territory by identifying innovative solutions through the articulation of the ST+i ecosystem and open innovation that accelerate the Energy Transition agenda. Strengthen the technological maturity capacity of the ST+i ecosystem through the adoption of innovation methodologies, prototyping, testing, and scaling of technologies, serving the EG, the industry, and the territory. Consolidate and generate best practices in open innovation aligned with the objectives of the TSEG agenda. Leverage opportunities for scalable business models and/or solutions.
Econova Projects	<ul style="list-style-type: none"> Create ST+i capabilities at the regional level that enable two (2) pillars of the 2040 Strategy: Cutting-edge Knowledge and Generate Value Through TSEG. Identify Energy Transition needs at the regional level. Align the impact of Econova with the TSEG agenda, generating value in regions and operations.
'Energy Human Tech' Ecosystem	<ul style="list-style-type: none"> Foster entrepreneurship in the technology-based energy sector at the regional and national levels. Orchestrate an environment of solutions related to the Energy Transition.
Orchestration	<ul style="list-style-type: none"> Strengthen the Econova Network and grow the 'Energy Human Tech' ecosystem by articulating with areas of interest (e.g., the ICP, the business, and the subsidiary Econova Technology SL). Facilitate the transfer of Cutting-edge Knowledge. Contribute to the development of the business fabric of the TSEG energy sector.

Long term (2026)

- Globalize the Econova Network (Innovation and Econova Projects Network with an international perspective).
- Mobilize resources sustainably through the investment of European funds.
- Strengthen an ecosystem of entrepreneurship and startups in the energy sector.
- Expand pilot projects involving hydrogen utilization and solutions for the Energy Transition.



Knowledge and Learning Management

The Cutting-edge Knowledge pillar envisions that by 2040, 70% of talent will have honed their skills to fortify the Group's strategy. To achieve this, the Ecopetrol Corporate University, conceived as an extensive virtual campus, has served as the platform for knowledge and learning management within the EG.

Consequently, emphasis has been placed on instilling five (5) essential skills throughout the organization:

Prioritized Skill	Basic Level	Intermediate and Advanced Levels
Energy Transition	Ensures the understanding of this skill and the challenges it brings to the Company.	Deepens into the topics of Circular Economy, Renewables, Energy Efficiency, Decarbonization, and Fuel Quality, as well as their application in Energy Transition projects and initiatives.
Digital Transformation	Provides capabilities to address digital transformation processes.	Develops knowledge and skills in automation, data science, and blockchain, among others.
Agility	Educates on the basic concepts of the subject.	Provides training in Scrum Master, Product Owner, and Agile Coach, among other skills.
Innovation	Ensures the understanding of concepts associated with the skill and its application in Ecopetrol.	Strengthens roles focused on facilitating, proposing, evaluating, and/or developing innovative solutions and business challenges.
Execution	Offers capabilities to prioritize tasks, communicate purposes, and collaborate with others to achieve organizational objectives.	Provides abilities for defining cross-functional plans for the Company's areas and team management skills.

The Ecopetrol University has developed a comprehensive learning ecosystem to disseminate cutting-edge knowledge to all employees, involving more than 90 national and international universities and institutions³³.

Covering over 16,000 employees of the Group, the University structures its initiatives around two (2) primary axes: one dedicated to **Learning Management** and another focused on **Knowledge Management**.

33. Like Harvard, MIT, Columbia University, Petroskills, Schlumberger, Klear, IFP School, Universidad de los Andes, Universidad Javeriana, Universidad Industrial de Santander, Tecnológico de Monterrey, Degreed, GetAbstract, goFLUENT, Credly, Pearson Education, Waste to Worth, E2 Efficient Energy, among others.

● Learning Management

The Learning axis, comprised of 10 Schools and 35 academies, aims to integrate and solidify Cutting-edge Knowledge for enhanced performance within the Group through three (3) virtual campus environments: Ecopetrol, ISA, and Esenttia.

Petrotechnical School: Addresses topics related to the exploration, development, and production of hydrocarbons for geologists, geophysicists, petrophysicists, and engineers, reaching 1,154 workers. This school includes two (2) academies, Geosciences and Engineering, and offers two (2) special programs in Project Management, Offshore Operations, and Efficient and Safe Recovery.

Operations and Maintenance School: Aims to strengthen competencies for safe, reliable, efficient, and profitable operation in disciplines such as operators, maintainers, engineers, covering 3,780 workers.

Low Emission Solutions School: Creates an integrated vision of the Energy Transition and targets a population of 107 workers. It spans across all of Ecopetrol, instilling the Energy Transition skill in the areas of Decarbonization, Energy Efficiency, Fuel Quality, Renewable Energy, and Circular Economy.

Innovation and Technology School: Develops skills aligned with the Group's innovation and technology strategy, housing two (2) academies, Digital and Innovation, and Technology, along with three (3) special programs.

Leadership School: Nurtures leaders, successors, high potentials, and new generations within the leadership model, mobilizing teams towards peak performance. This school caters to 1,147 leaders, 189 seedbeds, 21 high potentials, and over 1,200 successors.

Corporate School: Engages all functions of the Company's cross-functional and support areas. The school encompasses 14 academies: Commercial and Marketing, HSE, Projects, Procurement, Shared Services, Finance, Health, Human Talent, Environment, Supply Chain, Legal Defense, Compliance, Audit, and Corporate Affairs. It also includes three (3) special programs: Boards of Directors, Union Leaders, and Industrial Brigades.

Road School (ISA): Integrates technical knowledge related to the road business, impacting 626 workers across three (3) academies: Growth, Engineering and Construction, and Operation Process Management.

Electricity School (ISA): Addresses topics related to electric power transmission and new energy ventures, influencing 2,300 workers through eight (8) academies: Transmission Lines, Electric Substations, New Energy Services, Environmental Social and Land Management, New Technologies, Regulation Management, Supervision Center Operation, SPAT: Protection, Automation, and Telecommunications.

The **Petrochemical (Esenttia)** and **Transportation (Cenit)** Schools were under construction as of December 31, 2023.

● Knowledge Management

This axis advocates for mechanisms that transfer, document, and assure the Company's 'know-how':



Technology Days: Project fairs facilitating the sharing of internal work, results, and best practices, held every two (2) years, with an impact across the EG.



e+ Knowledge Talks: Weekly streaming sessions to share knowledge throughout Ecopetrol, totaling 339 talks since its inception in 2015.



Technology Fora: Events featuring international experts, academia, associations, and government institutions, challenging key issues for the strategy and generating action initiatives to incorporate knowledge. 39 fora had been conducted by 2023.

● Learning Culture at Ecopetrol

The learning culture at Ecopetrol is fortified through the governance model and the Corporate University's Virtual Campus.

Corporate University's Governance Model

The stewardship of Cutting-edge Knowledge rests on the shoulders of each of the Company's vice presidents. With the backing of their teams, comprising managers, technical experts, and Corporate University professionals, they actively foster skill development. The University's governance is structured as follows:

- **Academic Council:** This council plays a pivotal role in directing and aligning initiatives pertaining to Cutting-edge Knowledge across the entire EG. Its members include the Executive Vice President (serving as the council leader), the Upstream, Downstream, and Midstream Vice Presidents, along with the Vice Presidents of Finance, Innovation and Technology, Low Emission Solutions, Strategy and New Business, Commercial, and Human Talent.
- **School and Academy Committees:** These committees are instrumental in setting priorities, designing learning programs, and implementing knowledge management actions with a holistic EG perspective. They are comprised of vice presidents or managers directly related to the function.

Corporate University's Virtual Campus

In 2020, Degreed® "GEnius," a Learning Experience Platform (LXP) utilized by 30% of Fortune 500 companies, was integrated as the technological learning platform that gave life to the virtual campus of Ecopetrol's Corporate University.

Within "GEnius," there are over 70,000 learning objects available for Group employees, who, in 2023, engaged with more than 1.3 million items, encompassing courses, articles, book summaries, videos, and podcasts. Ecopetrol's Learning Management System (LMS) comprises over 29,000 on-the-job training tools, with over 1,000 in-person training sessions and more than 500 virtual training sessions.

"GEnius" also features the 'Skill Coach' tool, enabling leaders to assist their teams in learning by managing skills, monitoring progress, and sharing knowledge through the recommendation of learning objects.

Proficiency in English is considered a fundamental skill for accessing Cutting-edge Knowledge. For this reason, employees have had access to "goFLUENT," Ecopetrol's language platform since June 2023.

● Advancement of Skills and Competencies for a Just Energy Transition

The Ecopetrol University, through the Low Emission Solutions School, offers a comprehensive learning program designed to cultivate skills for the Just Energy Transition. In 2023, the following initiatives were undertaken:

The Energy Transition Forum was orchestrated with the physical attendance of 350 participants and virtually joined by 2,566 individuals. The primary objective was to complement the Energy Transition Plan with a specific emphasis on decarbonization, in alignment with the Group's TSEG objectives for 2040. The forum drew insights from successful practices, financial models, and international best practices.

In collaboration with the **French Institute of Petroleum (IFP)**, the virtual **Energy Transition program was executed, providing knowledge to over 7,800 GE workers** on the challenges of global Energy Transition. It covered principles and challenges related to various renewable technologies, the roles of gas, hydrogen, CCUS in the transition, and the significance of energy efficiency.

The Energy Transition learning path was meticulously designed and implemented to enhance competencies in the five (5) specified areas outlined in the 2040 Strategy: Circular Economy (133 participants), Renewable Energies (78 participants), Decarbonization (203 participants), Fuel Quality (50 participants), and Energy Efficiency (178 participants).

The **Hydrogen learning** path was conceptualized to be included in the 2024 learning portfolio, aiming to instill skills required by Ecopetrol concerning critical themes for hydrogen projects as an energy source and its pivotal role in the Energy Transition.

Training sessions were conducted for 80 employees, concentrating on updates regarding regulations and risks related to Energy Transition.

Three (3) workshops focusing on Social Dialogue were organized in collaboration with the Mission to Support the Peace Process of the Organization of American States (MAPP - OAS). These workshops primarily targeted regional professionals from the Supply and Services Vice Presidency and the Sustainable Territorial Development Vice Presidency. The workshop themes included social dialogue and conflict transformation, social dialogue and consensus building, and social dialogue and negotiation strategies. A total of 49 individuals participated in 2023.

The "Human Rights and Business" program is an integral part of the **"I Am Ecopetrol Talent"** ("Soy Talento Ecopetrol") learning path. By 2023, 8,070 Ecopetrol employees completed this virtual program, and in that same year, it was developed by 535 employees.

As part of the overseas study program, **10 employees were selected** in 2023 to pursue master's degrees in areas associated with Energy Transition.

Training initiatives focused on gas development were executed through the Petrotechnical School and the Offshore Program, within the existing 'offshore' programs, involving the participation of over 100 professionals.

From the Knowledge Management perspective, the following activities took place:



Eight (8) e+ talks were conducted for the entire Group, accumulating over 7,400 attendees. These sessions concentrated on energy savings, decarbonization, emission reduction, energy consumption during drilling and well completion, integrated water management, marine renewable energy and its potential in Colombia, water injection in cycles, and Energy Transition, among other topics.

Additionally, strategies were put in place to fortify the skills and capabilities of human talent in confronting the challenges of the ICP:

'Retooling' Plan: A three-year plan was implemented to address gaps in seven (7) knowledge areas: (i) low emissions, (ii) environmental, (iii) digital capabilities, (iv) geosciences, (v) drilling and production, (vi) enhanced recovery, and (vii) reservoirs, refining, and petrochemicals, with a particular emphasis on the Energy Transition. In collaboration with the Ecopetrol Corporate University and the Human Resources Corporate Vice Presidency, a personalized plan of activities was devised for each individual, encompassing courses, internships, and conferences.



Eleven thematic 'webinars' were organized for specific groups, covering areas such as tax incentives and ESCO business models for the development of energy efficiency initiatives, incentives for the development of energy efficiency initiatives, CCUS, carbon markets, production of green hydrogen in the Cartagena Refinery, and energy regulatory updates.

Culture Plan: The culture of openness to technology was promoted through the delivery of 40 "Tech Talk ST+i" talks in 2023. During these sessions, ICP officials shared and assimilated knowledge from both within the Company and other entities, such as Esenttia, Cenit, Ocesa, and Ecopetrol Brazil. Eight (8) knowledge and innovation sessions were conducted, with the participation of more than 450 people.





06

Generate Value
Through TESG



Stakeholder Groups

In 2023, Ecopetrol updated the identification and prioritization of its Stakeholder Groups (SG). This practice enables the Company to establish more effective relationships built on trust and mutual benefit.

The practice of updating the SG is motivated by the necessity for a timely and comprehensive understanding not only of their interests, expectations, and concerns, but also of the way they influence and are impacted within the framework of Ecopetrol's operations, which in the end becomes the essential input for the design of the relationship plans that the areas develop with their SG.



(GRI 2-29)

This exercise plays a critical role in updating Ecopetrol's materiality, as the prioritized SG assess the positive or negative impact of Ecopetrol's activities and operations on the environment and society. They serve as the focal point for impact materiality in the double materiality methodology.

Methodology for Updating Stakeholder Groups 2023

To determine the outcomes of the update, the existing Stakeholders until 2023 were reviewed, as well as their subgroups and associated promises of value, which made it possible to identify new stakeholders and prioritize them for engagement, based on the criteria of influence, dependency, power, legitimacy, and urgency, established in the AA1000 Accountability Stakeholder Engagement Standard methodology.

To access the results of the 2023 Annual Stakeholder Perception Survey, please scan the QR code below.



1

Analysis of the exercise

Understanding of the stakeholder engagement processes carried out by Ecopetrol.

2

Identification of Stakeholders

Identification and definition of Ecopetrol S.A.'s stakeholder groups and subgroups based on the analysis of internal and external information sources.

3

Classification and Prioritization of Stakeholders

Classification and prioritization of stakeholder groups through the implementation of an information gathering instrument.

4

Update of Value Propositions

Updating Ecopetrol's value proposition for each Stakeholder Group, serving as a driver for the management and engagement plan.

5

Construction of Engagement Plans

Formulating engagement strategies with prioritized Stakeholder Groups, as well as liaising with Ecopetrol representatives in each SG.

This methodology broadened the scope, expanding the number of SG from **seven (7) to 11**, as follows:

Ecopetrol S.A. Stakeholder Groups



State



Employees



Communities



Partners



Suppliers and their workers



Controlled companies



Shareholders and investors



Media and opinion leaders



Customers



Civil society and cooperation organizations



Scientific and academic community

Materiality Analysis

(SFC 7.4.13.1) The primary objective of the Materiality Analysis is for the Company to identify, assess, and manage both the risks and opportunities of the context from a financial perspective, as well as the impacts its activities have or could have on the environment and society. This exercise allows Ecopetrol to prioritize the most relevant environmental, social, and governance issues, against which it measures its management efforts and communicates its performance.

(DJSI 1.3.1) This exercise is reviewed annually and updated at least every three (3) years.

For the 2023 materiality update, Ecopetrol adopted a double materiality approach, promoting a holistic perspective on sustainability

management and the impact that ESG issues have on Ecopetrol's financial performance, strategic objectives, and reputation. This approach, in turn, fosters a culture of responsibility, transparency, and accountability with its stakeholders.

In this manner, the outcomes of the materiality assessments impact the configuration of the Generate Value Through TESG™ pillar within the 2040 Strategy, updating the ESG elements relevant to Ecopetrol, the Roadmaps (HdR) that mobilize them, and the reporting of financial and non-financial information that the Company communicates.

(GRI 3-1) (DJSI 1.3.1) (TCFD GR – 1.4) The methodology for conducting the materiality exercise has evolved due to new market needs, stakeholder

expectations, and changing business contexts. The concept of double materiality, incorporated in the 2023 update, ensures that the public information reported by Ecopetrol is sufficient and appropriate and includes risks and opportunities for the business, as well as its impacts on society and the environment.

From the prioritization of ESG issues that are relevant to the Company from the point of view of impact, financial or both perspectives, the Roadmaps that underpin the Generate Value Through TESG pillar of the 2040 Strategy are derived.

The process of updating Ecopetrol S.A.'s materiality unfolded through six (6) steps, as described below:

1 Alignment with the context
Understanding the organization's context, its main challenges and future plans, and how these align with the national and global context.

2 Identification of impacts, risks, and opportunities (IROs)
Identification and classification of social, environmental, and governance Impact, Risks, and Opportunities (IROs) stemming from Ecopetrol's operations and their interactions with the environment, as well as those originating from the environment and impacting Ecopetrol.

3 Definition of preliminary ESG elements
Identification of the relevant ESG elements for Ecopetrol according to their impacts, risks, and opportunities.

4 Financial materiality
Assessment of the financial impact of relevant risks and opportunities on Ecopetrol.

5 Impact materiality
Evaluation of the impacts caused by the Company on the environment and consultations with stakeholder groups to prioritize ESG elements.

6 Prioritization of material elements
Analysis of the prioritized ESG elements matrix and the interrelationships between them.

(GRI 3-1-b) The exercise, led by the Corporate Affairs Vice Presidency and its Corporate Responsibility Management, encompassed activities like consultations with Stakeholder Groups and engaged corporate and business units to validate the materiality approach from diverse perspectives. The process data presented below summarizes the methodological journey undertaken to define the material issues.



(GRI 3-1) (DJSI 1.3.1) To conduct the analysis with a double materiality approach, information from internal and external sources was analyzed to identify actual or potential impacts that Ecopetrol generates or could generate on the environment and/or society, as well as the risks and opportunities stemming from the external environment that generate or could generate effects on the Company's ability to generate economic value.

Based on the identified impacts, risks, and opportunities, 14 ESG issues that are potentially material for Ecopetrol were selected and

defined. These were then validated through consultations with various departments within the Company.

Additionally, four (4) issues were identified, which due to their transversal nature to Ecopetrol's strategy, were not considered as elements to be managed, but acquire a strategic and enabling role for the material issues.

Following the identification of these elements, an assessment was conducted, considering both Financial Materiality and Impact Materiality perspectives.

For the evaluation of Financial Materiality, the risks and opportunities identified were considered. The qualification of the risks resulted from the inherent economic impact and the probability of occurrence of each one of them according to the Company's risk matrices. For the evaluation from the Impact Materiality, engagements were held with various Stakeholder Groups prioritized for this exercise. This involved rating and prioritizing each potential ESG element, considering Ecopetrol's impact on the environment and society.

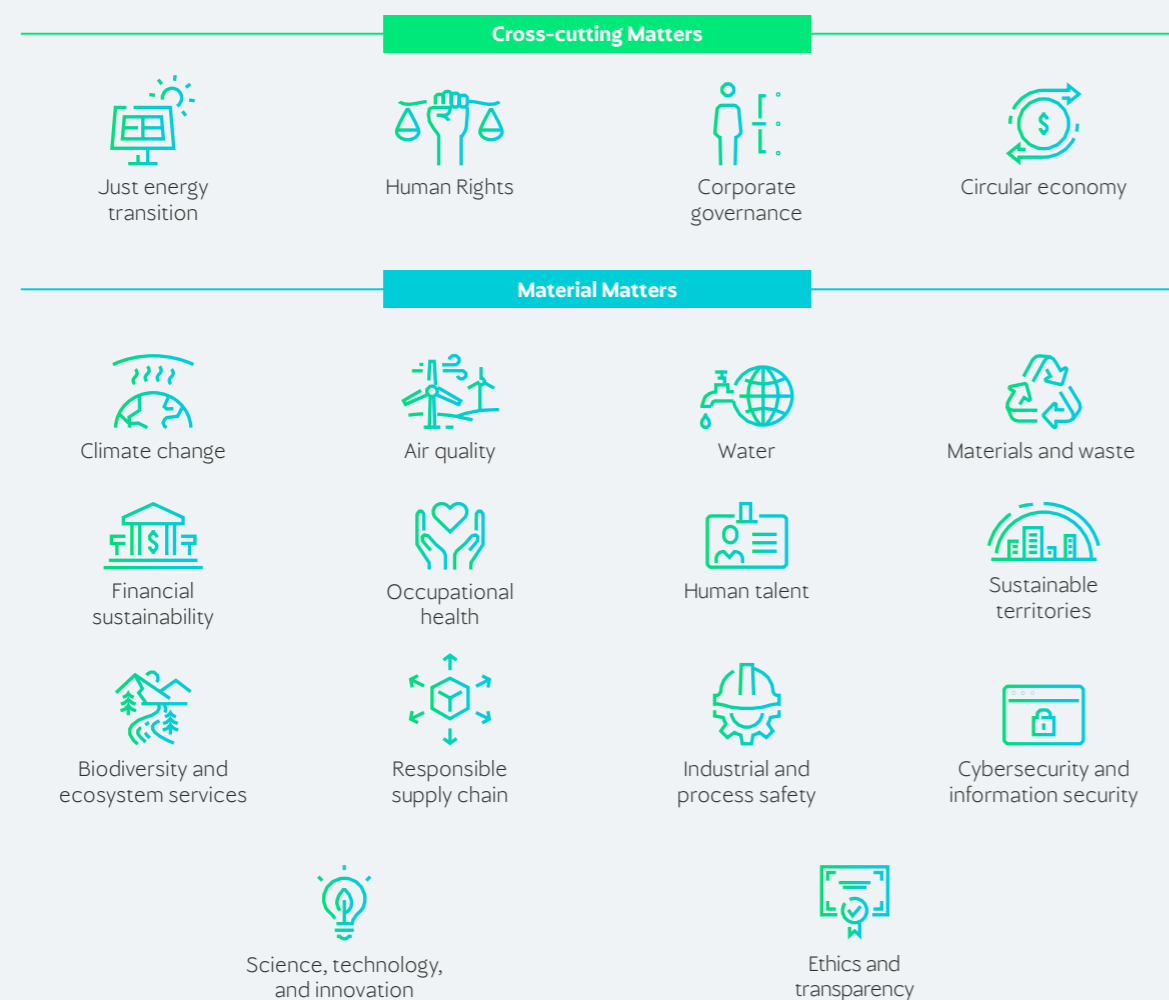
Material Issues for Ecopetrol

In 2020, the last materiality analysis was performed for Ecopetrol, in which 28 issues were defined and segmented into exceptional, notable, differentiated, and compliance-related.

(GRI 3-1-a) The 2023 materiality update identified four (4) issues understood as cross-cutting themes that permeate the material issues. Thus, **Just Energy Transition, Human Rights (HR), corporate governance, and circular economy** are elements that, in addition to being in the DNA of the business, leverage the management of material issues.

Moreover, a thorough analysis was conducted to discern and chart the interconnections among the identified elements. The following diagram provides a visual representation of the intricate relationships among different ESG issues (very strong, strong, or moderate), in relation to the nature and activities associated with each one. This information highlights the importance of integrated management, recognizing that the actions developed within the framework of one of the issues may have effects on another, achieving, for example, maximizing results or reducing efforts.

(GRI 3-2) (WEF 3) (DJSI 1.3.2)



Material Topics and Subtopics

(GRI 3-2) (WEF 3) (DJSI 1.3.2) (DJSI 1.3.4)

ESG Elements	Definition
Climate change	It consists of managing climate change mitigation and adaptation, addressing the impacts, risks, and opportunities (both physical and transitional) associated with climate change, diversifying Ecopetrol's product portfolio towards greener alternatives, and optimizing resource consumption, including energy. Subtopics: Climate change adaptation, Climate change mitigation, Risks related to climate change, Decarbonization, Diversification, and Energy consumption optimization.
Air quality	Strategies associated with air quality. Inventory of atmospheric emissions to verify criterion pollutants. Establishing targets to reduce atmospheric emissions of criterion pollutants and VOCs. Implementing knowledge management and adopting technologies for the prevention, control, and monitoring of criterion pollutant emissions. Subtopics: Criterion pollutants.
Water	Actions and initiatives outlined in Ecopetrol's Water Neutrality Roadmap are geared towards achieving water positivity by 2045. This entails enhancing operational efficiency in water consumption and management, advancing technology to improve water treatment systems, and implementing interventions to promote water resource sustainability, safeguard water sources, and ensure water security in areas affected by Ecopetrol's operations. Subtopics: Water required for operations, Effluents, Water-related risks, and Watershed compensation.
Biodiversity and ecosystem services	Enhanced actions aimed at the protection and conservation of biodiversity in operations, prioritizing the preservation of local ecosystems and their vital services, their ecosystem services, and the hierarchy of mitigation when ecosystems are intervened. Subtopics: Land use, Conservation efforts, Compensation measures, Ecosystem services
Materials and waste	Addresses operational and organizational measures developed by Ecopetrol to reduce the quantity and hazard of generated waste, applying source reduction strategies, material recovery through circular economy principles, and the closure of materials and waste cycles. Subtopics: Materials management, Waste management and utilization, Product lifecycle, and Sustainable inputs.
Occupational health	Healthy and safe working conditions are recognized as a human right. Occupational health and safety include preventing physical and mental harm and promoting workers' health. Subtopics: Occupational health and safety for employees, Occupational health and safety for contractors.
Industrial and process safety	Asset integrity and critical incident management address the prevention and control of incidents that may cause fatalities, injuries, illnesses, environmental impacts, or harm to local communities and infrastructure. This topic covers the impacts of these incidents and Ecopetrol's approach to managing them. Subtopics: Asset integrity, Injury-free operations, Operations with zero containment losses, and Emergency preparedness.
Human talent	Fostering the development and well-being of employees, recognizing them as the organization's most valuable asset. We cultivate an environment that is diverse, inclusive, safe, and geared towards professional growth. This includes providing fair compensation, flexible work schedules, and comprehensive benefits. Furthermore, we continually strive to improve our capacity to attract, retain, and develop highly skilled talent. Subtopics: Strengthening and developing capabilities for the energy transition, Knowledge management and learning, Labor and union relations, Attraction and retention of specialized talent, Diversity, equity, and inclusion; Culture and Well-being, and quality of life.

ESG Elements	Definition
Sustainable territories	Facilitating sustainable development in the territories where Ecopetrol operates, strengthening resilience to environmental conditions while striving to generate economic and social benefits. Subtopics: Engagement and social dialogue, and Territorial development.
Responsible supply chain	Promoting sustainability in Ecopetrol's supply chain to ensure that all stakeholders adhere to consistent ethical, environmental, and social standards, thereby reducing risks. Efforts are also made to ensure suppliers provide fair and favorable working conditions. Subtopics: Local sourcing, Supplier training and development on ESG issues, Ethics and transparency practices with suppliers, ESG criteria assessment for suppliers, and Sustainable procurement.
Financial sustainability	Strategy for Ecopetrol's long-term economic value generation. Subtopics: Economic value generation, Financial sustainability, National and global market trends, Tax management, Tax incentives, and Fiscal transparency.
Cybersecurity and information security	Ensuring the effective management, protection, and appropriate handling of security, privacy, and confidentiality of information and data pertaining to clients, employees, suppliers, and other stakeholders. Subtopics: Cybersecurity management, Information security, Security for computer systems and services, Cyber incident management, and Regulation.
Science, technology, and innovation	Driving innovation and digital transformation within Ecopetrol, encompassing the development and implementation of novel solutions, technologies, and strategies to enhance competitiveness and sustainability. Subtopics: Technological infrastructure, Digitalization, Scientific development, and Research.
Ethics and transparency	Promoting integrity and fostering ethical and transparent behavior throughout Ecopetrol, with the goal of building trust among all stakeholders and maintaining a zero-tolerance approach towards fraud, corruption, bribery, and money laundering. Subtopics: Responsible business conduct, Responsible labor conduct, Ethical business practices, Access to information, and Information reporting.

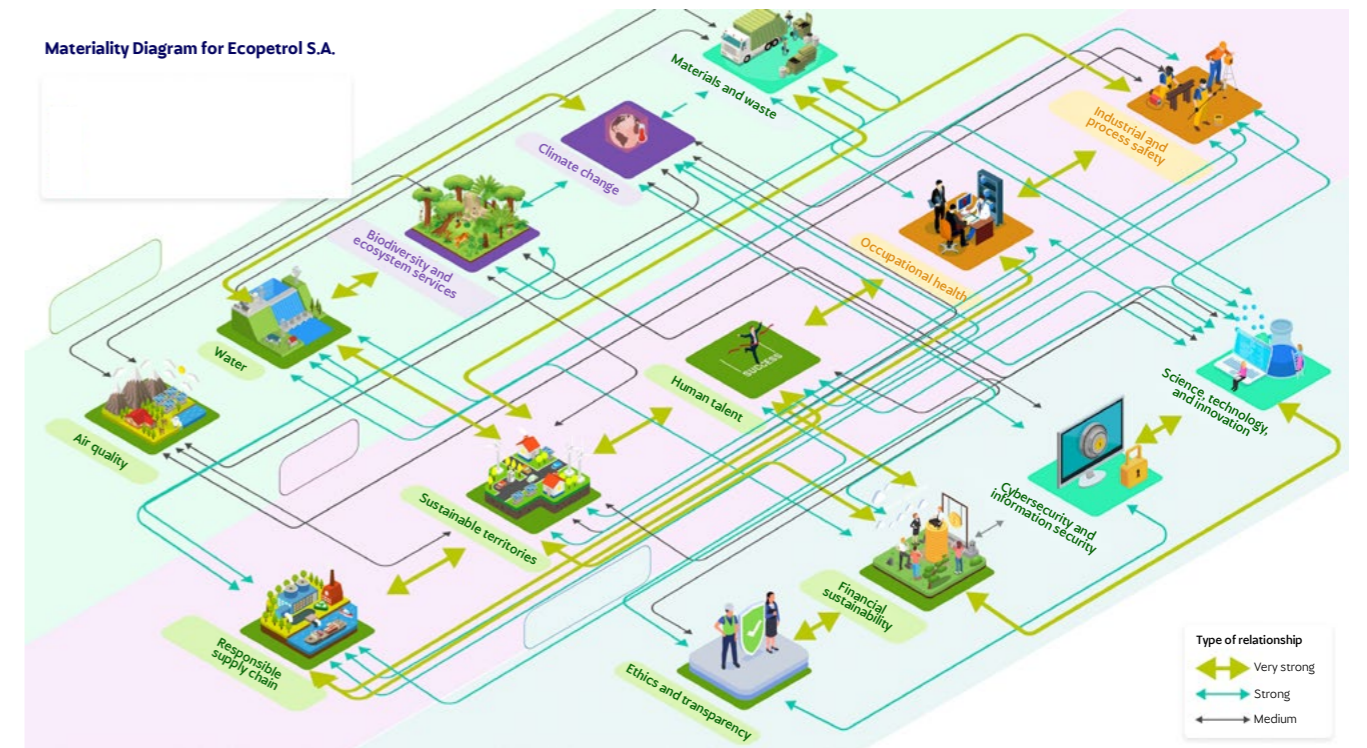


Materiality Diagram for Ecopetrol S.A

Node-Link Relationship

An analysis was developed to determine and map the existing relationship between the identified elements. The following diagram shows the type of relationship that exists between the different ESG issues (very strong, strong or medium), in relation to the nature and actions developed and managed from each of them.

This information highlights the importance of managing the elements in an integrated manner, bearing in mind that the actions developed within the framework of one of the issues may have effects on another, achieving, for example, maximizing results or reducing efforts.



Contribution to the Sustainable Development Goals

The United Nations adopted the Sustainable Development Goals (SDGs) in September 2015, aiming to eradicate poverty, address inequality and injustice, and tackle climate change by 2030. The responsibility for implementing the 17 SDGs, which encompass 169 targets, is shared between the public and private sectors. Consequently, companies play a significant role in achieving these ambitious goals.

In its commitment to the SDGs, with a particular emphasis on SDG 16³⁴, Ecopetrol recognizes that contributing to society involves developing operations in an integrated, sustainable, and responsible manner.

Hence, the Generate Value Through T ESG pillar under the 2040 Strategy is underpinned by the role of corporate responsibility in managing and anticipating issues related to corporate citizenship and T ESG (environmental, social, governance, and technology). This approach focuses on generating responsible, safe, and efficient operations while fostering a harmonious relationship with the environment and stakeholders, all within a framework of transparent and ethical governance, by leveraging technology for developing innovative solutions to current and future challenges.

In this context, the Company has actively contributed to the economic, social, and environmental development of the regions where it operates and the entire country. This contribution is realized through robust corporate governance and business conduct anchored in values and ethical principles. Integrity, transparency, and respect for human rights serve as central tenets of this management.

(DJSI 1.5.1) As a signatory to the United Nations Global Compact since 2009 and a Company adhering to the UN Guiding Principles on Business and Human Rights, Ecopetrol aligns its corporate strategy and operations with principles related to labor rights, equality, non-discrimination, environmental protection, and the fight against corruption, among others.

(DJSI 3.2.1) In this regard, the Company reaffirms its commitment to respecting human rights, as established in the International Bill of Human Rights³⁵ and the Declaration on Fundamental Principles and Rights at Work adopted by the International Labour Organization (ILO), along with various international instruments³⁶. To fulfill this commitment, it acts with due diligence, identifying and implementing preventive measures to proactively address situations that could impact the human rights of their holders, including workers, communities, and suppliers, among others.

Consistent with this responsible approach, Ecopetrol set its goal of achieving net-zero carbon emissions by 2050, reducing emissions by 25% in Scopes 1 and 2 by 2030, and reducing emissions by 50% in Scopes 1, 2, and 3 by 2050. The Company also aims to eliminate routine flaring and achieve zero methane emissions by 2030. Additionally, Ecopetrol commits to being water-neutral³⁷ by 2045, involving a 66% reduction in freshwater intake for industrial use, elimination of discharges into freshwater bodies, and compensation of the 34% remaining water consumption, as well as the designation of 30 eco-reserves by 2030 and conservation and restoration actions in more than 30,000 hectares by 2030, among other long-term initiatives. The Company also strives to

contribute to inclusive employment, increase local procurement, and promote diverse productive ventures in the national industry.

On the other hand, Ecopetrol has strengthened its inter-institutional relationships to contribute to peace, justice, and strong institutions through ongoing communication with authorities, creating safe dialogue spaces with communities, and closing socio-economic gaps in various areas of the national territory. The Company mobilizes resources and efforts to increase its capacity of exerting a positive impact, particularly in the regions where it operates.

In line with its commitment to peacebuilding and strong institutions, the Company rejects any conduct that goes against ethics and transparency. It calls on all Stakeholder Groups to uphold ethical actions at all times.

Through its 2040 Strategy, within the framework of the Just Energy Transition, Ecopetrol works to ensure energy security, cost-effective access to energy sources, and environmentally responsible resource management, thereby creating value for all stakeholders.

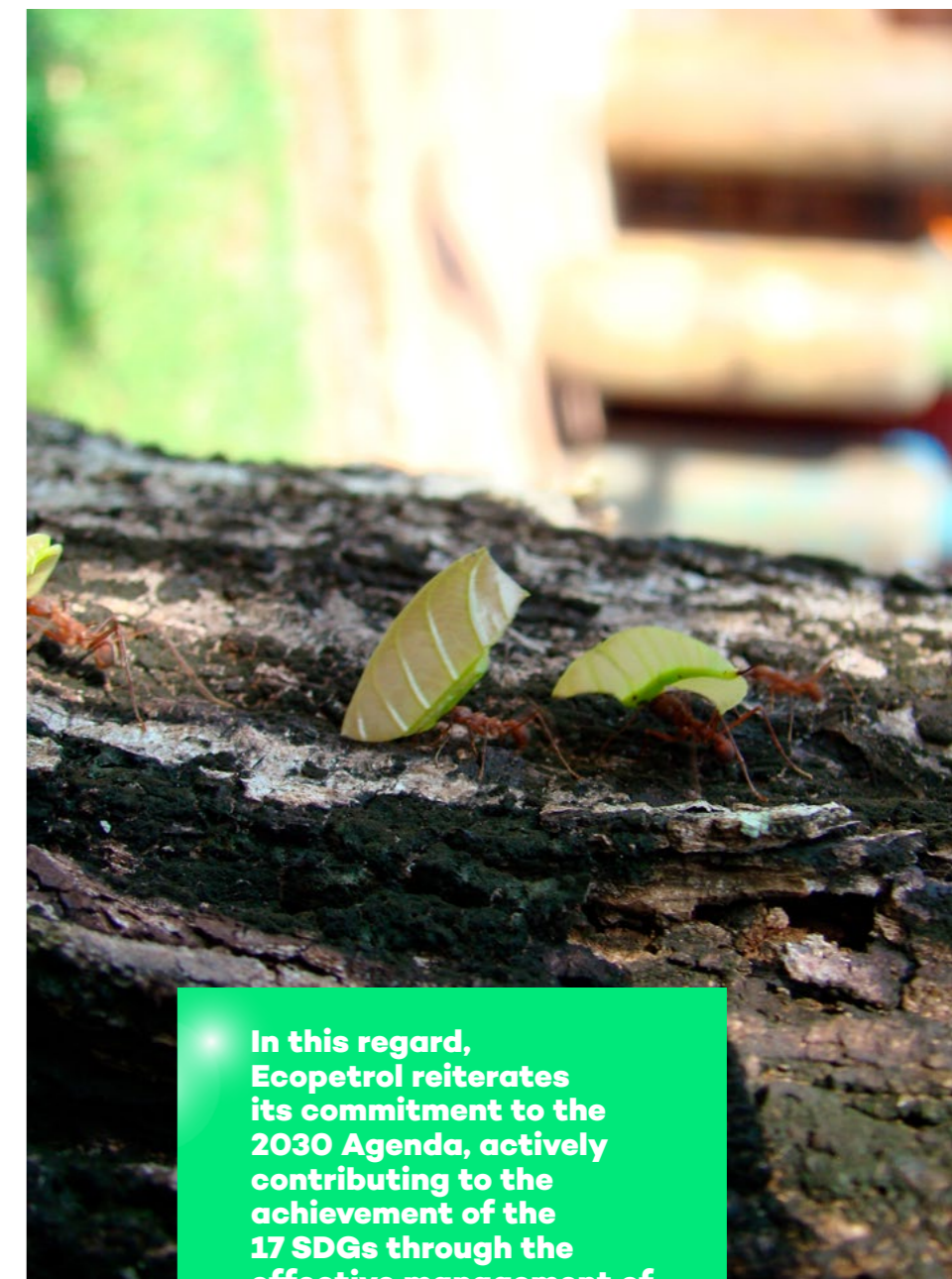
In this regard, Ecopetrol reiterates its commitment to the 2030 Agenda, actively contributing to the achievement of the 17 SDGs through the effective management of its material issues. By sharing its endeavors to attain these goals, the Company strives to inspire more sustainable practices within its sphere of influence, encompassing clients, suppliers, employees, and other stakeholders.

34. SDG 16: Peace, justice, and strong institutions.

35. The International Bill of Human Rights comprises the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights, and the International Covenant on Civil and Political Rights and its two Optional Protocols.

36. United Nations Guiding Principles on Business and Human Rights, the Ten Principles of the Global Compact, and the OECD Guidelines for Multinational Enterprises. It also commits to following the Voluntary Principles on Security and Human Rights, ILO Convention 169, and Performance Standard 7: Indigenous Peoples of the International Finance Corporation.

37. This involves replenishing at least 100% of the water consumed by the Company's operations.



In this regard, Ecopetrol reiterates its commitment to the 2030 Agenda, actively contributing to the achievement of the 17 SDGs through the effective management of its material issues.

By sharing its endeavors to attain these goals, the Company strives to inspire more sustainable practices within its sphere of influence, encompassing clients, suppliers, employees, and other stakeholders.

Table 6.3.1.
SDGs impacted by material issues

Material Issue	Impacted SDGs	Material Issue	Impacted SDGs
Climate Change	7 AFFORDABLE AND CLEAN ENERGY, 13 CLIMATE ACTION	Industrial and Process Safety	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE, 14 LIFE BELOW WATER, 15 LIFE ON LAND
Air Quality	3 GOOD HEALTH AND WELL-BEING, 11 SUSTAINABLE CITIES AND COMMUNITIES, 13 CLIMATE ACTION	Human Talent	3 GOOD HEALTH AND WELL-BEING, 4 QUALITY EDUCATION, 5 GENDER EQUALITY, 8 DECENT WORK AND ECONOMIC GROWTH, 10 REDUCED INEQUALITIES
Water	6 CLEAN WATER AND SANITATION, 14 LIFE BELOW WATER		
Biodiversity and Ecosystem Services	1 NO POVERTY, 6 CLEAN WATER AND SANITATION, 8 DECENT WORK AND ECONOMIC GROWTH, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION, 14 LIFE BELOW WATER, 15 LIFE ON LAND, 17 PARTNERSHIPS FOR THE GOALS	Sustainable Territories	1 NO POVERTY, 2 ZERO HUNGER, 3 GOOD HEALTH AND WELL-BEING, 4 QUALITY EDUCATION, 5 GENDER EQUALITY, 6 CLEAN WATER AND SANITATION, 7 AFFORDABLE AND CLEAN ENERGY, 8 DECENT WORK AND ECONOMIC GROWTH, 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE, 10 REDUCED INEQUALITIES, 11 SUSTAINABLE CITIES AND COMMUNITIES, 16 PEACE, JUSTICE AND STRONG INSTITUTIONS, 17 PARTNERSHIPS FOR THE GOALS
Materials and Waste	11 SUSTAINABLE CITIES AND COMMUNITIES, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION		
Responsible Supply Chain	8 DECENT WORK AND ECONOMIC GROWTH, 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE, 10 REDUCED INEQUALITIES, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION, 15 LIFE ON LAND	Cybersecurity and Information Security	17 PARTNERSHIPS FOR THE GOALS
Financial Sustainability	8 DECENT WORK AND ECONOMIC GROWTH, 17 PARTNERSHIPS FOR THE GOALS	Science, Technology, and Innovation	6 CLEAN WATER AND SANITATION, 7 AFFORDABLE AND CLEAN ENERGY, 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE, 13 CLIMATE ACTION
Occupational Health	3 GOOD HEALTH AND WELL-BEING, 8 DECENT WORK AND ECONOMIC GROWTH	Ethics and Transparency	16 PEACE, JUSTICE AND STRONG INSTITUTIONS, 17 PARTNERSHIPS FOR THE GOALS

Human Rights (HR)

To enhance the practice of information disclosure and accountability to its Stakeholder Groups, Ecopetrol has taken significant steps in acknowledging its responsibility to respect human rights. The Company adopted the United Nations Guiding Principles Reporting Framework, leading to the publication of Ecopetrol's first Special Report on Human Rights. This report offers a comprehensive historical overview of the evolution of human rights in the Company, delving into due diligence exercises and mechanisms for addressing complaints and facilitating remediation.

Public Commitment to Respecting Human Rights

(GRI 2-23) (DJSI 3.2.1)

Companies recognize that their activities generate impacts across social, economic, environmental, and, more recently, technological and digital dimensions, directly affecting individuals as rights holders. This is the reason why human rights are a prevalent aspect in company management.

This evolving trend necessitates organizations, from decision-making bodies to employees throughout their value chain, to actively engage in due diligence actions, ensuring the respect for human rights across their operations.

Ecopetrol's public commitment to respecting human rights was formally established in 2009 and has continuously evolved, with its most recent update in 2023 through the approval of a new version of the Guide on Human Rights and Business (the Guide). This commitment is responsive to the social, environmental, and economic realities of the territories in which the Company and its Group operate. It adapts to the evolution of national and international standards and regulations, Stakeholder expectations, and the Company's annual performance, assessed through internal management indicators and international benchmarks.

The Ecopetrol Group's current **public commitment**, as expressed by its CEO and outlined in the Guide, strongly emphasizes the promotion and respect of human rights and reinforces management strategies to facilitate a Just Energy Transition. Within this transition, the EG's commitment is further emphasized in promoting practices associated with diversity, equity, and inclusion at all organizational levels, ensuring equal rights, and fostering safe environments for everyone.

This commitment to respecting human rights is cross-cutting at strategic, tactical, and operational levels, encompassing all internationally recognized rights in the United Nations International Bill of Human Rights and the principles outlined in the ILO Declaration on Fundamental Principles and Rights at Work. Additionally, it adheres to the highest international standards, including the United Nations Guiding Principles on Business and Human Rights (UNGPs), the Ten Principles of the Global Compact, and the OECD Guidelines for Multinational Enterprises. Simultaneously, it aligns with instruments such as the Convention on Biological Diversity and UN General Assembly Resolution 76/300 on the human right to a healthy environment.

To contribute to the achievement of the SDGs, the Group rigorously assumes commitments derived from the Paris Agreement, placing emphasis on the necessity for a Just Energy Transition to mitigate climate change. Consequently, the commitment is reiterated to continue creating scenarios that enable the Company and its various Stakeholder Groups to effectively address current environmental and social challenges.

Workers, members of the Steering Committee, as well as internal and external experts, have actively participated in the development and updating of various versions of the Human Rights Guide. The Company's Board of Directors has also been thoroughly briefed on the Human Rights Strategy.

The recently updated Guide on Human Rights and Business was crafted by Ecopetrol's internal specialized team (Corporate Responsibility Management) and was subsequently validated with members of the Steering Committee to comprehensively address different issues within the Company's departments falling under the broad umbrella of human rights: diversity, equity, and inclusion (DEI), physical security, ethics,

Human talent, ethnic communities, labor issues, among others. This rigorous approach ensures the cross-cutting integration of the human rights topic within Ecopetrol teams. Additionally, the Guide underwent validation with international and national experts, whose contributions are evident in ensuring the adoption of the highest standards in the field.

(GRI 2-23) (DJSI 3.2.1) The Guide on Human Rights and Business, along

with the commitment derived from it and the Human Rights Strategy, were extensively discussed with the Board of Directors and subsequently approved by the CEO of Ecopetrol.

The Guide's recipients include members of boards of directors and EG workers, as well as suppliers, who are obligated to observe this commitment in their activities. These recipients must be well-versed in the Guide and apply

accordingly, ensuring that their actions consistently align with its guidelines. Ecopetrol also urges its partners, customers, agents, and other actors with whom it holds any contractual or commercial relationship to adopt the Guide, especially in the context of joint activities.

(GRI 2-23) Furthermore, within the framework of Ecopetrol's operations, the commitment to respect, promote, and defend specific rights and freedoms is deeply embedded in the **Code of Ethics and Conduct**. This Code of Ethics applies to both the board members and employees of Ecopetrol S.A. and its Group. Its scope encompasses all individuals, whether natural or legal, who have affiliations with the Company, including beneficiaries, shareholders, contractors, suppliers, agents, partners, clients, partners (including joint ventures), and bidders. It also includes the personnel and firms engaged by contractors for the execution of agreed-upon activities. Consequently, compliance with this Code is obligatory for all recipients, and a thorough understanding and implementation thereof are imperative.

The **Guide on Labor Aspects and Conditions in activities contracted by Ecopetrol** not only addresses labor-related matters but also incorporates comprehensive human rights guidelines, ensuring their applicability to suppliers and contractors throughout the entire supply chain.

(GRI 2-23) (DJSI 3.2.1) In the context of its operations and contractual and commercial relationships, Ecopetrol has made a proactive and distinctive commitment to respecting, promoting, and defending a spectrum of rights and freedoms. These include the right to life; personal integrity; personal freedom; children's rights, with a specific emphasis on the prohibition of child labor; the right to equality and non-discrimination; freedom of expression; the right to information; the right to privacy and the protection of personal data; the right to the participation of ethnic groups through prior consultation; collective rights and environmental rights; the right to work in dignified, favorable, suitable, and non-discriminatory conditions; prohibition of forced or compulsory labor and human trafficking; freedom of association and collective bargaining;

and finally, the right to health and safety at work.

Aligned with its commitment and guided by the **Human Rights Risk Management Cycle Guide**, Ecopetrol ensures due diligence in human rights by actively identifying, preventing, mitigating, and, where applicable, addressing human rights risks or situations with the potential to affect one or more human rights holders (every human being) as a direct or indirect outcome of business activities. During the execution of this due diligence, a comprehensive range of Stakeholder Groups is taken into account, encompassing employees, retirees, beneficiaries, the community, suppliers and their workers, as well as other actors involved in Ecopetrol's activities.

Adhering to the principle of a differential approach, Ecopetrol respects the rights of individuals belonging to groups that may be particularly vulnerable to adverse impacts on their human rights. Thus, in the course of its business activities, the Company applies a differential approach to prevent, mitigate, or remedy these impacts, considering components such as gender, ethnicity, origin (migrant population), sociocultural characteristics, disability, sexual orientation, and other factors outlined in **Ecopetrol's Diversity, Equity, and Inclusion Guide**. Notably, Ecopetrol underscores its

commitment to safeguarding the rights of children and teenagers as subjects of differential attention. It is worth noting that Ecopetrol has declared its **Commitment to Human Rights Defenders** given the vital role of human rights defenders in due diligence, as well as for democracy and society.

The Company's human rights management has undergone scrutiny by the Dow Jones Sustainability Index (DJSI), which highlights that Ecopetrol's performance in this area has steadily improved over the years. This improvement is evident in its alignment with the UNGPs, as well as in the prevention and mitigation of human rights risks at the operational level, in communities, and with other Stakeholder Groups. It is noteworthy that, in the last measurement conducted in 2023 for the period 2022, the Company demonstrated the **best performance in the human rights category with a score of 92/100**, surpassing the industry average of 57 in the Oil & Gas sector. **A perfect score of 100/100 was achieved in three (3) out of the four (4) categories: commitment, due diligence, and evaluation.** For 2024, Ecopetrol's challenge is to sustain its leadership in committed and respectful human rights management and narrow the existing gap in the "mitigation and remediation" category, where it currently scores 67/100, while the industry average is 21.



● Ecopetrol Recently Updated its Guide on Human Rights and Business

In addition to reaffirming the Company's unwavering commitment to respecting, promoting, and defending human rights, this comprehensive update includes:

- Integration of the 2040 Strategy "Energy That Transforms" and its alignment with human rights principles.
- Introduction of the concept of a Just Energy Transition as a crucial element in human rights management.
- Explicit references to the Paris and Escazú Agreements to be considered in the execution of due diligence.
- Firm commitment to the Convention on Biological Diversity and UN General Assembly Resolution 76/300, recognizing the fundamental human right to a healthy environment.
- Heightened emphasis on contributing to the achievement of the Sustainable Development Goals (SDGs).
- Commitment to combat modern slavery and human trafficking.
- Inclusion of commitments aligning with the International Finance Corporation's (IFC) standards.
- Expansion of the spectrum of rights to be addressed in a proactive and differential manner, accompanied by a reinforcement of the principles guiding human rights management.
- Adjustments made to the complaint mechanisms to meet rigorous international standards.



Roles and Responsibilities (GRI 2-24)

Human rights represent a significant corporate responsibility for all Stakeholder Groups (SG) within Ecopetrol and are deeply embedded in the 2040 Strategy. It is crucial to highlight that, in late 2023, the Company's materiality underwent an update. This comprehensive evaluation underscored that effective human rights management is a pivotal, cross-cutting factor in value generation and in the proper handling of material elements. Consequently, a structured internal distribution of responsibilities spans from the strategic to the tactical and operational levels.

From the corporate governance standpoint, it is imperative for management teams to assume a leadership role in upholding and advocating for human rights. They should possess a nuanced understanding of the key rights relevant to their organization and integrate the necessary tools for their effective management. In the case of Ecopetrol, human rights considerations are brought to the attention of the Company's Board of Directors through its Corporate Governance and Sustainability Committee.

This committee meticulously assesses the strategy, trends, and advancements in human rights, addressing critical issues identified through periodic due diligence exercises. The Steering Committee, comprised of the CEO

and vice presidents of Ecopetrol, is also actively engaged in these matters, ensuring a continuous flow of information pertaining to human rights management within the Company. This approach is geared towards furnishing them with pivotal and strategic insights for decision-making, always safeguarding the interests of rights holders.

Concurrently, the Corporate Affairs Vice Presidency and General Secretariat (VAC), operating through the Corporate Responsibility Management (GRT), plays a pivotal role in solidifying Ecopetrol's standing as an exemplary corporate citizen. It steers the behavior of the Group by adhering to best practices and standards of corporate responsibility, TEGS, and human rights. To achieve this, the VAC is entrusted with governing and directing human rights matters within the Company.

The GRT orchestrates the human rights management cycle, collaborating with other corporate and operational areas to implement necessary actions within the framework of respecting and promoting human rights, ensuring corporate due diligence under the Annual Human Rights Plan.

Moreover, through the relationship model with EG companies, the Corporate Responsibility function assumes responsibility

for formulating and disseminating the human rights guidelines to be followed by the Group's subsidiary and affiliated companies, by periodically monitoring the implementation of these guidelines.

In conclusion, both corporate and business areas, with their inherent roles and responsibilities, actively uphold the respect for human rights within their respective management frameworks. They undertake due diligence actions, including: (i) the identification and management of operational human rights risks; (ii) human rights assurance in the supply chain; (iii) dialogue with communities; (i) management of complaint communication channels associated with human rights (e.g., the Ethics Line and the Citizen Participation Office), (v) management of labor relations; and (vi) communication and disclosure to Stakeholder Groups.

The strategic distribution of roles and responsibilities aims to foster an environment of trust, transparency, and accountability. This approach ensures the prevention and mitigation of impacts on rights holders while concurrently promoting the long-term sustainability of operations and investments and upholding the integrity of the business.

Figure 6.4.1.
Human Rights Governance



Source: Corporate Affairs Vice Presidency and General Secretariat.

Ecopetrol has actively pursued the enhancement of its human rights (HR) policies, bringing matters related to their management to the forefront of its leadership hierarchy. This proactive approach aims to ensure that all governance processes, procedures, and practices guiding corporate behavior align with the principles of respecting and promoting human rights. This responsible conduct involves a comprehensive understanding of potential risks and impacts that might arise from the Company's operations or activities.

Gestión en DD.HH.

Guided by **eight fundamental** principles outlined in the *Guide on Human Rights and Business*, Ecopetrol's HR management encompasses:

- 1 Reparation
- 2 Cross-cutting nature
- 3 Continuous improvement
- 4 Complementarity
- 5 Due diligence in HR
- 6 Collaborative work
- 7 Differential approach
- 8 Continuous improvement

It is worth noting that the principles of reparation and territorial approach were incorporated with the Guide's recent update. Additionally, the principle of monitoring and self-assessment was replaced by a continuous improvement focus.

To ensure the proper application of HR guidelines and uphold due diligence, Ecopetrol formulates its

Human Rights Action Plan (Annual Plan) on an annual basis. This plan, rooted in the PDCA cycle, outlines actions to be taken and ensures management in compliance with the highest standards.

Over the last three (3) years, Ecopetrol has achieved a **100% compliance** rate for the Human Rights Action Plan, surpassing the 90% target.

In 2023, the Corporate Responsibility Management (GRT) supported the development of the Human Rights Action Plan for select companies within the EG. This effort considered the updated Guide on Human Rights and Business, identified gaps, results of self-diagnoses, best practices, and standards adopted by Ecopetrol, among other sources.

Due Diligence in Human Rights

(GRI 2-24) (GRI 406-1) (DJSI 3.2.2)

Within its HR management framework, Ecopetrol refrains from violating the human rights of third parties and addresses negative consequences involving the Company (Guiding Principle 11³⁸). To achieve this, the Ecopetrol identifies, prevents, mitigates, and/or remedies negative impacts on the rights of those affected by its business activities. This follows the guidelines outlined in the [Human Rights Risk Management Cycle Guide](#), launched in 2021, based on the UNGPs and in accordance with the Ecopetrol group's Integrated Risk Management Guide.

This process allows for the early identification of potential HR violations due to environmental and/or social situations. It ensures responsible business conduct in the Company's activities, commercial relationships, or in the supply chain.

Ecopetrol's due diligence adheres to the highest standards, especially those outlined in the UN Guiding Principles on Business and Human Rights, the OECD Guidelines, and the ILO Conventions. This process includes consultation with different Stakeholder Groups,

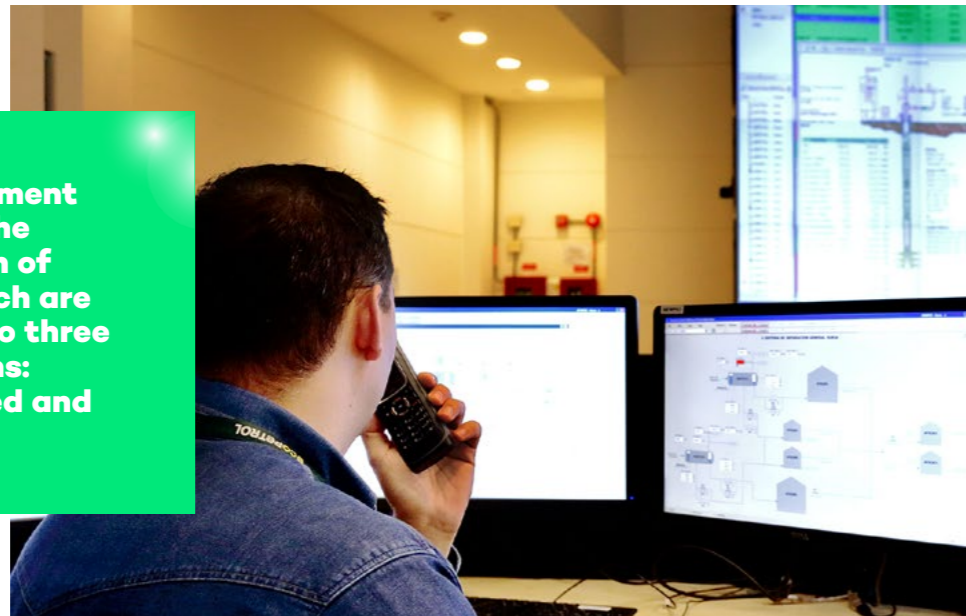
incorporating the variables of severity and probability.

Risk management is based on the identification of impacts, categorized into three (3) dimensions: real (already occurred), perceived (rooted in public perception), and potential (with a probability of materializing but not yet occurred). The Company incorporates these three facets into risk management, addressing them from the prevention of causes to the mitigation of possible adverse consequences³⁹.

38. Companies must respect human rights. This means they should refrain from violating the human rights of third parties and address the negative consequences on human rights in which they have any involvement.

39. United Nations. The responsibility of companies to respect human rights. Guide for interpretation. Available in [1242258_HR_PUB_12_02_SPA.pdf \(acnudh.org\)](#) Page 19.

Risk management is based on the identification of impacts, which are classified into three (3) dimensions: real, perceived and potential.



Human Rights Evaluation

(GRI 406-1) (GRI 11.11.7) (WEF 20E) (DJSI 3.2.2)

Process Implemented for Due Diligence in Human Rights

Ecopetrol follows a continuous and timely cycle for managing HR risks through the [Human Rights Risk Management Cycle Guide](#). Aligned with the IRS framework and the unique risk management cycle, the following details the specificities of the Company's HR risk management process in various stages:



Figure 6.4.2. Methodological Process for Identifying Operational HR Risks



Phases	Stage	Actions / activities
Preparation Phase	• Communication • Planning	Pedagogical and socialization sessions related to the Guide, along with engagements with prioritized areas pertaining to the planning of the human rights risk assessment process. These areas demand special attention due to their specific activities or operations.
Information Gathering Phase	• Identification • Assessment	Collecting information through fieldwork and focus groups to characterize human rights risks, followed by an evaluation considering severity and probability criteria. This process adheres to the methodology outlined in the Guide and aligns with the provisions of the Guiding Principles on Business and Human Rights (GPBHR).
Action Plan Phase	• Treatment • Monitoring • Recording, Reporting, and Responsibilities	The objective of this phase is to establish and implement necessary actions based on the identified risks. It offers guidance on periodically monitoring the management of established treatment measures, and responsibilities for managing human rights risks are assigned according to the risk level.

Source: Corporate affairs Vice Presidency and General Secretariat

The Bowtie methodology is employed to facilitate the integration of causes and consequences related to a specific risk, as well as to effectively identify the necessary prevention and mitigation measures. This visual technique provides a clear representation of action plans to be implemented based on the identified risk, considering both causes and potential impacts. Applying the Bowtie methodology allows for a more comprehensive understanding of human rights risk management in the Company's operations, aligning with international standards.

It is widely known that business operations can have impacts⁴⁰ on human rights holders⁴¹, who are integral to the stakeholder groups that interact continuously with companies. Hence, it is crucial to establish frameworks that define responsibilities for respecting and promoting human rights in business activities.

As a predominantly state-owned company, Ecopetrol is called to lead by example, supported by a strong and consistent corporate governance aligned with human rights commitments. This includes the identification and management of human rights risks and impacts (GPBHR 4⁴²), following the principle of due diligence.

(GRI 411-1) (GRI 412.1) (WEF 22E) (DJSI 3.2.3) Based on the above, Ecopetrol conducted impact assessments in 2023 to identify the potential impacts of its activities in two regions (Orinoquia and Andean East), one process (physical security), and one collaborative working area with a business partner (La Cira Infantas – SierraCol). These assessments identified, analyzed, and evaluated risks that could affect the actual exercise of human rights.

It is essential to highlight that while the activities also have benefits for rights holders, these risk assessments focus on the potential negative impacts that may arise from the operation. These results provide an overall view of the causes and consequences of these risks, enabling the implementation of prevention or mitigation measures that align with national and international standards for respecting human rights.

This assessment encompassed the analysis of rights explicitly acknowledged by the Company in its **Human Rights Guide**, such as the right to life and personal integrity, a dignified life, the right to a healthy environment and health, with a specific focus on mental health, access to information, and participation, among others. Risks linked to

Table 6.4.1.
Human Rights Assessments

Region/Processes	Geographic Areas
Andean East	Neiva
	Rubiales
	Orito
Orinoquia	Meta
La Cira Infantas	Barrancabermeja
Physical Security	Cross-cutting

Source: Corporate affairs Vice Presidency and General Secretariat

human trafficking, forced labor, child labor, freedom of association and collective bargaining, non-discrimination, and decent working conditions were also scrutinized. The initiative took particular care to consider women, children, adolescents, indigenous peoples, migrant workers, contractors, and local communities in the Company's due diligence and in the analysis of human rights-related risks.

(GRI 411-1) (GRI 412-1) (DJSI 3.2.3) (WEF 22E)

As part of its due diligence, Ecopetrol identified and evaluated potential impacts and risks associated with respecting human rights concerning its own activities, the supply chain, and other business relationships.

40. GPBHR Principle 12 states as follows: "whenever a company's operations have the potential to affect a broad range of internationally recognized human rights, its responsibility to respect applies to all such rights."

41. The term "rights holders" refers to individuals or groups whose human rights may be directly or indirectly affected by the company's activities across all its areas and levels, including workers, suppliers, contractors, and the community at large.

42. GPBHR 4 states that the closer a company is to the State, the more justified it is for the State to ensure that it respects human rights. In these cases, companies are owned or controlled by the State and have greater means to enforce policies, laws, and regulations related to human rights.

Table 6.4.2.
Human Rights Assessments

2023 Human Rights Assessment	Percentage of total operational sites assessed for human rights risks	Percentage of total operational sites where human rights risks have been identified	Percentage of operational sites with human rights risks for which management actions have been implemented
Own operations	100%*	100%	100%
Tier 1 contractors and suppliers	100%**	5.6%	100%
Joint Venture	100%*	100%	100%

* In 2023, Ecopetrol's primary objective was to thoroughly assess, identify, and mitigate risks within its own operations and joint ventures situated in the Orinoquia and Andean East regions.

** This commitment extends to evaluating the performance of significant suppliers, specifically in criteria such as Administrative, HSE, and Environmental aspects.

*** For the year 2023, Ecopetrol identified and scrutinized 124 significant suppliers, assessing them in at least one of the three criteria mentioned (Administrative, Environmental and/or HSE). Out of these, 7 suppliers (5.6%) exhibited performance deviations, each accompanied by a comprehensive Corrective Action Plan (100%).

(GRI 409-1) (GRI 11.12.2) (WEF 14) (WEF 22E) After conducting a comprehensive human rights risk analysis at the regional level and continuous monitoring of operations, Ecopetrol reported no cases involving forced or compulsory labor risks

within its own operations or supply chain in 2023.

Emphasizing its commitment to personal integrity and freedom, Ecopetrol strictly prohibits forced or compulsory labor and human

trafficking. The Company actively promotes respect among its workers and partners through various means, including talks, focus groups, and the incorporation of contractual clauses to prevent any situations in violation of these principles.



Mitigation and Remediation Measures

(GRI 2-25) (GRI 411-1) (GRI 11.17.2) (DJSI 3.2.4) (WEF 22E)

In adherence to international human rights standards, as outlined by the principles of due diligence, Ecopetrol actively engages in the identification, evaluation, treatment, and monitoring of human rights risks. This proactive approach aims to establish preventive and mitigative measures in situations where the rights of stakeholders may be adversely affected. Furthermore, the Company is committed to adopting reasonable reparations or remediation measures whenever the assessment results indicate that Ecopetrol has caused or contributed to adverse impacts on human rights.

The commitment to due diligence in human rights is not limited to public declarations but extends to ensuring remediation mechanisms in the event of potential violations, as stipulated in the GPBHR.

Ecopetrol's Guide on Human Rights and Business, beyond affirming its commitment to respect human rights, meticulously defines available remediation mechanisms for rights holders affected by business activities. Through these mechanisms, individuals can submit their claims, which will be promptly managed, analyzed, and resolved.

The Company has instituted accessible internal and external channels to ensure that all Stakeholder Groups have avenues to address various concerns, including those pertaining to

human rights. Thus, individuals whose rights might be impacted by Ecopetrol's business activities can use the following channels to voice their grievances effectively. These include utilizing Citizen Participation Offices, the Ethics Line, the Work Coexistence Committee, the Human Rights Commission of the Current Collective Labor Convention, and environmental committees. Through these channels, Ecopetrol diligently manages, evaluates, and delivers timely and high-quality responses to all received petitions.

In the context of potential human rights impacts, any individual who believes their rights have been violated can utilize established channels for the prevention, mitigation, or remediation of human rights violations. These provisions, which may be implemented collaboratively with third parties such as the State, local authorities, civil society organizations, among others, involve a differential approach tailored to approved measures.

In 2021, Ecopetrol conducted a comprehensive self-diagnosis on complaint mechanisms from a human rights perspective. This exercise facilitated the creation of specific criteria to identify requests, complaints, and/or claims related to human rights issues, marking them within the Company's reception system through provided channels. Subsequently, when a petition,

complaint, or request (PQR) enters the system, responsible employees are obligated to specify whether the issue is associated with human rights. To ensure clarity on key human rights concepts, training sessions have been conducted, allowing for the proper identification of relevant human rights issues and the development of prevention and mitigation plans for different Stakeholder Groups.

Regarding disputes arising within its operations, Ecopetrol, recognizing the right of the community or any other rights holder to access the administration of justice, actively promotes the use of Alternative Dispute Resolution Mechanisms (ADRs). The Company acknowledges the National Point of Contact, as outlined in the OECD Guidelines and regulated through Decree 1400 of 2012, currently under the Ministry of Commerce, Industry, and Tourism of Colombia, as a mediation mechanism in situations where there is controversy over the application of these guidelines.



Human Rights Risk Prevention and Mitigation Plans.

(GRI 411-1) (GRI 11.17.2) (DJSI 3.2.4) (WEF 22E)

In instances where Ecopetrol recognizes that it has caused or played a role in generating adverse impacts on the human rights of others, the Company will offer compensation or remediation for the effects, with a commitment to addressing each case on an individual basis.

Upholding the principles of transparency and accountability, Ecopetrol disseminates public reports detailing its preventative and mitigative measures designed to reduce or eliminate negative impacts on rights holders.

Derived from comprehensive risk analyses, the subsequent action plans represent specific measures adopted to address human rights concerns that warrant particular attention:

Table 6.4.3.
Human Rights Action Plans

Prioritized Rights	Identified Risk	Prevention Actions	Mitigation Actions
<p>Right to life and integrity</p>	Impact on the life and/or personal security of human rights advocates.	Educate, comprehend, and foster awareness in the realm of human rights. Ecopetrol aims to convey its public commitment to all Stakeholder Groups and internal procedures, as applicable, while fostering collaborations with relevant entities.	Notification of realized events to the competent authorities.
		Bring any alleged threats and extortions to the attention of competent authorities in relationship-building meetings with institutions (Ombudsman's Office, Public Defender's Office, Public Forces, municipal and gubernatorial offices).	Promote spaces with the Ministry of the Interior, the Ombudsman's Office, and the Public Defender's Office to offer training and raise awareness on human rights institutional protection mechanisms for the various stakeholders in the territory.
		Continue holding dialogue spaces on the issue of conflict and delve into the importance of the role as human rights advocates in the relationship with Stakeholder Groups.	Promote awareness and strict adherence to the due diligence guide.
		Publicize and ensure understanding of the human rights due diligence guide concerning the topics of life and personal integrity.	Ensure prompt communication from Ecopetrol in response to emerging situations.
		Sustain joint strategies with physical security to reinforce the surveillance programs of the public force in the areas of influence with reported threats.	Activation of internal protocols tailored to address the specific event type.
		Include human rights issues within community and societal strengthening plans.	Establishing fora for comprehensive lessons learned and ensure widespread dissemination.
	Impact on the life and/or personal safety of workers	Train, familiarize, and instill awareness on the subject of human rights, and disseminate Ecopetrol's public commitment to all Stakeholder Groups (including the public force and private security companies) and internal procedures, when applicable, while creating synergies with relevant entities.	Proactive notification of realized events to the relevant authorities.



Continued...

Prioritized Rights	Identified Risk	Prevention Actions	Mitigation Actions
		Activate the protection route in the event of threats against direct officials and inform the National Protection Unit (UNP).	Initiate the security route in response to threats against key personnel, particularly those holding union leadership roles. (Inform the UNP).
		Publicize and implement the due diligence guide for addressing and reporting threats to life and personal integrity.	Implement a comprehensive psycho-social support and health assistance plan for employees and their families, complete with corresponding action plans.
		Bring to any alleged threats and extortions to the attention of the competent authorities.	Activate the Operational Continuity Plan and other internal protocols to effectively address the event based on its typology.
		Provide support to employees in reporting possible human rights violations to the authorities.	Create dedicated spaces lessons learned and ensure broad dissemination.
		Publicize and familiarize with the human rights due diligence guide with regard to the topics of life and personal integrity, continue and/or implement, as applicable, the safety capsules and training for the surveillance service.	
		Activation of crisis prevention and response teams.	
 <p>Collective and environmental rights</p>	Impact on the right to dignified living conditions, a healthy environment, and the health of communities	Advance the water neutrality program.	Strengthen emergency and contingency plans.
		Execute the pipeline, lines, and vessels inspection program, including projects associated with line replacement.	Disseminate established contingency plans to the surrounding communities.
		Adhere rigorously to the surface and subsurface integrity program.	Activate the Incident Command System
		Consistently disseminate service and complaint channels (OPC).	Monitor environmental conditions after realized events.
		Integrated waste management plan.	Engagement spaces with communities, authorities, and institutions in the areas affected by the events.
		Continue working on robust environmental awareness campaigns.	
		Emergency response programs.	
 <p>Worker's rights</p>	Impact on dignity, integrity, and/or workplace harassment.	Promote widespread awareness of Ecopetrol's workplace harassment prevention policy and related established procedures.	Continuously generate prevention campaigns on the issue of harassment using materials from other sources (lessons learned, courses, etc.) to reinforce knowledge on the topic within the workgroups.
		Further the promotion of reporting mechanisms.	Report the filed complaint to the Ethics department to ensure appropriate attention to the situation.

Prioritized Rights	Identified Risk	Prevention Actions	Mitigation Actions
		Campaigns with organizational leaders to strengthen the planning and scheduling of activities with a view to achieving work-life balance.	Professional psychosocial support
		Conduct workshops, meetings, and/or talks to elevate awareness among leaders and contractor employees on human rights issues, including workplace harassment.	Generate lessons learned focused on workplace behavior concerning harassment.
	Restrictions on the rights to work and decent working conditions.	Implement a vigilant monitoring plan to ensure contractors' compliance with labor obligations.	Generate lessons learned focused on work behavior.
		Strengthen the labor recruitment mechanisms defined in Decree 1668 of 2016, through communication and awareness campaigns.	Encourage spaces for socializing and disseminating information (through various communication channels) regarding project activities to community stakeholders, workers, and contractors to foster transparent processes and prevent speculation/generation of unwarranted labor expectations that may lead to high migration flows to the operating areas.
		Promote and raise awareness about the established means for addressing complaints and concerns related to contracting and labor. Permanently disseminate OPC channels.	
		Reinforce engagement plans with Stakeholder Groups (SG)	
	Impact on freedom of association and collective bargaining in the supply chain	Enhance communication to contractor companies and workers in the supply chain on project commitments pertaining to union matters (extended to all suppliers and contractors) related to the respect for the right to freedom of association and collective bargaining, including: o Ecopetrol's Guide on Human Rights and Business. o Guide on labor aspects in activities contracted by Ecopetrol	
		Strengthen the appropriation and use of the Citizen Participation Office (OPC) by contractor workers to raise and process complaints related to threats, violence, and other forms of limitation to union activity by contractor companies.	
 <p>Right to Equality and Non-Discrimination</p>	Escalation of Gender-Based Violence (GBV) and Sexual Harassment	Provide training and awareness campaigns on handling situations related to gender-based violence and workplace harassment.	Report the case to the relevant department and request support (psychosocial and/or legal) if needed
		Inform about the reporting mechanisms.	Share lessons learned within the direct working group of the event, always maintaining confidentiality and respecting the privacy of the individuals involved.
		Generate awareness campaigns (videos, graphic pieces, etc.) based on lessons learned.	Reinforce the dissemination of reporting lines and corresponding support services.
		Disseminate Ecopetrol's protocols for addressing cases of gender-based violence, harassment, or discrimination.	Activation of Ecopetrol protocols for addressing cases of gender-based violence, harassment, or discrimination.

Continued...



Prioritized Rights	Identified Risk	Prevention Actions	Mitigation Actions
		Follow-up meetings with the Gender Commission established in CCT-2023-2026 to promote training, dissemination, and communication actions on gender equity, as well as incorporating information collected by the Commission for the continuous improvement of protocols for preventing gender-based violence, harassment, or discrimination.	Review by the Gender Commission established in CCT-2023-2026 to continually enhance training, dissemination, and communication actions promoting gender equity, and gathering relevant information for the continuous improvement of protocols for preventing gender-based violence, harassment, or discrimination.
Cultural and Ethnic Rights 	Violation of cultural, ethnic, and territorial rights of indigenous communities	Mapping of ethnic communities, including possible actors not identified by competent authorities.	Establish a review group to identify specific causes and implement corresponding actions for each case.
		Manual dissemination of engagement guidelines with ethnic groups (distribution, cultural traits, among others) to the Stakeholder Groups interacting in the territories (contractors, employees, suppliers, etc.)	Improve the plan for engaging with ethnic communities.
		Continue the institutional engagement plan with ethnic group authorities through informative sessions.	Review the mapping of ethnic communities, including possible actors not identified by competent authorities.
		Continue raising awareness and implementing the corporate procedures guide on ethnic management applicable to contractors and other Stakeholder Groups undertaking activities in the territory.	
Right to information 	Barriers to the effective enjoyment of the right to information.	Emphasize the work of the Citizen Participation Office, providing timely and relevant information, addressing PQRs, mobile OPC, permanent OPC, and disseminating contact channels.	Review and implement lessons learned from real activation scenarios in business continuity plans.
		Follow-up strategy with institutions present in the territory (Municipalities, Superintendence of Industry and Commerce, and Ministry of Transportation) to strengthen information and participation of local companies in a scenario of free competition, transparency, and plurality (in accordance with the Institutional and Community Engagement Plan).	Effective and close communication with the parties affected about specific events requiring attention.
		Disseminate the different lines, social media channels, Ecopetrol's website, among others, that contain relevant information for Stakeholder Groups https://www.ecopetrol.com.co/wps/portal/Home/es/transparencia-acceso-informacion/transparencia-acceso-informacion	

Source: Corporate affairs Vice Presidency and General Secretariat

Remediation at Ecopetrol Through a Specific Case

(DJSI 3.2.4)

In the latest update of the Guide on Human Rights and Business, Ecopetrol has incorporated reparations as a fundamental management principle, specifically outlining that whenever the Company identifies its responsibility for adverse impacts on human rights, whether caused or contributed, corresponding compensation or remediation will be provided through operational claims mechanisms or within the framework of any other legitimate process.

Ecopetrol recognizes that, despite the implemented strategies, actions such as attacks by illegal armed groups on oil infrastructure or unintentional crude oil spills have adversely affected communities in the area of influence. This impact extends to water resources, biodiversity, and, in some cases, individuals. Aligned with its commitment to remediation, Ecopetrol has formulated plans in accordance with the law to address the rights of affected individuals.

An exemplary case illustrating these principles is the **Lisama 158** incident, offering valuable lessons and exemplifying the established remediation mechanisms for such risks and impacts.

On March 2, 2018, an emergency occurred in the La Fortuna district in Barrancabermeja (Santander) due to atypical emissions of crude oil, gas, and mud on the Santo Tomás property. Upon learning of the situation, Ecopetrol promptly deployed teams to ensure proper attention, aiming to restore and enhance the socio-economic conditions of the populations affected by the environmental event.

The emergency response focused on: i) the comprehensive protection of individuals; ii) conducting a diagnosis and socio-economic restoration; and iii) revitalizing the economy.

The Company has implemented action plans to enhance its recovery efforts, with a biodiversity component achieving an impressive 98.7% compliance as of December 31, 2023.

The Lisama case stands out as emblematic for Ecopetrol in terms of attention and recovery. This experience has empowered the Company to learn valuable lessons, fortify its internal guidelines and teams to proactively mitigate new social and environmental risks, and, when necessary, execute timely and efficient remediations to restore affected natural components and communities.

To delve deeper into the remediation measures adopted by Ecopetrol, please refer to the Special Human Rights Report by scanning the provided QR code.

Ecopetrol is unwavering in its commitment to operating in harmony with the environment and communities. The Company employs programs that restore ecosystems on lands impacted by historical operational practices. Through innovative practices and advanced technologies, Ecopetrol not only mitigates environmental impacts but also revitalizes biodiversity, fostering the natural regeneration of the environment. An illustrative example of this commitment is showcased in the experience in El Llanito, Barrancabermeja, accessible by clicking [here](#).

For additional information on other pertinent corporate responsibility matters, including cases associated with human rights prevention, mitigation, and remediation actions, please visit the following link.



Communication and Training

(GRI 2-23)

Aligned with the commitment to keep Stakeholder Groups well-informed, the Company annually guides the members of governing bodies, staff, suppliers, and partners on matters related to human rights and its management through various communication channels. These include both in-person and virtual training sessions, a virtual human rights course, live-streamed talks, distribution of audiovisual and informative materials, focus groups for identifying human rights risks, the Integrated Management Report, and the official website, among other tools and media.

These fora comprehensively address issues ranging from internal policies and Ecopetrol's commitment to respecting human rights to the national and international standards adhered to by the Company, such as the GPBHR. Additionally, they cover emerging topics like the implications of the Energy Transition on human rights and other cutting-edge subjects, ensuring that Ecopetrol remains up-to-date on human rights matters. Key highlights for 2023 include:

- The ongoing virtual Human Rights and Business course, completed by over 8,600 Ecopetrol employees, was updated in 2023 and is scheduled to be implemented across the entire Company workforce in 2024.
- Ethical Moment initiatives involved the dissemination or replication of key human rights information (related to due diligence and the commitment to respect) in work areas, engaging over 1,000 employees acting as ethical mentors.
- Focus groups, incorporating suppliers, direct collaborators, contractors, and community members, contributed to enhancing human rights risk assessment exercises in two (2) regions (Orinoquía and Andean East) and one (1) process (physical security).
- Over 1,100 connections were recorded in the live-streamed talks addressing topics like Success Factors for a Human Rights-Respectful Supply Chain, the Relationship Between Human Rights and the Environment, and Energy Transition and Human Rights.
- Top management, board members of EG companies, and suppliers received training from an international expert affiliated with Centro Vincular at Pontificia Universidad Católica de Valparaíso.
- Informative pieces detailing the EG's commitment to human rights and the Risk Management Cycle were disseminated to all partners and suppliers.

The impact of our SG training is clearly demonstrated through the outcomes of the annual perception and expectations survey directed towards them. The survey underscores the growth in knowledge among Stakeholder Groups regarding Ecopetrol's commitments and mechanisms related to the respect for human rights. Identified as an area for improvement in the previous fiscal year, a majority of Stakeholder Groups witnessed enhancements of up to 25 percentage points, reflecting a robust focus and effort on the topic.

Table 6.4.4
Security Personnel Trained in Human Rights Policies or Procedures
(GRI 410-1)

Human Rights Training	Unit of measurement	2023
Number of security personnel who have received formal training in specific human rights policies or procedures	#	3,041
Total number of security personnel	#	3,170
Percentage of security personnel who have received formal training in specific human rights policies or procedures	%	95.93

Just Energy Transition

In 2023, efforts persisted in exploring the implications of a Just Energy Transition on human rights. The Company organized discussions with external experts concerning the nexus between the Energy Transition, Climate Change, and Human Rights. These sessions aimed to encourage constructive dialogues among employees regarding the challenges and opportunities for the Company, the EG, and the industry in this domain. Additionally, documentary reviews and sessions were conducted to delve into national and international trends relevant to the topic.

Recognizing the vital role of continually integrating respect for human rights into the 2040 Strategy as a facilitator for goal achievement, particularly those linked with the Just Energy Transition, this concept was integrated as a fundamental element in managing human rights at Ecopetrol. It also forms part of the public commitment to human rights in the updated Guide on Human Rights and Business.

In alignment with the foregoing, and acknowledging that the Just Energy Transition in Colombia can bridge disparities and offer opportunities to ensure access, participation, and development with environmental responsibility, Ecopetrol addresses this issue from **four (4) major perspectives:**

- 1 Facilitating access to clean energy:** Through the Just Energy Transition (JET), the goal is to provide, maintain, and transport energy in an affordable manner, preserving access for current users and expanding reach to new users. The projection is to reach +70,000 potential new users by 2024.
- 2 Promoting the evolution of the workforce in decent working conditions:** By equipping employees with new skills through reskilling and upskilling initiatives. Ecopetrol aims to have 70% of its workforce undergo retooling by 2030.
- 3 Fostering resilient communities:** Through social dialogue and active community participation in Ecopetrol's areas of influence.
- 4 Promoting collaboration and transparency:** By ensuring timely and transparent information about projects associated with the Just Energy Transition.

The implementation of these perspectives is reinforced by the EG's commitment to carry out all its activities and those involving its value chain within the framework of respecting human rights.

The incorporation of this concept is also formulated in direct relation to the EG's commitment to contribute to achieving the SDGs and mitigating climate change through the diversification of the service portfolio and consolidation as a diversified energy group.

In this context, the EG has participated in the consolidation of a portfolio of initiatives with the potential to become Energy Communities. To learn more, refer to the Energy Communities section of this report.

● Compliance with the Conventional Commitments Established in Chapter XVII of the Collective Labor Agreement (CLA) in the Matter of Human Rights

The 2023-2026 Collective Labor Agreement incorporates Chapter XVII, titled "Human Rights and Peace." This chapter serves as a collaborative platform for Ecopetrol and the Oil Industry Workers' Union - USO to cultivate an environment that upholds and defends the right to life, human rights, peaceful coexistence, conflict resolution, and peace within the Company and its areas of influence.

The National Commission on HUMAN RIGHTS AND PEACE ECP-USO comprises two (2) representatives from Ecopetrol and four (4) representatives from the USO labor union. Additionally, six (6) subcommittees on human rights and peace, comprising representatives from Ecopetrol and the union, work collaboratively on the development of this chapter.

Key Activities of the National Human Rights Commission ECP-USO in 2023

- In the realm of human rights, support and collaboration with the Colombian state, and due diligence actions by the National Human Rights Commission and the USO, have facilitated the guarantee of the right to life and integrity of union leaders throughout the territories where union organizations are present and in the areas of influence of Ecopetrol S.A. This was accomplished through the conduct of eight (8) sessions focused on security and human rights due diligence.
- The Human Rights Commission conducted eight (8) regular sessions and three (3) extraordinary sessions. These sessions, held in each of the Human Rights subcommittees, defined internal promotion and prevention strategies, sharing safety and human rights protocols in each area.
- Strengthening and development of educational programs in human rights and peace in the territories, including 12 regional human rights workshops, regional peace assemblies, and the implementation of a human rights diploma course in partnership with Universidad Nacional, with the participation of 39 Ecopetrol workers in 2023.
- Two (2) semi-annual human rights meetings were held, attended by the National Human Rights and Peace Commission and the ECOPETROL-USO Regional Human Rights Subcommittees, featuring expert speakers in the field of human rights.
- Follow-up on agendas and building solutions for the effective protection of human rights within due diligence, including the monitoring of cases of relocated workers in different areas of the Company in previous years.
- Within the framework of the collective labor agreement and under the principle of due diligence, sessions were held with the United Nations and the National Protection Unit to review the security situation of union leaders nationwide.

● Promotion of Human Rights in the Supply Chain

(ECPO31) (GRI 11.10.9)

Ecopetrol acknowledges that fulfilling its responsibility to respect, promote, and defend human rights extends beyond its operations to encompass its entire value chain, as articulated in its Guide on Human Rights and Business.

Within its internal labor regulations for contracted activities, the Company outlines specific labor standards that every supplier must adhere to when conducting operations for Ecopetrol. This policy explicitly commits to upholding all human rights, with particular emphasis on the following aspects within the supply chain:



Providing decent, favorable, suitable, and non-discriminatory working conditions.



Prohibiting forced or compulsory labor and human trafficking.



Ensuring equality in employment and occupation.



Safeguarding the freedom of association and collective bargaining.



Eliminating any form of child labor.



Furthermore, **human rights contractual clauses are integrated to guarantee the respect, promotion, and defense of human rights.**

Performance evaluations for contractors encompass environmental, social, and labor-related aspects associated with human rights.

Ecopetrol is steadfast in its commitment to ensuring human rights within its value chain.

- To underscore the significance of the commitment to respecting human rights, the Company introduced the Human Rights and Diversity, Equity, and Inclusion Annex—an updated contractual supplement applicable to suppliers, emphasizing respect for human rights and due diligence in Ecopetrol’s supply chain.
- Over 150 contract administrators received training on issues related to human rights, the commitment to respecting human rights at Ecopetrol, due diligence, and Due Diligence Instructions for addressing complaints related to threats or harm to life and personal integrity.
- Communication materials on human rights, the relationship between human rights and businesses, and due diligence in human rights were disseminated to all suppliers.
- Ecopetrol supported 15 Small and Medium-sized Enterprise (SMEs) suppliers, guiding them in exercising due diligence in human rights, and formulating, updating, and implementing their human rights policies; and in general, in the management of human rights within the framework of the BPBHR through the Humane-Biz platform.
- Ecopetrol sponsored the Human Rights in the Supply Chain Program, led by the Ideas para la Paz Foundation. This initiative reinforced the understanding of international human rights standards in business management among suppliers in Casanare.
- Conducted the e+ Knowledge talk on "Supply Chains Respectful of Human Rights".
- Operational human rights risk assessments were carried out with top suppliers that concentrate the majority of labor exclusively dedicated to Ecopetrol. This allowed the Company to listen to suppliers, identifying risks, and developing collaborative strategies to create treatment plans incorporating preventive and mitigating measures.

Table 6.4.5.
Significant Investment Agreements and Contracts* with Human Rights Clauses or Subject to Human Rights Evaluation (ECP 030) (WEF 22E)

Agreements with Human Rights Clauses	2023
Number of significant investment agreements and contracts with human rights clauses or subject to human rights evaluation	3,846
Total number of significant investment agreements and contracts	3,846
Percentage of significant investment agreements and contracts with human rights clauses or subject to human rights evaluation.	100

* Significant Investment Agreements are defined, on one hand, as agreements or their derived cooperation agreements executed with the primary goal of safeguarding critical infrastructure. These agreements are also deemed representative in terms of risks or impacts associated with human rights.
On the other hand, service contracts signed from 2016 onwards, and still effective as of December 31, 2023, fall under the purview of Supply Management (goods and services). These contracts are subject to the annex on human rights and corporate social responsibility.

Environmental Strategy

(SASB EM-EP-160a.1) Ecopetrol’s Environmental Strategy outlines the Company’s environmental management guidelines, encompassing its vision, principles, and objectives, as well as the identification of strategic environmental pillars and levers. Aligned with the Generate Value Through T ESG pillar of the 2040 Strategy, this strategy propels corporate goals associated with sustainability.

The Environmental Strategy has garnered high-level endorsement, validated by the Health, Safety, and Environment (HSE) Vice President, underscoring its strategic importance in adhering to environmental guidelines within Ecopetrol’s operations.

(DJSI 2.1.3) Implementation takes place within the framework of the Company’s HSE management system, in compliance with the guidelines established by the ISO 14001 standard.

The specific objectives of the Environmental Strategy include:

- Ensuring environmental legal compliance.
- Systematically identifying and managing potential environmental impacts and risks associated with Ecopetrol’s activities, with a focus on continuous improvement and the application of a mitigation hierarchy.
- Achieving continuous improvement through the definition of strategic pillars and levers.
- Promoting an environmental culture among employees, contractors, and the business group.
- Generating long-term environmental value in the operations’ surroundings.
- Facilitating the achievement of corporate environmental goals on the path to the Energy Transition.

For further insights into the Environmental Strategy, scan the provided QR code.



(DJSI 2.7.1) (TCFD GR-1.3) Furthermore, it is aligned with Ecopetrol’s Risk Management System (IRS), seeking to enhance the prevention of potential risks that may affect natural resources and biota, while also ensuring readiness and response to environmental emergencies. This framework is applicable across all Ecopetrol projects and activities and can be likewise adopted by EG companies.

The strategy is structured around **eight (8) strategic pillars**.



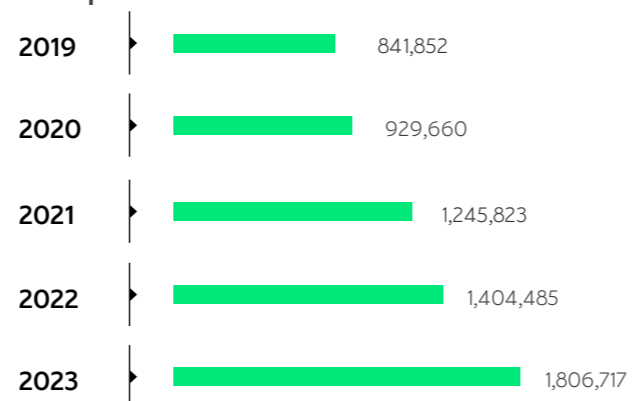
Environmental Investments and Expenditures



In 2023, Ecopetrol made a total environmental management investment of approximately **MCOP 1,806,717** representing a **22% increase** compared to the year 2022.

This data is visualized in Figure 6.5.1 and is reported to the General Comptroller's Office of the Republic during the first quarter of each year.

Figure 6.5.1
Ecopetrol's Environmental Investments and Expenditures in MCOP



The investment allocation is detailed as follows:

MCOP 325,337

for various activities, including environmental education, the dissemination of environmental initiatives, hiring personnel for environmental management, preparation of environmental studies, and legal procedures.

MCOP 62,669

for the management of water resources.

MCOP 95,597

directed towards the restoration and preservation of forests.

MCOP 337,343

for the restoration and preservation of air quality.

MCOP 205,273

for the restoration and preservation of the soil.

MCOP 26,694

in biodiversity.

MCOP 543,842

in drinking water and basic sanitation.

MCOP 209,358

in risk management.

MCOP 604

in urban environmental management.

Environmental Planning and Compliance

Prior knowledge and diagnosis of environmental aspects, along with the specific regulations of the areas where Ecopetrol undertakes projects and operations, facilitate the identification of potential environmental impacts and essential opportunities for conceiving and planning measures primarily focused on applying the hierarchy of mitigation. This contributes to the successful development of operations, the viability of new projects, and sustainable development in the regions of operation.

In obtaining environmental authorizations, Ecopetrol adheres to national regulations associated with citizen participation in the regions where it intends to conduct its operations and projects. This aims to inform stakeholders about the scope of activities, as well as the potential environmental and social impacts. It involves collaborative construction of environmental management measures with various social actors in the areas of influence of the projects or operations.

Throughout the execution phase, continuous communication

mechanisms are established with authorities, communities, associations, and other stakeholders to understand and respond to concerns related to the environmental management of projects and operations. For this purpose, the Company has a Citizen Participation Office to address inquiries and complaints, meeting the requirements of interested parties within the timelines established by Colombian law.

It is important to note that the Colombian government, through the National Environmental Licensing Authority (ANLA, as per its Spanish acronym), as part of the National Environmental System, is responsible for evaluating and authorizing projects, works, or activities in the hydrocarbons sector. To comply with the legal and environmental requirements for a project, Ecopetrol submits an environmental license application or its corresponding modification to the authority by means of an Environmental Impact Assessment. This process includes the identification of environmental and social impacts, both with and without the project, classified as

indirect, synergistic, and cumulative.

Moreover, an evaluation and assessment are carried out using methodologies appropriate to the nature of the project, justifying the assessment of each impact, whether negative or positive. Additionally, the Environmental Impact Assessment proposes environmental management programs, offering a detailed description of the set of actions, measures, and activities aimed at preventing, mitigating, correcting, and compensating for environmental and social impacts identified during the development of a project, work, or activity.

In terms of environmental legal compliance, corporate guidelines are developed according to the sub-element of the HSE Management System. Annually, the Environmental Legal Compliance Index is assessed to monitor the fulfillment of requirements.

Ecopetrol S.A. holds **430 valid environmental authorizations** issued by national and regional environmental authorities, distributed as follows:

Table 6.5.1.
Environmental Authorizations issued by authority:

Business Segment	Environmental Licenses/ Environmental Management Plans/ Environmental Management Measures	Permits for the Use and Exploitation of Natural Resources	Lifting of Bans
Upstream (exploration – production)	168	242	5
Refining	2	9	0
Other	0	4	0

In this context, noteworthy achievements include:

- Successfully managing **27,620** tasks and addressing **23,738** legal requirements to ensure the timely fulfillment of obligations set by environmental authorities in the Company's operations and projects. In 2023, Ecopetrol S.A. received notifications for **3,820** administrative acts, with **1,635** acts subject to systematic monitoring at the strategic, tactical, and operational levels to ensure compliance within specified timeframes and locations.
- Executing the planning of environmental authorizations, handling the submission of **237** reports, procedures, and various requests to the Ministry of Environment and Sustainable Development, ANLA, and the Regional Autonomous Corporations (CAR, as per its Spanish acronym). **Five (5)** environmental studies were conducted, wherein impacts were identified and evaluated to formulate management measures aimed at mitigating, correcting, preventing, and compensating for environmental and social impacts.
- Conducting an environmental public hearing as part of the modification process for the Comprehensive Environmental Management Plan (PMAI) for Cubarral before ANLA in November and December 2023.



Ecopetrol obtained **117 national (12 from ANLA) and regional (105 from CAR) environmental authorizations** for the use and exploitation of natural resources and **35 preventive archeology authorizations**, which guarantee the development of operations and projects.

Notable environmental authorizations obtained before ANLA include:

Three (3) environmental licenses for the following projects: Rubí Marine Exploratory Drilling Area, Flamencos Development, and Receptor Norte Exploratory Drilling Area.

One (1) Environmental License modification: Cusiana T Development Well Area.

One (1) modification to the Comprehensive Environmental Management Plan



Analysis of Risks, Opportunities, and Corporate Positions Related to Environmental and Social Regulations.

(EM-EP-530a.1)

Ecopetrol has established collaborative workspaces with the Ministry of Environment and Sustainable Development and, more broadly, with members of the national environmental system. The objective is to advance the review, analysis, and development of regulations and public policies addressing challenges related to energy transition, environmental issues, and climate concerns. This effort aims to strike a balance in mitigating impacts while fostering socio-economic development and the well-being of the country.

To ensure continuous monitoring of current and applicable environmental legal requirements in Colombia, the Company systematically documents the inclusion of environmental regulations and communicates this information to the relevant departments. In international markets, Ecopetrol operates through subsidiaries, each responsible for monitoring and adhering to the environmental regulations of the respective countries.

Concerning climate change, Ecopetrol proactively identifies challenges at the national level related to compliance with regulatory and management requirements for greenhouse gas emissions and climate change adaptation. These challenges are integrated into the Company's climate action plan. Internationally, ongoing monitoring is conducted on discussions surrounding energy transition and decarbonization. Ecopetrol actively engages in various exchanges to identify challenges and alignment mechanisms with its climate ambitions.

Lastly, it's crucial to underscore that Ecopetrol considers both national and international public policy frameworks and regulatory norms when establishing sustainability indicators and objectives.

Circular Economy

Following the materiality exercise conducted by the Company in 2023, Circular Economy was identified as a cross-cutting element within material issues, as it is present throughout different stages in Ecopetrol's value chain, enabling a more robust leverage of the 2040 Strategy, specifically in the pillar of Generate Value Through TESG.

Circular Economy is characterized as a production and consumption system that advocates for efficient and sustainable resource management across the value chain, aiming to mitigate risks and generate new opportunities for both the company and society. Through process efficiency, material recirculation, and innovative business models, Circular Economy seeks to enable and positively contribute to nature and the strategic objectives of the Group.

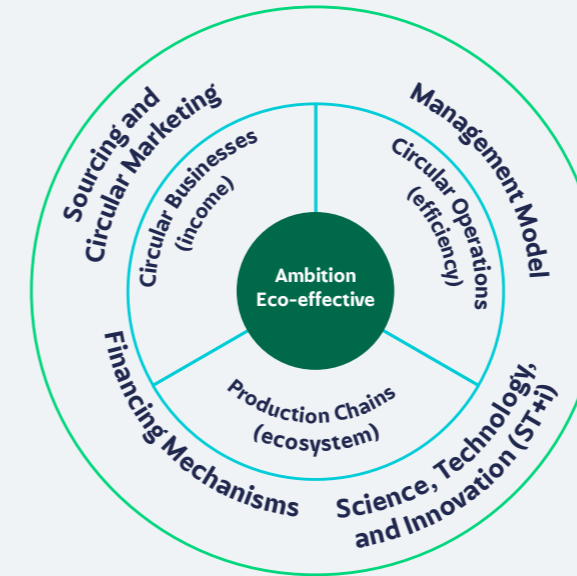
The circularity model has been revamped, comprising:

- (i) A renewed vision extending to 2040.
- (ii) Three strategic fronts: circular businesses, circular operations, and productive chains.
- (iii) Four enablers to fortify and advance the operational model.

The proposed new Circular Economy model aims to foster collaborative efforts across various Company departments in developing and monitoring circularity initiatives.



The Ecopetrol Group's Proposed Circular Economy Model



Culture plays a pivotal role as a foundational element within the circular economy model, necessitating comprehensive integration throughout the organization to prioritize the adoption of circular practices.

Ambition

To be on **par with circularity leaders** in the energy sector with an **eco-effective maturity level** (level 3) by 2040 to achieve positive contributions to nature.

Strategic Fronts

Initiatives are structured across three fronts:

- **Circular Operations (efficiency)** Reduce the consumption of resources, materials, and inputs in processes while improving the recirculation of output streams.
- **Circular Businesses (income)** Create new revenue streams through the development and provision of circular products and services.
- **Production Chains (ecosystem)** Work towards advancing the circularity agenda in Colombia by fostering increased collaboration and integration with internal and external stakeholders, including initiatives that engage communities within the territories (e.g. energy communities)

Enablers

- **Financing Mechanisms**
Establish funding sources for circular initiatives.
- **Management Model**
Define the governance framework with its roles and responsibilities to enable circularity.
- **Sourcing and Circular Marketing**
Ensure leveraging strategies with suppliers, customers, and stakeholders to strengthen circular businesses and enable circularity models.
- **Science, Technology, and Innovation (ST+i)**
Develop, appropriate, and adapt cutting-edge knowledge and solutions to accelerate, enable, and implement initiatives.

The proposed new Circular Economy model aims to foster collaborative efforts across various Company departments in developing and monitoring circularity initiatives. This collaborative approach aims to generate positive impacts, including:

- 1 Reduced use of natural resources: water, energy, and materials.
- 2 Waste minimization or utilization.
- 3 Development of competencies in EG professionals for the effective implementation of circular initiatives.
- 4 Strengthening of productive systems through circular strategies, enabling the use of by-products from each productive chain in the respective territories.
- 5 Contribution to achieving annual Water Neutrality goals by 2045.
- 6 Contribution to achieving annual emission reduction goals.

Furthermore, critical materials or those on restrictive lists have been incorporated into the 2023 Business Risk Map as the cause of two identified risks, including low-emission businesses failing to generate the expected value in the Energy Transition and unsuccessful protection and incorporation of resources and reserves.

In the past year, Circular Economy challenges focused on two main fronts: firstly, defining an ambition for circularity by 2040, and secondly, prioritizing circular initiatives that generate short and medium-term impacts (before 2035). These initiatives are proposed within the Circular Business strategic


front under the Circular Economy model. Their successful implementation will necessitate analyzing eligibility requirements for internal and/or external financing sources to align business plans with circularity ambitions.


Moreover, in 2023, Ecopetrol established over 300 circular initiatives, with 97 already implemented and 99 currently in progress.




Some noteworthy achievements include:


 Modified asphalt incorporating recycled plastic was used in 14 road sections nationwide, with 350 tons notably exported to Central America. Moreover, recycled plastic road signs were implemented in the vicinity of the Barrancabermeja refinery. These projects have facilitated the repurposing of over 6 million plastic bags.


 The initial phase of the chemical recycling project, carried out in collaboration with Esenttia, the Barrancabermeja Refinery, Pepsico, and other companies, involved the incorporation of pyrolytic oil from the recovery of approximately 500 tons of plastic waste from landfills. This oil is utilized to produce circular polypropylene for food packaging (Esenttia, Ecopetrol, Pepsico, and other companies).


 Successful technological testing utilizing oily residues from the Barrancabermeja Refinery as raw material in the production of coke at Reficar.

 Successful technological testing in partnership with Veolia to regenerate spent catalysts for reuse in the hydroprocessing plant at the Cartagena Refinery.

 Implementation of phytovaporator technology to achieve zero domestic wastewater discharges in the Dina production field in the Department of Huila.

 TRL8 maturity assessment of oily sludge technology as an asphalt binder for low-traffic roads by INVIAS-Universidad del Cauca.

 The first sustainable Transmilenio bus, equipped with solar panels, was constructed using 19 tons of plastic waste.

 100% reuse of production water in the Casabe, Galán, Llanito, and Tisquirama fields in the Magdalena Medio region.

In addition, the triple impact benefit calculation methodology was implemented in six (6) pilots: plastic-modified asphalt applied in Bogotá, Medellín, and Campo Lorito-Meta; oily sludge as an asphalt binder for roads; hydrocarbon elimination in water combined with nanofertilizers and used in palm or cocoa crops; recirculation of effluent water from PTAR to cooling towers at the

Barrancabermeja Refinery; reuse of water-based drilling cuttings for civil works; and ISA's sustainable station in Sogamoso.

Moreover, the implementation of the Life Cycle Analysis (LCA) methodology was initiated to identify product and material impacts, providing input for decision-making in the development of initiatives or projects and

enabling the creation of long-term environmental product declarations. In 2023, the following LCAs were conducted for the Ecopetrol Group: Recovery of spent catalysts, Plastic-modified asphalt, Utilization of oily sludge as fuel at the refinery, Conversion of plastic waste to monomers, and Recycling of plastic resins.

Similarly, various subsidiaries and business segments were engaged through the Circular Economy Center of Excellence to achieve some of the following results:

- 1 Environmental Sourcing Guidelines, covering Climate Change, materials, waste, water, and natural capital;
- 2 Advancements in industrial symbiosis initiatives among EG companies:
 - Successful completion of mix design trials incorporating spent catalysts in Unconventional Cements (Cartagena Refinery - ISA - Coastal Route).
 - Technical proposal for the pilot "Regional waste storage logistics model in Magdalena Medio".

Moreover, efforts to enhance competencies persisted through the Ecopetrol University's training program for employees, resulting in the successful training of 1,053 individuals in 2023.

For Circular Economy management, collaboration took place with various Stakeholder Groups. In 2023, coordinated actions with national entities, such as:

-  The Ministry of Environment and Sustainable Development, resulted in the structuring of a memorandum of understanding for the period 2023-2026, prioritizing Circular Economy as one of the areas of joint efforts.
-  With ANLA, approval was secured for technological testing to incorporate oily waste from the Barrancabermeja Refinery into coke production at the Cartagena Refinery.
-  Collaboration with the National Roads Institute (INVIAS), Universidad del Cauca, and Universidad Industrial de Santander furthered the verification of the technology to transform oily waste into asphalt binders for low-traffic roads.
-  Technological trials with companies like CEMEX were conducted to incorporate waste from refining and production as raw materials in cement products.
-  International collaboration with actors like IPIECA contributed to the development of circular indicators for the oil and gas sector.
-  To implement the initiative of applying plastic-modified asphalt in road sections, the participation of El Dorado Airport in Bogotá, the Municipalities of Bogotá and Medellín, and the expertise of sustainable practices from asphalt mix suppliers were essential.


A comprehensive plan is underway to systematically coordinate and oversee circularity initiatives within the EG, aligning with the ambitious goals set for 2040. To this end, meticulous initiatives have been assessed and prioritized for each strategic front of the Circular Economy Model to be implemented across three distinct timeframes

(2024-2027; 2027-2035; and beyond 2035), based on their financial feasibility, environmental impact, and potential social benefits.

- In circular operations, the goal is to implement operational improvements related to circularity in different business

segments (e.g., upstream, downstream, etc.).

- In circular businesses, **eight (8) initiatives** have been carefully earmarked for preliminary prioritization, spanning across the following strategic areas for further development:

Subject Area	Initiative
Waste for Low-Emission Fuels	1 Develop biofuels (Jet/ Renewable Diesel) with 1 st and 2 nd gen feedstock (vegetable oil; used cooking oils and animal fats).
	2 Expand biodiesel production with 2 nd gen feedstock (EcoDiesel)
	3 Develop biomethane production capabilities
	4 Create a feedstock purchasing platform
Resource Valorization	5 Enhance agro-coke for soil restoration
Recycling of Plastics 	6 <ul style="list-style-type: none"> • Strengthen mechanical recycling capabilities • Develop chemical recycling capabilities • Expand inorganically to rPET market
Environmental Remediation	7 Scale up reforestation/restoration efforts to develop carbon markets
CCUS	8 Producing eco-aggregates for concrete from captured CO ₂



Climate Change

(GRI 3-3) (GRI 11.1) (WEF 7) (WEF 7E) (WEF 11E) (WEF 13E) Ecopetrol has recognized Climate Change as a critical element due to its impact on operations, infrastructure, the Company's sustainability, decision-making processes, and human rights across various Stakeholder Groups. Acknowledging the responsibility to mitigate these effects, Ecopetrol has implemented strategic and operational best practices to drive the decarbonization of its operations within the framework of an equitable and Just Energy Transition. The objective is to strike a balance among energy security, environmental concerns, and societal contributions.

(DJSI 2.6.10) In its 2040 Strategy, specifically under the Growing With The Energy Transition pillar, Ecopetrol aims to transition gradually towards a low-carbon, socially and environmentally responsible operation. At the core of the concept of a Just Energy Transition lies the recognition of the urgent need for an environmentally sustainable transformation, achievable through participatory schemes where innovation and technology act as catalysts to expedite solutions to future challenges.

(GRI 3-3) (TCFD GR 1.2) Consequently, Ecopetrol has identified "Inadequate Response to Challenges Associated with Climate Change, Water, and Biodiversity" as a strategic risk. This involves implementing treatment actions, Key Risk Indicators (KRIs), and controls to effectively manage

the causes and mitigate the materialization of the risk.

This business risk designation empowers the Company to define actions to progress toward decarbonization, meet medium and long-term goals, and adapt to the country's climatic variability and normal climatological conditions to mitigate effects related to water availability and security in regions, energy security, among other considerations.

(DJSI 2.6.12) (SASB EM-EP-110a.3) The Ecopetrol Business Group remains committed to achieving net-zero carbon emissions by 2050, reducing emissions by 25% by 2030 compared to 2019, and 1.6 million tons of CO₂e in the period 2020-2024 for Scopes 1 and 2. Additionally, it aims to eliminate routine flaring by 2030, aligning with the initiative led by the World Bank. Furthermore, the goal is to reduce Scope 1, 2, and 3 emissions by 50% by 2050.

In March 2023, Ecopetrol S.A. committed to reducing methane emissions by 45% by 2025 and 55% by 2030 compared to the 2019 baseline. This reduction focuses on direct operations in the production segment through the detection, measurement, and closure of fugitive emissions and the reduction of venting in tanks and wells. This aligns with recent regulations issued by the Ministry of Mines and Energy (MME) related to reducing flaring and venting in hydrocarbon exploration and production activities.

Additionally, in November 2023, Ecopetrol joined the 'Aiming for Zero Methane Initiative' led by the Oil and Gas Climate Initiative (OGCI), which seeks to bring methane emissions close to zero.

(ECP 007) (SASB EM-EP-530a.1) These goals contribute to Colombia's commitment to reducing greenhouse gas emissions by 51% by 2030, aligning with the mitigation objectives of the Paris Agreement. Since 2022, Ecopetrol has been a member of the Colombian Carbon Market Actors Association (Asocarbono), reviewing government regulatory proposals and generating recommendations. The Company is also part of various committees within the National Business Association of Colombia (ANDI), discussing regulatory issues related to Climate Change and creating proposals in line with each organization's purposes. In 2023,

Ecopetrol contributed to the review of the National Development Plan, especially to the bill to modernize the National Environmental System (SINA) and the roadmap for a just energy transition.

The Company sets annual emission reduction targets, including methane-related initiatives, aiming to further meet the aforementioned goals. For 2023, the target was 416,672 tCO₂e, surpassing expectations by 40%, reaching 581,532 tCO₂e.

(GRI 3-3) (DJSI 2.1.1) (DJSI 2.6.1) (TCFD G1.1) (TCFD G-2.1) (TCFD G-2.2) Climate Change issues are considered a material concern at Ecopetrol, underpinned by a robust

and reinforced governance structure. The Board of Directors defines and oversees Ecopetrol's strategy and the Business Group's approach to Climate Change. This body is entrusted with the ongoing review and resolution of matters associated with the T ESG pillar under the 2040 Strategy, steering the Company towards pivotal actions for long-term value generation.

Concurrently, the Company's Senior Management assumes a pivotal role in the execution of the strategy outlined by the Board of Directors. They actively integrate climate-related metrics and formulate a comprehensive action plan encompassing short, medium, and long-term perspectives.



(GRI 3-3) (GRI 3-3) (TCFD G1.1) (DJSI 2.1.1) (DJSI 2.1.2) (DJSI 2.6.11) (SASB EM-EP-110a.3) (WEF 8) One of the pivotal governance instruments in the **Environmental Strategy** and the "Climate Action" pillar is the roadmap, which enables the gradual definition of actions over time to solidify goals associated with the material issue of Climate Change. This roadmap encompasses five (5) strategic levers and their associated actions to effectively address the identified challenges and impacts:

1

Greenhouse Gas Emissions Reduction:

Identification and implementation of initiatives linked to optimizing energy consumption, promoting renewable energies, reducing flare gas, minimizing fugitive emissions and venting (methane), and fostering the development of low-emission emerging technologies.

Associated actions:

- a) Establishment, monitoring, and review of decarbonization goals.
- b) Assessment of emerging technologies (Hydrogen and CCUS).
- c) Continuous identification of mitigation opportunities.
- d) Updating emission projection scenarios.
- e) Gap closure analysis to ensure compliance with goals.

2

Climate-Related Risk Management

Analysis of climate risks (physical and transitional) to define adaptation actions and assess the resilience of the business, the operations, and the infrastructure.

Associated actions:

- a) Analysis of various variables that could materialize into physical or transitional risks for the Company (coastal and riverine floods, drought, thermal overload, hydrocarbon demand, carbon price, offset limit, among others).
- b) Financial quantification of risks to establish the impact on the Environmental Strategy and climate investments.

3

Portfolio Strategic Management:

Analysis of the impact of business lines on climate ambition.

Associated actions:

- a) Implementation of internal carbon pricing as an evaluation criterion for decision-making in capital allocation (USD 25/ tCO₂e until 2024, USD 40/ tCO₂e between 2025 and 2029, and USD 50/ tCO₂e starting 2030).
- b) Asset analysis with a focus on emissions and value generation for the Business Group.
- c) Definition of Climate Change criteria for the analysis of asset incorporation and divestments.
- d) Evaluation of other economic instruments promoting the development of low-carbon projects.

4

Greenhouse Gas Emissions Offset

Management of residual emissions that cannot be avoided or reduced in operations.

Associated actions:

- a) Implementation of the Natural Climate Solutions Portfolio to facilitate carbon credit offerings.
- b) Development of a robust and standardized strategy for carbon credit commercialization

5

Greenhouse Gas Emissions Information Management:

Ensuring the quality, integrity, coherence, and transparency of the reported information.

Associated actions:

- a) Continuous enhancement of the greenhouse gas inventory.
- b) Third-party verification.
- c) Development of technological tools to optimize data management for increased traceability, transparency, and information analysis for decision-making.

(GRI 3-3) (DJSI 2.6.3) (TCFD G-2.3)

To evaluate and track the strategic levers outlined in the Climate Change roadmap, the Company has established the management indicator for the Business Group's TBG linked to the reduction of greenhouse gas emissions. It is important to note that both the CEO, Vice Presidents, and employees of the Company receive variable compensation based on achieving greenhouse gas reduction goals.

(GRI 3-3) (TCFD G-1.1) The effectiveness of actions and measures related to greenhouse gas emission mitigation is monitored through the "Decarbonize operations: Greenhouse Gas Reduction" indicator, reflecting the outcomes of implementing measures outlined in the Climate Change roadmap. This indicator undergoes monthly monitoring and reporting, forming part of the Business Group's TBG, which is supervised by the Board of Directors



Achieving greenhouse gas reductions accounted for 5% in the TBG for the period 2019-2023 and 2% for methane reduction between 2025 and 2030.

Risks and Impacts Associated with Climate Change

(GRI 201-2) (GRI 11.2.2) (DJSI 2.6.4) (DJSI 2.6.7) (SASB EM-EP-530a.1) (SFC XV) (SFC 7.4.1.2.4.3.) (TCFD GR-1.1) (TCFD E-1.2) (TCFD E-1.3) (TCFD GR-1.3)



Ecopetrol has identified risks and opportunities related to climate change, encompassing both physical and transitional aspects, as well as potential impacts and benefits across the following time horizons:

2021 - 2024

The short-term horizon encompasses the following aspects: **(i)** establishing and achieving annual and intermediate goals for greenhouse gas emission reduction in alignment with the Decarbonization Plan, **(ii)** identifying short-term risks and implementing mitigation actions, controls, and Key Risk Indicators (KRIs) within the annual risk management cycle, and **(iii)** identifying and implementing cost-effective opportunities to contribute to greenhouse gas emission reduction goals.

2025 - 2030

The medium-term horizon is employed to review GHG emission reduction and offset goals by 2030, in accordance with the Company's Decarbonization Plan. This horizon also facilitates the identification of emerging risks that will impact the Company in the next five (5) years or more.

2030 - >

The long-term horizon is used to analyze market trends, political and regulatory changes, and emerging technological advancements that may influence the Company's climate ambition and long-term business strategy (2040).

Ecopetrol has made progress in identifying physical and transitional risks and assessing their strategic and financial impact until 2100 for prioritized risks.

Physical risks are associated with the Company's exposure and vulnerability to the impacts of variability and climate change, potentially affecting operational continuity and increasing asset exposure to potential damages.

(DJSI 2.6.8) Physical risks are categorized as acute and chronic. Acute risks stem from extreme climatic events, whose frequency and intensity have been increasing due to the gradual rise in global temperatures, primarily reflected in Colombia through the climatic variability phenomenon "El Niño" and its opposite phase "La Niña." These conditions could lead to water scarcity, heatwaves, floods, and fires, among others.

On the other hand, chronic risks arise from sustained medium to long-term climate conditions, which, for the Company, may manifest in rising sea levels, thermal overload, and droughts beyond 2050.

The physical risk analysis completed in 2023 considered the following

Regulatory risk

Regulatory developments in Energy Transition and Climate Change encompass changes in regulations that can directly impact the Company in the short and medium term. The Company is committed to making a significant contribution to national and sectoral goals, which may eventually translate into potential mandatory requirements.

In response to this risk, Ecopetrol assessed two approaches: i) quantification of the impact on costs associated with a potential change in carbon prices, and ii) quantification of financial repercussions resulting from higher abatement costs due to limitations on the use of offsets. The established model utilized three (3) scenarios from the International Energy Agency (IEA) World Energy Outlook 2022: (i) Net Zero Emissions (NZE), (ii) Announced Pledges Scenario (APS), and (iii) Stated Policies Scenario (STEPS). These scenarios were employed to analyze the effects on cash flow and potential capital allocation requirements to facilitate the entry of new abatement opportunities to achieve decarbonization goals.

scenarios from the Intergovernmental Panel on Climate Change (IPCC): (i) Aligned with the Paris Agreement goal (SSP 1 / RCP 2.6), (ii) Peak emissions in 2040 (SSP 2 / RCP4.5), and (iii) 'Business as Usual' (SSP5 / RCP8.5). Under these scenarios, seven (7) chronic (drought and heat stress) and acute threats (precipitation, coastal and riverine

Market Risk

The energy transition is steering the market and consumers toward preferring the use of low-carbon products. This implies a risk for the Ecopetrol Group in not meeting market demand. For this reason, the Company continually monitors and analyzes the evolution, trends, and behavior of the market concerning performance, best practices in the oil, gas, and refined industry, as well as the use of low-carbon products and energy for electrification.

Ecopetrol quantified the impact on the value of upstream segment assets given the different expectations of hydrocarbon demand, considering the three (3) scenarios defined by the IEA. In the APS and STEPS scenarios, the oil business demonstrates resilience to volatility. However, this exercise cannot be considered absolute, as the IEA scenarios do not account for the dynamics of local energy demand, especially in the natural gas market.

flooding, fires, and winds) were assessed at 95 points associated with the main assets of the Ecopetrol Group.

The following risks associated with the transition have been identified:

Reputational Risk

The inability to promptly respond to the expectations of investors and other Stakeholder Groups in setting ambitious Climate Change objectives would significantly impact the Company's image and brand. Therefore, within the framework of the business risk "Inadequate response to Climate Change, water, and biodiversity challenges," mitigation measures and Key Risk Indicators (KRI) are established to reduce and monitor the Company's exposure.

SSP: Shared Socio-Economic Pathways (SSPs), published by the IPCC in its latest AR6 report, considering a series of political decisions and climate outcomes.

RCP: Representative Concentration Pathways (RCPs), published by the Intergovernmental Panel on Climate Change in its AR5 report.



Impact of Climate-Related Risks on Ecopetrol's Business, Strategy, and Financial Planning

Physical risks may lead to financial consequences for the Company, stemming from direct damage to assets or indirect impacts caused by disruptions in the production chain.

Ecopetrol assessed the physical risks in its primary assets in Colombia to determine vulnerability to future climate scenarios beyond 2050. The results indicated that an increase in maximum temperatures and the duration of heatwaves poses the most significant threats to the entire asset portfolio. Six (6) locations are subject to significantly higher risks of coastal flooding, and four (4) locations expect more moderate riverine floods. High maximum temperatures and prolonged heatwaves pose major threats to the entire portfolio by 2050, potentially risking worker safety and water availability for operations.

To mitigate potential impacts and ensure the continuity of activities during prolonged climatic phenomena, Ecopetrol has developed regional climate variability adaptation plans. These plans include measures in water resource management, climate-resilient infrastructure, restoration and

conservation of strategic ecosystems, and climate-compatible operations. The plans align with the methodology of the "Guidelines for the Development of Comprehensive Business Climate Change Management Plans for the Mining-Energy Sector" and the "Guide for the Identification, Analysis, and Evaluation of Disaster Risk in the Mining-Energy Sector," issued by the Ministry of Mines and Energy (MME).

In the financial impact analysis for 2023, the Company made progress in developing an analytical initiative to simulate and evaluate the financial impacts of climate risks, considering IPCC scenarios and Energy Transition scenarios developed by Ecopetrol. For physical risks, as an initial approach, threats associated with thermal overload, riverine, and coastal flooding were included, quantifying implications in two impact spheres: (1) Operational Impact and (2) Impact from damage to infrastructure and equipment. Additionally, an optimization model was developed for capital allocation for mitigation measures, achieving a residual risk analysis. The results obtained are at a high level and include

long-term assumptions. It is important to clarify that, to quantify a financial impact with less uncertainty, further model refinement based on on-site information and the construction of historical data is required to refine the probability of threat occurrence.

Concerning transition risks, the initiative analyzed the portfolio's resilience to potential Energy Transition scenarios and their respective assumptions. This involved dynamic cash flow modeling of prioritized assets in possible company portfolios and the analysis of variables associated with energy transition risks (e.g., market prices, refined demand, carbon prices, decarbonization technology costs, etc.). As a preliminary result, the model indicates financial implications based on the selected scenario, which may vary by segment, asset, and according to the criticality of the chosen variable.

This process of financial impact on climate risks necessitates continuous and in-depth analysis to establish its scope in decision-making for short, medium, and long-term CAPEX allocation.

(GRI 2-29) (GRI 3-3) To support its initiatives related to Climate Change, Ecopetrol establishes various alliances and relationship scenarios with key stakeholders:



Suppliers

Ecopetrol implements a comprehensive decarbonization strategy for its supply chain and services, aligning with the Company's climate goals. This strategy promotes a unified approach by applying criteria for contractor selection, incorporating contractual clauses and performance evaluation metrics linked to emissions estimation, the definition of emission reduction targets, and their corresponding achievement. The strategy also involves engaging suppliers in Climate Change issues and effective information management practices.



Customers

The Company has devised a commercial plan to market carbon-offset products, including crude oil, asphalt, and extra gasoline, featuring high-quality carbon credits. These products not only benefit communities but also contribute positively to the environment. These products are purchased by the market, recognizing offsetting as a mechanism to leverage decarbonization objectives.



National Government

Ecopetrol actively participates in establishing national emission reduction goals and programs, contributing to the development of public policies and regulations guiding Climate Change management in both the sector and the country. This involvement plays a key role in shaping the Company's climate ambitions.



Associates and Partners

Ecopetrol coordinates and integrates measures related to Climate Change management to mitigate the impact on assets not directly operated by the Company. Within this context, the Company is advancing in structuring guidelines to facilitate the implementation of strategic lines defined to achieve the climate objectives set by the Ecopetrol Group.



Shareholders and Investors

Ongoing interaction to address requirements and requests related to fulfilling the commitments acquired on Climate Change, thus assuring the sustainability of their investments.

Ecopetrol develops the impact assessment of climate-related risks from two approaches: physical risks and transition risks.

Impact on Human Rights

(GRI 3-3) The substantial accumulation of greenhouse gases (GHGs) has caused dramatic shifts in climate patterns, elevating climate change to a paramount material factor capable of affecting the exercise of fundamental human rights, including life, personal integrity, health, environmental well-being, and food security, among others.

In the pursuit of respecting and advancing human rights, particularly the collective and environmental rights of workers, suppliers, and communities located in areas where the Company operates, Ecopetrol has implemented processes designed to identify potential environmental impacts and essential opportunities. These processes play a pivotal role in planning and executing measures based on a hierarchy of mitigation.

Within these processes, Ecopetrol formulates Energy Transition plans by embracing new business models and transforming existing ones to actively contribute to decarbonization. Recognizing that an abrupt shift in its operations and business model can exert a substantial impact on rights holders (workers, suppliers, communities), as well as the environment, the Company aligns with the principles of conducting a just and equitable transition, prioritizing the needs and rights of individuals.



(SASB EM-EP-530a.1)

In 2023, Ecopetrol committed to reducing methane emissions by 45% by 2025 and 55% by 2030 in the direct operations of the production segment.

This involves detecting, measuring, and closing fugitive emissions and reducing venting from tanks and wells, aligning with the regulations of the Ministry of Mines and Energy (MME) associated with the reduction of flaring and venting in oil and gas exploration and production activities.

Goals

(GRI 3-3) (DJSI 2.6.9)
(SASB EM-EP-110a.3) (DJSI 2.6.12) (WEF 8)

(SASB EM-EP-530a.1) Following the principle of comparability, Ecopetrol sets annual emission reduction targets to monitor the results of its actions. For 2023, the target was 416,672 tCO₂e, surpassing it by **40%** and reaching **581,532 tCO₂e**. These goals and commitments aim to contribute to the Colombian state's objective of reducing 51% of GHGs in line with its Nationally Determined Contribution (NDC) under the Paris Agreement on Climate Change.

Short Term (2024-2025)

- Maintain an updated and verified greenhouse gas inventory every two (2) years.
- Achieve a 1.6 tCO₂e reduction (2020-2024).
- Reduce methane emissions by 45% by 2025.
- Implement operational reduction projects.
- Attain approximately 900 MW in renewable energy generation by 2025.
- Develop Natural Climate Solution (NCS) projects.

Medium Term (2026-2030)

- Reduce GHG emissions by 25% by 2030 (Scopes 1 and 2).
- Reduce methane emissions by 55% by 2030.
- Aim for zero methane emissions by 2030.
- Achieve zero routine flaring by 2030.
- Optimize energy consumption by 25 PJ by 2030.
- Incorporate 1,000 MW of renewable energy by 2030.
- Capture between 2-4 MtCO₂e through NCS by 2030.

Long Term (2024-2025)

- Achieve Net Zero emissions by 2050 (Scopes 1 and 2).
- Reduce emissions by 50% (Scopes 1, 2, and 3) by 2050.
- Increase low-emission business participation by 50% by 2040.

Emissions

(GRI 305-1) (GRI 305-2) (GRI 305-3)

Ecopetrol's atmospheric emissions inventory for Scopes 1 and 2 is structured around the operational control approach. This encompasses estimating emissions linked to both Ecopetrol S.A. and the Cartagena Refinery. Following the guidelines of ISO 14064-1 and the GHG Protocol, recalculations of emissions for the base year are necessary in the event of significant Company changes, such as acquisitions, divestments, mergers, or substantial alterations in emission estimation methods. This recalibration is not only applied to the base year but also extends to the entire historical dataset to ensure consistency in the reported data.

The emissions report for the year 2023 shows a slight increase (1%), mainly linked to the growth in refinery load (14%). It is noteworthy that, in 2023, the production segment achieved a 6% reduction in emissions compared to the year 2022.

Scope 2 emissions at Ecopetrol are reported using the market-based method. This method incorporates emissions generated by energy purchased from the National Interconnected System (NIS), estimated with the emission factor published by UPME Resolution 320 of 2022 (126 Kg/Mwh), and emissions generated

by local generation centers (emission factors estimated based on generated energy and fuel consumption).

While Ecopetrol calculates Scope 2 emissions using the location-based method, applying the NIS emission factor to all purchased energy, the decision is made to report using the market-based method. This choice is influenced by the composition of the Colombian energy mix, primarily consisting of hydroelectric energy, resulting in fewer emissions than local providers. Thus, the market-based method provides a more accurate reflection of the operational reality.

It is crucial to emphasize that the purchase of electricity from local providers is influenced by factors such as the location of facilities in areas with inadequate national electrification, the low reliability of the system, or, in some cases, the utilization of gas as part of the decarbonization plan.

For Scope 3, emission data follows the operational control approach (similar to Scopes 1 and 2). In 2023, emissions increased primarily due to the rise in: i) crude and refined exports; and ii) crude imports and domestic crude purchases.

Scopes 1, 2, and 3 Direct and Indirect GHG Emissions

(GRI 305-1) (GRI 305-2) (GRI 305-3) (GRI 11.5) (GRI 11.6) (GRI 11.7) (DJSI 2.2.1) (DJSI 2.2.2) (DJSI 2.2.3) (SASB EM-EP-110a.1) (SASB EM-EP-110a.2) (TCFD M-1.2.) (WEF 7) (WEF 7E)

Table 6.6.1
Scopes 1, 2, and 3 Direct Emissions.

Emissions	2020 (TonCO ₂ e)	2021 (TonCO ₂ e)	2022 (TonCO ₂ e)	2023 (TonCO ₂ e)
Gross Value of Direct GHG Emissions (Scope 1)	12,745,256	12,515,133	12,338,759	12,458,520
Gross Value of Indirect GHG Emissions from Energy Generation (Scope 2)	866,036	583,362	500,772	468,921
Gross Value of Other Indirect GHG Emissions (Scope 3)	140,794,093	138,535,802	148,218,864	152,963,989

Note 1. The gas calculation includes CO₂, CH₄, and N₂O.

Note 2. Ecopetrol's atmospheric emissions inventory for Scopes 1 and 2 is structured under the operational control approach. Following the recommendations of ISO 14064-1 and the GHG Protocol, emissions for the base year must be recalculated whenever the Company undergoes significant changes such as acquisitions, divestitures, mergers, or substantial alterations in the emissions estimation methodology. This recalibration is not only performed for the base year but also for the historical series to maintain consistency in the reported data.

Note 3 (GRI 305-1) (GRI 305-2) (GRI 305-3). The SAP-Environmental Compliance - SAP EC software solution is utilized for estimating emissions. The primary sources within the inventory to obtain emission factors include the Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Gas Industry - API; FECOC; UPME; AP-42; ARPEL; and CORINAIR.

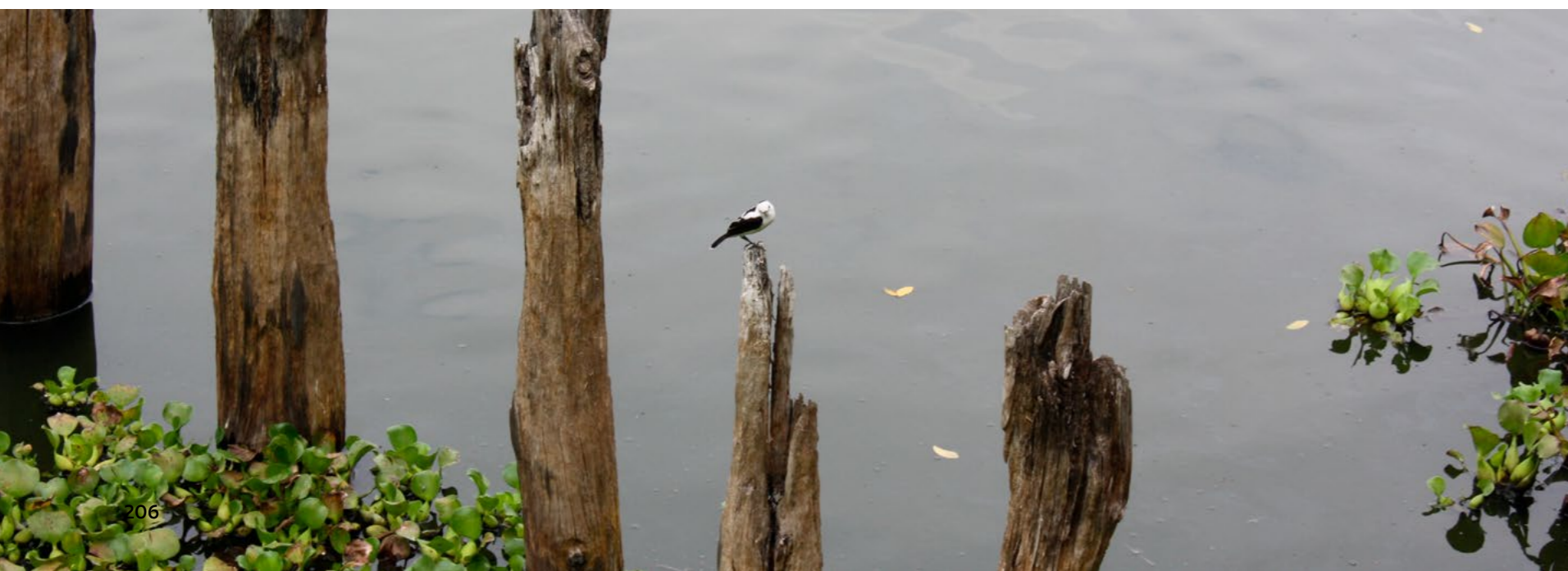
The global warming potentials used in the inventory are those reported in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC- AR5).

Note 4. This report is compiled with actual information from the first 10 months of the year and projections for the last two months of the year 2023.

Table 6.6.2
Biogenic Emissions

(GRI 305-1) (GRI 305-2) (GRI 305-3) (GRI 11.5) (DJSI 2.2.1) (DJSI 2.2.2) (DJSI 2.2.3) (TCFDM-1.2.1) (WEF 7) (WEF 7E)





Emissions	2020 (TonCO ₂ e)	2021 (TonCO ₂ e)	2022 (TonCO ₂ e)	2023 (TonCO ₂ e)
Scope 1 Biogenic CO ₂ emissions	1,309	1,230	1,346	900
Scope 2 Biogenic CO ₂ emissions	NA	NA	NA	NA
Scope 3 Biogenic CO ₂ emissions	199,487	259,652	293,975	300,481









Scope 3 Emissions








(DJSI 2.2.3) (TCFD M-1.2.) For Ecopetrol, the primary category contributing to Scope 3 emissions is associated with the use of its sold products, followed by the acquisition of capital goods and purchased services. **These categories collectively represent 99.2% of Scope 3 emissions:**

Table 6.6.3.
Scope 3 Emissions by Category.

Scope 3 Categories	Emissions in the reporting year (metric tons CO ₂ e)	Emission calculation methodology and exclusions
 Goods and services acquired	6,422,421	For Ecopetrol, emissions associated with the use of its sold products constitute the second-largest contributor to the Company's emissions, representing 4.2% of the total Scope 3 emissions. This category consolidates all purchases of goods and services (Category 1) and capital goods (Category 2) into a unified quantification under Category 1. It also encompasses all contracts related to the supply of goods and services, as well as those associated with the purchase of oil and fuels. The minimum limit, recommended by the GHG Protocol and adopted by Ecopetrol, corresponds to "cradle-to-gate" emissions of goods and services. The emissions from acquired goods and services were estimated using three different methods: supplier-specific, expenditure-based, and hybrid, depending on the defined subcategory and available information. The supplier-specific method was employed for certain suppliers classified as relevant to the supply area and for oil and fuel suppliers. The expenditure-based method was utilized by breaking down Ecopetrol's expenditure data and assigning each contract to the most appropriate product.
 Capital goods	0	Ecopetrol consolidates all purchases of goods and services (Category 1) and capital goods (Category 2) into a single quantification under Category 1.
 Fuel and energy-related activities (not included in Scope 1 or 2)	57,922	Category 3 emissions accounted for 0.04% of Ecopetrol's total Scope 3 emissions. This category includes Transmission and Distribution (T&D) losses and excess energy sales. T&D loss emissions are calculated using the emission factor of the national electric grid, which is updated annually, while excess energy sales emissions are calculated using the supplier-specific emission factor.
 Upstream transport and distribution	228,725	Category 4 emissions represented 0.15% of Ecopetrol's total Scope 3 emissions. Ecopetrol divided this category into three (3) subcategories: river, maritime, and land transportation. Both river and land transportation occur locally in Colombia, so the fuel used in these activities corresponds to the fuel marketed by Ecopetrol. Therefore, these two subcategories are already included in Category 11 (use of sold products). The reported value corresponds to the entire category, with 41,230 tCO ₂ e referring to the subcategories accounted for in Category 11, and 187,495 tCO ₂ e referring to the only subcategory not accounted for in Category 11, i.e., maritime transportation. Most of these activities are calculated using the distance-based method.

Scope 3 Categories	Emissions in the reporting year (metric tons CO ₂ e)	Emission calculation methodology and exclusions
 Waste generated in operations	18,125	Category 5 emissions represented 0.01% of Ecopetrol's total Scope 3 emissions. Ecopetrol divided this category into three (3) subcategories: waste sent to incineration, landfill, and composting. This category is calculated using a specific method for each type of waste.
 Business travel	2,862	Category 6 emissions accounted for 0.002% of Ecopetrol's total Scope 3 emissions. This category refers to air transportation. Since all travel activities originate in Colombia, the fuel used in these activities corresponds to the fuel marketed by Ecopetrol. Therefore, this category is already included in Category 11 (use of sold products). This category is calculated using a distance-based methodology, following the recommendation of the International Civil Aviation Organization (ICAO), which establishes the average emissions per passenger by route, aircraft type, and cabin on each trip.
 Employee commuting	19,081	Category 7 emissions represented 0.01% of Ecopetrol's total Scope 3 emissions. This category includes both air and land travel. Since all activities take place on national territory, the fuel used in these activities corresponds to the fuel marketed by Ecopetrol. Therefore, this category is already accounted for in Category 11 (use of sold products). Some activities are calculated using the distance-based method, and others using national emission factors for fuels.
 Leased assets (Upstream)	688	Category 8 includes emissions associated with leased non-industrial assets and Ecopetrol's own non-industrial assets. Both subcategories are calculated using the emission factor of the national electric grid and the energy consumption at each non-industrial asset.
 Downstream transport and distribution	757,534	Category 9 emissions represented 0.5% of Ecopetrol's total Scope 3 emissions. Ecopetrol divided this category into two (2) subcategories: river and maritime transportation. River transportation is conducted locally (in Colombia), and maritime transportation starts in Colombia, so the fuel used in these activities corresponds to the fuel marketed by Ecopetrol. For this reason, these two (2) subcategories are already accounted for in Category 11 (use of sold products). This category is calculated using the distance-based method considering the transported load.
 Processing of sold products	5,951,993	Category 10 emissions accounted for 3.89% of Ecopetrol's total Scope 3 emissions. This category includes the processing of intermediate products marketed by Ecopetrol, such as crude oil. The processing of crude oil used the average data method. The secondary data used was the carbon intensity of an average refining process. This category is accounted for in Category 11 (use of sold products), following the recommendations of the GHG Protocol, which include direct emissions from the product use phase considering that all crude oil is burned.

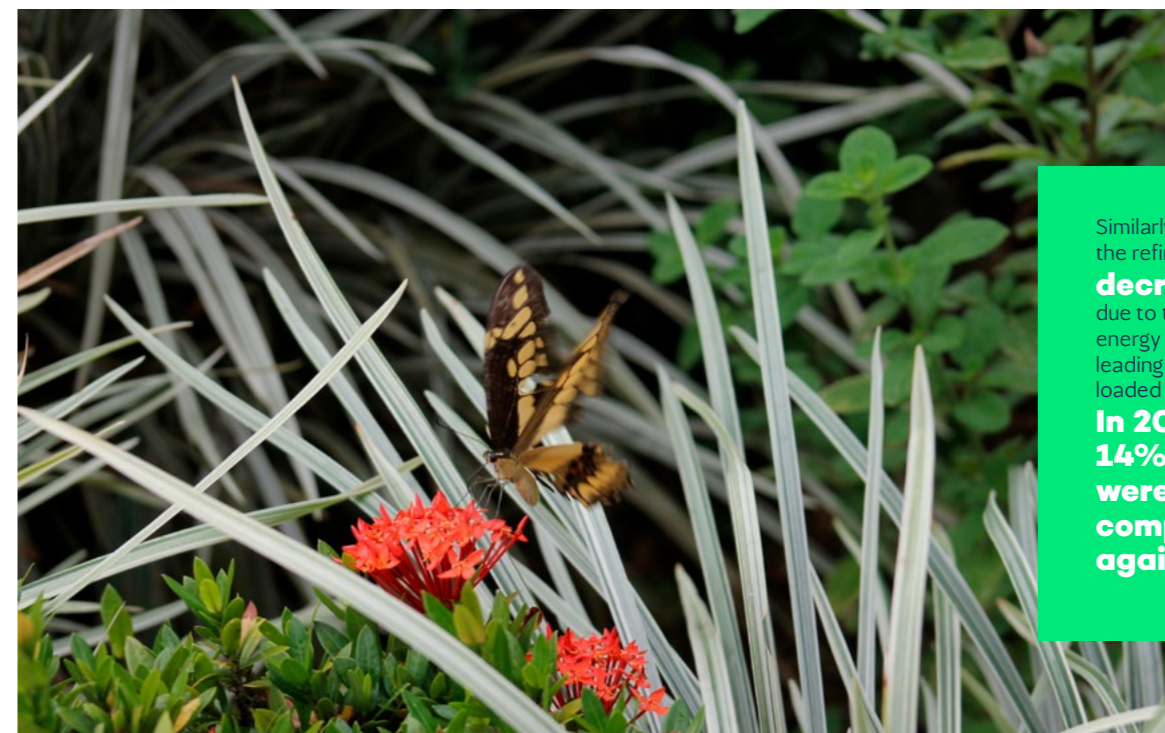
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Scope 3 Categories	Emissions in the reporting year (metric tons CO ₂ e)	Emission calculation methodology and exclusions
 Use of sold products	145,419,271	Category 11 constitutes over 95% of Ecopetrol's total Scope 3 emissions. The established threshold, endorsed by the Greenhouse Gas Protocol and adhered to by Ecopetrol, encompasses the final usage of both products (such as liquid fuels and petrochemicals) and intermediate products (such as crude oil). Emissions from sold products encompass direct emissions during the final usage phase of end products like liquid fuels and natural gas. Furthermore, this category encompasses emissions from the final usage phase of sold intermediate products, such as crude oil. The methodology involves net volume in commercial operations where Ecopetrol possesses the highest total volume of potential sold products (results remain consistent using the total volume). To estimate fuel emissions based on end products, fuel quantities were multiplied by the national combustion emission factor for each type of fuel. CO ₂ , CH ₄ , and N ₂ O emission factors were applied, with national statistics utilized to determine the percentage of burned fuel.
 End-of-life treatment of sold products	39,692	Category 12 emissions constitute 0.03% of Ecopetrol's overall Scope 3 emissions. This category encompasses emissions related to the end-of-life treatment of lubricants and paraffins. Both products are assumed to undergo incineration, hence the application of the specific method for this type of waste.
 Leased assets (Downstream)	200	Category 13 pertains to assets leased to third parties. Emissions are computed using the expenditure-based method and the EEIO (Environmentally Extended Input-Output) database.
 Franchises	0	This category remains uncalculated as Ecopetrol does not engage in franchise operations.
 Investments	809,990	Category 15 emissions account for 0.53% of Ecopetrol's total Scope 3 emissions, ranking as the third most substantial contributor to the Company's emissions and encompassing assets with equity participation. The category is assessed using the average data method, considering the carbon intensity of the upstream operator if the information is publicly available. If not, Ecopetrol's upstream average carbon intensity is applied.
 Other upstream	NA	No other upstream category is considered, as all of Ecopetrol's indirect activities are encompassed in the preceding categories.
 Other downstream	NA	No other downstream category is considered, as all of Ecopetrol's indirect activities are addressed in the preceding categories.

GHG Emissions Intensity

(GRI 305-4) (GRI 11.8) (TCFD-1.2.1)

The carbon intensity of the exploration and production segment decreased by 9% from 2022 to 2023, primarily attributed to reduced emissions in the flaring, fugitive, and venting categories. These reductions are in line with the production segment's leak closure plan and implemented emission reduction projects.



Similarly, the carbon intensity of the refining segment **decreased by 5%** due to the implementation of energy efficiency initiatives, leading to fewer emissions per loaded barrel. **In 2023, a total of 14% more barrels were loaded compared against 2022.**

Table 6.6.4
GHG Emissions Intensity
(GRI 305-4) (GRI 11.8) (TCFD-1.2.1)

Process	2020 (kg CO ₂ e/boe)	2021 (kg CO ₂ e/boe)	2022 (kg CO ₂ e/boe)	2023 (kg CO ₂ e/boe)
Production	43.34	40.82	38.13	34.9
Refining and industrial processes	40.97	38.92	39.29	37.53

Note 1: The gases considered in this table include CO₂, CH₄, and N₂O.

Note 2: The Upstream segment's intensity is calculated by dividing the Scope 1 and 2 emissions produced in the segment by the net production, encompassing crude oil, gas, and white gases. This calculation is expressed in terms of barrels of oil equivalent (BOE) and falls within the organizational operational control limit.

Note 3: The Downstream segment's intensity is determined by dividing the Scope 1 and 2 emissions from the refining and petrochemical segment by the annual input flows to the Barrancabermeja and Cartagena refineries, expressed in terms of barrels of oil equivalent (BOE). This calculation is conducted under the organizational operational control limit.

Emissions Management Strategy: Fugitive Emissions, Venting, and Flaring

Ecopetrol has an approved strategy for managing fugitive emissions and venting, endorsed by the Executive Committee (ExCo) in 2020, encompassing the following **key initiatives**:

- 1 Updating and refining the inventory, developing proprietary emission factors, and establishing reduction targets.
- 2 Incorporating design criteria and engineering best practices to mitigate fugitive emissions and venting.
- 3 Implementing the Leak Detection and Repair (LDAR) program to identify and remediate methane emission leaks.

In alignment with this strategy, the Company has made significant progress in fulfilling the commitments outlined by the Oil and Gas Methane Partnership (OGMP 2.0), led by the United Nations, since its affiliation in 2020. This commitment also aligns with national regulations on methane emissions issued by the Ministry of Mines and Energy (MME) in 2022. Key advancements include:

- Detection and quantification of fugitive emissions and venting using state-of-the-art technologies such as infrared cameras and flow meters (bottom-up approach) and analysis of satellite imagery and flights with methane sensors (top-down approach), covering approximately 95% of the Company's operations.
- A top-down measurement campaign covering 550 km² over 48 operated assets and 5 non-operated assets (partners) was conducted in 2023. Additionally, bottom-up measurements with Optical Gas Imaging (OGI) cameras were conducted across various Company assets.
- Implementation of the identified leak closure program, leading to the detection of over 1,800 leaks and the closure of more than 1,700.
- Reduction of 13,558 tCH₄ (~379,644 tCO₂e) during the period of 2020 to 2023.
- In March 2023, the Company established ambitious methane emission reduction targets of 45% by 2025 and 55% by 2030.
- In November 2023, the Company joined the "Aiming for Zero Methane Emissions" initiative led by the Oil and Gas Climate Initiative – OGCI, further intensifying its commitment to achieving near-zero methane emissions by 2030.

In its efforts to reduce gas flaring, Ecopetrol is steadfastly dedicated to eliminating routine flaring by 2030, in alignment with the World Bank's "Zero Routine Flaring by 2030" initiative, to which the Company pledged its commitment in 2020.

Significant strides have already been made, including:

- A commendable 29% reduction in total gas flaring from 2017 to 2022.
- Development of a roadmap to achieve zero routine flaring by 2030 in the Upstream segment.

In June 2023, the Company submitted its World Bank report for the year 2022, indicating a total gas flaring of 10,077 million cubic feet, with routine flaring accounting for 6,667 million cubic feet.

Table 6.6.5
Projects Undertaken to Avoid and Reduce Emissions
(GRI 305-5) (GRI 11.2.3) (TCFD-1.2.1)

Projects	2020 (TonCO ₂ e)	2021 (TonCO ₂ e)	2022 (TonCO ₂ e)	2023 (TonCO ₂ e)
Energy efficiency	128,596	186,713	154,976	306,265 ⁴³
Fugitive emissions and venting	23,257	59,817	101,602	194,968
Flaring optimization	47,994	45,135	150,852	71,734
Renewable energies	0	1,929	9,243	8,565

43. This figure includes self-generation projects and energy efficiency projects in Hocol and Esentia.

(GRI 305-5) Ecopetrol has implemented initiatives to reduce emissions across **four key pillars**. Utilizing a proprietary estimation model based on mass balances and/or emission factors, the Company can assess the reductions achieved in the implementation year compared to the immediately preceding year. Below is a detailed description of each pillar:



Energy Efficiency:

This program encompasses projects related to altering the energy matrix for a lower impact and optimizing processes. Between 2020 and 2023, a total of 128 projects were executed (14 in 2020, 24 in 2021, 41 in 2022, and 49 in 2023). The emission reductions from this pillar directly affect Scope 1 emissions, including gases such as CO₂, CH₄, and N₂O in the calculation.



Flaring Optimization:

This program involves projects dedicated to optimizing flaring volumes through sales, self-generation, or process improvements. From 2020 to 2023, a total of 36 projects were executed (6 in 2020, 9 in 2021, 9 in 2022, and 12 in 2023). Emission reductions from this pillar directly impact Scope 1 emissions, considering gases like CO₂ and CH₄ in the calculation.



Fugitive Emissions and Venting:

This program focuses on projects aimed at eliminating leaks and venting in various processes. 45 projects were executed over the period from 2020 to 2023 (6 in 2020, 8 in 2021, 9 in 2022, and 22 in 2023). The resulting emission reductions impact Scope 1 emissions, with the CH₄ gases included in the calculation.



Renewable Energies:

This program incorporates projects related to energy generation through renewable sources. From 2020 to 2023, a total of 9 projects were implemented (2 in 2021, 3 in 2022, and 6 in 2023). Emission reductions from this pillar directly impact Scope 2 emissions, with CO₂ included in the calculation.

Ecopetrol is actively advancing in identifying and consolidating actions to mitigate its contributions to climate change associated with hydrocarbon production, transportation, refining, and marketing. The consolidation of climate change-related initiatives in operations, along with the identification of low-emission solutions, is instrumental in reducing the impacts of climate change and generating positive outcomes in economic terms, process efficiencies, and greenhouse gas emission reductions. Additionally, projects focusing on Natural Climate Solutions (including conservation, restoration, and reforestation) positively impact strategic ecosystems, benefiting both communities and the environment.

(TCFD GR-1.2) Monitoring the actions designed and implemented by Ecopetrol has enabled the assessment of impacts and challenges to manage climate change appropriately and in a timely manner. Recognizing that reducing greenhouse gas emissions is the primary objective for contributing to environmental mitigation, the Company has hence incorporated various strategies and systems.

At the environmental strategy level

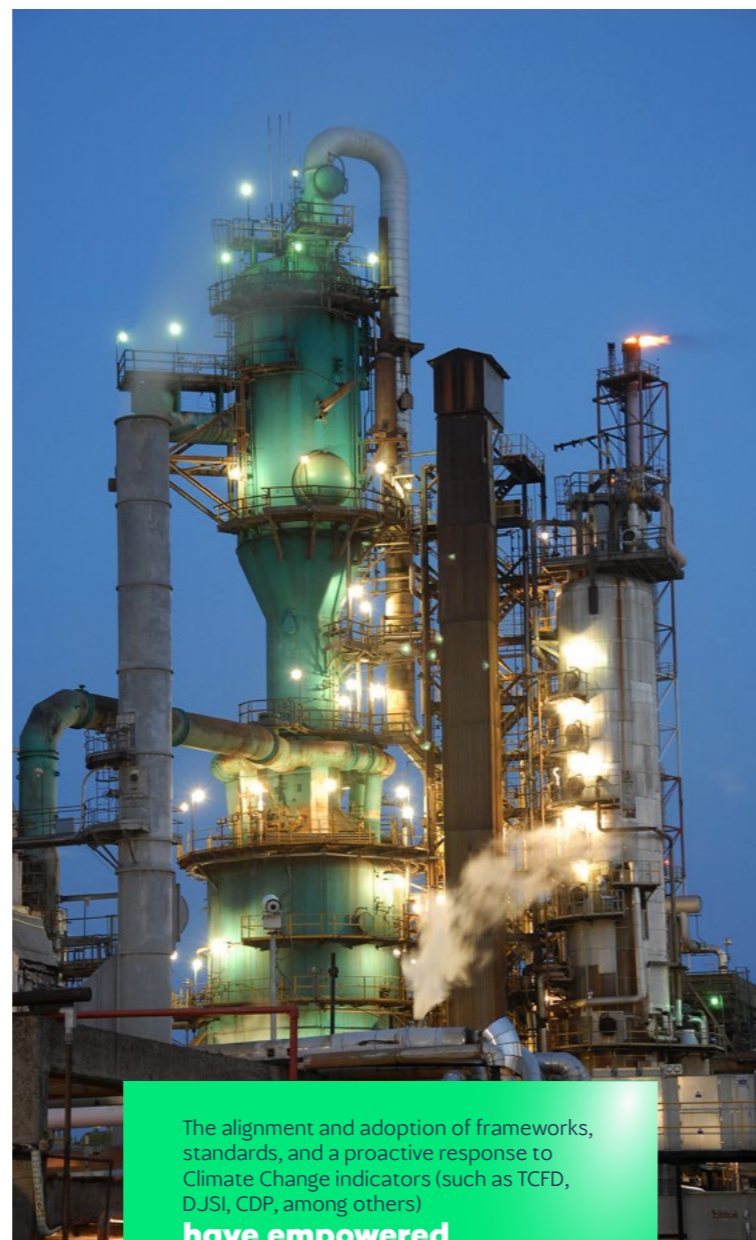
Within the "Energy That Transforms" corporate strategy for 2040, Ecopetrol has initiated targeted actions aligned with the "Growing With The Energy Transition" pillars, emphasizing diversification and investments in low-emission energy ventures. Under the banner of "Generate Value Through T ESG," the Company is committed to accelerating and prioritizing decarbonization and optimizing energy consumption. This commitment includes the ambitious goal of achieving Net Zero Emissions by 2050 (Scopes 1 and 2) and a substantial 50% reduction in total emissions by 2050.

At the corporate strategy level

In the broader context of Ecopetrol's Environmental Strategy, Climate Change stands as a key strategic pillar, directing efforts towards maintaining operations with low-carbon emissions and staying vigilant to associated risks and opportunities. Monitoring at this strategic level is meticulously managed through a comprehensive program, developed under the PDCA cycle. This program incorporates specific measures reviewed annually, to assess their contribution and determine any necessary adjustments or changes.

At the operational level

Operational directives for Climate Change management have been clearly outlined through the establishment of guidelines, procedures, and guides at various levels of the Company.



The alignment and adoption of frameworks, standards, and a proactive response to Climate Change indicators (such as TCFD, DJSI, CDP, among others)

have empowered Ecopetrol to identify gaps, implement effective measures, and integrate valuable lessons learned.

These efforts are geared towards advancing the Company's management practices and enhancing its positioning

in the realm of Climate Change mitigation measures.

Accomplishments

(GRI 3-3) (SASB EM-EP-110a.3) (WEF 7) (WEF 11E) (WEF 13E)

Aligned with its commitment, Ecopetrol joined the 'Aiming for Zero Methane Initiative' led by the Oil and Gas Climate Initiative (OGCI) in November 2023, with the overarching goal of significantly mitigating methane emissions.

Simultaneously, at the Conference of the Parties to the Convention on Climate Change (COP28) in Dubai, United Arab Emirates, Ecopetrol formally endorsed the global sectoral agreement aimed at expediting the decarbonization of the oil and gas industry (OGDC). It proudly stands as one of the 30 state-owned companies actively engaged in this pivotal agreement.

Moreover, the noteworthy accomplishments of 2023 include:

- **In March 2023, Ecopetrol established a goal to decrease methane emissions by 45% by 2025 and 55% by 2030 in its direct production operations.**
- **A commendable reduction of 6,963 tons of methane (~194,968 tCO₂e) through the successful implementation of initiatives targeting Upstream fugitive emissions, venting, and flaring.**
- **A reduction of 581,532 tCO₂e, contributing to a cumulative decrease of 1,491,645 tCO₂e (2020-2023).**
- Comprehensive top-down methane measurement across 48 operated assets and five (5) non-operated assets (550 km²), accompanied by the closure of over 1,700 leaks (2020-2023).
- Subsidiaries Cenit, ODL, ODC, Bicentenario, Ocesa, Esenttia, and ISA obtained their Carbon Neutrality certification.
- Successful execution of a pyrolytic oil test at FCC Barrancabermeja, leading to circular propylene production in Esenttia.
- Third-party verification conducted on 118,828 tCO₂e in operational projects.
- The United Nations Environment Programme (UNEP) honored Ecopetrol in 2023 with the prestigious "Gold Standard" recognition for the quality, level of detail, and granularity of the report and the management plan of methane emissions for 2023 in both its directly operated and non-operated assets.
- Carbon-offset product marketing, involving the sale of nine (9) million barrels of crude oil, 895 thousand barrels of extra gasoline in Colombia, and 5,905 tons of asphalt, alongside the purchase of 300 thousand barrels of diluent Naptha.



Energy

(GRI 3-3) The effective utilization of energy and the integration of alternative sources are paramount for the growth and sustainability of the EG within the context of Energy Transition.

(GRI 302-4) (TCFD M-1.1) In 2023, the EG reaffirmed its 2040 Strategy and implemented three (3) adjustments, with one specifically tied to the strategic objective of energy efficiency. This adjustment entails a 25 PJ reduction in cumulative internal energy consumption from 2018 to 2030, encompassing various energy sources such as Gas, Crude, Electricity, and Liquid Fuels. This represents a shift in reporting practices, as previous years only indicated the percentage reduction in

electricity consumption. The new goal involves optimizing the use of all energy sources.

The Energy Efficiency Program has successfully overseen the optimization of asset energy performance, relying on a methodology aligned with ISO 50001:2019. This program focuses on two key actions: i) operational control and ii) technological improvement.

In the realm of Unconventional Renewable Energies, Ecopetrol aims to incorporate 900 MW of renewable energy into its supply matrix by 2025. This involves the adoption of technologies such as solar, wind, and geothermal, with a growing portfolio exploring other technologies like biomass and small hydroelectric plants.

This initiative is designed to meet the electricity demand of operations, align with requirements for the Low Emission H2 Strategic Plan, and facilitate the development of new business lines and low-carbon markets.



In 2023, a significant reduction of **3,887,668,692,135,220** Joules was achieved, spanning energy types including fuel and electricity. The goal sets forth the integration of **900 MW in renewable energy by 2025 and over 1000 MW by 2030 for the EG.**

For a thorough and comprehensive oversight of energy management, Ecopetrol relies on five (5) key indicators:

1

Savings in energy efficiency (PJ)

Optimization of electric and thermal energy compared to previously established baselines.

2

Reduction of CO₂ emissions:

Tons of CO₂ not emitted due to demand optimization.

3

Cost optimization:

Quantification of costs associated with energy optimization, aligned with the tariff structure of consumed energy sources.

4

Incorporation of Renewable Energies:

Quantification of MW of installed capacity in execution, construction, and operation at the end of each year to meet the established goal.

5

Hydrogen Incorporation:

Quantification of tons of hydrogen delivered by portfolio projects.

Table 6.6.6.
Fuel Consumption From Renewable Or Non-Renewable Sources Within The Organization.
(GRI 302-1) (GRI 11.1.2) (TCFD M-1.1)

Renewable and Non-renewable Energy Consumption	2020 (GWh)	2021 (GWh)	2022 (GWh)	2023 (GWh)
Total consumption of fuels from renewable sources in GWh	65.4	54.6	168.7	211.45
Total consumption of fuels from non-renewable sources in GWh	3,030	2,813	2,752.08	3,020.2
Total	3,095.4	2,867.6	2,920.78	3,231.65

Table 6.6.7.
Energy Consumption of Different Types of Purchased Energy Sources, Excluding Steam
(GRI 302-1) (GRI 11.1.2) (TCFD M-1.1)

Shared Energy	2020 (GWh)	2021 (GWh)	2022 (GWh)	2023 (GWh)
Electricity consumption	NA	2,309.84	2,881.3	3,111.12
Heating consumption	NA	NA	NA	NA
Cooling consumption	NA	NA	NA	NA
Total	NA	2,309.84	2,881.3	3,111.12

Note: The entries marked as Not Applicable (NA) refer to information not included in Ecopetrol's energy consumption data.

Table 6.6.8.
Energy Consumption of Different Types of Autogenerated Energy, Excluding Steam.
(GRI 302-1) (GRI 11.1.2) (TCFD M-1.1)

Autogenerated Energy	2020 (GWh)	2021 (GWh)	2022 (GWh)	2023 (GWh)
Autogenerated electricity	NA	1,515	1,517.5	1,664.6
Autogenerated heating	NA	NA	NA	NA
Autogenerated cooling	NA	NA	NA	NA
Total	NA	1,515	1,517.5	1,664.6

Note: The entries marked as Not Applicable (NA) refer to information not included in Ecopetrol's energy consumption data.

Table 6.6.9.
Energy Consumption of Different Types of Energy Sold, Excluding Steam.
(GRI 302-1) (GRI 11.1.2) (TCFD M-1.1)

Energy sold	2020 (GWh)	2021 (GWh)	2022 (GWh)	2023 (GWh)
Electricity sold	NA	81.58	NA	78.37
Heating sold	NA	NA	NA	NA
Cooling sold	NA	NA	NA	NA
Total	NA	81.58	0	78.37

Note: Entries marked as Not Applicable (NA) refer to information not included in Ecopetrol's energy consumption data.

Table 6.6.10.
Amount of Autogenerated Steam and Steam Sold
(GRI 302-1) (GRI 11.1.2) (TCFD M-1.1) (TCFD M-1.2.2)

Energy Consumption	2020 (klb)	2021 (klb)	2022 (klb)	2023 (klb)
Autogenerated steam	23,962,888	22,276,124	25,618,267	23,097,657
Steam sold	17,520	17,520	17,520	6,588



Table 6.6.11.
Total Energy Consumption within the Organization
(GRI 302-1) (GRI 11.1.2) (TCFD M-1.1) (TCFD M-1.2.2)

Energy Consumption	2020	2021	2022	2023
Total Energy Consumption within the Organization (GWh)	NA	6,610.86	7,319.58	7,929
Total Steam Energy Consumption (klb)	NA	22,258,604	25,600,747	23,091,069

Note: Entries marked as "Not Applicable" (NA) refer to information not included in Ecopetrol's energy consumption data.

Table 6.6.12.
Energy Intensity (ratio)
(GRI 302-3) (GRI 11.1.4) (TCFD M-1.1)

Criteria	2020	2021	2022	2023
Energy consumption (KWh)	NA	4,498,319,441	4,936,462,840	4,905,438,267
Barrels produced (bbls)	NA	4,230,032,541	4,488,309,093	2,931,154,897
Energy intensity ratio kWh/bbl	NA	1.063	1.1	1.674

Note: Entries marked as "Not Applicable" (NA) refer to information not included in Ecopetrol's energy consumption data.

(GRI 302-3) The ratio is derived by dividing the absolute electricity consumption (numerator) linked to Upstream production assets directly operated by Ecopetrol S.A by specific organizational parameters (denominator). These parameters encompass the aggregate production of crude oil, gas, white gases, and water within the same assets. The indicator omits assets affiliated with the Regional Piedemonte Vice Presidency, as their

production processes predominantly (~97%) necessitate thermal energy. The calculation methodology for the year 2023 has been revised from previous years, resulting in an uptick in the indicator. This adjustment aims to enhance the characterization of electrical processes by focusing solely on assets where the utilization of this energy is substantial (Pareto principle) and there is traceable information regarding its consumption.

Table 6.6.13.
Total Energy Consumption
(GRI 302-1) (GRI 302-2) (GR 11.1.2) (GR 11.1.3) (DJSI 2.3.1) (DJSI 2.8.5) (TCFD M-1.2.2)

Criteria	2020	2021	2022	2023
Total consumption of non-renewable energy (MWh)	6,629,762	6,719,091	7,150,883	7,795,917
Total consumption of renewable energy (MWh)	65,889	54,551	168,705	211,453
Coverage (%)	81	82	82	83

(GRI 302-1) (SASB EM-EP-530a.1) The scope of energy consumption includes Ecopetrol SA's Upstream, the Ecopetrol Group's Midstream (CENIT and subsidiaries), and the Ecopetrol Group's Downstream (Esenttia, Ecodiesel, Cartagena, and Barrancabermeja refineries). As per regulatory requirements, Ecopetrol does not sell energy to third parties. SAP serves as the consolidation platform for all energy information, incorporating

continuous field measurements from various monitoring points. All energy consumption is internal, and no conversion factors are applied when calculating total energy consumption within the organization.

(GRI 302-1) (GRI 302-4) Methods for calculating consumption reduction:

1

Savings through operational control:

- a. Periodic savings calculation: A base consumption is determined (through measurements or simulation), and the actual energy consumed is measured at periodic intervals. The difference is established as the savings to be updated at the specified frequency.
- b. Savings according to ISO 50001: Savings and energy management indicators are calculated relative to baseline energy consumption defined by ISO 50006. It is worth noting that savings are incremental, reporting the savings value for the first year, and for the following year, the baseline is updated to report only additional benefits.

2

Savings through operational control:

Calculated in accordance with ISO50001:2019 standards, establishing energy management indicators relative to baseline energy consumption.

3

Savings through IIE management

Savings are established according to the optimization of the energy intensity index obtained with the Solomon methodology.

It is important to note that consumption reduction initiatives have premises for execution associated with energy tariffs and the representative market rate (TRM), among other factors. Each initiative incorporates detailed calculations and their corresponding technical sheet. The definition of baselines is primarily derived from standards such as the GHG Protocol, ISO 50015 of 2014, and ISO 50006 of 2023.

Accomplishments

(GRI 3-3) (WEF 7) (WEF 11E) (WEF 13E)

- About 19,000 tons of CO₂ were successfully reduced, leading to 28 billion in savings, attributed to competitive rates in solar parks and Small Hydroelectric Power Plants (SHP).
- Additionally, the notable recognition of the Diario Portafolio 2023 Award was bestowed upon the Asphalt Modified with Recycled Plastic Initiative.
- A remarkable 5.9% optimization in electrical energy was attained, surpassing the 2018 baseline. This achievement translated into a reduction of 198,000 tons of CO₂ and substantial savings amounting to 37.7 billion.



Air Quality

(GRI 3-3) (WEF 7) (WEF 7E) (WEF 11E) (WF 13E) Ecopetrol is dedicated to preserving air quality near its operations, striving to improve the well-being of citizens and foster environmental care.

Air quality plays a vital role in the "Generate Value Through TESG" pillar under the Company's 2040 Strategy, focusing on mitigating and preventing potential impacts on air quality in operational surroundings. Given the nature of Ecopetrol's operations, which involve combustion processes, hydrocarbon storage, and the separation of hydrocarbons

from water during treatment, there is a potential for emissions of criteria pollutants (particulate matter, carbon monoxide, sulfur oxides, and nitrogen oxides) and volatile organic compounds (VOCs), which can impact air quality in the vicinity.

Hence, the potential repercussions on both health and ecosystems arising from any degradation in air quality near our operations are meticulously assessed and addressed. These impacts, which encompass offensive odors that could detrimentally affect community well-being, are thoroughly evaluated and actively mitigated.

Air quality serves as a crucial component in responding to the strategic risk of "Inadequate Response To Challenges Associated With Climate Change, Water, And Biodiversity," as outlined in Ecopetrol's Corporate Risk Matrix.

The response strategy involves periodic reviews of associated risks, utilizing emission monitoring data from fixed sources and air quality assessments, considering regulatory changes, and incorporating community feedback through complaints (PQRs). The goal is to prioritize actions that can prevent or mitigate identified risks.

Within the operational context, Ecopetrol must monitor and control emissions of criteria pollutants (particulate matter, carbon monoxide, sulfur oxides, and nitrogen oxides) and volatile organic compounds within defined limits to avoid adverse impacts on air quality.

This commitment involves taking actions aligned with the purpose of reducing emissions of criteria pollutants to meet world-class standards and contribute to overall air quality improvements to safeguard public health, supported by the systematic update of the Air Emissions Inventory for pollutants in assets operated by Ecopetrol.

While there have been no identified instances of degraded air quality related to emissions from Ecopetrol's operations, corrective actions have been taken at fixed sources where occasional exceedances in concentrations of particulate matter, nitrogen oxides, and sulfur oxides compared to regulatory limits have been detected.



Thus, in the context of its operations, the Company must monitor and **control emissions of criteria pollutants (particulate matter, carbon monoxide, sulfur and nitrogen oxides) and volatile organic compounds (VOCs) within defined limits that do not impact air quality in the environment.**

Regular reviews of industry best practices, active participation in initiatives seeking air quality improvements, and thorough monitoring of implemented actions contribute to leveraging management efforts. Given that air quality is a strategic pillar of the Environmental Strategy, a management program is defined within the framework of the HSE Integrated Management System certification in ISO 14001. This program establishes goals and milestones, subject to quarterly follow-ups and annual evaluations to ensure continuous improvement for updates.

This approach is strengthened by the "Clean Air for the Environment" roadmap designed within the materiality framework of 2020, reaffirmed in 2023 with Ecopetrol's new materiality.

This roadmap is crafted based on the following strategic options:



Prevention

Implementation of standards and best practices related to criteria pollutant emissions, including: (i) frequent monitoring in sensitive and prioritized areas, (ii) adoption of clean technologies, and (iii) establishment of design criteria for fixed sources, among other measures.



Mitigation

Development of updated and verified atmospheric emissions inventories, implementation of monitoring programs for air quality around assets and sensitive receptors, and measurement of emissions from fixed sources. Reduction goals for NO_x, SO_x, and VOCs are also set in alignment with decarbonization initiatives.

To evaluate air quality management, the Company employs the following control and monitoring elements:

- 1 Air Quality Monitoring, through the measurement, monitoring, and modeling of air quality in the operational surroundings to assess the contribution of self-generated emissions.
- 2 Tracking reduction goals for criteria pollutant emissions in both Upstream and Downstream operations.
- 3 Tracking the implementation of emission reduction initiatives, prioritized based on their cost-effectiveness, based on the monitoring and surveillance of emissions and air quality. This includes potential needs for technological process reconfiguration.



Impact on Human Rights

(GRI 3-3) (WEF 7) (WEF 7E)
(WEF 11E) (WEF 13E)

In line with the Company's dedication to upholding human rights, with a specific focus on **collective and environmental rights**, ongoing efforts are undertaken to identify, evaluate, and mitigate potential impacts on both public health and ecosystems. This involves addressing issues related to the deterioration of air quality or the generation of offensive odors that may impact the well-being of communities surrounding our operations.

In instances where potential impacts have been pinpointed, the Company takes prompt and suitable corrective actions, including the implementation of improvement plans, especially in response to interventions by environmental authorities, aimed at meeting requirements for mitigating offensive odors.



Goals

(GRI 3-3) (WEF 7) (WEF 7E) (WEF 11E) (WEF 13E)

- By 2023, as a result of implementing GHG reduction initiatives, the following reduction objectives were established compared to the year 2022: **3,100 tons of VOCs, 305 tons of NO_x, and 60 tons of SO_x.**
- Monitor the collective benefits of GHG emission reduction initiatives, focusing on criteria pollutants and VOC emissions.
- Target a reduction in SO_x emissions by 2025 through the implementation of the SO_x emission control project at the Barrancabermeja Refinery, estimated at **1,800 tons/year.**
- Develop a network of monitoring systems by 2025, utilizing low-cost sensors and data analytics, with the goal of implementing an air quality monitoring and modeling system for the refineries.

Air Quality Management

Ecopetrol's air quality management measures are grounded in the outcomes of air quality monitoring analyses conducted in the operational surroundings, aligning with the requirements of environmental authorities.

Concentrations of criteria pollutant emissions are measured at significant emission sources to ensure that there are no significant increases surpassing maximum thresholds. Additionally, air quality monitoring is performed to determine the concentrations of criteria pollutants present in the air surrounding the operation.

These monitoring activities are executed by laboratories accredited by the Institute of Hydrology, Meteorology, and Environmental Studies (IDEAM, as per its Spanish acronym). Collaborative strategies have been established with these laboratories to enhance the detection limits for each pollutant, ensuring a more precise determination of concentrations

and emission volumes from fixed sources in the operation. This, in turn, provides better information to assess the future relevance of these emissions to air quality.

Furthermore, dispersion models and results from emissions measurements of the equipment with potential impacts on emission contributions from the operation are scrutinized. This analysis aims to identify the potential regulatory risks of pollutant concentrations exceeding established normative limits.

In the event of potential deviations, immediate operational actions are identified to correct anomalies. These actions may be short-term or may require the development of technological improvement projects.

In 2023, the analyses and calculations conducted to identify atmospheric pollutant emissions yielded the following results:

Table 6.7.1.
Emissions of Criteria Pollutants And Volatile Organic Compounds
(GRI 305-7) (GRI 113.2) (DJSI 2.2.4) (DJSI 2.2.5) (DJSI 2.2.6) (DJSI 2.2.7) (WEF 12E) (TCFD 1.2.2.) (SASB EM-EP-120a.1)

Emissions	2020 (kt)	2021 (kt)	2022 (kt)	2023 (kt)
Nitrogen Oxides - NOx	29.7	28.6	29.12	29.78
Sulfur Oxides - SOx	13.43	14.53	15.41	15.8
Persistent Organic Pollutants (POPs)	NA	NA	NA	NA
Volatile Organic Compounds (VOCs)	131.16	121.12	127.61	123.33
Hazardous Air Pollutants (HAP)	NA	NA	NS	NA
Particulate Matter (PM)	1.51	1.4	1.59	1.82
Other categories of air emissions identified in relevant regulations (Carbon Monoxide - CO)	11.88	11.62	11.47	10.82

In this way, measurements are taken of the concentration of emissions of criteria pollutants in the main emission sources to establish that there are no significant increases that could exceed the maximum thresholds. Likewise, air quality monitoring is carried out to establish the concentrations of criteria pollutants present in the air around the operation.

These atmospheric calculations involve utilizing mass balance for Sulfur Oxide (SOx) emissions in combustion systems and employing emission factors for other pollutants: Particulate Matter (PM), Nitrogen Oxides (NOx), Volatile Organic Compounds (VOCs), and Carbon Monoxide (CO). Moreover, the emission factors used to calculate criteria pollutant emissions (NOx, CO, and PM) and VOCs are predominantly derived from the U.S. Environmental Protection Agency's (EPA) AP-42 document.

In certain specific instances, emission factors are sourced from the following references:

- "Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry" by API, 2009.
- "Methodologies for Atmospheric Emissions Inventories in the Oil Industry," 1999, by the Regional Association of Oil and Natural Gas Companies in Latin America and the Caribbean (ARPEL).
- "[EEA] EMEP/EEA Air Pollutant Emissions

Inventory Guidebook 2019: Technical Guidance to Prepare National Emission Inventories" – European Environmental Agency.

- "EIIIP Vol II Ch 14 Uncontrolled Emission Factor Listing for Criteria Air Pollutants" – Emission Inventory Improvement Program, July 2001.

Looking ahead, there are plans to integrate emissions data for volatile organic compounds obtained from venting measurement campaigns in production fields.

Table 6.7.2.
ODS Production, Imports, and Exports*
(GRI 305-6) (TCFD M 1.2.2)

Emissions	Unit of measurement	2020	2021	2022	2023
ODS Emissions	Ton	1.32	0.19	0.35	0.35
ODS Imports	Ton	NA	NA	NA	NA
ODS Exports	Ton	NA	NA	NA	NA

* To calculate ODS emissions, we consider the emission factors recommended by the Intergovernmental Panel on Climate Change (IPCC), distinguishing between a 1% EF for units with a charge of less than 5 lbs and a 17% EF for units with a charge greater than 5 lbs.

ODS (Ozone Depleting Substances) emissions are reported using the advanced method level 2a from the IPCC, alongside the Ozone Depletion Potentials outlined in the Montreal Protocol manual.

The ODS substances used for the calculation include CFC-12 and HCFC-22.

Notably, substitute substances for ODS, employed in refrigeration and fire suppression systems, are excluded from the calculation due to their zero-ozone depletion potential.

The IPCC's Advanced Method Level 2a (bottom-up) approach factors in the time interval between consumption and emission, explicitly considering emission factors. This approach relies on data regarding the number of products and end uses where chemicals are consumed and emitted. It estimates actual annual emissions based on several parameters, including the number of equipment units using these chemicals, the average substance charge, service lifetime, emission rates, recycling, and disposal practices. This method was chosen because, despite being a consumer of ODS or their substitutes, Ecopetrol S.A. does not produce, export, or sell these substances—neither in bulk nor in products containing them. Instead, the Company acquires equipment containing these substances from various suppliers, such as air conditioners, stationary refrigerators, and fire suppression systems.

(GRI 305-7) (GRI 11.3.2) Hazardous air pollutants (HAP) are effectively managed from an occupational perspective through the implementation of an epidemiological surveillance system in targeted areas. This system facilitates the identification of high-risk zones and exposed groups, enabling thorough assessment, evaluation of their impact on workers' health, and the formulation of strategies for prevention, management, and control. Among the most significant substances are aromatic hydrocarbons and solvents, whose emissions are documented in the volatile organic compounds (VOC) inventory, along with sulfur oxides reported as SOx.

In 2023, significant strides were made in updating the methodology for estimating VOC emissions from hydrocarbon storage tanks, especially in refineries, where a new tool was introduced to enhance the accuracy of these estimations. This tool is currently undergoing stabilization and validation of calculations, with potential for future adjustments and updates to VOC emissions for 2023.

The comprehensive inventory of criteria pollutant and VOC emissions reflects the impact of heightened emissions stemming from increased activity in specific areas like the Caño Sur field and heightened crude oil processing at the Cartagena Refinery. These increases are partially counterbalanced by reductions achieved through initiatives focused on energy efficiency, flaring reduction, and venting minimization.

Ecopetrol monitors emissions from over 200 stationary sources and assesses air quality at more than 250 stations in operational environments, with monitoring frequencies varying between six (6) months and one (1) year, as mandated by environmental authorities and regulations.

In critical zones such as the sulfur plants at the Barrancabermeja Refinery and regions like Rubiales, more frequent monitoring of stationary sources exceeding standard levels has been contemplated to enable swift and timely interventions.

Furthermore, ongoing endeavors aimed at curbing greenhouse gas emissions through energy efficiency enhancements, fuel substitution, flaring reduction, venting minimization, and mitigation of fugitive emissions further contribute to diminishing emissions of criteria pollutants and volatile organic compounds (VOCs).

Table 6.7.3.
ODS Loads Within The Equipment Category
(GRI 305-6) (TCFD M 1.2.2)

Equipment Category	Unit of measurement	2020	2021	2022	2023
Small-scale domestic/commercial applications (Load between 0 and 5 lbs or 0 and 2.3 kg)	#	678	94	1288	1288
Medium and large scale commercial applications (Load between 5 and 15 lbs or 2.3 and 6.8 kg)	#	86	220	461	461
Industrial applications (Load exceeding 15 lbs or 6.8 kg)	#	619	223	127	127
Total	#	1383	537	1876	1876

In 2023, action plans were devised for specific cases demonstrating substantial potential for improvement, including:



Improvements in the construction of the SOx emissions control project at the Barrancabermeja Refinery, with the goal of reducing emissions through the installation of gas treatment technologies for sulfur recovery units before their release into the atmosphere. This project is expected to be fully operational by December 2024.



Enhancing the implementation of the Offensive Odor Impact Reduction Plan (PRIO, as per its Spanish acronym) at the Castilla 2 Station.



Following the identification of exceedances in particulate matter and NOx concentrations at certain stationary sources in the Rubiales area, it was imperative in 2023 to devise an improvement plan. This plan involves maintenance interventions on equipment, ensuring optimal operational conditions, and evaluating potential enhancements in the quality of fuels utilized.

Table 6.7.4.
Composition of Produced Fuels
(ECP 021)

Fuel quality metrics	Unit of Measurement	2023
Lead Content	g/L	0
Benzene Content - Extra Gasoline	%Vol/vol	0,63
Benzene Content - Regular Gasoline	%Vol/vol	4,46
Sulfur Content	Ppm peso	41,3

In 2023, progress was made in updating the methodology for estimating VOC emissions in hydrocarbon storage tanks, particularly in refineries, where a new tool is being implemented to more accurately quantify these emissions.

This tool is in the stabilization and validation phase of the calculations, so future adjustments and updates could be generated in the VOC results for 2023.

Accomplishments

- The implementation of greenhouse gas (GHG) reduction initiatives has yielded additional benefits by reducing emissions of criteria pollutants and volatile organic compounds (VOCs), resulting in reductions of 3,500 tons of VOCs, 700 tons of NOx, and 130 tons of SOx, surpassing established targets.
- Methodological and normative evaluation of air quality monitoring and emissions measurement from sources.
- Prioritization of emission sources of criteria pollutants and volatile organic compounds, based on risk analysis by air quality in the operational environment, to evaluate initiatives that mitigate these risks and potential impacts.
- Initiation of a pilot network for air quality monitoring using low-cost sensors at the Cartagena Refinery, initially focusing on particulate matter, with the potential for expansion to other pollutants.



Water

(GRI 3-3) At Ecopetrol, water is a crucial resource for development and for the continuity of operations. This is emphasized in the Company's 2040 Strategy, "Energy That Transforms." Recognizing its significance for both value creation and the well-being of communities and Stakeholder Groups, Ecopetrol is dedicated to taking concrete actions to conserve and safeguard this invaluable resource.

On a global scale, water management objectives are in line with Sustainable Development Goal (SDG) six (6), which aims to ensure universal access to safe and affordable drinking water by 2030. Ecopetrol is committed to contributing to this goal by advocating for equitable access to economically viable and environmentally sustainable water resources. This commitment is seamlessly integrated into the company's overarching strategies, including the 2040 Strategy, the T ESG agenda, the water neutrality roadmap, and the Environmental Strategy's pillars of action addressing climate, biodiversity, and the circular economy.



(GRI 3-3)

Through comprehensive water management at Ecopetrol,

we can also generate positive impacts on the conservation, restoration, and preservation of watersheds,

as well as improve access to clean water and sanitation for communities located near the Company's operational areas.

Water Neutrality

(GRI 303-1) (GRI 11.6.2) The Company is committed to achieving Water Neutrality by 2045, which entails striking a balance between its operational water requirements and efforts to reduce its direct water footprint. This involves implementing economically and technically feasible measures to replenish at least 100% of the remaining water consumption through compensation projects in the same basins where water is extracted. By doing so, the Company aims to make a positive impact on each basin where water resources are utilized.

This commitment requires proactive actions that extend beyond mere compliance with environmental regulations. It involves managing water risks across physical, regulatory, and reputational dimensions while also delivering benefits to the community and the environment. Through these initiatives, Ecopetrol will enhance its control over business sustainability and align with the expectations of its Stakeholder Groups.

The roadmap for achieving Water Neutrality encompasses **three (3) strategic lines:**

1

Enhancing operational efficiency in water management

Involves reducing freshwater intake and minimizing discharge load and volume.

2

Integrating knowledge and technology

Aims to facilitate cost-effective treatments for water reuse and recirculation, reduce surface water production, and explore alternative water sources.

3

Promoting sustainability and water security in the environment

Entails improving water conditions in supplying basins and implementing residual compensation measures to achieve water neutrality.

These strategic objectives are aligned with the pillars of action outlined in the Environmental Strategy, including climate, circular economy, biodiversity, and ecosystem services.

(GRI 3-3) (GRI 303-1)

Through comprehensive water management, Ecopetrol aims to promote responsible resource usage across its business and extraction processes, as well as in discharge and reduction practices. This approach ensures the availability and continuity of current and future water supplies for projects, operations, and territories where the Company operates, all while considering the sustainability of water resources and value generation.

(SASB EM-EP-530a.1) Adhering to national regulations⁴⁴, Ecopetrol recognizes that potential impacts from water resource utilization and exploitation may affect both the water supply of basins and water quality. Water extraction and consumption, under certain circumstances, could alter water availability for downstream users, while discharges have the potential to impact the quality of surface and groundwater bodies. These scenarios are particularly relevant to operations in the Upstream and Downstream segments.

(GRI 303-1) (GRI 11.6.2) (DJSI 2.5.5) To address these concerns, environmental planning assesses the potential impacts of each operation or project on water bodies, considering their supply and quality conditions. Evaluations of discharges are conducted based on the load and capacity of the receiving body to assimilate and dilute pollutants, determining appropriate volumes and discharge periods throughout the year.

Consequently, environmental water resource management plans are formulated, incorporating regular monitoring of water sources and discharges within project areas. Monitoring data is recorded in the Water Information System (SIGAR, as per its Spanish acronym), facilitating the identification of deviations and the formulation of corresponding action plans.

⁴⁴. Decree 1076 of 2015, Ministry of Environment and Sustainable Development.



(GRI 303-4) (GRI 303-2) (GRI 11.6.3)
(GRI 11.6.5) (SASB EM-EP-530a.1)
(SASB EM-EP-160a.2)

Ecopetrol employs robust treatment systems to remove contaminants from wastewater,

ensuring compliance with quality standards stipulated in environmental regulations for discharges into **surface water bodies** (Resolution 631 de 2015), **marine waters** (Resolution 0883 de 2018), or **soil** (Resolution 699 de 2021).

For the hydrocarbon sector specifically, maximum values are defined based on segment activities, with monitoring conducted for over 40 quality parameters. Environmental assessments of discharges consider the assimilation and dilution capacity

of receiving bodies to minimize resource impacts.

In alignment with these efforts and through the integration of knowledge and technology, Ecopetrol seeks innovative solutions for effluent

management. Initiatives include scaling up polishing processes, enriching with nano-fertilizers, and increasing the reuse of production water for irrigation in agroforestry activities. Operational actions supporting reuse objectives aim to gradually reduce discharge volumes.

Water Footprint

(GRI 303-1) (GRI 303-4) (GRI 11-6.5) Additionally, Ecopetrol employs the water footprint calculation methodology (ISO 14046:2014), facilitating the identification of impacts and benefits of reducing pressure on water resources. Through analyses of the indirect water footprint, the most impactful raw materials and inputs have been identified, along with suppliers of goods and services who could adopt initiatives to mitigate water-related risks. In this context, the following aspects are evaluated:

- 1 **Consumption footprint:** freshwater extracted that either evaporates, is incorporated into products, or is not returned to the basin.
- 2 **Water scarcity footprint:** impact of water consumption relative to available freshwater resources.
- 3 **Degradation footprint:** deterioration of freshwater quality due to the contribution of contaminating substances. This helps identify priority substances, including:
 - **Human toxicity:** Evaluated using the USEtox⁴⁵ model, it assesses the hazardousness of wastewater discharges in terms of carcinogenic and non-carcinogenic toxicity to humans [CTUh].
 - **Freshwater ecotoxicity:** Assessed with the USEtox model, it examines various toxicological mechanisms caused by the release of substances directly affecting ecosystem health, measured in Comparative Toxic Unit equivalents [CTUe]⁴⁶;
 - **Marine water ecotoxicity:** Evaluated using the Recipe model.
 - **Freshwater acidification:** Assessed with the Accumulated Exceedance (AE) model, it examines the impact on freshwater from the release of NOx, SOx, and NH3 into the atmosphere, which could lead to acid rain.

45. A scientific model developed by the United Nations Environment Programme (UNEP) and the Society of Environmental Toxicology and Chemistry (SETAC) aimed at enhancing our understanding and management of the effects of chemicals on various products. This model facilitates the assessment of both the toxicological impacts on humans and the ecotoxicological impacts on freshwater ecosystems.

46. Comparative toxic units.

Monitoring

Monitoring the effectiveness of actions taken to manage water resources involves several key metrics:



Ensuring legal compliance with environmental regulations, particularly by monitoring the supply and quality conditions of water bodies within the Company's area of influence.



Setting and adhering to internal targets that align with the goal of achieving water neutrality. These targets include limiting freshwater intake for industrial purposes, increasing the percentage of water reuse, establishing goals for reusing production water, controlling hydrocarbon levels in discharges, and progressively reducing discharges until they are completely eliminated.



Managing water-related risks (physical, regulatory, or reputational) through an Integrated Risk Management System and by monitoring Key Risk Indicators (KRIs).



Analyzing petitions, complaints, and claims (PQRs) related to water issues and addressing them accordingly.



Evaluating the Company's performance in DJSI, CDP, Sustainalytics reports or assessments, among others.

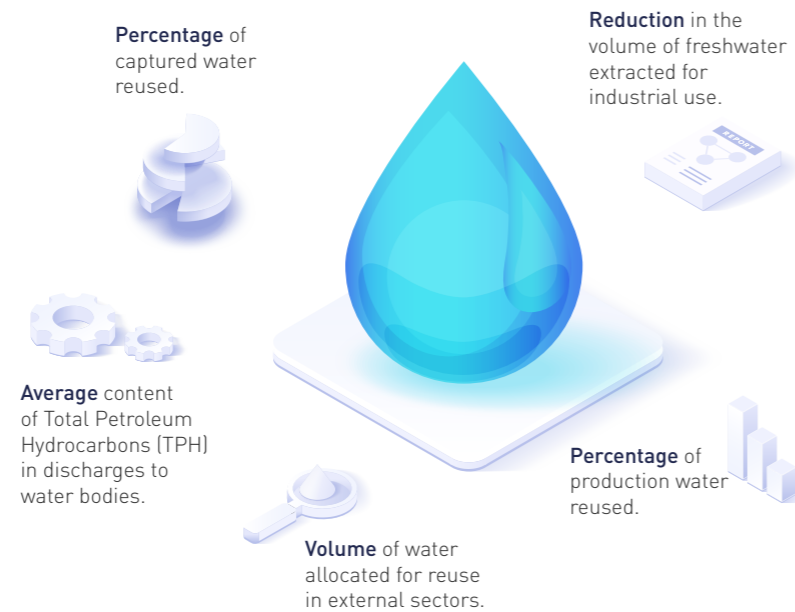


Conducting internal audits to ensure the efficient use of water resources.



Being subject to monitoring and oversight by environmental authorities and fulfilling any requirements resulting from visits or hearings with these authorities.

Currently, the assessment of the water neutrality pillar relies on key performance indicators (KPIs) such as:





In monitoring the strategy associated with the water pillar, Ecopetrol develops water models that account for short, medium, and long-term scenarios. These models focus on: **1)** regulatory limitations on freshwater extraction for industrial purposes, with the aim of identifying alternative water sources to meet demand, and **2)** water quality parameters necessary for discharges into receiving water bodies.


Similarly, Ecopetrol conducts an annual scenario analysis considering:


- 1 Unforeseen temporary limitations on discharging treated wastewater into surface water bodies.
- 2 Shortage of freshwater for industrial purposes to enhance oil recovery in assets situated in water-stressed areas.

(DJSI 2.5.5) Lastly, in 2022, Ecopetrol conducted an assessment⁴⁷ of surface water availability for the short, medium, and long terms within the area of influence of 45 assets. This assessment included:

 Utilization of various hydrological models to capture the complexity of each watershed where the Company operates.

 Examination of diverse climatic scenarios using Global Circulation Models (GCM) like GISS-E2-R (NASA Goddard), MPI-ESM-MR (Max Planck Institute), MRI-CGCM3 (Japanese Meteorological Research Institute), and the third national communication on Climate Change (IDEAM).

 Analysis of potential changes in land use linked to agricultural expansion.

 Assessment of scenarios for hydroelectricity expansion.

 Evaluation of population growth trends.

Considering that these situations may lead to postponed production and revenue loss, potentially resulting in financial repercussions, **the water neutrality roadmap aims to decrease the Company's reliance on freshwater and gradually diminish discharges.**



Risk Management

The Company has identified, within its Enterprise Risk Map, the strategic risk of "Inadequate Response To Challenges Associated With Climate Change, Water, And Biodiversity." Through this framework, water-related risks are defined and evaluated, and potential scenarios that could impact operational continuity are anticipated. Subsequently, treatment actions are proposed to minimize exposure to these risks. This approach allows for the incorporation of lessons learned into asset development plans, benefiting both the Company and its Stakeholder Groups.

(SASB EM-EP-530a.1) Additionally, the Company acknowledges another business risk associated with regulatory changes in water management. This involves the continuous monitoring and analysis of regulations, along with active participation in their formulation. Such efforts help in raising alerts to identify potential restrictions and prompt corresponding actions to ensure alignment with regulatory requirements.

Therefore, consultations conducted with various entities are crucial for providing constructive feedback from both technical and legal standpoints. For instance, Ecopetrol's involvement in the 2023 diagnostic process for the reformulation of the National Policy on Integrated Water Resource Management and the initiative to amend Law 99 of 1993 serve as notable examples.

⁴⁷ The findings of this study empower us to foresee fluctuations in water availability, potentially resulting in limitations on water extraction and discharge into surface waters. Furthermore, it facilitates the implementation of strategies to diminish reliance on freshwater, especially within assets prioritized by the Company.

Impact on Human Rights

(GRI 2-29) (GRI 3-3) (GRI 303-1) (GRI 11.6.2) (DJSI 2.5.6) Ecopetrol acknowledges the fundamental importance of the right to water, as it underpins the enjoyment of other rights such as life, health, and a healthy environment. Accordingly, the proper management of water resources by the Company is paramount to ensure availability, quality, and accessibility in the areas where operations are conducted.

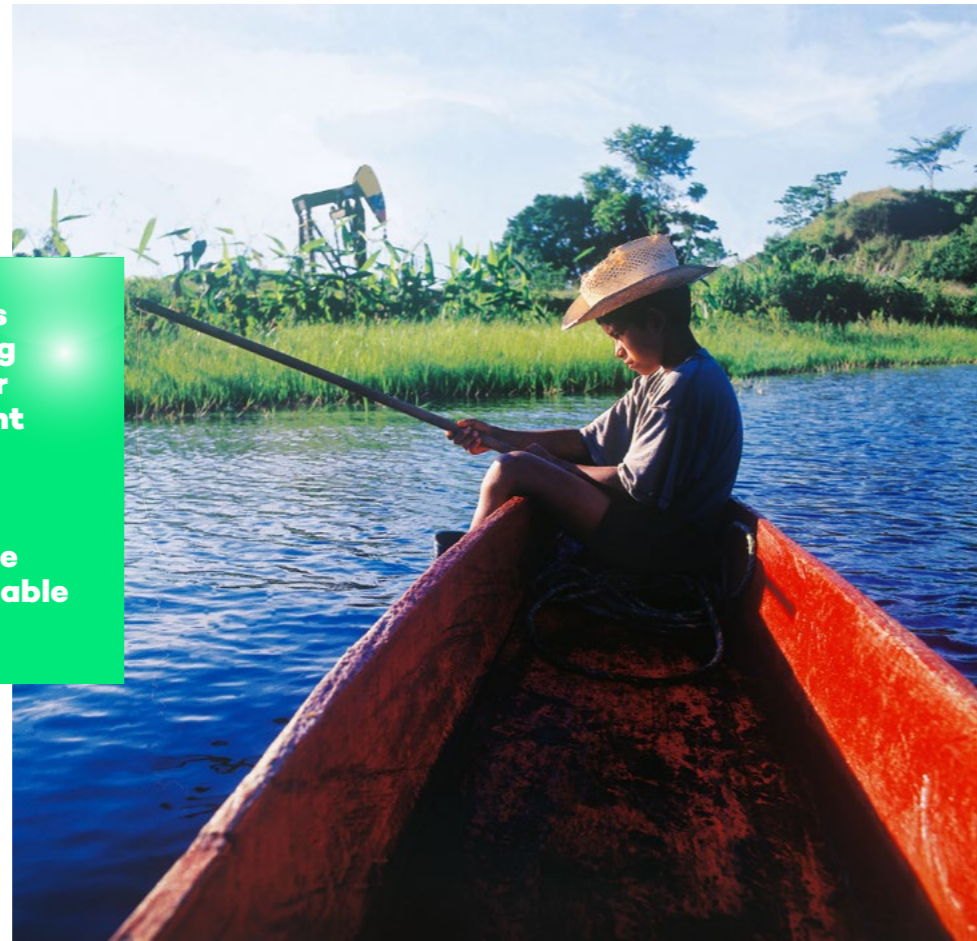
The communities within Ecopetrol's areas of influence actively engage in the early stages of project planning or the modification of existing operations. They participate at three key moments during the preparation of environmental impact studies, which are essential for formulating environmental licensing requests. During these stages, potential impacts and risks to natural resources, including water resources, are thoroughly discussed. Additionally, various participation mechanisms are in place during the evaluation of licensing requests, including environmental public hearings,

prior consultations with ethnic communities, and the involvement of third-party interveners.

Following the granting of permits, communities continue to play an active role in the operational phase. They exercise surveillance and control over project development by participating in technical monitoring visits conducted by environmental authorities, submitting petitions, and raising environmental complaints. Moreover, Ecopetrol has established mechanisms to receive and address PQRs filed by Stakeholder Groups and provides opportunities for participation to

inform stakeholders about its activities.

Regional and national environmental authorities are entrusted with issuing environmental authorizations and ensuring compliance with the commitments outlined in the Environmental Management Plan. This oversight aims to prevent, mitigate, correct, and/or compensate for identified environmental impacts. Through monitoring directives and/or oral reports, authorities may impose additional requirements on the Company to safeguard environmental integrity.



Overall, these efforts contribute to aligning comprehensive water resource management with the well-being of communities, the protection of human rights, and the promotion of sustainable development.

Goals

(GRI 3-3) (GRI 303-1) (GRI 11.6.2)
The water neutrality commitment includes the following goals by 2045:

- Reduce 66% of freshwater intake for industrial use, compared to 2019.
- Zero industrial discharges into freshwater bodies.
- Compensate for the remaining intake (34%) through compensation projects in the same watersheds from which water is extracted.

Furthermore, short-term objectives are delineated for the upcoming three (3) years as part of the Business Plan, aiming to propel progress towards the long-term objectives. Specifically, for the period 2024-2026, these objectives were revised for assets managed by Ecopetrol.

- Intake limit: **728.3 KBWPD⁴⁸** (an 11% reduction compared to 2019)
- Production water reuse: **29.4%**
- Reuse of captured freshwater: **43.1%**
- Reuse of treated production water in agroforestry crops: **60.1 KBWPD**
- HTP⁴⁹ content in discharges to freshwater bodies: **3.3 mg/L**

Accomplishments

(GRI 3-3) For 2023, the main achievements in the management of the material issue are highlighted:

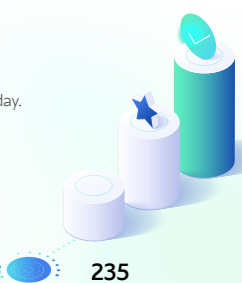
- Compliance with 106.4% of the water management efficiency indicator.
- Reuse of 152.8 million m3, equivalent to 79% of the water required for operations.
- 20% reduction in the volume of water extracted for industrial use*.
- 69% increase in the volume of reused production water*.
- Reuse of 5.09 million m3 of production water in agroforestry crops.
- Successful water polishing pilot (25kbpd) and enrichment with nano-fertilizers.
- Portfolio of compensation alternatives and defined calculation methodology.
- 100% of assets operated with water footprint calculation from 2018-2022, with 10 receiving a favorable verification concept from ICONTEC.
- Update of the environmental hydrological baseline and surface water quality of the VMM.
- Winners of the Lighthouse Award granted by the Brave Blue World Foundation in 2023 for the reuse initiative.
- Progress in the collective action mechanism for water security in Villavicencio and Acacias, along with 13 public and private entities.
- Obtained 100 out of 100 points in the evaluation of the management component of the Dow Jones Sustainability Index.

"A-" Leadership Rating in the latest CDP Water Security performance evaluation, positioning Ecopetrol as one of the best companies in the Oil and Gas sector globally in comprehensive water management.

⁴⁸. One thousand barrels of water per day.

⁴⁹. Hydrocarbon concentration

* Baseline year 2019 for achievements marked with *.



Water Extraction



(GRI 303-3) (GRI 11.6.4)

In 2023, freshwater intake increased by 8.3% compared to the previous year, driven primarily by heightened activity in the refining segment. Nevertheless, the intensity of freshwater intake per refined barrel decreased to 1.27 Bbl water / Bbl crude (-7% compared to 2022), owing to improved water recirculation practices.

In the production segment, the intensity of freshwater intake remained stable at 0.3 Bbl water / Bbl crude. As for production water, there was a 7.3% increase from the previous year, largely attributed to expanded treatment and management capabilities in the Rubiales, Caño Sur, and Castilla assets. The average water/oil ratio in 2023 stood at 13.8 Bbl water / Bbl crude-eq, compared to 13.2 in 2022. It is crucial to note that production water is a natural byproduct of hydrocarbon extraction and does not contribute to the hydrological cycle.

Similarly, captured water was predominantly utilized in refining (74.9%) and production (24.9%) activities, with the remaining portion allocated to administrative areas and the ICP. Of the total freshwater captured, 62% originated from surface sources, 18% from groundwater, and 20% from aqueducts and external suppliers, facilitated through 105 capture points spread across 25 basins. While water extraction may impact downstream availability, particularly during dry spells, the volume captured never surpassed 2.2% of the basin's water supply, thus minimizing significant impacts.

Table 6.8.1.

Water Extraction by Region

(GRI 303-3) (GRI 11.6.4) (SASB EM-EP-140a.1) (TCFD M-1.2.2) (WEF 10)

Water extraction in all areas	2020 (ML)	2021 (ML)	2022 (ML)	2023 (ML)
Total extraction all areas	454,866	429,838	468,657	503,206
Total surface water	34,493	26,023	23,134	25,580
Surface: Freshwater (total dissolved solids ≤1000mg/l)	34,493	26,023	23,134	25,580
Surface: Other waters (total dissolved solids >1000mg/l)	0	0	0	0
Total groundwater	9,397	8,691	7,221	7,277
Groundwater: Freshwater (total dissolved solids ≤1000mg/l)	9,397	8,691	7,221	7,277
Groundwater: Other waters (total dissolved solids >1000mg/l)	0	0	0	0
Total marine water	0	10	0	0
Marine: Freshwater (total dissolved solids ≤1000mg/l)	0	0	0	0
Marine: Other waters (total dissolved solids >1000mg/l)	0	10	0	0
Total aqueducts	7,381	6,997	7,751	8,407
Aqueducts: Freshwater (total dissolved solids ≤1000mg/l)	7,381	6,997	7,751	8,407
Aqueducts: Other waters (total dissolved solids >1000mg/l)	0	0	0	0
Total production water	403,595	388,117	430,551	461,942
Total production water: Freshwater (total dissolved solids ≤1000mg/l)	317,968	298,387	335,594	354,340
Total production water: Other waters (total dissolved solids >1000mg/l)	85,627	89,730	94,957	107,602

Note: To consolidate all environmental information associated with the use and exploitation of water resources in Ecopetrol's facilities and projects, the Company uses the Water Information System "SIGAR Aguas", an SAP tool based on direct measurements taken continuously in the field for the different monitoring points.

Table 6.8.2.
Water Extraction Volumes In Water-Stressed Areas
(GRI 303-3) (GRI 11.6.4) (DJSI 2.5.1) (SASB EM-EP 140a.1) (TCFD M-1.2.2) (WEF 10)

Water extraction in water-stressed areas	2020 (ML)	2021 (ML)	2022 (ML)	2023 (ML)
Total extraction in water-stressed areas	23,456	24,902	24,504	26,530
Total surface water	3,231	4,255	2,712	3,453
Surface: Freshwater (total dissolved solids ≤1000mg/l)	3,231	4,255	2,712	3,453
Surface: Other waters (total dissolved solids >1000mg/l)	0	0	0	0
Total groundwater	69	84	121	80
Groundwater: Freshwater (total dissolved solids ≤1000mg/l)	69	84	121	80
Groundwater: Other waters (total dissolved solids >1000mg/l)	0	0	0	0
Total marine water	0	10	0	0
Marine: Freshwater (total dissolved solids ≤1000mg/l)	0	0	0	0
Marine: Other waters (total dissolved solids >1000mg/l)	0	9.67	0	0
Total aqueducts	7,221	6,975	7,708	8,360
Aqueducts: Freshwater (total dissolved solids ≤1000mg/l)	7,221	6,975	7,708	8,360
Aqueducts: Other waters (total dissolved solids >1000mg/l)	0	0	0	0
Total production water	12,935	13,578	13,963	14,637
Total production water: Freshwater (total dissolved solids ≤1000mg/l)	0	0	0	0
Total production water: Other waters (total dissolved solids >1000mg/l)	12,935	13,578	13,963	14,637

In 2023, freshwater intake in water-stressed areas (hydrographic subzones with a water usage index greater than 40%, as per the hydrological data from the 2022 National Water Study) increased by 12.8% compared to the previous year. This surge was primarily driven by heightened demand at the Cartagena Refinery due to an upsurge in refined crude load and the utilization of water from the San Silvestre Marsh to address contingencies at the Barrancabermeja Refinery.

Of particular note is the significant decrease in freshwater intake at assets in Huila, with a 99.7% reduction in the volume of freshwater intake for secondary recovery compared to the previous year.

Effluent Management

Ecopetrol offers various alternatives for effluent management, as outlined in the following table:

Table 6.8.3.
Volumes For Each Alternative Available To Ecopetrol In Effluent Management
(GRI 303-4) (TCFD M-1.2.2)

Effluent Management	2020 (ML)	2021 (ML)	2022 (ML)	2023 (ML)
Reutilization/ Recycling	97,090	111,583	131,702	152,819
Reuse	3,134	2,305	3,767	5,092
Disposal	245,206	246,693	249,331	252,925
Discharges	89,375	62,034	80,209	85,131
Total Effluents	434,805	422,615	465,009	495,967



Reutilization/Recycling

During 2023, a total of **152.8 million m³ of water** were recycled, amounting to **79%** of the total water volume required for operations. This marks a 16% increase compared to the volume recycled in 2022. Additionally, 19 million cubic meters of wastewater from freshwater intakes were recycled, reflecting a 12% increase driven by the implementation of new recirculation initiatives, particularly in the Downstream segment.

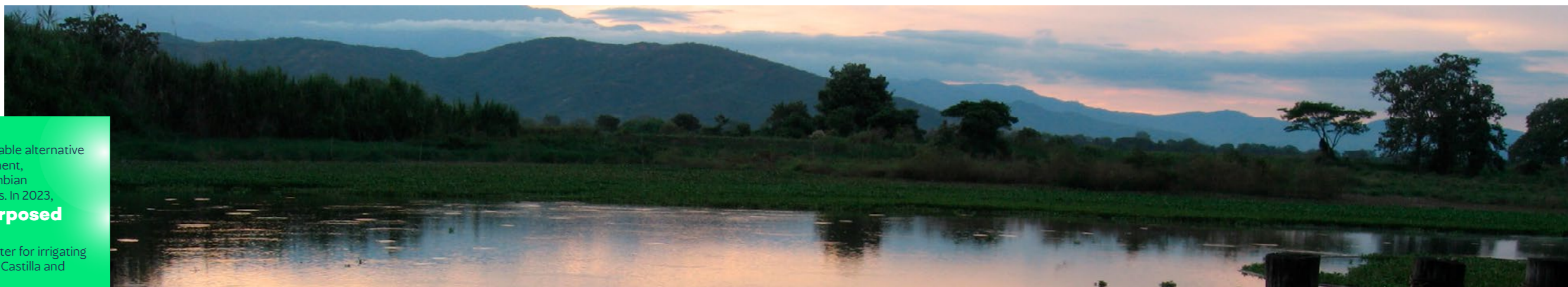
In the Upstream, 133.8 million m³ of production water were reused, representing a 17% increase from the previous year. This growth is primarily attributed to enhanced reinjection of production water for recovery and/or pressure maintenance across assets like Rubiales, Castilla, Chichimene, and Apiay.

Table 6.8.4.
Volume of Water Reused
(TCFDM-1.2.2) (WEF 10)

Water Reuse	2020 (ML)	2021 (ML)	2022 (ML)	2023 (ML)
Total Water Reuse	97,090	111,583	131,704	152,818
Reuse of Captured Water	11,694	16,887	16,907	19,005
Reuse of Production Water	85,396	94,696	114,797	133,813

Reuse

Water reuse is another viable alternative for wastewater management, in compliance with Colombian environmental regulations. In 2023, **Ecopetrol repurposed 5.09 million m³** of treated production water for irrigating agroforestry crops in the Castilla and Rubiales fields.



Discharges

In 2023, 95.7% of discharges were directed into surface water bodies, 3.6% into the sea, 0.5% into the ground, and 0.2% were transferred to third parties. Discharges occurred across 26 basins. The Production segment contributed 85% to the total discharges, primarily from production water, while the Refining segment accounted for 15%.

Total discharge amounted to 85.1 million m³, marking a 6% increase compared to the previous year, primarily attributed to the establishment of a new discharge point in Rubiales.

Table 6.8.5.
Water Discharge in Water-Stressed Areas
(GRI 303-4) (GRI 11.6.5) (TCFD M - 1.1)

Water Discharge in All Areas	2020 (ML)	2021 (ML)	2022 (ML)	2023 (ML)
Surface Water	85,986	58,222	76,922	81,459
Marine Water	2,360	2,516	2,574	3,038
Groundwater	780	860	446	406
Sewage Water	250	436	268	228
Total Discharges for Freshwater (total dissolved solids ≤1000mg/l)	77,428	49,597	72,179	77,026
Total Discharges for Other Waters (total dissolved solids >1000mg/l)	11,947	12,437	8,031	8,105

Table 6.8.6.
Water Discharge in Water-Stressed Areas
(GRI 303-4) (GRI 11.6.5) (TCFD M - 1.1)

Water Discharge in Water-Stressed Areas	2020 (ML)	2021 (ML)	2022 (ML)	2023 (ML)
Surface Water	480	593	60	59
Marine Water	2,339	2,516	2,574	3,038
Groundwater	140	122	39	39
Sewer Water	24	11	18	17
Total Discharges for Freshwater (total dissolved solids ≤1000mg/l)	262	213	109	115
Total Discharges for Other Waters (total dissolved solids >1000mg/l)	2,721	3,029	2,583	3,039

In 2023, wastewater discharge in water-stressed areas increased by 17% compared to the previous year, mainly attributed to elevated discharges into the sea at the Cartagena Refinery due to an increase in refined crude load.

Table 6.8.7.
Volume of Water Discharge by Treatment Level
(GRI 303-4) (11.6.5) (TCFD M - 1.1)

Discharge by Treatment Level	2020 (ML)	2021 (ML)	2022 (ML)	2023 (ML)
Untreated	0	0	0	0
Pretreatment	0	0	0	0
Primary Treatment	3,844	4,302	4,586	2,948
Secondary Treatment	85,372	57,391	75,481	82,084
Tertiary Treatment	0	0	0	0
Other Treatments	159	341	143	99

In primary treatments, discharges undergoing physical treatments are recorded; secondary treatments involve biological processes; tertiary treatments encompass advanced methods like reverse osmosis. The volume categorized as "Other treatments" pertains to wastewater managed by external entities, responsible for its treatment and ultimate disposal.

Production Water Treatment

In 2023, production water was managed as follows:

15%
was discharged into surface water bodies.

29%
was reused for reinjection for secondary recovery and/or pressure maintenance.

55%
of production water was reinjected for final disposal

1%
was reused for agroforestry crop irrigation in Castilla and Rubiales. A 35% increase was recorded compared to the previous year due to the implementation of the SAARA project in Rubiales, for palm crop irrigation in Puerto Gaitán, Meta.

Table 6.8.8.
Production Water Volumes by Management Method
(TCFDM1-1) (WEF 10)

Production Water by Disposal Method	2020 (ML)	2021 (ML)	2022 (ML)	2023 (ML)
Total Production Water	405,758	389,471	432,226	463,376
Disposed	72,050	45,777	64,345	71,579
Reinjected for Final Disposal	245,206	246,693	249,331	252,925
Reinjected for Recovery	85,095	94,566	114,541	133,498
Reused	3,134	2,305	3,767	5,092
Other Reuses	273	130	242	282

Consumption

The majority of water consumption, which is the water that does not return to the basin, **is attributed to the Refining segment, primarily due to evaporation losses.**



Table 6.8.9.
Total Water Consumption in all Areas
(GRI 303-5)

Water Consumption	2020 (ML)	2021 (ML)	2022 (ML)	2023 (ML)
Inputs	454,865	429,839	468,657	503,206
Freshwater Intakes	51,270	41,722	38,106	41,264
Production Water	403,595	388,117	430,551	461,942
Effluents	442,359	414,172	453,847	483,725
Injected Captured Water for Recovery	10,259	8,551	5,999	7,079
Drinking Water Supplied to Communities	9,288	23	-	-
Production Water Reinjected for Recovery	85,095	94,566	114,541	133,498
Production Water Reinjected for Final Disposal	245,206	246,693	249,331	252,925
Reuse of Production Water for Agricultural Irrigation	3,136	2,305	3,767	5,092
Discharges	89,375	62,034	80,209	85,131
Balance (consumption)	12,506	15,667	14,810	19,481

Table 6.8.10.
Water Consumption Within The Organization In Each Of The Water-Stressed Areas
(GRI 303-5) (DJSI 2.5.1) (DJSI 2.5.2) (WEF 10)

Water Consumption	2020 (ML)	2021 (ML)	2022 (ML)	2023 (ML)
Inputs	23,456	24,902	24,504	26,530
Freshwater intakes	10,521	11,324	10,541	11,893
Production water	12,935	13,578	13,963	14,637
Effluents	15,490	16,223	16,516	17,739
Captured water injected for recovery	41	0	37	0
Drinking water supplied to third parties (communities)	4	0	0	0
Production water reinjected for recovery	12,462	12,981	13,787	14,005
Production water reinjected for final disposal	0	0	0	580
Reuse of production water for agricultural irrigation	0	0	0	0
Discharges	2,983	3,242	2,692	3,154
Balance (consumption)	7,966	8,679	7,988	8,791

Note: Water consumption in water-stressed areas (UA greater than 40%) saw a 10% increase, primarily driven by heightened water intake from the San Silvestre Marsh to address contingencies at the Barrancabermeja Refinery. This water is discharged into a different hydrographic subzone. (GRI 303-5) It is noteworthy that changes in stored volume are considered negligible compared to the substantial volumes of water managed in Upstream and Downstream operations. Moreover, due to the high volumes of water, especially production water, storage is not a viable method of managing the water effluents generated by Ecopetrol.

Biodiversity and Ecosystem Services

(GRI 3-3) Ecopetrol recognizes the multitude of dependencies, impacts, risks, and opportunities associated with nature, which are particularly pronounced when operating in a megadiverse country like Colombia. Hence, within the framework of the 2040 Strategy, it is imperative to identify and manage these dependencies and potential impacts on biodiversity and ecosystem services, aligning actions with the Sustainable Development Goals (SDGs).



(GRI 3-3) (DJSI 2.7.4)

Ecopetrol acknowledges that biodiversity management directly affects project continuity, and operational activities can impact strategic ecosystems or areas of special biodiversity significance.

These impacts can lead to significant ramifications for business operations and relationships, including social conflicts, asset damage, financial implications, reputational risks, community effects, among others.

To address these challenges, Ecopetrol employs a proactive approach from project inception, employing the mitigation hierarchy to identify biodiversity-sensitive areas and prevent adverse impacts. Furthermore, the Environmental Strategy incorporates a dedicated pillar focused on preventing and mitigating potential environmental impacts from hydrocarbon spills and other hazardous substances resulting from operational and process safety incidents in operational zones.

(DJSI 2.7.1) In line with these considerations, the Company has recognized the insufficient response to challenges linked to climate change, water, and biodiversity as a strategic risk. This concern is further underscored by the identification of the emerging risk "Technology-enabled Natural Capital Solutions." This emphasizes the need for Ecopetrol to adapt and enhance its technological capabilities to effectively tackle, evaluate, and communicate efforts aimed at mitigating its impact, risks, dependencies, and opportunities related to Colombia's biodiversity and natural environment.

Based on this perspective, Ecopetrol has crafted an **Environmental Strategy** that positions biodiversity and ecosystem services as a strategic pillar guiding its management approach.

(DJSI 2.7.2) (DJSI 2.7.3) The objective of this pillar is to develop operations that are in harmony with the environment, reducing and mitigating potential impacts on ecosystems and communities. To achieve this, the Company exerts management efforts focused on **four fundamental axes**:

1

Mitigation Hierarchy

This approach focuses on preventing, avoiding, mitigating, and compensating for potential residual impacts resulting from project implementation. It establishes a sequence of measures to manage negative impacts and prevent a net loss of biodiversity.

2

Nature-based Solutions (Nbs):

These solutions aim to preserve biodiversity and ecosystem services in strategic areas while also enhancing the livelihoods of local communities. Their goal is to identify synergies between nature, the economy, and society to address environmental challenges effectively.

3

Knowledge Generation

This involves the production and dissemination of information and knowledge about biodiversity and ecosystem services. It is crucial for supporting informed decision-making and enabling effective planning that favors the implementation of the mitigation hierarchy.

4

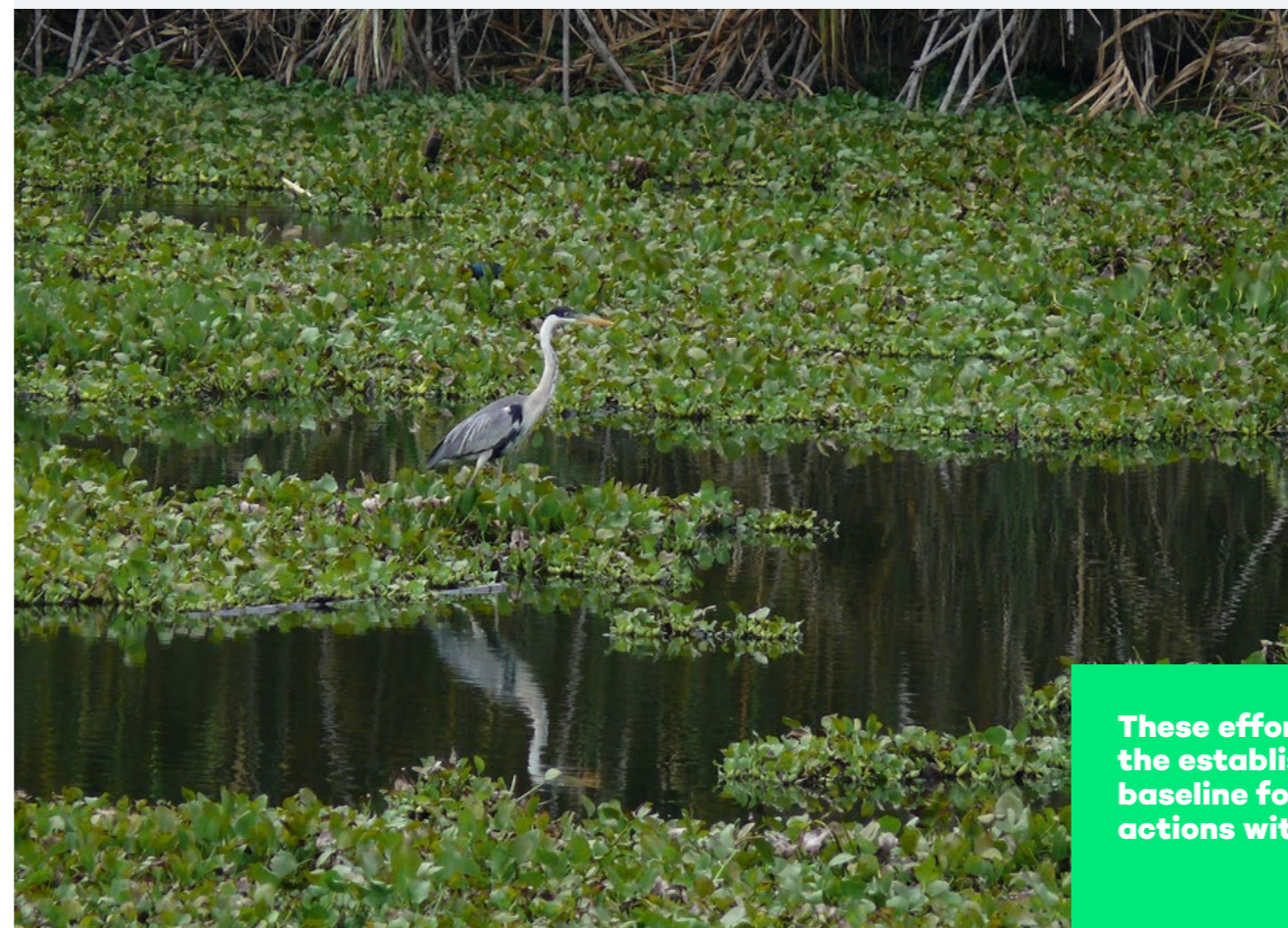
Biodiversity Culture

This refers to the reinforcement of competencies, appreciation, and respect for biodiversity and ecosystem services, as well as understanding the importance of their conservation and sustainable use. It targets both Company personnel and various Stakeholder Groups. This concept aligns with Ecopetrol's 2040 Strategy and its core principle of "Life First," which emphasizes self-care, care for others, and care for the planet, promoting environmental protection and consideration for future generations.

(GRI 304-1) (GRI 304-2) (GRI 304-4) (GRI 11.4.2) (GRI 11.4.3) (DJSI 2.7.1) (DJSI 2.7.4) (SASB EM-EP-160a.3) (WEF 9)
Within these four (4) pillars, Ecopetrol's biodiversity strategy adheres to the following principles:

- Avoid operating in protected areas classified under categories I to IV of the International Union for Conservation of Nature (IUCN)⁵⁰.
- Refrain from conducting activities in UNESCO-designated World Heritage areas.
- Apply the Precautionary/Prevention Principle.

(DJSI 2.7.2) (DJSI 2.7.3)
To learn more about Ecopetrol's biodiversity strategy, scan the QR code below.



These efforts have enabled the establishment of a baseline for biodiversity actions with suppliers.

(GRI 3-3) (DJSI 2.7.1) Prior knowledge and assessment of environmental aspects, as well as specific regulations in the areas where Ecopetrol operates, enable the identification of potential environmental impacts and opportunities to define measures aligned with the mitigation hierarchy. The main impacts are typically associated with:

- 1 Land use change (transformation).
- 2 Forest exploitation.
- 3 Contamination associated with contingencies.
- 4 Impact on species classified as threatened according to the IUCN.

To mitigate residual impacts, Ecopetrol implements actions focused on subscribing to and executing projects for conservation and reforestation. Specific goals are set to make positive contributions to nature, aligning with the Company's objectives and national and international goals in this area.

(DJSI 2.7.3) (DJSI 2.7.1) (DJSI 2.7.2) In addition to addressing the direct impacts potentially caused by Ecopetrol, it's crucial for the Company to develop and enhance biodiversity management across its supply chain. Therefore, in 2023, progress was made in developing environmental guidelines to prevent deforestation, and training programs on nature management were initiated.

⁵⁰. (GRI 304-1) For the year 2023, Ecopetrol did not report operations in protected areas classified as I to IV by the IUCN (International Union for Conservation of Nature).

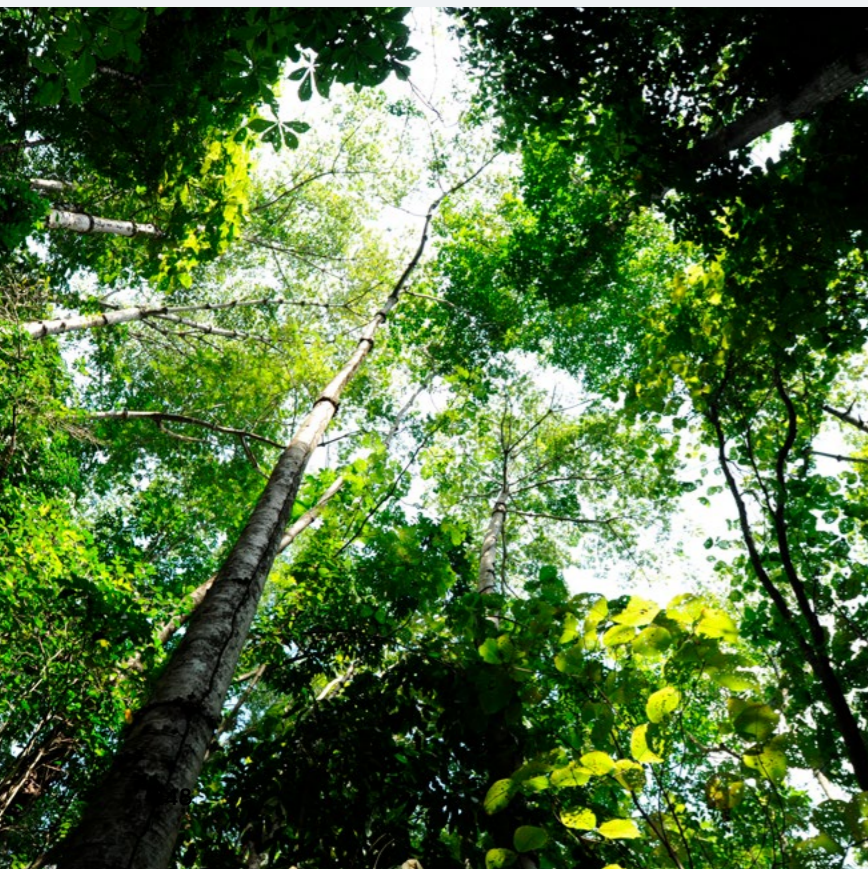
Impact on Human Rights

(GRI 2-29) (GRI 3-3) (DJSI 2.7.2) (DJSI 2.7.3)

Ecopetrol, in alignment with its *Guide on Human Rights and Business*, is dedicated to upholding United Nations General Assembly Resolution 76/300, which promotes the human right to a healthy, clean, and sustainable environment. It also aligns with the Convention on Biological Diversity, which advocates for biodiversity conservation and sustainable resource utilization.

This commitment facilitates proactive management of human rights within Ecopetrol's operations, as there is a clear correlation with the benefits it brings to people, including access to clean water sources, reduced diseases, climate change mitigation, prevention of soil degradation, and protection of species, among others.

Hence, beginning with environmental licensing and the implementation of the mitigation hierarchy, endeavors are undertaken to ensure a thorough process of identifying biodiversity-sensitive areas. This is aimed at averting significant impacts and potential infringements on human rights.



Goals

- By 2025, Ecopetrol aims to produce an integrated report on risks and opportunities associated with climate change and nature, in accordance with the recommendations of the **Taskforce on Nature-related Financial Disclosures (TNFD)**⁵¹.
- Plant **12 million trees** and conserve **30,000 hectares** of land by 2030.
- Accumulate between **two (2) and four (4) MtCO2** through Natural Climate Solution projects by 2030.
- Establish **25 reserves by 2025**, with a target goal of **50 by 2030**.
- Preserve **15 wild species** across three **(3) landscapes**.

Biodiversity and Ecosystem Services Management

(GRI 304-3) (GRI 11.4.4) (DJSI 2.7.5)]

In 2023, Ecopetrol undertook various initiatives to underscore its commitment to protecting and restoring habitats in the areas where the Company operates, thereby contributing to generating positive impacts on biodiversity.

To effectively manage aspects related to biodiversity, Ecopetrol implements a mitigation hierarchy, beginning with project and operations planning, identifying potential impacts, and proposing management measures. This comprehensive approach involves the identification of strategic ecosystems,

51. The TNFD is a globally recognized, science-based initiative championed by governments, businesses, and financial institutions. Its primary objective is to steer corporate actions and facilitate the disclosure of information concerning risks, impacts, and opportunities associated with nature. Embracing this initiative leads to enhanced organizational decision-making and the effective management of adverse effects on the environment.

protected areas, and endemic or threatened species. It facilitates the identification of sensitive environmental and social elements, enabling the delineation of intervention and non-intervention areas to mitigate impacts.

Building on the defined prevention and mitigation measures, Ecopetrol designs compensation actions for residual impacts,

aiming to achieve a net gain in biodiversity. These actions encompass various strategies such as soil management, vegetation cover, flora and deforestation management, habitat protection and conservation, establishment of protected areas, revegetation and/or reforestation efforts, water and hydrobiological resource management, flora conservation, and compensation.

Significant positive and negative impacts, including direct and indirect effects on biodiversity.

(GRI 304-2) (GRI 11.4.3) (WEF 9)

Positive impacts:



Managed a total of **1,740 agreements**, comprising 937 voluntary agreements and 803 for environmental compliance, covering actions across 167,922 hectares. The sustainability of these initiatives is expected to yield positive impacts on local and regional biodiversity while enhancing the productive practices of the communities involved.

Marimonda Monkey (*Ateles hybridus*), White-lipped Peccary (*Tayassu pecari*), Woolly Monkey (*Lagothrix lagotricha*), Spanish Cedar (*Cedrela odorata*), Margay (*Leopardus wiedii*), and the Black Tinamou (*Tinamus osgoodii*).



Preserved more than **500 species of flora and fauna** in the Eco-reserves, including approximately 34 classified as Vulnerable (VU), 29 as Near Threatened (NT), 6 as Endangered (EN), and 1469 as Least Concern (LC). Notably, the presence of turtles (*genus Podocnemis*), crocodiles (*genus Caiman*), poisonous frogs (genera *Allobates*, *Dendrobates*), among others, is emphasized.



Conducted sampling of epiphytic flora, along with **159 fauna samplings** and 40 hydrobiological sampling points.



Provided voluntary support for the conservation of **17 threatened wild species**: the Orinoco Crocodile (*Crocodylus intermedius*), Tapir (*Tapirus terrestris*), Arrau Turtle (*Podocnemis expansa*), Congrio tree (*Acosmium nitens*), Moriche Palm (*Mauritia flexuosa*), River Turtle (*Podocnemis lewyana*), Jaguar (*Panthera onca*), Blue-billed Curassow (*Crax alberti*), Carreto (*Aspidosperma polyneuron*), Striped Catfish (*Pseudoplatystoma magdaleniatum*), Manatee (*Trichechus manatus*),



Conserved **strategic ecosystems** like gallery forests, morichales (swamp forests with *Mauritia* palms), tropical dry forests, and wetlands through a combination of voluntary and mandatory measures.

Advanced in risk management by identifying hydrocarbon-affiliated microorganisms in water sources with potential for bioremediation.

Negative impacts:



The most significant impact of Ecopetrol's projects and operations is land use change.



Intervened in 4.36 hectares of land and exploited 446 m³ of wood from forests.

To effectively monitor the impact of voluntary initiatives across various biodiversity management strategies, we conduct regular evaluations of the progress of each ongoing initiative. To facilitate this, internal management dashboards are utilized, providing monthly reports on significant milestones, success factors, and early warnings related to each strategic aspect of the biodiversity pillar. These reports include

supporting documents, maps, images, videos, and other relevant materials.

Furthermore, to gauge the efficacy of environmental compensation plans and ensure compliance with environmental obligations, we establish monitoring indicators. These indicators are then incorporated into **Environmental Compliance Reports (ECR)** and reviewed by environmental authorities.

Activity highlights

- **72** feasibility assessments were conducted in project and operations planning; **77** environmental studies were carried out for exploratory and production projects, which included biotic characterization of the areas of influence.
- **45** environmental management sheets associated with the preservation of vegetation cover and biodiversity protection were implemented.
- **Nine (9)** flora surveys and **159** fauna surveys were conducted. Epiphytic flora species were recorded, and **40** hydrobiological sampling points were monitored.

(GRI 3-3) (GRI 2-29)

Furthermore, to enhance the management of biodiversity and ecosystem services, Ecopetrol engages in dialogue and collaboration with various stakeholders across different contexts:



Government

The Company actively participates in national coordination dialogues and is in the process of advancing a memorandum of understanding with the Ministry of Environment and Sustainable Development (MADS, as per its Spanish acronym). Additionally, it supports the generation of information and knowledge through partnerships with research institutes such as the Institute of Hydrology, Meteorology, and Environmental Studies (IDEAM, as per its Spanish acronym) and the Alexander von Humboldt Research Institute for Biological Resources (IAVH). These collaborations contribute to the generation of data for SIB Colombia, the national network of open biodiversity data.



Society and Community

Ecopetrol disseminates information related to biodiversity, goal compliance, and environmental obligations. It collaborates with local communities to create social and economic benefits through alternatives different from oil. Efforts include strengthening community wildlife monitoring processes and offering free virtual courses on biodiversity and the bioeconomy.



Associations

The Company provides technical support for environmental compensation and 1% investment in partnership with organizations like FEDEGAN and FEDECACAO. Proposals for regulatory and operational improvements aimed at streamlining 1% compensation and investment obligations were developed in collaboration with the National Business Association of Colombia (ANDI, as per its Spanish acronym), and presented to the National Environmental Licensing Authority (ANLA, as per its Spanish acronym) and MADS. Ecopetrol also contributes to the construction of the Biodiversity + Business roadmap, aligning with the goals of the Kunming-Montreal Global Biodiversity Framework.



Employees

Ecopetrol strengthens its employees' competencies and capacities related to biodiversity through webinars and virtual diploma programs on Nature-based Solutions (NbS) and the bioeconomy. Two platforms have been developed for this purpose: (i) the NbS Platform, which provides tools for formulating, implementing, and monitoring NbS projects, and (ii) the Resilience Tool, which enhances understanding of interrelationships in areas where the Company operates.



Shareholders and Investors

Ecopetrol discloses its biodiversity management practices in accordance with international and national standards. The Company also initiated and implemented two (2) TNFD pilots at regional and local levels.



EG-Controlled Companies

A center of excellence in biodiversity, climate change, and water management has been established to facilitate coordinated management measures among subsidiaries.



Suppliers

In 2023, Ecopetrol published the HSE Guide - Annex containing Environmental Sustainability Guidelines for the Procurement Process, which includes criteria for selecting contractors and contractual clauses associated with Net Zero Deforestation (NZD). Training programs were offered to suppliers and various roles involved in the procurement process.



(GRI 304-3) In the past fiscal year, Ecopetrol continued to strengthen its leadership in biodiversity and ecosystem services management through various initiatives and projects in collaboration with different strategic partnerships. These initiatives include:

1

WCS and Fondo Acción

Wildlife Project. This project aims to address the conservation challenges faced by 15 threatened wildlife species, promoting biodiversity conservation and providing benefits to local communities.

2

Fundación Natura

Carbon and Wetlands Project. This project focuses on conserving and restoring tropical forest and freshwater wetland ecosystems, with actions aimed at mitigating greenhouse gas emissions.

3

The Nature Conservancy (TNC)

Carbon Monitoring Protocol. Through this initiative, Ecopetrol plans to plant 250,000 native trees in Meta and Caquetá and implement a monitoring strategy to estimate carbon absorption.

4

Fundación Cataruben - Orinoco Carbon

This project aims to prevent ecosystem transformation, deforestation, and degradation in the Orinoco region, thereby reducing greenhouse gas emissions.

5

CORMACARENA and Meta Governorate

Conservation of strategic areas through community engagement and payments for environmental services in the Department of Meta, middle and upper Guayuriba river basin, and the Metica river.

6

Humboldt Institute Eco-reserves Agreement:

In collaboration with CENIT and Oleoducto Bicentenario, this agreement seeks to develop management instruments for four eco-reserves and explore new opportunities.

7

Colombian Air Force

Research focused on aerospace sciences to study land cover and greenhouse gas emissions.

8

Humboldt Institute FIBRAS Agreement

This agreement aims to plan and manage biodiversity in accordance with sustainable development criteria, focusing on eco-reserves, socio-ecological resilience, biodiversity monitoring, and promoting bioeconomy and green businesses.

To learn more about Ecopetrol's strategic partnerships, scan the QR code below.



Table 6.9.1.
Protected or Restored Habitats (Mandatory plus Voluntary Consolidated Figures)
(GRI 304-3) (GRI 11.4.4) (DJSI 2.7.5)

Criterion	Unit of Measurement	2020	2021	2022	2023
Trees planted or contributed to communities, environmental authorities, or local governments	#	682,054	434,746	615,592	933,225
Established nurseries	#	22	24	32	11
Seedlings produced in nurseries	#	90,724	113,990	155,481	989,731
Areas planted or undergoing restoration processes	ha	8,640	8,321	265.2	1,505
Number of protected water sources	#	92	0	115	97
Conservation agreements signed	#	52	182	625	1,740
Hectares in managed conservation agreements	ha	16,093	2,611	22,973.7	167,922
Area in silvopastoral systems	ha	NA	34	37.8	373.2
Area in agroforestry systems	ha	204	22	71.73	215.72
Established eco-efficient stoves	#	NA	5	55	58
Protected areas declared under any conservation figure	#	15	15	16	22
Hectares protected under any conservation figure	ha	17,675	17,675	435	8,236
Eco-friendly homes	#	NA	0	0	61
Photovoltaic systems	#	NA	0	10	69
Apiaries - Melipolinaries	#	NA	0	0	66
Intervened hydrographic subzones	#	2	7	32	43
Kilometers of protected water bodies	km	22	31	91	198.13
New or strengthened hydrometeorological stations	#	NA	0	0	0
Threatened wildlife species in conservation processes	#	15	15	15	17
Number of Eco-reserves	#	6	15	15	20
Hectares covered by the Eco-reserve Network	ha	11,906	15,085	15,085	15,583

Note 1: The data presented in Table 6.8.1, "Protected or Restored Habitats," reflects finalized figures as of December 31, 2023; ongoing efforts in conservation, restoration, and protection areas are still underway. Only criteria with measurement units in hectares (ha) are considered for indicator GRI 304-3.

Note 2: Only initiatives implemented within the corresponding year are included in the report. If data is marked as "NA," it indicates that there were no associated data available.

(GRI 304-3) The EG's tree planting and restoration initiatives align with the United Nations' Decade on Restoration (2021-2030). These efforts encompass plantings conducted through both mandatory and voluntary initiatives, partnerships with NGOs, and the distribution of trees from Ecopetrol Group nurseries to various stakeholders, including communities, governments, and municipalities.

(GRI 304-3) The methodologies employed for conservation and restoration activities vary depending on the specific action and are guided by official documents such as the National Restoration Plan, technical guidelines from the Ministry of Environment, collaborative designs with organizations like TNC, WCS, Humboldt Institute, IUCN, technical specifications from ANLA, and input from regional and local environmental authorities, among others.

(GRI 304-4) Regarding habitats impacted by the organization's operations, no species classified as critical or endangered were identified in 2023 based on assessments using the IUCN Red List and national conservation listings.



The tree planting target corresponds to an EG objective of achieving a cumulative total of 8,063,226 between 2018 and 2023.

The distribution breakdown is as follows: Bicentenario 34,557, Cenit 1,715,050, Ecopetrol 3,734,361, Ecopetrol America 1,250, Esentia 14,884, Hocol 2,254,936, ISA INTERCOLOMBIA 97,430, OCENSA 96,570, ODC 13,445, ODL 84,391, and REFCAR 16,352.

Table 6.9.2.
Species Classified as Critical and Endangered According to the IUCN Red List and National Conservation Listings

(GRI 304-4) (GRI 11.4.5)

Species	2021 (#)	2022 (#)	2023 (#)
Critically Endangered	1	0	0
Endangered	1	0	0
Vulnerable	2	2	2
Near Threatened	2	0	1
Least Concern	1	23	36

(GRI 304-4) According to the current classification of the IUCN Red List, various species were affected by incidents and roadkill, including two (2) species of vulnerable fish (VU); one (1) species of near-threatened fish (NT), thirty-six (36) species in the least concern category (LC) consisting of fish, reptiles, and mammals; five (5) not evaluated (NE), and one (1) with insufficient data. These incidents were addressed in adherence to response, care, and cleaning protocols.

Accomplishments

(GRI 3-3) In 2023, Ecopetrol fortified operational policies and procedures and progressed in standardizing indicator scorecards for enhanced biodiversity and ecosystem services management. Evaluations of goals and milestones were conducted on management dashboards, in addition to other notable achievements during this fiscal year, as outlined below:

- Restored/conserved 167 thousand hectares.
- The GE planted/distributed over eight (8) million trees.
- Developed the first carbon and biodiversity monitoring protocol for freshwater wetlands in the country.
- Designated five (5) new Eco-reserves, totaling 20 by 2023. Between 2022 and 2023, 68 visits were recorded, with 1,286 visitors from academic, scientific institutions, national entities, subsidiaries, among others.
- Presented technical-legal proposals to ANLA and MADS for regulatory and operational improvements to streamline forced 1% investment and compensation obligations in collaboration with ANDI.
- Published the book titled "Colombian Biodiversity in Detail."
- "Fibras Esencia y Territorio" Agreement with the Humboldt Institute.
- Supported the creation of the TNFD Consultation Center of Colombia under the leadership of ANDI.
- Implemented two (2) pilot methodologies proposed by TNFD for the management of nature-related risks and opportunities.
- PVS initiative recognized with the Good Practices for Sustainable Development award in SDG 15, "House Workshop for the Creation of Possible Territories."
- Signed an agreement with IDEAM for the execution of 1% investment through the implementation and strengthening of hydrometeorological instrumentation for the Cusiana and Cravo Sur river basins.
- Awarded the Boscar Prize for forest care through the Eco-reserves initiative.

Scan the following QR codes to access these publications



Materials and Waste

(GRI 3-3) For Ecopetrol, the holistic management of materials and waste not only enhances operational efficiency across all business segments but also bolsters the circular economy as a foundational concern. Through this management approach, the objective is to influence the Company's 2040 Strategy, particularly its Generate Value Through T ESG pillar, by fostering clean production processes that contribute to organizational growth and decarbonization.




Considering that various segments of the hydrocarbon industry generate diverse types of waste including construction and demolition debris, drilling residues, oily sludges, scrap metal, impregnated materials, spent catalysts, salts, resins, and oily sludges, Ecopetrol's Environmental Strategy prioritizes comprehensive waste management as a strategic cornerstone. The goal is to implement operational and organizational measures aimed at reducing both the quantity and hazardousness of generated waste to economically and technically feasible levels. To achieve this, **three fundamental aspects are emphasized:**

- 1 Reduction at source or at the point of origin.
- 2 Recovery of materials through waste utilization, leveraging the principles of the Multi-R or 9Rs⁵² concept within the framework of the circular economy.
- 3 Integration of disruptive technologies.

These measures enable Ecopetrol to embrace circular initiatives aimed at preventing and minimizing waste generation while also facilitating the transition to a circular waste management paradigm.

Moreover, proactive steps are taken to maximize material utilization, particularly within the supply chain, by promoting circularity models such as reuse, remanufacturing, and take-back schemes that prioritize the use of renewable raw materials and facilitate the closure of material life cycles. Effective management in this regard not only yields positive impacts on the Company's economic development but also fosters beneficial outcomes in local communities by encouraging the growth of green and sustainable businesses.

Thus, for Ecopetrol, procurement and service provision endeavors are expected to align with at least one of the following objectives:

-  Reducing non-renewable virgin materials.
-  Optimizing the reuse potential of products and components through processes such as remanufacturing, repair, and the establishment of buy-back agreements.
-  Enhancing product and material recycling efforts through the incorporation of waste utilization options, thereby ensuring the complete closure of cycles for acquired goods.



52. The Multi-R concept of the Circular Economy is based on: Redesign, Rethink, Recover; Reduce; Reuse; Recycle; Redistribute; Repair; and Remanufacture.

Impact on Human Rights

(GRI 2-29) (GRI 3-3) The effective management of materials and waste within the Company fosters the implementation of measures to prevent or alleviate potential impacts on air, soil, water, and biodiversity across all stages of the Company's operations. This commitment translates into safeguarding the right to life, personal integrity, a healthy environment, and the collective rights of workers, suppliers, and communities in the areas where the Company operates.

By properly managing construction and demolition waste (CDW), drilling cuttings, scrap metal, salts, resins, incineration residues, oily sludges, virgin materials, and other waste streams, the Company actively contributes to the well-being of ecosystems and communities. Its goal is to mitigate the pollution of natural resources caused by the release of chemicals and excessive resource consumption.



This approach facilitates the holistic enjoyment of human rights in Ecopetrol's operational areas and aligns with the Company's commitment to reducing its environmental impact.

Goals

The following waste management objectives⁵³ are outlined for the period 2023-2025, based on the respective business units:

Regional Piedemonte Vice Presidency (VPI)

- 95% utilization of hazardous waste.
- 10% utilization of non-hazardous waste.

Regional Andean East Vice Presidency (VAO)

- 80% utilization of non-hazardous waste.
- 8% reduction in oily sludges.

Regional Orinoquía Vice Presidency (VRO)

- 86% utilization of non-hazardous waste.

Regional Central Vice Presidency (VRC)

- 6% reduction in hazardous waste.
- 80% utilization of non-hazardous waste.
- 7% reduction in oily sludges.

General Management Barrancabermeja Refinery (GRB)

- 35% utilization of hazardous waste.
- 10% utilization of non-hazardous waste.
- 35% utilization of oily sludges.

General Management Cartagena Refinery (GRC)

- 20% utilization of hazardous waste.
- 10% utilization of non-hazardous waste.
- 15% utilization of non-oily sludges.

The following goals are defined for the proper management of materials:

- Identification of the baseline of materials category with potential for reuse through reutilization, remanufacturing, and/or repair processes, and take-back acquired within the procurement process (2024-2026).
- Identification of inputs with future supply risks (2024-2026).
- Management of commercial vehicles for reusable waste under Pareto categories identified by procurement (2024-2026).
- Evaluation of inputs with future supply risks in the supply chain (2027-2031).
- Incorporation of circular procurement measurements and identification of the circularity degree with suppliers (2027-2031).
- Seeking alliances with utilization managers for spent materials (2027-2031).
- Establishment of industrial symbiosis partnerships with suppliers, customers, and procurement managers (2032-2040).
- Seeking alliances with companies to sell waste and spent materials with potential for their value chains (2032-2040).
- Incorporation of circular procurement measurements (2032-2040).

⁵³ The reduction and utilization targets were calculated based on the tons generated in 2022 and are applicable exclusively to the refining and production business units. The Environmental Management department is currently in the process of establishing a unified goal.

Materials and Waste Management

(GRI 306-1) (GRI 11.5.2) Waste generation is inherent to construction, drilling, exploration, production, and refining activities. Therefore, the comprehensive management of waste and materials is an integral part of our pursuit of operational excellence, aligning with the Environmental Strategy and the Circular Economy Model for the EG. This approach is meticulously developed in full compliance with national regulatory frameworks and Ecopetrol's internal protocols.

Throughout 2023, the implementation of the *Comprehensive Waste Management Guide* persisted, covering all Company operations generating solid, liquid, or gaseous waste. Grounded in a PDCA cycle, the guide aims to identify risk scenarios and implement prevention, mitigation, or remediation measures to address potential impacts on both people and operations.

(GRI 306-2) (GRI 11.5.3) It is worth highlighting that, in collaboration with suppliers and contractors (upstream), proactive measures are taken based on the *Comprehensive Waste Management Guide* and the Sustainable Procurement Best Practices document. These measures include:



Application of environmental criteria in supplier selection processes. Inclusion of contractual clauses promoting waste prevention or utilization.



Regular inspections of third-party facilities to ensure proper waste management practices.



Monitoring and implementation of improvement plans based on evaluations and audit findings.



(GRI 306-2) (GRI 11.5.3) Utilization actions are deployed Downstream across various fronts:

1

Oily sludges and soil contaminated with hydrocarbons:

- **Production: In Production:** Employing technologies to minimize the presence of fluid in sludge and drilling cuttings, including dehydration and centrifugation processes for oil recovery.
- **In Refining:** Directing oily sludges to third-party processors, typically utilizing cement kilns for treatment.
- **In Refining and Production:** Conducting research into efficient emulsion breakers for production wastewater treatments to prevent oily sludge generation and repurpose sludges as asphalt binders.
- **In Transportation:** Enhancing inspection, monitoring, pipeline replacement, and post-inspection protocols, alongside adjusting pipeline routes to minimize spills.

2

The following actions are implemented in relation to the other streams

- Sale of scrap metal waste to steel mills for integration into their manufacturing processes.
- Utilization of construction and demolition waste for road maintenance and civil engineering projects.
- Utilization of clarification sludges (from water treatment plants) and water-based drilling cuttings in construction.
- Development of a single-use packaging management plan aligned with practices applicable to market-packaged products.
- Implementation of the chemical leasing model in chemical treatment services to optimize chemical usage.
- Composting of organic waste from catering and food services.

In this context, LCAs were conducted for:

- Recovery of spent catalysts.
- Plastic-modified asphalt.
- Utilization of oily sludges as fuel in refining.
- Conversion of plastic waste into monomers.
- Recycling of plastic resins.

In the same vein, in 2023, the Life Cycle Analysis (LCA) methodology was implemented to begin identifying the impacts of products and materials on decision-making for initiatives and projects.

The implementation of the Mars-e application allows the monitoring of waste management in terms of treatment, recovery and final disposal of waste.



(GRI 306-2) (GRI 306-3) This effort was further bolstered by the implementation of the Mars-e⁵⁴ application, facilitating the collection of data on waste generated across Ecopetrol's operational and administrative areas, from its source to disposal. This deployment enables effective monitoring of waste management, encompassing its treatment, utilization, and final disposal.

(GRI 306-2) (GRI 11.5.3) To optimize management practices, different Stakeholder Groups need to be aligned with processes concerning materials and waste. As a priority SG, employees are actively involved in Comprehensive Waste Management, receiving training to comprehend their roles and responsibilities at each stage of the PDCA cycle.

(GRI 306-1) Over recent years, significant negative impacts associated with materials and waste have been identified, particularly in maintenance, operation, production, projects, and decommissioning activities within the refining and hydrocarbon production processes. This is predominantly attributed to the substantial proportions of hazardous waste, primarily comprising oily sludges and hydrocarbon-contaminated soils resulting from incidents with environmental implications.

Ecopetrol remains committed to enhancing its measurement and monitoring system pertaining to materials and waste management within the Company's operations. In 2023, this meant:

Table 6.10.1.
Amount of Waste Generated

(GRI 306-3) (GRI 11.5.4) (TCFD M-1.2.2) (WEF 17E)

Waste Generated ⁵⁵	Unit of measurement	2020	2021	2022	2023
Hazardous Waste ⁵⁶	TonM	140,434.13	137,375.67	188,711	114,990
Non-Hazardous Waste ⁵⁷	TonM	157,700.91	199,716.89	270,378	454,029
Total Waste Generated	TonM	298,135.04	337,092.56	459,089	569,019

54. The MARS-E application streamlines the assessment of hazardous and non-hazardous waste management, allowing for precise identification of improvement opportunities, generating reports on waste generation, and managing the documentation necessary for legal compliance. This information aids decision-making for continuous performance enhancement.

55. In 2023, total waste generation amounted to 569,019 metric tons, comprising 114,990 metric tons of hazardous waste and 454,029 metric tons of non-hazardous waste. This represents a 24% increase compared to 2022.

56. The hazardous waste generated, ranked from highest to lowest quantity, includes: 80,324 tons of oily sludges, 14,796 tons of soils contaminated with hydrocarbons, and 9,119 tons of oil-based cuttings.

57. In terms of non-hazardous waste, the most significant contributors are: construction and demolition waste (CDW) totaling 252,502 tons, water-based cuttings amounting to 113,684 tons, and scrap metal reaching 44,755 tons. Notably, non-hazardous waste has seen a 68% increase compared to 2022 data. This surge can be attributed to several factors: (i) the implementation of a new reporting application, enhancing accuracy and reliability in data recording, potentially influencing perceived trends, (ii) heightened construction and road maintenance activities in new areas, and (iii) ongoing dismantling and abandonment initiatives in the Foothills (Piedemonte) region and within exploratory assets.

Hazardous waste generation in 2023 demonstrates a notable

39%

decrease compared to the previous year, primarily attributed to the reduction of oily sludges

This decline can be attributed to:

- Less periodic maintenance activities carried out during 2023.
- Implementation of oil recovery treatments from sludges, subsequently reintegrated into the operations of the Casabe Field.
- Less barrel spills affecting the environment, resulting in a significant reduction of 79% in contaminated soils compared to 2022.

Table 6.10.2.
Hazardous Waste
(DJSI 2.4.2)

Hazardous Waste	2020	2021	2022	2023
Total hazardous waste recycled/reused (TonM)	3,883.72	6,105.84	19,845	10,358
Total hazardous waste disposed (TonM)	136,550.42	131,269.83	168,866	104,632
Hazardous waste disposed in landfills (TonM)	30,209.79	6,034.52	7,096	4,884
Hazardous waste incinerated with energy recovery (TonM)	NA	NA	NA	NA
Hazardous waste incinerated without energy recovery (TonM)	2,599.72	461.45	773	349
Hazardous waste disposed by other means (TonM)	103,740.91	124,773.86	160,997	98,926
Hazardous waste with unknown disposal method (TonM)	NA	NA	NA	NA
Data Coverage (as a % of the denominator)	100	100	100	100

The amount listed under "hazardous waste disposed by other means" includes hazardous materials such as oil sludges, petroleum-based drilling cuttings, and soils contaminated by unforeseen events. These substances undergo treatment processes like thermal desorption and

bioremediation, carried out by authorized third-party entities. In 2023, a total of 98,926 tons of hazardous waste from locations like Rubiales, Chichimene, Casabe, Floreña, among others, underwent disposal through thermal desorption and bioremediation procedures.

Waste Diverted from Disposal

Data on waste diverted from disposal is gathered from reports submitted by contracted companies engaged in activities within the Company's industrial facilities and supply areas. These companies are responsible for managing non-industrial facilities.

Table 6.10.3.
Amount of Waste Diverted from Disposal
(GRI 306-4) (DJSI 2.4.1) (DJSI 2.4.2) (TCFD M-1.2.2) (WEF 17E)

Waste Diverted from Disposal	2020 (TonM)	2021 (TonM)	2022 (TonM)	2023 (TonM)
Hazardous waste	3,883.72	6,105.84	19,845	10,358
Non-hazardous waste	31,863.13	47,565.51	52,496	180,935
Total waste diverted from disposal	35,746.85	53,671.35	72,341	19,1293

Table 6.10.4.
Consolidated Waste Diverted from Disposal
(GRI 306-4) (GRI 11.5.5) (DJSI 2.4.1)

Consolidated Waste Diverted from Disposal	2020 (TonM)	2021 (TonM)	2022 (TonM)	2023 (TonM)
Hazardous waste to be prepared for reuse	3,103.01	6,074.62	17,922	9,396
Recycled hazardous waste	780.71	31.22	1,923	962
Hazardous waste destined for other valorization operations	0	0	0	0
Total hazardous waste diverted from disposal	3,884.72	6,105.84	19,845	10,358
Non-hazardous waste to be prepared for reuse	3,171.02	13,420,094	9,486	1,648
Recycled non-hazardous waste	17,861.58	27,922.31	41,556	178,996
Non-hazardous waste destined for other valorization operations	10,830.53	6,223.11	1,454	291
Total non-hazardous waste diverted from disposal	31,863.13	47,565.514	52,496	180,935
Total waste diverted from disposal	35,746.85	53,671.354	72,341	191,293

In 2023, the utilization rate for hazardous waste diverted from disposal stood at 9%. This decrease can be attributed to a 15% reduction in the generation of oily sludges at the Barrancabermeja Refinery, typically used as fuel in cement kilns.

For non-hazardous waste, the utilization rate reached 40%, a significant increase from the 19% recorded in 2022. This surge was mainly driven by the utilization of construction and demolition waste in both internal and external road maintenance, with civil construction achieving a utilization rate of 50%. Additionally, there was a notable increase in the

valorization of scrap in the steel industry, reaching an impressive utilization rate of 99%.

Furthermore, in 2023, various non-hazardous waste streams were effectively repurposed: 10,900 tons were utilized in internal activities, 4,740 tons of water-based drilling cuttings were repurposed for construction and maintenance, and 1,215 tons of organic waste underwent composting, originating from food preparation and vegetative waste from pruning and mowing. These efforts yielded fertilizers and other by-products for internal use and distribution to Stakeholder Groups.

It is worth highlighting that materials such as plastic, glass, paper, and cardboard achieved a remarkable utilization rate of 93% through distribution to individuals or foundations engaged in waste management activities.



Waste Diverted from Disposal

According to the Comprehensive Waste Management and Zero Waste Guide, the management process begins with an initial assessment to determine if the waste can be reduced or utilized. If no suitable treatment options are available in the market due to the waste's physicochemical composition, it is directed for final disposal.

In 2023, the primary wastes designated for disposal were:

- 1 Construction and demolition waste.
- 2 Oily sludges.
- 3 Water-based drilling cuttings.
- 1 Soils contaminated with hydrocarbons.

Construction and demolition waste, along with water-based cuttings, are primarily disposed of in designated areas for excavated material or in internal or external landfills with appropriate environmental permits.

Table 6.10.5.
Amount of Disposal Waste

(GRI 306-5) (DJSI 2.4.2) (TCFD M-1.2.2) (WEF 17E)

Disposal Waste	2020 (TonM)	2021 (TonM)	2022 (TonM)	2023 (TonM)
Hazardous waste ⁵⁸	136,550.41	131,269.83	168,866	104,632
Non-hazardous waste ⁵⁹	125,837.78	152,153.12	217,882	273,094
Total waste directed to disposal	262,388.2	283,422.95	386,748	377,726

Table 6.10.6.
Consolidated Disposal Waste Figures

(GRI 306-4) (GRI 11.5.5) (DJSI 2.4.1)

Disposal Waste	2020 (TonM)	2021 (TonM)	2022 (TonM)	2023 (TonM)
Hazardous waste sent for incineration (with energy recovery)	NA	0	0	0
Hazardous waste sent for incineration (without energy recovery)	2,599.72	461.45	773	349
Hazardous waste transported to a landfill	30,209.79	6,034.52	7,096	4,884
Hazardous waste sent to other disposal operations	103,740.91	124,773.86	160,997	NA
Total hazardous waste directed to disposal	136,550.41	131,269.83	168,866	104,632
Non-hazardous waste sent for incineration (with energy recovery)	NA	0	0	0
Non-hazardous waste sent for incineration (without energy recovery)	45.56	2.37	55	26
Non-hazardous waste transported to a landfill	125,792.22	94,729.72	108,682	220,749
Non-hazardous waste sent to other disposal operations	NA	57,421.03	109,145	52,319
Total non-hazardous waste directed to disposal	125,837.78	152,153.12	217,882	273,094
Total waste directed to disposal	262,388.2	283,422.95	386,748	377,726

⁵⁸. Total hazardous waste directed to disposal at the facilities amounted to 473 TonM

⁵⁹. Total non-hazardous waste directed to disposal at the facilities amounted to 148,260 TonM

Hazardous wastes earmarked for disposal are safely contained within secure cells or landfills. These include materials like acidic sludges and items saturated with hydrocarbons.

Additionally, the dataset encompasses wastes subjected to bioremediation, such as oily sludges and soils contaminated with hydrocarbons. These bioremediated materials represent roughly 83% of the Company's hazardous waste volume in 2023.

The amount reported under "waste disposed of in other ways" pertains to waste treated through soil cultivation processes. This category encompasses aqueous sludges and drilling cuttings. Soil cultivation procedures are conducted by authorized third-party entities. In 2023, a combined total of 52,319 tons of non-hazardous waste from Chichimene, Castilla, Floreña, and 50K were managed through soil cultivation methods.

Table 6.10.7.
Waste Disposal
(DJSI 2.4.1)

Disposed Waste	2020	2021	2022	2023
Total recycled/reused waste (TonM)	318,63.13	47,565.51	52,496	180,935
Total waste disposed (TonM)	125,837.78	152,153.12	217,882	273,094
Waste deposited in landfills	125,792.22	94,729.72	108,682	220,749
Waste incinerated with energy recovery (TonM)	0	0	0	
Waste incinerated without energy recovery (TonM)	45.56	2.37	55	26
Waste disposed of in other ways (TonM)	0	57,421.03	109,145	52,319
Waste with unknown disposal method (TonM)	0	0	0	0
Data coverage (as % of denominator)	100	100	100	100

For 2023, although there were no significant fines, the administrative act of the environmental authority Corporinoquia that began in 2016 for non-compliance with obligations of the Environmental Management Plan (PMA) in the Llanos 9 Seismic, which represents a value of COP 56,857,444, remains in force.

Table 6.10.8.
Significant Environmental Fines Or Penalties
(GRI 2-27) (DJSI 2.1.5) (WEF 5E)

Significant environmental fines or penalties	2020	2021	2022	2023
Number of violations with legal obligations/regulations	1	1	2	0
Amount of fines/penalties related to the above (COP)	265,836,101	3,863,918,267	4,422,533,402	0
Accrued Environmental Liability at the end of the fiscal year (COP)	265,836,101	3,863,918,267	4,422,533,402	56,857,444

Accomplishments

- Reduced 59,344 tons of waste** through the dehydration of water-based drilling cuttings in the Rubiales, Caño Sur, and Floreña fields.
- Increased the waste utilization rate to 34%**, including 180,395 tons of non-hazardous waste mainly from construction and demolition.
- Achieved 100% of the 2023 target for the refining and production business units, with a utilization of 75,042 tons, exceeding the committed 57,706 tons.
- Costs avoided amounting to COP 92.9 million** derived from the use of materials between different businesses and the material showcase, and \$6.3 million from unnecessary fixed assets.
- Hocol reincorporated 99.3% of plastic material into local production chains near Campo Ocelote**; valuation of ~470 tons of materials from dismantling; recirculation of production and rainwater in operational processes at Campo Ocelote, resulting in a 33.6% reduction in uptake; 90.4% of process energy comes from self-generation with gas or alternative sources..
- Repair and remanufacture initiatives** to increase the lifespan of materials with an estimated cost prevention of USD \$13 million.
- Material loan agreement** signed with all EG subsidiaries in Colombia aimed at inventory optimization.
- The first Circular Economy contract** was designed and implemented, allowing the transformation of ferrous scrap into goods required by Ecopetrol such as pipe racks, sanitation points, etc. This transformation resulted in an avoided expense of \$112 million.
- 30 tons of utilized waste** were obtained at **CENIT**; 15 composting and vermicomposting projects; reduction of +40,000 m3 of water compared to 2019 with contributions from 10 projects utilizing rainwater (water harvesting); reduction of 5,934 tCO2 through the implementation of 8 operational solar farms, the Cantayús SHP, and operational control; commissioning of the Solar Parks (8.8MW) and Ayacucho (4.42MW).



Responsible Supply Chain

(GRI 3-3) The supply chain at Ecopetrol plays a pivotal role in the value creation process of the business model. Its management is dedicated to ensuring the effective, responsible, and sustainable long-term supply of goods and services, carefully segmented according to cost, timeliness, performance, quality, and risk factors.

By establishing a Responsible Supply Chain within the Company, the 2040 Strategy is further reinforced across its pillars: (i) Growing With The Energy Transition, utilizing a clean energy characterization model to monitor low-emission markets; (ii) Generate Value Through T ESG, fostering local labor contracting and supplier development practices; (iii) Cutting-Edge Knowledge, optimizing mandatory query lists for the Supply Management Process; and finally, (iv) Competitive Returns, implementing OPEX efficiencies and service sales to the EG.

(ECP 015) (ECP 016) Furthermore, supplier management is intricately linked to the Corporate Risk Matrix, where various strategic risks may materialize, including impacts on financial sustainability, value generation, ethical and compliance breaches, operational interruptions due to territorial dynamics, HSE events from operational or natural causes, and cyberattacks or data breaches.

The procurement function identifies any event or action with negative implications for economic growth, social well-being, environmental protection, human rights, ethical obligations, and business compliance as a high sustainability risk. Hence, a risk and control matrix is utilized for the timely identification of potential risk scenarios and the implementation of preventive measures to mitigate their occurrence, with annual risk analyses conducted to assess control effectiveness and make necessary adjustments.

To bolster the supply chain, Ecopetrol adopts a strategic and collaborative cross-functional supply model, ensuring a segmented, effective, responsible, and sustainable supply of goods and services while leveraging synergies with the EG across pillars such as value beyond economics, sustainable procurement, growth in energy transition, efficient processes, talent management, and digital culture.

This model is reinforced by policies, regulations, best practices, digitalization, and technological adoption, all underpinned by high ethical standards, transparency, and due diligence.

Moreover, procurement management endeavors to implement value-generating initiatives with suppliers, focusing on process optimization through innovative technologies, enhancing regional development contributions, reducing carbon footprint via decarbonization, renewable energies, circular economy practices, water management strategies, among others—all subject to technical approval for implementation.



To achieve these goals, various capabilities are defined to ensure a resilient, flexible, agile, transparent, traceable, digital, and a T ESG supply chain.

TESG

Enhancing and cultivating local and regional capabilities, aligning with the productive strengths of Ecopetrol's operational regions in supply strategies, and adopting contractual and market practices that align with environmental objectives.

Demand management, inventory, and logistics

Integrating investment and supply plans to maximize value creation within the supply chain, transitioning towards predictive demand modeling to optimize inventory levels and ensure timely service delivery.

Intelligent market management

Utilizing scenario simulation, analytics, and risk monitoring to inform decision-making and optimize responses to market dynamics.

Business models

Crafting and executing commercial strategies, including alliances with key suppliers, to drive innovation and efficiency, with a focus on standardization, long-term viability, and total lifecycle cost considerations.

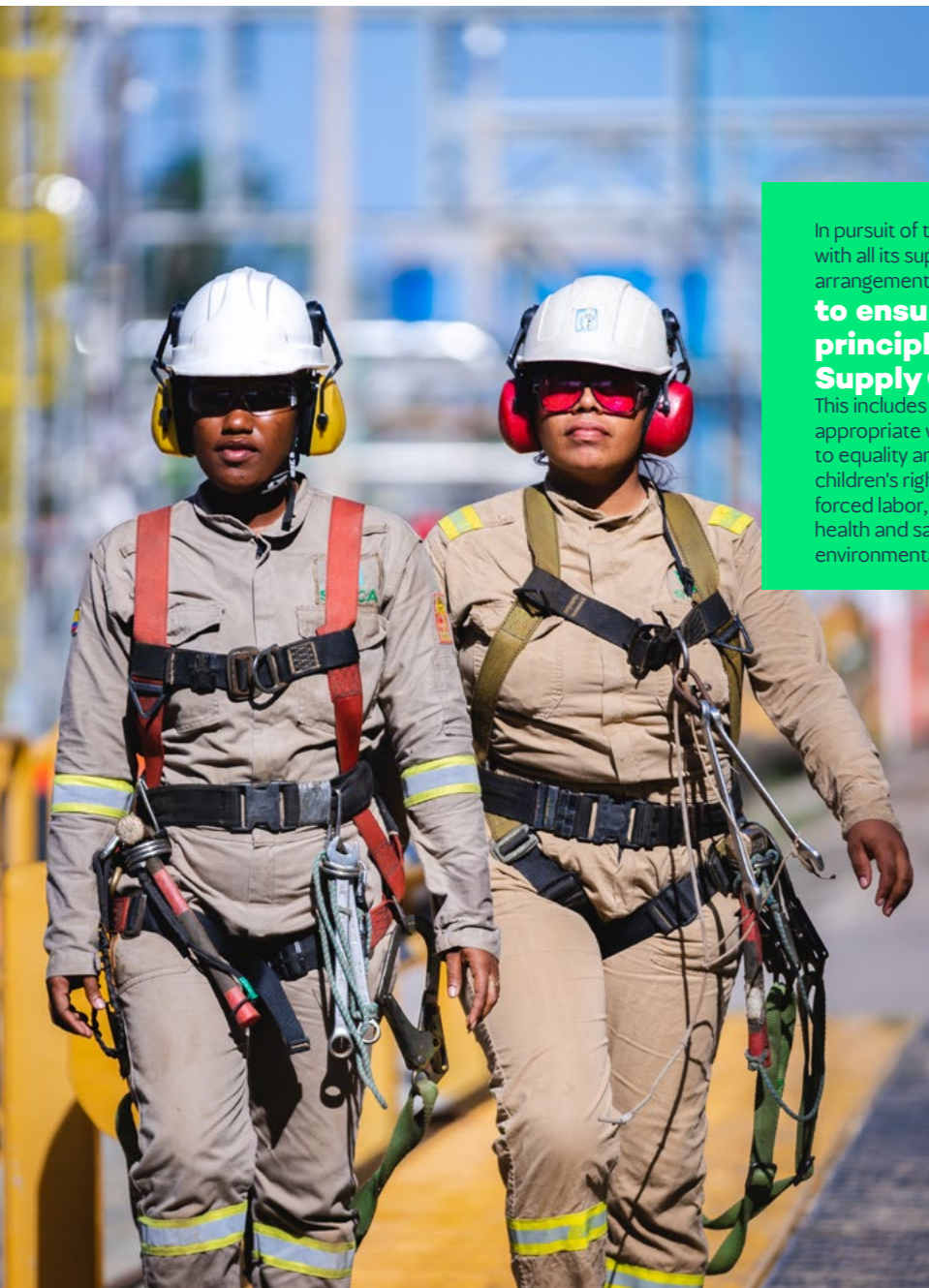
Technology and innovation

Enhancing supply chain efficiency through technological advancements, analytics, and leveraging the opportunities presented by the Fourth Industrial Revolution (4IR)⁶⁰, including cloud migration, in alignment with the digital transformation roadmap.

⁶⁰. 4IR: Fourth Industrial Revolution.

Impact on Human Rights

(GRI 2-29) (GRI 3-3) (GRI 410-1) Ecopetrol recognizes the paramount importance of upholding human rights not only within its own operations but also in the activities conducted by its suppliers and contractors, given the impact of their actions on the territories and communities they serve.



In pursuit of this goal, the Company actively engages with all its suppliers through contractual and commercial arrangements

to ensure adherence to the principles of a Responsible Supply Chain.

This includes promoting dignified, favorable, and appropriate working conditions, upholding the rights to equality and non-discrimination, safeguarding children's rights, particularly by prohibiting child labor, forced labor, and human trafficking, ensuring the right to health and safety at work, and respecting collective and environmental rights.

To reinforce these commitments, Ecopetrol establishes clear labor standards that all suppliers must uphold for their workers engaged in activities for the Company. These standards are outlined in the Guide to Labor Aspects in Contracted Activities, which includes a dedicated section on human rights. Additionally, the Company refers to the *Guide on Human Rights and Business*, which provides stringent guidelines to ensure a secure supply chain in alignment with Human Rights principles.

Goals

Configuring the procurement process as a key player in optimizing the 2024-2026 Investment Plan, through:

- Comprehensive review of contracts in execution, including quantity, rates, and operational models and/or business models.
- Planning and management of material inventories.
- New contracts to activate all possible optimization levers in view of efficiency challenges.
- Development of new competitive business models supporting the local industry (mitigation of conflict in localities and harmonious execution of Company activities).
- Practices of austerity in contracts.
- Focus on the Top 25 investment projects where 90% of committed production and low-emission goals are concentrated.
- EG synergies (with certified benefits in the order of COP 63 billion).

- Strengthening the evaluation of supplier performance with ESG criteria.
- Initiating the greenhouse gas inventory process for the EG supply chain.
- Consolidating synergies and new strategies to enable greater agility in generating digital solutions.
- Initiating the internal program in 2024 to strengthen new capabilities for authorized personnel, in order to close the gaps identified in the 2023 Audit.

Responsible Supply Chain Management

Supplier Segmentation

(ECP 017)

Since 2018, Ecopetrol has implemented supplier segmentation based on international standards to enhance the procurement process, aligning with the 2040 Strategy. This initiative aims to strengthen supplier interactions, optimize costs, and identify and define new strategies and opportunities.



Under this approach, the Company categorizes its suppliers into **three (3) segments**:



Strategic Suppliers

These are partners with potential for innovation and technology. Ecopetrol aims to develop a wide range of goods and services with them, fostering long-term relationships and making investments to enhance competitiveness.



Suppliers to be Enhanced

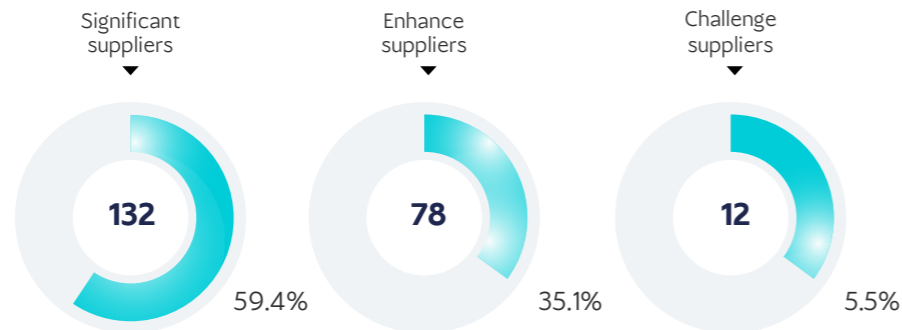
This category includes suppliers for whom Ecopetrol seeks to enhance performance and maximize value-added contributions.



Challenge Suppliers

These suppliers exhibit low performance levels and require additional support to improve their operations and ensure continuity in the supply chain.

In 2023, **222 suppliers** accounted for approximately **80%** of the Company's expenditure, classified according to these segments:



With significant suppliers representing **71% of expenditure**, Ecopetrol ensured the participation of **97% of this segment** in various capacity development programs for environmental, social, governance, and technology management within the framework of supplier relationships.

Procurement

(GRI 2-6) (WEF 17)

The procurement process at Ecopetrol plays a pivotal role in supply chain management. To uphold transparency and adhere to the Company's ethical standards, invitations are extended to companies or individuals capable of meeting the needs, considering their scale or complexity. Potential participants are identified through diverse sources, including market intelligence and Ecopetrol's Supplier Information System.

(ECP 012) In order to facilitate the procurement of goods and services, the Company leverages the following communication channels:



Ecopetrol Suppliers Portal

In 2023, the supply chain integrated the SAP ARIBA platform as a technological facilitator for process development. This platform was established for suppliers to access detailed information about supplier management, procurement, contract management, and the various requirements and actions associated with each section. It also offers access to regulations governing procurement operations and the responsibilities of suppliers during contract execution with Ecopetrol. Ultimately, through this portal, suppliers can access different modules available in SAP ARIBA tailored to their specific needs.

Ecopetrol Website

In 2023, the Supply Chain section underwent a significant overhaul to ensure easy access to comprehensive Supply Management information for Ecopetrol's Stakeholder Groups, particularly "Suppliers and their Workers." The objective was to provide robust and up-to-date public information as the main support for national and international reports, ensuring complete consistency of information in both English and Spanish versions, in compliance with international standards, and reaffirming the Company's commitment to transparency.

Municipalities and/or Chambers of Commerce in the regions of interest

Publication of market information requests.



ESG selection criteria include sourcing of local goods and services, value-generating activities, hiring local labor, inclusive labor linkages, GHG reduction, waste management and circular economy, and operational efficiencies, among others.

During the supplier selection phase, critical criteria such as legal and financial capacity, experience, HSE certifications, commitment to ethics and transparency, and previous performance evaluations (if applicable) are comprehensively assessed. Additionally, bidders must adhere to additional social, environmental, and governance (ESG) criteria beyond those outlined in the procurement strategy.

ESG selection criteria encompass various aspects including the procurement of local goods and services, initiatives for value creation, engagement of local labor, promotion of inclusive employment, reduction

of greenhouse gas emissions, implementation of waste management and circular economy practices, and operational efficiencies, among others. These criteria are evaluated during the bidding process, and compliance during contract execution is ensured through ongoing ESG performance evaluation. In the event of non-compliance with contractual commitments, the contract monitoring professional will impact the supplier's performance evaluation, and corrective action plans may be devised to address identified gaps.

Similarly, within the corporate strategy for economic growth, three (3) local

impact axes have been delineated: **job creation, productive activity, and sustainable territorial development.** These axes aim to foster inclusive employment opportunities, enhance local procurement of goods and services, and stimulate diverse productive ventures within the national industry. All endeavors are guided by principles of legality, transparency, plurality, competitiveness, fair pricing, equitable competition, and inclusive participation.

In 2023, the Comprehensive Strategic Plan for goods, services, and labor was implemented, structured around four (4) pillars: **interventions to encourage participation, preventive measures with stabilization mechanisms, regulatory framework updates, and the development of a transformative TESG strategy.**

To ensure its effective execution, various actions have been undertaken:

- Prioritizing local employment and inclusive labor engagement.
- Defining minimum categories of local goods and services to be offered.
- Identifying local labor and goods/services supply based on the prioritized needs and the municipalities of interest.
- Providing a format for presenting value-generating activities.
- Compiling a list of local suppliers.
- Ensuring compliance with labor and commercial requirements.
- Monitoring payments.
- Implementing the Permanent, Preventive, and Active Dialogue (PPAD) Program.
- Offering a portfolio of business strengthening programs.

Table 6.11.1.
Number Of Contracts Managed

Year	2020	2021	2022	2023
Number	8,521	9,887	7,208	7,475

Table 6.11.2.
Number Of Suppliers

Year	2020	2021	2022	2023
Number	3,480	3,554	3,553	3,479

Table 6.11.3.
Total Number Of Non-Employee Workers
(GRI 2-8)

Year	2020	2021	2022	2023
Number	26	22	124	66

Table 6.11.4.
Inclusive Employment In The Supply Chain

Population	2018		2019		2020		2021		2022		2023	
	#	%	#	%	#	%	#	%	#	%	#	%
Women	13,017	17.5%	15,516	17.9%	13,362	19.5%	14,296	18.2%	16,237	18.3%	16,486	19.7%
People with disabilities	68	0.1%	115	0.1%	258	0.4%	120	0.2%	143	0.2%	155	0.2%
First-time employment (youth employment)	*		1,154	1.3%	690	1.0%	1,145	1.5%	1,678	1.9%	1,986	2.4%
Ethnic groups	*		*		*		863	1.1%	1,322	1.5%	1,348	1.6%
Victims of armed conflict	*		*		*		198	0.3%	477	0.5%	689	0.8%
Total	13,085	17.6%	16,785	19.4%	14,310	20.9%	16,622	21.1%	19,857	22.4%	20,664	24.7%

* The information was not recorded in form GAB-F-221 during this period.



Ecopetrol does not establish an employment relationship with contractor workers and does not directly supervise the work they perform under the terms of the commercial contract. However, Ecopetrol hires temporary workers through temporary employment agencies, in compliance with the provisions of Decree 1072 of 2015. These workers do not have a contractual relationship with Ecopetrol; rather, their activities are governed by the terms of the commercial contract between their employer and Ecopetrol.

Likewise, on a monthly basis, it is required for all commercial contracts that have workers with exclusive dedication, to report information on the labor force of contractors' workers with exclusive dedication to the activities contracted by Ecopetrol. Based on this report, commercial contracts whose purpose is "service of supply of temporary personnel on mission to meet the requirements of Ecopetrol S.A." and the workers associated with them are identified.

A decrease in the number of temporary workers was recorded in 2023 due to:



Reduction in occasional, accidental, or temporary employment as defined in Article 6 of the Labor Code.



Decrease in personnel substitutions during vacation, leave, illness, or maternity leave.



Scaling back of activities aimed at meeting increased production, transportation, product or merchandise sales, seasonal harvesting periods, and service provision for a period of six (6) months, extendable for an additional six (6) months.

Table 6.11.5.
Procurement Information (National)
(GRI 204-1) (GRI 11.4.6) (WEF 18)

Procurement	2020	2021	2022	2023
Total contract value (COP)	12,213,041,342,863	15,823,530,409,025	23,575,703,425,030	21,723,671,324,972.7
Local contract value (COP)	6,003,572,900,536	8,413,035,379,158	11,640,437,310,281	11,515,077,653,141.8
Proportion of local contracting (%)	51	53.1	49.3	53

Note 1: Significant operating locations pertain to Ecopetrol's operations in Colombia.

Note 2: Local denotes the timely, suitable, and competitive procurement and/or supply of goods and services from suppliers and/or contractors domiciled in the municipality, department, or region where Ecopetrol conducts its operations.

Table 6.11.6.
Total Value of Ecopetrol's Procurement (National + Foreign)
(ECP 014)

Origin	2020	2021	2022	2023
National	12,213,041,342,863	15,823,530,409,025	23,575,703,425,030	21,723,671,324,973
Foreign	756,651,341,559	1,044,413,202,432	1,144,809,406,978	1,220,246,316,342
Total	12,969,692,684,422	16,867,943,611,458	24,720,512,832,008	22,943,917,641,315

Note: Figures include procurement by Reficar

Table 6.11.7.
Evolution of the Local Procurement Indicator

Local procurement target	Contractor	2020	2021	2022	2023
Result	Ecopetrol	25%	57%	65%	23%
	Partners	46%			
Percentage of compliance	Ecopetrol	34% (\$1.549 billion)	70% (\$4.194 billion) \$ 2.570 billion	67% (\$4.577 billion) \$3.170 billion	35% (\$5.063 billion) \$3.627 billion
	Partners	54% (\$1.508 billion)	Ecopetrol + \$1.624 billion Partners	Ecopetrol + \$1.407 billion Partners	Ecopetrol + 1435 billion Partners
Notes on the evolution and calculation premises of the Indicator (if applicable):	Ecopetrol	136%	123%	103%	152%
	Partners	117%			

Contracts with foreigners, the Business Group, and reimbursable expenses, as well as contracts executed in Bogotá, are included in the calculation. For Ecopetrol, categories and subcategories without local supply available were excluded from the denominator.

The target is consolidated for Ecopetrol and its partners, with measurement based on Ecopetrol's local procurement potential plus the total procurement carried out by partners.

The objective is set collectively for both Ecopetrol and its partners. The assessment is based on Ecopetrol's potential for local procurement, in addition to the total procurement executed by partners. Ecopetrol's local potential is regularly updated and characterized based on the available local supply in each region.

The target is collectively set for Ecopetrol and its Partners. The measurement is based on Ecopetrol's total National procurement, excluding contracts with foreign companies and foreign branches.

Notes:

- Figures for the First Link and Second Link as of December 31, 2023.

Between 2019 and 2023, the premises for calculating the Local Procurement Indicator have evolved and been adjusted to more accurately measure Ecopetrol's impact on the procurement of local goods and services in the regions where it operates. In 2021, there was a shift to an analysis that identifies goods and services with the potential to be procured locally (local potential) to promote local procurement of these lines. The indicator and its respective measurement respond to the procurement behavior for these lines of goods and services.

- Local procurement measurement by Partners began in 2018, prompting the establishment of a target in terms of an increase versus the previous year and to establish a baseline for 2019. Accordingly, local procurement targets have been set in percentages for Ecopetrol and its Partners since 2019.

- In 2023, the local procurement target underwent enhancement through a refined measurement approach. This transition expanded the evaluation criteria beyond solely assessing the potential for local procurement, now encompassing National procurement while excluding foreign entities and their branches.

Table 6.11.8.
Distribution of Ecopetrol's Domestic Procurement (COP)
(GRI 11.14.6) (WEF 18)

Local procurement and procurement from commercial surroundings	2020	2021	2022	2023
(A) Local procurement and procurement from commercial surroundings	6,209,468,442,326	8,413,035,379,158	11,640,437,310,281	11,515,077,653,142
(B) Procurement rest of the country	6,003,572,900,536	7,410,495,029,867	11,935,266,114,750	10,208,593,671,831
Total procurement A+B	12,213,041,342,863	15,823,530,409,025	23,575,703,425,030	21,723,671,324,973
Percentage of local procurement	51%	53%	49%	53%

Note 1: Figures encompass procurement from Reficar and contracts executed in Bogotá.
Note 2: Local procurement refers to the procurement of goods and services from suppliers domiciled in the municipality where the contract is executed.
Note 3: Procurement from the Commercial surroundings pertains to the procurement of goods and services from suppliers domiciled in other municipalities within the same department where the contract is executed.
Note 4: Total local procurement comprises both local procurement and procurement from the commercial surroundings.

Table 6.11.9.
Savings Generation

Year	Actual	Target	% Target Achievement	Billion COP
2020	9%	8%	112%	2,590
2021	7.83%	7.5%	104%	2,287
2022**	7.1%	5%	142%	2,639
2023	7.05%	4.53%	156%	2,340***

***Note:** This value includes the savings for the year plus the savings achieved in previous fiscal years capitalized in the year (carryovers).
****Note:** Explanation regarding the decreasing target: In 2022, an unprecedented inflationary scenario occurred, with historical highs in different categories associated with the Oil & Gas industry, including significant increases in the Producer Price Index (PPI), Food Price Index (FPI) by 27.8%, and the Consumer Price Index (CPI) by 13.12%. This inflationary environment impacted the direct cost of services, making savings generation more challenging amidst rising prices.
*****Note:** In addition to the savings generated based on the Comprehensive Supply Plan (PAI, as per its Spanish acronym), an additional 1.050 billion COP was generated from other initiatives (Non-PAI + Sustainability Monetization), primarily focused on deferred reduction, circular economy, digital supply management, synergies, decarbonization, technology, and process improvement.

Table 6.10.10.
Number Of Contractors At The End Of Each Year
(GRI 2-6) (GRI 2-13) (WEF 17)

Origin	2020	2021	2022	2023
National	3,264	3,285	3,281	3,211
Foreign	216	269	272	268
Total	3,480	3,554	3,553	3,479

Since 2017, accumulated savings exceeding COP 13.4 trillion have been achieved. Out of the 2.340 billion COP reported in 2023, 1.642 billion COP were generated during the fiscal year, with an additional 698 billion COP achieved in previous fiscal years and capitalized in 2023.

In the realm of procuring goods and services, the year 2023 concluded with **4,800 enabled suppliers** in ARIBA, spanning various categories of required goods and services. This period witnessed the signing of **7,475** contracts, with **3,479 contractors** maintaining active contracts, of which, 92% are associated with contracts with domestic suppliers, while the remaining 8% pertain to contracts with foreign suppliers..



Table 6.11.11.
Number Of Employees In Ecopetrol Contractor Companies

Number of workers distributed by origin	2020	2021	2022	2023
Local*	28,579	35,948	38,841	39,085
Non-local**	5,385	5,495	6,098	5,847
Total workers	33,964	41,443	44,939	44,932
Percentage of local worker hiring	84%	87%	86%	87%

* Local labor: Individuals who confirm their residency with a certificate issued by the municipal mayor's office.
** Non-local labor: Workers residing in other regions of the country. If the required labor is unavailable in the municipality where the projects are being developed, it will be sought in neighboring municipalities.

Table 6.11.12.
Number of Ecopetrol Contractor Employees
(GRI 2-13) (GRI 11.15.2) (WEF 17)

Region	2020	2021	2022	2023
Caribbean - Pacific	3,416	3,952	4,001	3,335
Female	370	464	514	562
Male	3,046	3,488	3,487	2,772
Diverse sexual orientation	-	-	-	1
Central	15,409	18,673	18,98	18,544
Female	3,682	4,614	4,771	4,977
Male	11,727	14,059	14,209	13,561
Diverse sexual orientation	-	-	-	6
East	3,95	6,854	8,058	6,725
Female	528	825	1,015	1,050
Male	3,422	6,029	7,043	5,672
Diverse sexual orientation	-	-	-	3
Orinoquía	8,478	9,36	11,19	13,675
Female	1,629	1,968	2,448	2,805
Male	6,849	7,392	8,742	10,869
Diverse sexual orientation	-	-	-	1
South	2,711	2,604	2,71	2,653
Female	478	507	529	635
Male	2,233	2,097	2,181	2,018
TOTAL	33,964	41,443	44,939	44,932

* **Observation:** The gender categorization of Ecopetrol contractor employees reveals that among the 11 hires identified as male, there are individuals who self-identify with diverse sexual orientations.

Table 6.11.13.
Inclusive Employment Engagement (IEE)

Labor target	Inclusive Employment Engagement (IEE) 2021	Inclusive Employment Engagement (IEE) 2022	Inclusive Employment Engagement (IEE) 2023
Target	15,310 hires	Increase the annual IEE cumulative percentage to 22%	Maintain the annual IEE cumulative percentage at 22%
Actual	16,622 IEE hires / 78.721 = 21%	19,857 IEE hires / 88.801 = 22.4%	20,664 IEE hires / 83.594 = 24.7%
% Target achievement	109%	102%	112%

Furthermore, over the past five years, Ecopetrol has actively promoted the Diverse Productive Ventures (DPV) program aimed at fostering the economic development of SMEs.

This initiative has provided opportunities for business enhancement and expansion to more than **1,307 companies**. As a result, business transactions worth **79 MCOP** have been facilitated, leading to the creation of over **7,000 inclusive, non-oil-related jobs** accumulated between 2020 and 2023.

Table 6.11.14.
Diverse Productive Ventures Program

Population	2023	
	#	%
Gender	747	33%
People with Disabilities	49	2%
Ethnicities, origin, and sociocultural conditions* (includes first employment)	70	3%
Reconciliation (victims, former combatants, and retired security forces)	300	13%
Sexual orientation and gender identity	14	1%
First employment	20	1%
Total DEI ventures	1,200	53%
Unclassified	1,100	48%
Total	2,300	

Supplier Assessment and Readiness

(GRI 308-1) (GRI 414-1) (GRI 11.10.8) (DJSI 1.7.3) (DJSI 1.7.4) (ECP 016) Ecopetrol has developed a methodology incorporating various criteria to assess the effectiveness and efficiency of its contractors' performance, aiming to ensure that contractual relationships align with compliance with national legislation and adhere to best practices in sustainability and Human Rights.

The evaluation of contractor performance involves monitoring suppliers' sustainable management throughout contract execution and assessing their performance across each of the ESG dimensions using **four (4) assessment criteria**:

1

Environmental Management

HSE: Reduce negative impacts on the environment, people, and facilities.

4

Supply Management

Incorporates the Supplier Readiness process, aimed at assessing the compliance level of current and potential suppliers with Ecopetrol's requirements in terms of commercial, technical, financial, HSE, and ethics and compliance standards. If potential suppliers fail to meet these requirements, they will not receive comprehensive qualification, and consequently, they will not be invited to participate in selection processes or be awarded contracts. Similarly, current suppliers failing to maintain their comprehensive qualification will face repercussions in their sustainability performance evaluation, particularly under the "Compliance with Deadlines" criterion, as comprehensive qualification and updates are mandatory.

2

Social Management

Labor and Commercial Aspects: Compliance with legal commercial and labor obligations, as well as compliance with the hiring of local labor and inclusive employment engagement.

Environment Management: Conflict management, procurement of local goods and services, diverse productive ventures, and activities to generate value in the areas of influence.

3

Governance Management

Operational Efficiency: Fulfillment of the value proposition.

Compliance with Deadlines: Timeliness and quality of supplied goods and services, documentary evidence, fulfillment of commitments, including ethical aspects and compliance in business (AML/CFT, incompatibilities, disqualifications, among others).



Table 6.11.15.
Supplier Performance Evaluation Results

Evaluation Aspects	2020 (%)	2021 (%)	2022 (%)	2023 (%)
HSE Aspects	99.7	98.3	99.26	97.46
Environmental Management	99.6	99	99.86	97.58
Administrative Aspects	99.3	92.9	99.02	96.46

Table 6.11.16.
Supplier Evaluation
(DJSI 1.7.6)

Supplier Evaluation	2023	Meta para 2023
Total number of suppliers evaluated	132	132
Percentage of significant suppliers evaluated	100	100
Number of suppliers with current/potential substantial negative impacts	12	NA
Percentage of suppliers with current/potential substantial negative impacts with whom a correction or improvement plan has been agreed	100	100
Number of suppliers with current/potential substantial negative impacts with whom the contractual relationship has been terminated	0	NA
Number of suppliers supported in the implementation of corrective or improvement plans	12	12
Percentage of evaluated suppliers with current/potential substantial negative impacts supported in the implementation of corrective or improvement plans	100	100
Number of suppliers in capacity improvement programs	128	NA
Percentage of suppliers in capacity improvement programs	97	NA

Supplier Review and Selection

(DJSI 1.7.3)

Supplier reviews are conducted at the end of the fiscal year, with the results used to ensure differentiated relationships in the subsequent year tailored to the specific characteristics of each supplier group.



(DJSI 1.7.5) While Ecopetrol lacks a segmentation of critical non-tier 1 suppliers, its supply chain process enables comprehensive segmentation based on strategy, goods or services category, and supplier type. This ensures that procurement needs are identified considering these factors, delineating critical activities to be directly contracted and executed by tier 1 suppliers, and non-critical activities that may be subcontracted or provided by third parties (non-tier 1 suppliers).

It is worth noting that Ecopetrol defines two types of non-tier 1 suppliers:



Subcontractors

These are natural or legal persons who perform activities on behalf of Ecopetrol's suppliers. They form an integral part of the objectives and scope of the contracts executed for Ecopetrol. All subcontracting agreements must be authorized and approved by Ecopetrol.



Suppliers

These are natural or legal persons who carry out activities on behalf of Ecopetrol's suppliers but are not an essential part of the scope and objectives of the contracts executed for Ecopetrol.

Table 6.11.17.
Supplier Review and Monitoring
(DJSI 1.7.5)

Supplier Review	2023
Total number of Tier-1 suppliers	3,458
Total number of significant suppliers in Tier-1	132
Percentage of total spending on significant Tier-1 suppliers	71
Total number of non-Tier-1 suppliers	0
Total number of significant suppliers (Tier-1 and non-Tier-1)	132

Ethics, Transparency, and Compliance in the Supply Chain

(ECP 013)

Supply chain management is guided by corporate ethics, which are built upon three (3) fundamental pillars:

- 1 Due diligence
- 2 Ethics
- 3 Transparency

As such, Ecopetrol's suppliers and contractors are expected to stay informed, updated, and ensure that their processes adhere to current regulations and ethical standards outlined for procurement. These standards include the Corporate Governance Code, the Code of Ethics and Conduct, anti-bribery laws, accounting standards, and the internal control framework. Failure to comply with these standards may result in severe penalties under the contract terms or termination of the contract by Ecopetrol.

To ensure compliance, the "Annex of Ethics, Transparency, and Compliance Rules" has been introduced. Through this annex, suppliers certify their understanding and acceptance of:

- Provisions related to conflicts of interest and ethical conduct.
- Compliance with all participation requirements, as well as adherence to regulations concerning the prevention and control of money laundering and terrorist financing.
- The lawful origin of resources used in their activities and their alignment with the intended social purpose. Suppliers confirm that they have not engaged in transactions or operations aimed at promoting or executing illegal activities, have not conducted business with individuals, companies, or countries on restrictive lists, and have refrained from participating in practices that restrict competition or engage in unfair competition, among other commitments.



It is imperative that the actions and responsibilities carried out by suppliers and their employees reflect transparency and ethical conduct. Any behavior that contradicts the principles established in the Code of Ethics and Conduct is met with strong disapproval and zero tolerance.

Accomplishments

- No recordable incidents occurred during the more than 10.5 million man-hours worked across various fronts.
- In 2023, local procurement amounted to \$5 trillion, with \$3.6 trillion by Ecopetrol and \$1.4 trillion by partners.
- Efficiencies of COP \$1.2 trillion were achieved in cash and/or tax savings.
- 100,046 tCO₂e were reduced in the supply chain and services, with 57% being mitigated and 43% offset.
- The highest rating was achieved under the risk methodology in the SWIFT 2023 audit on the technological infrastructure for financial messaging.
- 83,594 contractor workers engaged during 2023, with exclusive dedication in 2023, of which nearly 90% were local labor.
- A land analysis was conducted to assess the viability of over +1,700 hectares (compared to the planned 300) for Low Emission Solution projects in the Floreña, Pauto, and Orinoquía production fields.
- During 2023, Ecopetrol reported COP \$2.3 trillion for supply management, comprising COP \$1.6 billion in savings from reduced and avoided costs during the fiscal year, marking a 12% increase over the value generated in 2022.
- Instilled at least one (1) of the five (5) key skills defined by the EG in 400 Vice Presidency employees, focusing primarily on energy transition and agility.
- The digital initiatives portfolio yielded benefits of approximately \$24.4 million USD, \$5.47 GSC⁶¹ y \$18.93 GAB⁶², associated with the Ariba projects, the SAP-OPEN WELLS integration, algorithms for the allocation of oilfield services, and VAT recovery strategies.
- 80% of waste generated in the operation of maintenance services, non-industrial civil works, clearing, cleaning, accommodation, and catering was utilized, amounting to over 3,266 tons of waste.
- Procurement strategies were approved for the acquisition of electrolyzers for both refineries and the implementation of the decarbonization technological test in CCUS.
- The Responsible Purchasing and Diverse Markets Directory was designed to promote purchasing opportunities and economic inclusion, incorporating entrepreneurs from all regions of Colombia, including populations facing barriers such as indigenous and Afro-descendant communities.

61. Shared Services Management.

62. Procurement Management.



Financial Sustainability

(GRI 3-3) For Ecopetrol, Financial Sustainability results from competitive operational and economic performance across all business lines within a dynamic market context, aimed at generating value for all stakeholder groups. In this sense, the 2040 Strategy not only focuses on preserving the value of the hydrocarbon business but also emphasizes an unwavering commitment to a Just and Equitable Energy Transition. This commitment aligns with market trends, shareholder and investor interests, and the principles of fiscal transparency.

By ensuring the financial sustainability of the Company, efficient management associated with the energy transition is assured, while also enhancing its capacity to maintain leadership and drive transformation in the energy sector.

Ecopetrol recognizes the "impact on financial sustainability and value generation" as one of its most strategic risks. This refers to the risk of being unable to achieve the required cash level to meet the Company's operational and investment needs, which can affect value generation according to expected returns as defined in the business plan.

Proactive financial sustainability management involves establishing strategies to monitor, anticipate, and effectively manage environmental factors such as crude oil price volatility, adverse market behaviors, geopolitical and macroeconomic factors, and regulatory changes. This proactive approach aims to preserve and maximize the value generated by the Company.

Impact on Human Rights

Effective Financial Sustainability management enables Ecopetrol to further enhance its dedication to promoting Human Rights, particularly those concerning dignified, favorable, appropriate, and non-discriminatory working conditions, as well as health and safety in the workplace. Positive outcomes in its economic performance can result in providing increasingly advantageous working environments for its employees, surpassing legal requirements.

Moreover, diverse forms of social investment can be initiated to empower various Stakeholder Groups, amplifying their influence on the realization of collective rights and environmental protection.



Financial Sustainability Management

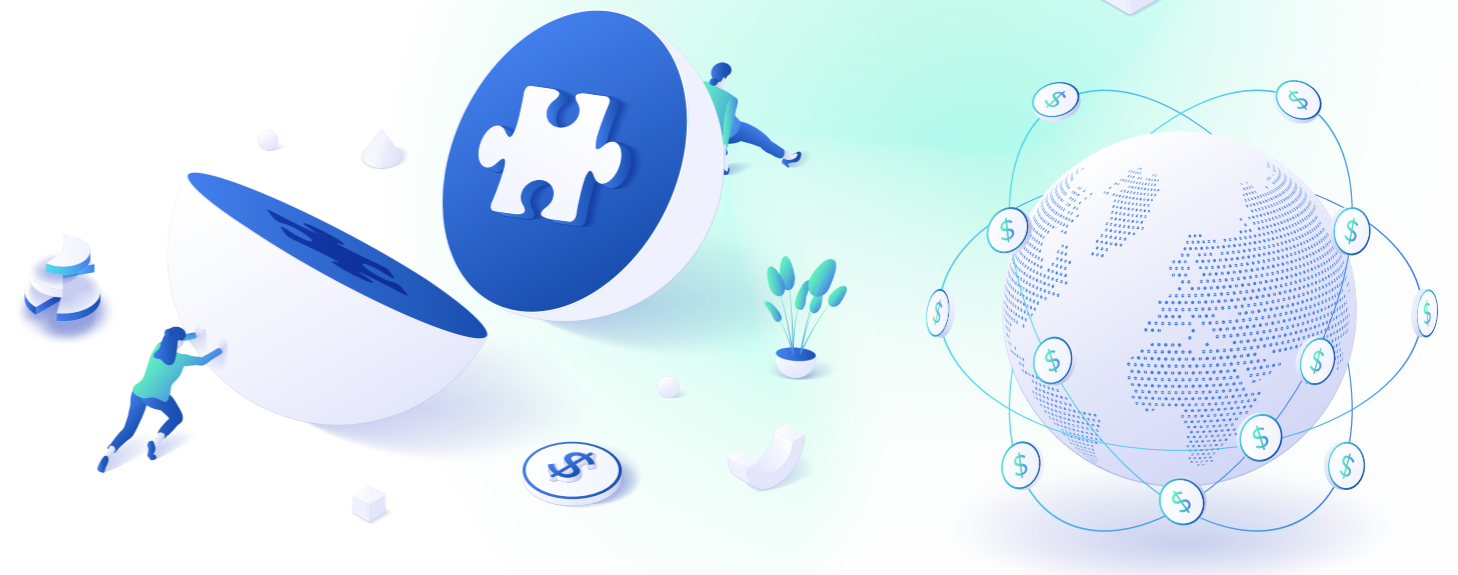
Market Environment

(SFC 7.4.1.1.1.iii)

International Crude and Product Market Environment in 2023

Throughout 2023, the Brent oil market experienced significant price volatility, albeit not as high as observed in 2022, indicating the intricate and diverse influences on the oil and gas industry.

Factors such as geopolitical tensions, shifts in global energy demand, and decisions made by major oil producers all contributed to the instability of Brent prices. Concurrently, central banks, facing inflationary pressures, continued a cycle of interest rate hikes that seemed to exacerbate the economic outlook for 2023.



Against a backdrop of global uncertainty stemming from deteriorating financial conditions, risks of crises in the US banking system, and increased Russian crude supply, Brent followed a downward trajectory in the early months of the year. This trend was interrupted in July when the necessity for OPEC to restrain its production became evident, amidst a global scenario anticipating less dynamic economic growth than initially expected (in June, Saudi Arabia announced a voluntary cut of 1 mmbd, maintained throughout the second half of the year).

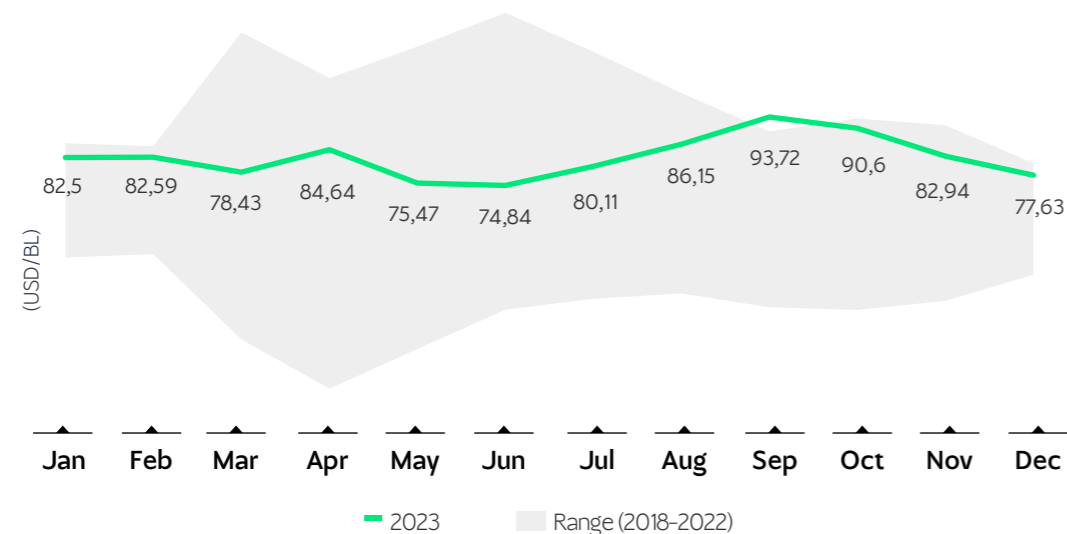
OPEC concluded the year with production around 1 million barrels lower than in 2022. However, the group's unity in adhering to quotas was questioned report after report,

which, coupled with exceedingly weak data from the Chinese economy, adversely impacted crude oil prices in the final quarter of the year.

Conversely, global economic expansion was buoyed by a surprisingly robust US economy. Initially, growth of less than half a percentage point was anticipated at the start of the year, yet the year culminated with a solid annual growth of 3.1%.

These dynamics resulted in a series of peaks and troughs in oil prices. Brent fluctuated between a low of \$70 per barrel and nearly reaching the maximum threshold of \$98 per barrel. The annual average for Brent stood at \$82 per barrel in 2023, lower than the \$99 per barrel recorded in 2022.

Figure 16.13.1
Brent monthly average



Source: Bloomberg.

Despite the conflict in the Middle East following the attacks faced by Israel in a military escalation that generated tensions worldwide, and a series of attacks in the Red Sea that caused disruptions in container and vessel traffic, Brent ended the year at \$77 per barrel. This represents a 10.3% decrease compared to the close of 2022.

This volatility, characteristic of recent years, underscores the inherent complexity of the oil industry. Consequently, Ecopetrol emphasizes the importance of adaptability and risk management in this key sector of the global and local economy.



(SFC 7.4.1.2.4.3) (SFC 7.4.1.2.5)

Colombian Economic Overview 2023

In 2023, the Colombian economy experienced a modest growth rate of 0.6%.

While the latter quarters of the year saw a slowdown in domestic demand, household spending remained resilient, growing at an annual rate of 1.1%. The trade deficit notably decreased due to subdued import activity, stemming from the slowdown in consumption and investment.

Conversely, there was a significant decline in investment, with gross capital formation plummeting by 25% annually. The manufacturing and construction sectors also faced challenges, with a 3.5% and 4.2% decrease respectively, whereas the GDP from oil and gas exploitation saw a modest growth of 2.8%.

The year concluded with an inflation rate of 9.3%, peaking at 13.3% in March (the highest levels since the end of the century). A more stringent monetary policy, with the policy rate reaching 13.25%, along with a weaker global dollar that favored cheaper imports, and the stabilization of food and commodity prices, contributed to local inflation converging to a single-digit figure.

Given this price dynamic and indications of weakened demand, the Central Bank implemented its first rate cut since commencing its contractionary cycle at the end of 2021, reducing rates by 25 basis points in December, closing 2023 at 13%.



Ecopetrol's Growth and Contribution to National GDP

Contribution of the Oil Sector to Gross Domestic Product (GDP)

Despite indications of an economic slowdown and risks of a global recession, the hydrocarbon sector showcased its resilience and ability to bolster the country's economic stability.

The oil industry stood as one of the cornerstones of Colombian economic expansion. Oil and gas production experienced a real annual growth rate of 2.8%, coupled with associated activities, which significantly contributed to the country's revenues, accounting for 3.1% of the GDP, and fostering foreign exchange reserves that enhanced Colombia's international financial standing. Concurrently, fuel refining saw a real annual growth rate of 9.3% and represented approximately 1.5% of the GDP.

Table 16.13.2.
Contribution of the Oil Sector to GDP
(Billions of pesos, legal tender)

	2022	2023
National GDP	1,469,791	1,572,658
GDP from Oil and Gas Extraction	58,411	49,265
% GDP from Oil	4.0%	3.1%
GDP from Refining	19,948	23,482
% GDP from Refining	1.4%	1.5%
% Ecopetrol's Contribution to National GDP	3.8%	3.4%

In summary, the oil and refining sectors played pivotal roles in Colombia's economic advancement in 2023, mitigating the potential impact of an overall economic deceleration.

The Company, holding a significant position in the oil value chain, generated substantial revenue through the sale of crude oil and refined products both domestically and internationally. This revenue stream not only bolstered Ecopetrol's financial standing but also directly contributed to Colombia's economic growth. In 2022, oil revenues amounted to COP 25 trillion for the Central Government, representing around 1.7% of GDP. By 2023, this figure had increased to COP 44 trillion, accounting for 2.8% of GDP.

According to DANE, between January and December 2023, Colombian exports totaled USD 49.5 billion FOB, with exports from the Fuel and products of extractive industries group reaching USD 25.9 billion, of which USD 12.4 billion FOB corresponded to the oil and gas

category. Ecopetrol accounted for approximately 80% of total exports within the oil and gas category during 2023.

It is important to emphasize that Ecopetrol's contribution to the GDP extended beyond its direct activities in the hydrocarbon sector. It also generated multiplier effects in the supply chain, job creation, and the development of local communities in the regions where it operates.

However, it is crucial to recognize that Colombia's GDP dependence on the hydrocarbon sector, particularly on Ecopetrol, exposes the country to fluctuations in international oil prices. Economic diversification and sustainable resource management are vital aspects to enhance the country's long-term economic resilience.

Sources: DANE, ANH, and Ecopetrol Calculations
(1) Corresponds to Ecopetrol's share within the national production of crude oil and gas during the year plus the production from the refining sector.
p: provisional DANE
pr: preliminary DANE
Note: In 2022, the share of each sector was obtained using the total GDP at constant prices of 2015; however, in 2023, it was considered that the share in current pesos more accurately represents the true weight of the sector during the year.



Furthermore, Ecopetrol's total exports comprised 25% of Colombia's overall export revenue in 2023.

This underscores Ecopetrol's reliance on the country as a crucial pillar for maintaining sustainable economic equilibrium, playing a fundamental role in supplying energy, supporting industrial development, and infrastructure.

Transfers to the Nation

(GRI 207-1) Ecopetrol stands as one of the foremost contributors to national and territorial taxes in Colombia. Its fiscal policy is geared towards fulfilling its legal obligations within existing regulations while maximizing tax benefits for the Company. The taxes payable by Ecopetrol are outlined in the table below.

Table 16.13.3.
Breakdown of Taxes Payable by Ecopetrol

Type of Tax	Tax
National	Income and Complementary Taxes VAT under the Common Regime Income Tax Withholding Agent, VAT Withholding Agent National Surcharge on Diesel Fuel National Tax on Gasoline and Diesel Fuel Carbon Tax Tax on Financial Transactions
Territorial	Industry and Commerce Tax, Notices, and Billboards Industry and Commerce Withholding Agents Public Lighting Vehicles Property Tax Gasoline Surcharge Transportation Tax

Source: Ecopetrol. Finance Corporate Vice Presidency.

The amount paid by Ecopetrol encompasses taxes calculated by the company itself, along with the withholdings or collections of taxes it gathers from third parties and remits to various tax authorities as a withholding agent. The effective tax rate for Ecopetrol, both on an individual and consolidated basis, in the year 2023, stood at 50% and 36.5%, respectively.

The EG's contribution to the Nation in 2023 totaled transfers effectively paid of COP 58.3 trillion. This amount breaks down as follows: dividends COP 21.6 million, total taxes COP 26.6 trillion (which includes taxes assumed by the Company and the withholdings or collections of taxes from third parties remitted to various tax authorities as a withholding agent), and royalties and crude oil and gas purchases to the ANH for COP 10.1 trillion.

The effective tax rate for Ecopetrol, both on an individual and consolidated basis, in the year 2023, stood at 50% and 36.5%, respectively.

Table 16.13.4.
Value of Taxes and Transfers Paid by Ecopetrol S.A. at both National and Territorial Levels (figures in millions of pesos)

Type of tax	2019	2020	2021	2022	2023	Destination
OWN TAXES						
Income tax	-	446,316	-	69,530	4,574,997	Nation
Self-withholding for income tax	2,172,632	1,728,724	2,795,957	5,196,462	7,987,898	Nation
National gasoline and ACPM tax	45	31	30	30	131,187	Nation
Carbon tax (Effective from 2017)	1,128	446	800	146	3,936	Nation
National surcharge on ACPM	26	18	16	16	18	Nation
Sales tax	756,350	-	-	-	-	Nation
Industry and commerce tax	167,124	165,289	149,353	312,817	356,956	Municipalities
Property tax	22,439	20,763	21,184	46,054	27,035	Municipalities
Transportation tax	77,267	163,553	166,936	401,210	218,904	Municipalities
Financial transactions levy	142,312	128,230	135,793	296,154	200,098	Nation
Vehicle tax	173	92	95	227	110	Municipalities
Lighting tax	11,646	19,374	40,534	62,620	37,818	Municipalities
Gasoline surcharge	5	2	2	3	-	Departments/ municipalities
SUBTOTAL OWN TAXES	3,351,147	2,672,838	3,310,699	6,385,269	13,538,958	
THIRD-PARTY COLLECTION						
National gasoline and ACPM tax	1,188,018	954,854	1,303,416	1,499,890	1,305,284	Nation
Income/VAT/stamp duty withholding	1,060,373	1,175,564	1,328,934	1,854,695	2,119,526	Nation
National university stamp	3,132	675	2,063	17,293	68,765	Ministry of education - nation
Work contribution (Effective from 2020)	-	688	14,942	100,088	212,175	Ministry of the interior
COVID-19 solidarity tax withholdings	-	45,216	-	-	-	Nation
ACPM surcharge	50,870	31,594	26,690	27,183	30,869	Nation / departments / municipalities
Carbon tax (Effective from 2017)	363,930	235,123	264,210	341,462	435,537	Nation
Industry and commerce withholding tax	68,940	77,870	230,873	108,057	150,800	Municipalities
SUBTOTAL THIRD-PARTY COLLECTION	2,735,263	2,521,583	3,171,128	3,948,668	4,322,955	
TOTAL	6,086,410	5,194,421	6,481,827	10,333,937	17,861,913	



Fiscal Transparency

The Ecopetrol Group's (EG) Fiscal Policy is published on the Ecopetrol website and can be accessed by scanning the following QR code. It covers the following key aspects:

- 1 Ensuring prompt compliance with all national and international tax obligations based on current legislation.
- 2 Avoiding fiscal decisions with aggressive or risky positions that could raise doubts about its tax declarations.
- 3 Providing the Board of Directors of Ecopetrol S.A. and the various companies within the Group with comprehensive information on the main tax implications of their operations or matters subject to their approval, especially when they significantly impact decision-making.
- 4 Utilizing conventions to prevent double taxation, when available, to optimize the tax treatment of different operations.

To consult the Ecopetrol Group's Fiscal Policy, scan the following QR.



Good Tax Practices

The EG adheres to the following good tax practices:

- Documenting and standardizing the group's tax planning processes.
- Implementing a transfer pricing guide to ensure that transactions, agreements, and contracts between the EG's subsidiaries and affiliates are conducted on market terms, thereby preventing erosion of tax bases.
- Refraining from using structures or intermediary companies located in tax havens or non-cooperative territories with tax authorities unless there is a legitimate and valid business rationale.

Tracking and Control

The EG executes the following tracking and control measures:

- Regularly update, publish, and disseminate the tax planning memorandum to all Group companies whenever the National Government enacts regulations impacting its directives.
- Conduct quarterly committees with the EG to review the application of benefits and address evolving tax issues.
- Provide reports on key aspects such as the performance of the effective tax rate, significant transactions affecting it, comparative analyses with preceding periods, and the implications of recent tax reforms on the group's rate, among other considerations.

(DJSI 1.8.1) (DJSI 1.8.2)

Key Aspects of Ecopetrol's Tax Planning

1

Utilization of tax benefits as per current regulations:

- EG companies operating in CIIU 0610 "crude oil extraction" are subject to an additional tax rate on top of the standard rate.
- A minimum tax rate is prescribed for income taxpayers, calculated based on adjusted financial profit.
- A ceiling is imposed on tax benefits and incentives applicable to the 2023 income tax return. The aggregate of non-taxable income, special deductions, exempt income, and tax discounts cannot exceed 3% annually of the ordinary net income before accounting for specified deductions established by Law.
- VAT deduction applicable to the acquisition, construction, etc., of Productive Real Fixed Assets.
- Tax incentives for the utilization of alternative energies.
- Optimization of carbon bond benefits.
- Companies investing in research, technological development, and innovation may claim a 30% deduction on such investments in their income tax returns.

2

Involvement in the structuring and tax delineation of new businesses within the Group.

3

Dissemination of tax legislative changes to the Company and Subsidiary departments.

4

Collaboration with the Ministry of Finance and Public Credit (MHCP), the Ministry of Mines and Energy (ME), and DIAN.

5

Participation in Works for Taxes initiative.

6

Convening Ecopetrol Group Tax Committees and quarterly reporting of litigations across all Group entities.

Tax Risks

Ecopetrol has identified several tax risks that, if realized, could result in business losses and entail the payment of penalties and late interest to tax authorities. The primary risks include:

- Changes in tax legislation within the countries where the company operates.
- Adoption of aggressive tax stances that could trigger disputes with tax authorities.
- Shifts in prevailing tax doctrines that might lead to disagreements with tax authorities.

The document containing the Company's risk matrix and the protocol for evaluating the economic impact linked to the occurrence of these risks is available for reference at www.ecopetrol.com.co

Occupational Health

(GRI 3-3) Creating value for Ecopetrol, in alignment with the 2040 Strategy, entails proactively managing occupational health risks, with a focus on safeguarding the lives of employees, partners, and the communities where it operates. This objective is achieved through the implementation of safe, healthy, and sustainable practices, as well as the cultivation of supportive work environments.

Aligned with the “Life First” principle and the CCTV 2023-2026 framework, Ecopetrol’s occupational health initiatives aim to nurture the potential of its

workforce, enhancing and preserving the physical, mental, and social well-being of employees while preventing work-related ill-health and accidents. Furthermore, efforts are made to ensure that work environments are conducive to the physical and psychological needs of workers.

Ecopetrol has devised an Occupational Health Strategy built upon two (2) foundational pillars, which delineate areas of intervention, alongside a set of cross-cutting mechanisms designed to bolster comprehensive occupational health management:

Secure, Healthy, and Sustainable Operations	Promoting the Well-being of Employees
<p>Risk management in existing facilities: Intervening in sources that generate hazards related to industrial hygiene, chemicals, and ergonomics with the aim of closing gaps and minimizing health risks for individuals. This is achieved through hazard identification, health risk assessment, an industrial hygiene program, and an ergonomics program.</p>	<p>Occupational health: initiatives aimed at promoting healthy lifestyles and preventing work-related ill-health, while nurturing and upholding healthy workplace habits. These initiatives foster individual risk management, encourage the adoption of behaviors that prevent work-related ill-health, and enhance the overall quality of life for workers.</p>
<p>Incorporating standards, methodologies, and technical principles of industrial hygiene and ergonomics at all stages of Ecopetrol’s prioritized projects to ensure the health and well-being of personnel interacting with facilities and equipment.</p>	<p>Mental Health and Psychosocial Well-being: involves managing psychosocial risk factors to mitigate their impact on physical and mental health, achieving a harmonious balance between work, personal life, and the Company. It includes reinforcing protective factors that contribute to this equilibrium and maintaining a healthy work environment for employees. This strategic approach also encompasses management efforts for the prevention and control of alcohol and psychoactive substance consumption.</p>
<p>Identifying hazards, and evaluating, and managing risks in occupational health related to new technologies associated with low emissions.</p>	<p>Preventive and Occupational Medicine: a comprehensive array of programs, procedures, instructions, and activities that are coordinated to preserve workers’ health and prevent work-related ill-health across all stages of their employment with Ecopetrol.</p>
	<p>Holistic Occupational Rehabilitation Program: in the event of health issues affecting work capacity, measures are taken to optimize the worker’s functionality for their social and occupational reintegration.</p>

The cross-cutting levers encompass occupational epidemiological surveillance, financial management, legal compliance in occupational health, and technological innovation and data analytics.

Managing work-related health hazards and risks at Ecopetrol involves:

Ensuring work environments meet high occupational health standards and implementing proactive risk control measures.

Promoting healthy lifestyles and preventing the work-related ill-health by:

- Encouraging healthy habits in the workplace.
- Managing psychosocial risk factors to achieve a balance between work, personal life, and the Company.
- Developing the Preventive and Occupational Medicine Program.
- Implementing a digital strategy for risk identification, prioritization of interventions, proposal and monitoring of interventions, and analysis of results.

Ecopetrol monitors occupational health programs through:

Intervention in work environments, aligned with the fulfillment of Health Risk Assessment (HRA) intervention plans, Hygiene Plans, Ergonomics Plans, and Psychosocial Plans, and controlling the risk level of critical occupations.

Intervening in psychosocial aspects and managing ergonomic, industrial hygiene, and occupational risks in telecommuting.

Leveraging innovation and technology, including data analytics, to predict and alert possible occupational health risks within work environments.

Intervention actions in occupational health are integrated into the tactical and operational plans of the business units, with impacts disseminated throughout all levels at Ecopetrol. Positive outcomes from these actions are incorporated into the Occupational Health Strategy, overseen by the HSE Vice Presidency for the entire Company.

Managing occupational risks in projects.

Implementing the Preventive and Occupational Medicine Program, conducting periodic comprehensive health assessments, and managing work-related ill-health.



● Impact on Human Rights

(GRI 3-3) Ecopetrol is dedicated to safeguarding life in all its forms, addressing present occupational health challenges while upholding the rights to life, personal integrity, workplace health and safety, and dignified working conditions. By doing so, the Company strives to foster beneficial, healthy, and secure lifestyles and work environments for its employees, contractors, and surrounding communities.

● Goals

Ecopetrol has set short, medium, and long-term objectives, including:

- Enhancing existing facilities.
- Implementing industrial hygiene and ergonomic standards in new facilities for Oil & Gas processes and emerging technologies (low emissions).
- Pursuing opportunities for innovation, technological advancements, and the utilization of data analytics.
- Mitigating health risks for both employees and the wider community.

Short Term (2024-2026)

Maintaining a Recordable Injury Frequency Rate equal to or below

0.04.

Medium Term (2027-2030)

Maintaining a Recordable Injury Frequency Rate equal to or below

0.03.



(DJSI 3.5.1)
Ecopetrol's Comprehensive Policy underscores the Company's dedication to life and operational excellence.

● HSE Management System

(GRI 403-1) (GRI 11.9.2) (GRI 403-9) (GRI 11.9.10) (DJSI 2.1.3) (DJSI 3.5.2) (SASB EM-EP-320a.2) Through the HSE Management System, Ecopetrol establishes essential components for effective risk management, with the primary goal of safeguarding lives. This system is **certified under ISO 14001:2015 and ISO 45001:2018**.

(GRI 403-8) (GRI 11.9.9)

The HSE Management System extends to various processes, including:

-  Oil and Gas Exploration and Production.
-  Refining and petrochemical production.
-  Hydrocarbon marketing.
-  Administrative and support functions.

In this way, the HSE Management System is applicable to both employees and contractors involved in all Company processes. Its objective is to cultivate leadership and commitment by establishing objectives, implementing best practices, and conducting monitoring activities. These endeavors result in the identification and prioritization of improvement opportunities, activating action plans to achieve desired outcomes, thereby ensuring continuous enhancement in system performance.

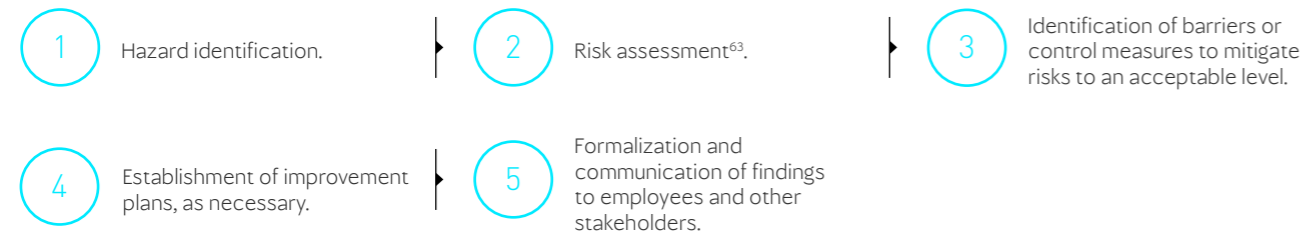
(GRI 403-2) (GRI 11.9.3)

Risk assessment is a pivotal element of the management system. Ecopetrol employs

various methodologies for **hazard identification and risk analysis and evaluation**, tailored to the specific type of hazard under assessment. For hazards related to industrial safety, the Company adopts the "bowtie" methodology, while the "Health Risk Assessment" (HRA) methodology is utilized for identifying hazards and risks associated with Occupational health.

(GRI 403-4) (GRI 11.9.5) These methodologies are comprehensively documented and formalized within the HSE Management System, with personnel trained to consistently apply them across all Company facilities and operations through the annual HSE training program.

The process of **hazard identification and risk assessment** includes:



Controls or barriers are designed with criteria for both the elimination and mitigation of risks, referencing the control hierarchy outlined in ISO 45001:2018. To ensure the quality of these analyses, teams responsible for hazard identification and risk assessment comprise operational personnel, area leaders, and occupational health and safety specialists. Additionally, mechanisms are established to facilitate review and active participation of involved workers.

For the execution of daily tasks, primarily conducted by contractors, continuous task risk analyses are performed, with approval from responsible personnel in the respective areas where activities are carried out. Health risk assessments and “bowties” (a risk assessment methodology) are regularly updated under the following circumstances: (i) upon identification of a new hazard, (ii) introduction of a new production or technological process, (iii) implementation of any changes posing risks to health, individuals, or the environment, or (iv) as a result of accident investigation.

The outcomes of hazard identification and risk assessment aid in gauging the effectiveness of improvement actions, pinpointing new opportunities for intervention in prevention efforts, and integrating fresh controls or requirements into safe practices linked with the HSE Management System.

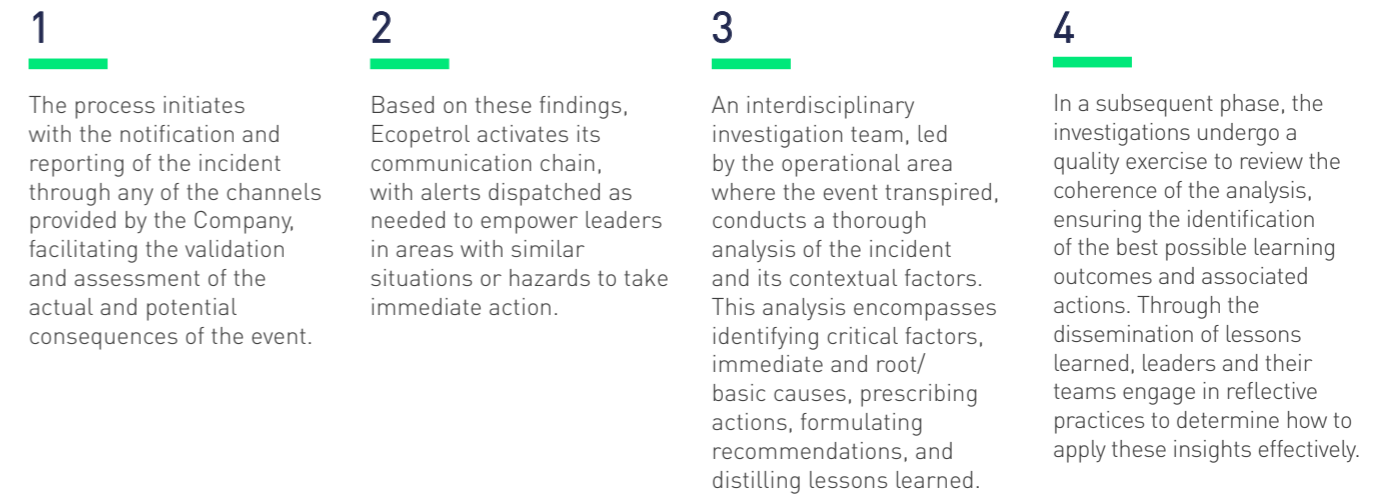
(GRI 403-7) (GRI 11.9.8) (SASB EM-EP-320a.1) Moreover, personnel are provided with a tool, accessible electronically or via a telephone line, for reporting unsafe behaviors and conditions. To foster reporting of hazardous situations and conditions and bolster improvement in established controls, visits, HSE tours, inspections, and dialogue spaces between leaders and workers are encouraged. At Ecopetrol, adherence to work control practices reinforces that all employees possess the authority and responsibility to halt work upon identifying unsafe acts or conditions—a principle communicated from Senior Management to all direct and contracted personnel. Workers exercising this authority are recognized weekly through area HSE reports.

In cases where an unsafe condition is reported, individuals involved are promptly notified of the identified act or condition for rectification. A joint reassessment is conducted to determine whether work can proceed safely or if the activity should be suspended until any uncertainties are resolved. Additionally, safe work initiation is promoted by implementing checklists or support certificates for critical activities, empowering workers to commence work only once all necessary safety conditions are confirmed.

Ecopetrol maintains various communication channels for workers and contractors, enabling them to raise inquiries or lodge complaints regarding potential retaliation subsequent to reporting any situations linked to unsafe work practices.

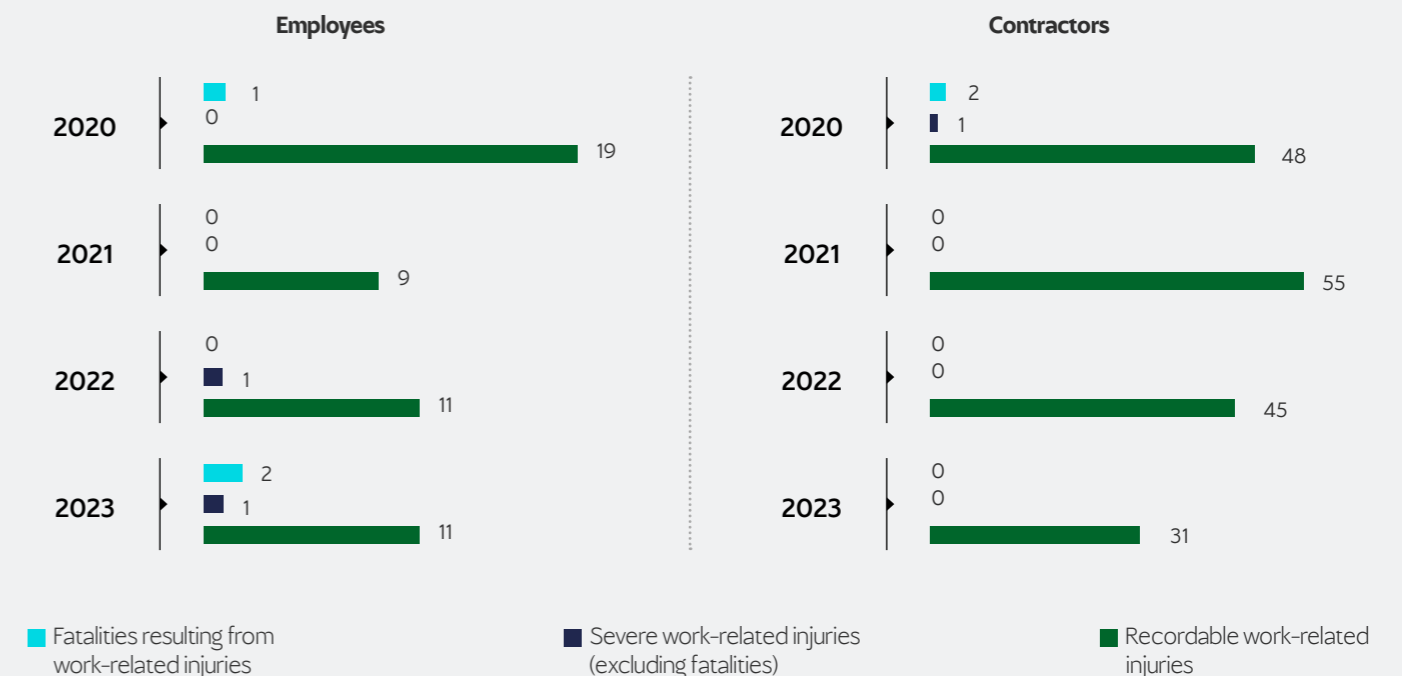
63 Quantitative or qualitative.

(SASB EM-EP-320a.1) The **management of occupational incidents** within the Company follows a series of sequential stages, aimed at prompt management and the assimilation of lessons through corrective and improvement actions:



Ecopetrol employs a technological tool to monitor the process and status of actions, conducting periodic analyses of consolidated data to discern patterns in deviations and their underlying causes. These analyses inform the establishment of actions aimed at effectively managing the involved risks.

Figure 6.13.1.
Workplace Injuries Suffered by Employees and Contractors
(GRI 403-9) (GRI 11.9.10) (DJSI 3.5.3) (WEF 15)

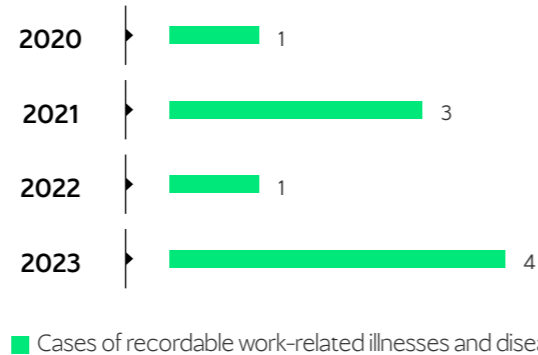


(GRI 403-9) During risk assessments, activities or processes are scrutinized to identify instances where the sudden release of energy could lead to severe injuries. Hazards posing a risk of serious injury include working at heights, working with electrical systems, operating vehicles, entering confined spaces, lifting heavy loads mechanically, and operating pressurized systems, among others. For such activities, Ecopetrol has implemented safe practices that delineate responsibilities, competencies, and control measures necessary for their safe execution. These hazards and their corresponding controls form the foundation of the “Life-Saving Rules,” a set of guidelines aimed at communicating and internalizing safe practices among workers.

In the hazard identification and risk assessment process, those identified as having a high or very high risk, or those capable of causing significant work-related injuries, are deemed intolerable. Efforts are then directed towards reducing these risks by employing a hierarchy of controls, ranging from hazard elimination to mitigation.

No work-related ill-health fatalities were reported between 2020 and 2023.

Figure 6.13.2.
Number of Employee Illnesses and Occupational Diseases
(GRI 403-10) (GRI 11.9.11) (WEF 25E)



(GRI 403-10-d) Contractors are excluded from the metrics.

Figure 6.13.3.
Lost-Time Injury Frequency Rate (LTIFR)⁶⁴
(DJSI 3.5.4) (DJSI 3.5.5) (ECP 002)

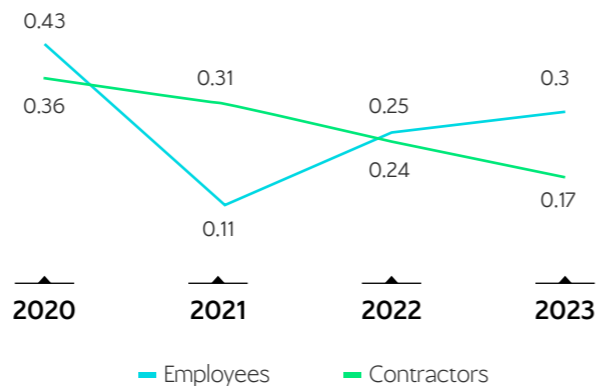
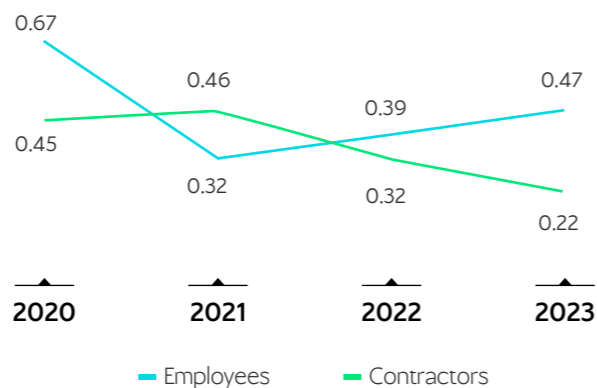


Figure 6.13.4.
Total Recordable Injury Frequency Rate (TRIFR)⁶⁵
(DJSI 3.5.6) (DJSI 3.5.7) (ECP 003)



⁶⁴ Includes: Hocol, Cenit, ODL, ODC, Ocesa, and Esentia. Data coverage (in % of employees or contractors depending on the case): 100%.

⁶⁵ Includes: Hocol, Cenit, ODL, ODC, Ocesa and Esentia. Data coverage (in % of employees or contractors depending on the case): 100%.

Workers At High Risk Or With A High Incidence Of Work-Related Illnesses

Below are the Ecopetrol departments where high-risk activities are conducted, making them subject to the corresponding regulations⁶⁶:

1

Activities involving exposure to high temperatures exceeding permissible limits, as determined by Occupational health technical standards:

- Management of Development and Production Operations at Sea of the Central Regional Vice Presidency: ‘Workover’ activities for the positions of Floor Hand and Derrickman.
- Management of Development and Production Operations in River Areas of the Central Regional Vice Presidency: ‘Workover’ activities for the positions of Floor Hand and Derrickman.
- Cartagena Refinery Management – Acid Zone Alkylation Plant: Operations, supervision, and maintenance activities.

2

Activities involving exposure to proven carcinogenic substances:

- Aromatics Plant – Petrochemical Department – Barrancabermeja Refinery.
- Maintenance Group VI – Barrancabermeja Refinery.
- Industrial Laboratory – Barrancabermeja Refinery.
- Acid Plant – Cracking III – Barrancabermeja Refinery.
- Alkylation, Hydroisomerization, and Merox Plant – Cracking II – Barrancabermeja Refinery.
- Maintenance Department - Welders – Barrancabermeja Refinery.
- Maintenance Department - Welders – Cartagena Refinery.
- Maintenance Department - Metal Mechanics – Barrancabermeja Refinery.
- Maintenance Department - Metal Mechanics – Cartagena Refinery.

3

In fire departments, the activity pertains to the specific function of firefighting operations:

- Prevention and Emergency Control Coordination - Barrancabermeja Refinery.
- Prevention and Emergency Control Coordination - Cartagena Refinery.
- Production Coordination in Orito.

⁶⁶ Within the framework outlined by Decree 2090 of 2003, titled “Defining High-Risk Activities for Worker Health and Modifying and Establishing the Conditions, Requirements, and Benefits of the Pension Regime for Workers Engaged in Such Activities,” and Decree 2655 of 2014, which extended the validity of Decree 2090 by 10 years.

⁶⁷ Activity where maintenance is performed on a well or its condition is modified.



During 2023, Ecopetrol did not experience any events associated with the aforementioned activities with regards to the incidence of work-related diseases.

Incorporation Of Industrial Hygiene And Ergonomics Standards In Projects And New Facilities

The objective of this initiative is to ensure the integration of industrial hygiene and ergonomics standards across all stages of project development managed within the Group.

The technical analysis of ergonomics and industrial hygiene in projects aims to control uncertainty and primarily anticipate negative effects arising from variability in work systems.

Considerations for industrial hygiene and ergonomics support include:

- Ergonomics support for the Water System Reliability project for boilers at U031 in the Cartagena Refinery during pre-startup stages (90%), and a review of the completed project after one (1) year (100%).
- Basic engineering evaluation for projects aimed at upgrading maintenance workshops and heat exchanger washing yards within the Cartagena Refinery Management.
- Ergonomics support for the solar plant project to mitigate identified risks in tasks related to bolt assembly, solar bed assembly, and panel installation.
- Ongoing ergonomics support for Project U107 in the GRC, with a 60% review and technical observations related to overhead cranes and circulation platforms/walkways.
- Continuous ergonomics support for the safeguards project involving 12 furnaces at the Barrancabermeja Refinery.
- Progress on the Fuel Quality Baseline project: support has reached 40% completion.
- Detailed engineering support has commenced for the Azufre II and Azufre III projects. As of December 31, 2023, verification of interventions to improve noise levels was pending.



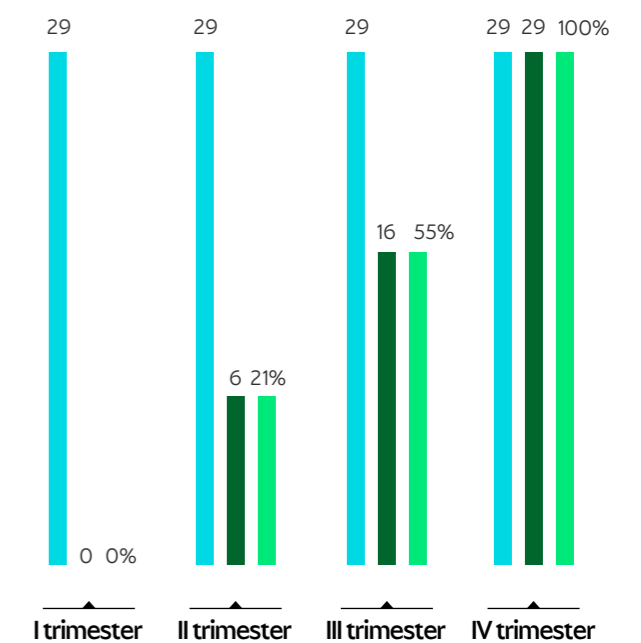
By December 2023, a notable reduction or complete elimination of hygienic and ergonomic risk factors had been accomplished across all occupations targeted for intervention, in accordance with the planned objectives for that period.

Risk Level Control Indicator

This indicator plays a crucial role in proactively managing occupational risks within work environments and preventing the onset of work-related ill-health, by assessing the effectiveness of intervention plans designed to address chemical, physical, and ergonomic risks. The objective is to provide support to various departments in managing these risks effectively through the Occupational Health Department, with the ultimate goal of eliminating or minimizing them.

In 2023, the indicator encompassed 29 occupations classified with “Very High,” “High,” or “Medium” risk levels concerning industrial hygiene or ergonomics conditions.

Figure 6.13.5.
Compliance with Risk Level Control in 2023



	I trimester	II trimester	III trimester	IV trimester
Annual goal	29	29	29	29
No. of accumulated controlled trades	0	6	16	29
Compliance	0%	21%	55%	100%



● Closing Gaps in Existing Facilities

The planned activities for 2023 described below achieved a 100% compliance rate:

Ergonomics:

- Dissemination of results and prioritization of intervention actions (valves, control rooms, and tools).
- Definition of intervention proposals and their inclusion in the 2024 budget planning.
- Support for the implementation of intervention actions prioritized for the 2023 period.

Industrial Hygiene:

- Establishment of prioritization criteria for interventions in process sampling points and storage tanks.
- Prioritization of interventions for process sampling points and storage tanks.
- Formulation of Intervention Plans by Business Units to address gaps in process sampling points and to ensure the tightness measurement of storage tanks.

● Occupational Health Support for Teleworking Mode

A support strategy was established for personnel in teleworking mode to identify risk conditions and determine how to address them.

The strategy includes an initial assessment of teleworking positions by ergonomics specialists, with the purpose of:

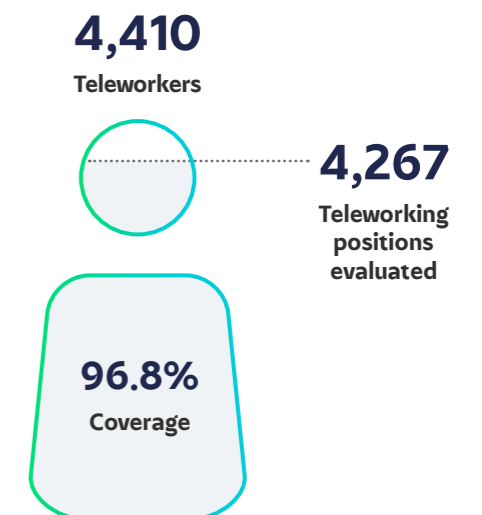
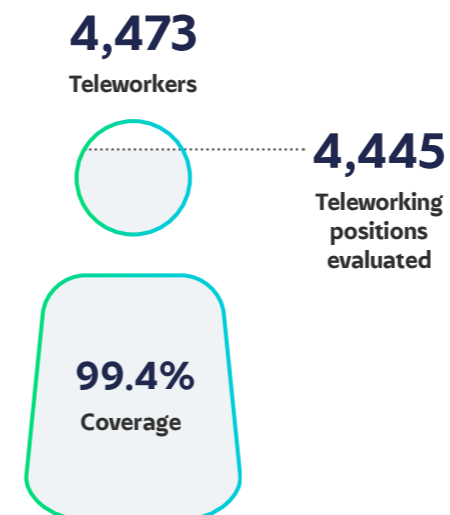
- Providing basic recommendations for immediate workstation improvements.
- Generating a report with recommendations to ensure suitable workstations for teleworking activities.

By 2023, support and advice on workstations were provided to 99.4% of Ecopetrol's teleworkers.

Furthermore, the strategy incorporates a second assessment to ensure that teleworkers have effectively implemented the recommendations derived from the initial evaluation. This follow-up evaluation of teleworking positions serves the following objectives:

- Confirm the successful execution of the initially provided recommendations for workstation adjustment.
- Finalize any necessary adjustments for teleworkers concerning their work setup.

By the end of 2023, verification coverage (second assessment) of teleworking positions reached 96.8%.



Human Factors

The 2023–2040 Occupational Health Strategy has established guidelines, principles, and requirements for integrating human factors into the implementation, operation, and maintenance stages of both industrial and non-industrial systems at Ecopetrol.

The disciplines framed within human factors, along with their respective tools, enable the management of employee-related risks, considering three (3) dimensions:



The task: defining what individuals need to accomplish.



The individual and their competencies: identifying who performs the task.



The organization and its attributes: understanding where and why the task is performed.

Integration of Human Factors into the Company’s processes is crucial, given the interaction between workers and these processes. The activation of the Human Factors strategy follows the course of action below:



Existing facilities: Verification of current conditions in areas previously monitored or identified as areas of interest for occupational health management.



Facility modifications: Projects involving adaptations or modifications that alter operations (interaction between the system and humans) by less than 60%.



New projects: Projects involving adaptations or modifications to new facilities that significantly alter operations (interaction between the system and humans) by more than 60%.



Employee and Contractor Participation

(GRI 2-29) (GRI 403-4) (GRI 11.9.5)

Processes are established, implemented, and maintained through the HSE Management System to ensure worker consultation and participation at all levels and operations of the Company through their corresponding representatives.

(DJSI 3.5.1)

Ecopetrol maintains 12 Joint Health and Safety Committees (COPASOS) and 25 Local Occupational Health Committees (COLOSOS), comprising representatives from both management and workers. COPASOS serve as advisory bodies aimed at promoting and monitoring compliance with Occupational Health and Safety Programs, while COLOSOS undertake promotion, prevention, and control actions associated with occupational risk factors in their respective areas, proposing solutions as area experts whenever necessary.

All workers are represented in COPASOS and COLOSOS.

In 2023, two (2) COPASOs and two (2) COLOSOS were established, arising from the new CCTV, and the relevant representatives were selected.

(GRI 403-7) (GRI 11.9.8) In addition, during the procurement processes—from preparation and planning to selection, execution, and completion—contractor companies are required to comply with HSE standards and requirements to ensure proper risk management.

Promoting Workers’ Health

(GRI 403-6) (GRI 11.9.7) (DJSI 3.4.4)

(ECP 011) Ecopetrol, in accordance with Article 279 of Law 100 of 1993, is exempt from the General Health Security System. Consequently, its workers, retirees, and duly registered family members are covered by the health social security system, as outlined in Chapter VI “Medical Services” of the 2023–2026 Collective Labor Agreement (CCTV). The CCTV commits the Company to maintaining the best possible health for workers and their families, offering comprehensive medical, paramedical, dental, rehabilitation, hospital, alternative medicine, and ancillary services, including rare and orphan diseases. Additionally, it provides outpatient medical and dental consultations, specialized opinions, alternative medicine, complementary therapies, and priority care.

The CCTV also covers the provision of medications, orthopedic devices, prostheses for eyes, ears, and limbs, ophthalmic and contact lenses, crutches, wheelchairs, laboratory materials, dental prostheses, rehabilitation treatments, emergency medical and dental services nationwide, hospitalization in high-quality facilities, local and non-local referrals, the latter with travel and assistance allowances for illness and companion authorization as medically required; medical transportation services by air, land, and/or river; disability benefits, determination of labor protection periods extended to family members; burial expenses, and medical insurance for workers’ children studying abroad.

Moreover, the CCTV established the formation of one (1) ECP-USO National Health Services Commission and regional sub-commissions to address service-related issues.

(GRI 403-3) (GRI 11.9.4) On the other hand, the Ecopetrol Occupational Health Department is responsible for:



Spearheading the management of preventive medicine and occupational health.



Defining and formulating guidelines, manuals, procedures, instructions, formats, and tools essential for the effective delivery of occupational health services.



Strategizing and securing the necessary budgetary resources to facilitate the management of occupational health.



Offering technical assistance to Ecopetrol's Business Units on matters related to occupational medicine and other occupational health concerns, engaging in strategic initiatives to mitigate occupational risks in work environments.



Overseeing adherence to guidelines and standards in preventive medicine and occupational health.



Contributing to the investigation of work-related accidents and ill-health.

To ensure high-quality occupational health services, Ecopetrol conducts an induction process for personnel from service provider companies specializing in preventive medicine and occupational health. This induction encompasses the delivery of hygiene, ergonomics, and psychosocial results, providing insights into the health conditions of workers. These findings are essential for developing promotion and prevention activities and structuring comprehensive action plans tailored to individuals. Additionally, Ecopetrol conducts audits to assess the quality of occupational health services, adhering to current regulations in Colombia.



Psychosocial Risk Management and Mental Health

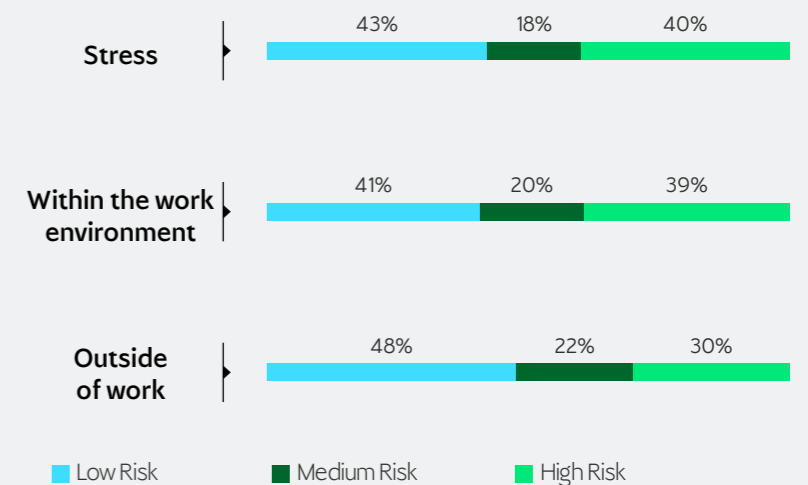
(DJSI 3.4.4) Ecopetrol maintains continuous monitoring⁶⁸ of psychosocial factors in the workplace and their impact on individuals' health. Through early identification, assessment, intervention, and ongoing monitoring of exposure to psychosocial risk factors, the Company strengthens these factors to foster a healthy work environment, particularly in the mental health aspect and in related spheres of influence.

Assessment of psychosocial factors:

These factors, along with mental and emotional health, are top priorities for Ecopetrol. As part of the objectives set for 2023, completing the update of the diagnosis of psychosocial risk factors was crucial. Targeting a population of 9,301 individuals and achieving a coverage of 7,465 (80% of the defined population), the assessment encompassed intra-

labor and extra-labor factors as well as stress perception. The results indicated a significant level of favorability compared to the intervention priorities.

Figure 6.13.6.
Results Of Psychosocial Factor Assessment Questionnaires for the 2022-2023 Cycle



⁶⁸ This surveillance is conducted in accordance with the methodology and criteria outlined in the Instruction Manual for the Occupational Epidemiological Surveillance System (SIVEO) of Psychosocial Factors at Ecopetrol S.A.

(GRI 403-5) (GRI 11.9.6) Healthy Leadership

Interventions: This strategy has been developed as another cornerstone of management in the realm of psychosocial and mental health, with the aim of empowering leaders to strengthen their individual capabilities, fostering tools that facilitate effective management, and enhancing their soft skills. In 2023, a total of 495 leaders were engaged in this initiative. Furthermore, the training of leaders in Cartagena commenced with a focus on neuro-leadership, designed to equip them with tools for effective leadership based on an understanding of brain functioning. Through this approach, leaders are encouraged to comprehend the intricacies of each individual's brain, thereby promoting desirable actions among their team members.

(GRI 403-5) (GRI 11.9.6) Promotion and Prevention

Interventions: Both individual and group interventions have been implemented.



Within group interventions, three (3) overarching themes were delineated: Mental Health, Brain Health, and Social Well-being. A total of **386 workshops were conducted, reaching 3,537 workers.**



In individual interventions, which encompassed coping capacity assessments and psychosocial counseling, **2,987 activities were undertaken.**



Noteworthy among the group interventions is the development of the Team Cohesion and Corporate Values Program, aimed at enhancing the capacity of team members to collaborate effectively, trust one another, and pursue common goals in harmony. **Five hundred workers** participated in this program, and it will continue into 2024.

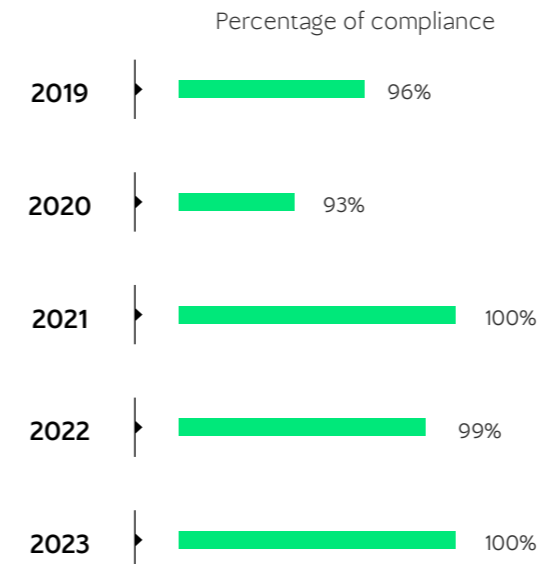
Program for the Promotion of Active Aging at Work:

This program is designed to prepare workers for active aging across four (4) dimensions: cognitive health, brain health and sleep, mindful eating, and physical activity. In 2023, a pilot test was conducted, inviting all ICP workers to participate. The assessment covered 36 employees across various dimensions: 19 in cognitive health, 24 in brain health, 18 in physical activity, and seven (7) in nutritional status. Based on the evaluations, workers received personalized diagnoses and training plans to enhance or maintain their performance in the evaluated dimensions. The program will be expanded to other business units in 2024, incorporating insights gleaned from the 2023 pilot.

An evaluation and training model has been established for employees seeking to join the Emotional Emergency Response Brigades (BAEE), with the registration process scheduled to commence in the first quarter of 2024, in accordance with the Company's mental health program guidelines.



Figure 6.13.7.
Compliance with Psychosocial Risk Intervention Plans

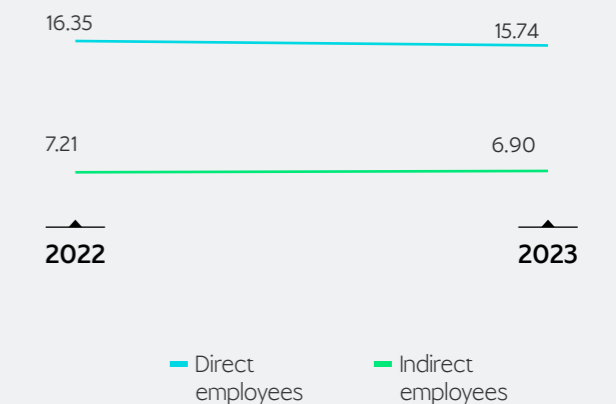


Cognitive Skills - RASA (Anticipated Response to Abnormal Situations)

(GRI 403-5) (GRI 11.9.6) (DJSI 3.5.2) Ecopetrol acknowledges the significance of equipping employees with cognitive skills in the workplace, where task complexity and the pace of professional demands remain constant. These skills not only enhance information processing, memory, and decision-making abilities but also bolster problem-solving and adaptability to unforeseen changes. Furthermore, by investing in the development of these cognitive skills, the Company understands that it is strengthening the capacity of its employees to face complex challenges and reduce HSE risks, promoting a more efficient and sustainable work environment in the long term.

Figure 6.13.8.
Average Training Hours in Health, Safety, and Emergency Management for Direct and Indirect Employees

(SASB EM-EP-320a.1)



Key Accomplishments

- Maintained compliance with the recordable injury rate (TRIF) indicator: The EG achieved a rate of 0.26 against a limit of 0.33, marking a 21% reduction compared to 2022. For Ecopetrol S.A., the TRIF rate was 0.27 within the same limit.

- Implemented the healthy company program and initiated planning and structuring for the pilot project to commence at the Cartagena Refinery in February 2024.

- Disseminated results and prioritized intervention actions to address gaps in existing facilities concerning hygiene and ergonomics (such as control rooms, valves, tools, sampling points, and tank measurements).

- Supported low emissions processes through the HSE Transition Energy route.

- Conducted evaluations of psychosocial factors, covering 80% of the workforce, equivalent to 7,465 evaluated workers.

- Launched the pilot test for the Active Aging Program for ICP workers.

- Updated the psychoactive substance prevention program.

- Developed the Occupational Health Department's digital strategy.

- Conducted promotion and prevention interventions, including 386 workshops with a coverage of 3,537 workers, and 2,987 individual interventions for workers, encompassing coping capacity assessments and psychosocial counseling.

- Conducted healthy leadership interventions, covering a population of 495 leaders, with the initiation of leader training based on neuro-leadership practices.

- Executed interventions in 29 operational trades with occupational risks, implementing industrial hygiene or ergonomics measures for all targeted trades in 2023.

- Provided advisory support for 25 projects to ensure the incorporation of Industrial Hygiene and Ergonomics standards.

- Successfully completed the Occupational Health Action Plan for Teleworking Employees, resulting in highly favorable outcomes for workers' health and well-being: initial evaluation coverage included 4,445 employees, representing 99.4% of the workforce, with workstation adequacy verification for 4,267 employees, corresponding to 96.8%.

- Established and operated the Occupational Health Center of Excellence for the EG, defining standardized management monitoring indicators. The Occupational Health Center of Excellence includes the following EG companies: CENIT, OCENSA, ODL, ODC, ESENTTIA, ECODIESEL, HOCOL, ISA, and Ecopetrol S.A.



Industrial and Process Safety

(GRI 3-3) Ecopetrol upholds a commitment to safeguarding life in all its forms, as outlined in the 2040 Strategy and guided by its cultural ethos of “Life First.” This principle serves as a cornerstone in managing operations to ensure the safety of individuals and prevent containment losses.

Ecopetrol aspires to maintain its status as a leader in industrial safety and process safety by embracing best practices and conducting operations within acceptable risk thresholds. To effectively address industrial safety and process safety incidents that may impact individuals, the environment, and infrastructure, Ecopetrol has identified the risk of “HSE Events Due to Operational or Natural Causes” on its business risk map.

The Company focuses on five key areas to establish itself as an industry leader:



Consistency, dedication, and visible leadership in occupational health and safety.



Management of industrial safety and risk-based processes.



Adherence to safe practices and maintenance of high safety standards.



Analysis of trends and incorporation of lessons learned from experience.



Proactive management of emerging risks.

Through these efforts, Industrial and Process Safety at Ecopetrol strives to achieve optimal operational performance by implementing measures and actions aimed at preventing and mitigating the release of hazardous substances or energy. This approach prioritizes the protection of lives, the environment, and upholding the highest standards of occupational health and safety.



Impact on Human Rights

(GRI 3-3) The guiding principle of our corporate ethos is “Life First,” underscoring our commitment to safeguarding the lives, integrity, and well-being of employees, contractors, communities, partners, suppliers, and all other stakeholders with whom the Company engages. In pursuit of this principle, Ecopetrol upholds its pledge to respect and exercise due diligence in Human Rights.

(SASB EM-EP-540a.2) Consequently, Ecopetrol establishes an efficient management framework for its operations, aiming to minimize operational and occupational incidents that pose the risk of major accidents or disasters. We prioritize the rights to life, health, and workplace safety, personal integrity, dignified and favorable working conditions, and a healthy environment for the work teams, suppliers, and communities.

Goals

Short Term (2024-2026)

- Implement the Major Accident Prevention Program (MAPP) in all Ecopetrol areas and EG subsidiaries.
- Establish and implement the human factors methodology in safety management.
- Maintain the Tier 1 Process Safety Incident Frequency Index (IFSP N1) at or below 0.04.
- Maintain the Tier 2 Process Safety Incident Frequency Index (IFSP N2) 15% lower than the 2021 result.

Medium Term (2027-2030)

- Achieve a sustainable proactive culture level.
- Strengthen the management of *Natural-Hazard Triggered Technological Accidents*⁷¹ (Natech) en el GE, in the EG, incorporating variability and Climate Change⁷².
- Maintain the IFSP N1 at or below 0.04.
- Maintain the IFSP N2 30% lower than the 2020 result.

⁶⁹ Tier 1 Process Safety Frequency Index (IFSP 1): Level 1 or ‘Tier 1’ Incidents are those with the most significant consequences, including disabling injuries, fatalities, major environmental impacts, fire or explosion damages exceeding USD100,000, or material containment losses above the thresholds defined by API 754.

⁷⁰ Tier 2 Process Safety Frequency Index (IFSP N2): Level 2 or ‘Tier 2’ Incidents are considered to have lesser consequences compared to Level 1 incidents.

⁷¹ These incidents involve operational scenarios where the containment of hazardous substances or energy is lost due to natural and socio-natural threatening phenomena, such as earthquakes, floods, tropical storms, mass movements, volcanic activity, wildfires, among others. These events have the potential to expose workers, the population, the environment, assets, and infrastructure to serious, immediate, or deferred danger.

⁷² This goal is expected to be achieved no later than 2029.

Management System

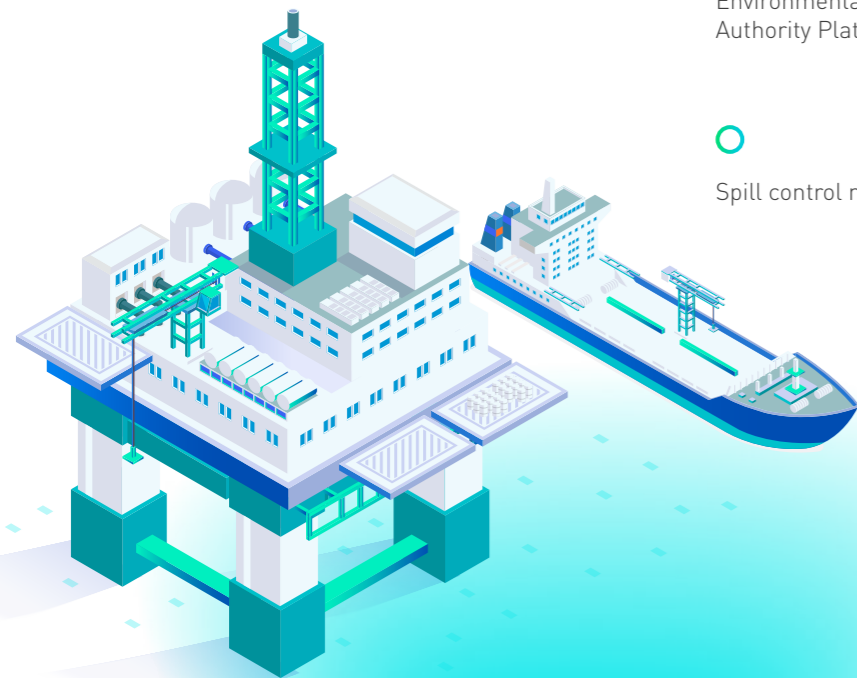
(SASB EM-EP-540a.2) At Ecopetrol, process safety is governed by the Guide for Process Safety Management⁷³, which establishes the principles, requirements, and governance for risk-based management. The goal is to prevent and mitigate incidents involving the loss of containment of hazardous substances or energy release within the framework of the HSE Management System.

(SASB EM-EP-540a.2) The Guide for Process Safety Management serves as a structured reference framework for managing and overseeing the integrity of hazardous operating systems and processes. It entails the application of various measures, skills, and sound management principles across design, engineering, human and organizational factors, operation, and maintenance practices. The primary objective is to eliminate, prevent, control, and mitigate incidents resulting from the unplanned or uncontrolled release of

hazardous substances or energy, which have the potential to harm people, the environment, and infrastructure. Process safety focuses on identifying and preventing incidents associated with low-frequency but high-consequence technological risks, such as the release of hazardous substances or energy, fires, and explosions. These incidents typically have catastrophic effects, leading to multiple injuries and fatalities, economic losses, and environmental impacts, thereby affecting reputation and business continuity.

Consequently, Ecopetrol has established an internal management system to develop and implement actions addressing the hydrocarbons and harmful substances linked to its value chain. Incident management during operations encompasses:

- Activation of the Emergency and Contingency Plan based on the event's severity and reporting on the vital platform (National Environmental Licensing Authority Platform).
- Activation of cooperation agreements and mutual aid plans, as necessary, depending on the magnitude of the event.
- Spill control measures.
- Restoration of affected areas in accordance with the level of impact and/or environmental authorities' guidelines.



(SASB EM-EP-540a.2) Process safety systems are essential throughout the entire asset lifecycle, including acquisition, operation, maintenance, and decommissioning, creating sustainable value at every stage.

For detailed information on managing hydrocarbon spill incidents, please scan the QR code below.



This aspect is evaluated using performance indicators based on *Process Safety Performance Indicators for the Refining and Petrochemical Industries* (API 754), recommended by the *American Petroleum Institute*. These indicators are regularly monitored at different levels and frequencies, also in HSE reports, monthly business HSE committees, and performance reports presented to Ecopetrol's Steering Committee and Board of Directors through its HSE Committee.

Ecopetrol's employees and contractors actively engage in addressing identified gaps, integrating process safety requirements into contractor management, ensuring quality assurance and control for asset integrity (QA/QC), managing high-consequence scenarios based on barrier and control status, and overseeing the risk management process (including risk identification, assessment, documentation, communication, and monitoring).

Moreover, authorities and communities in areas where the Company operates receive annual updates on technological risk scenarios. Ecopetrol also actively participates in national interinstitutional bodies for disaster risk management, such as the National Advisory Commission on Industrial and Technological Risk.

Incorporating lessons learned and measures into practices, standards, and procedures is integral to the ongoing review and improvement cycle of the HSE Management System, which has contributed to Ecopetrol's continuous enhancement. This reinforces contractor management, high-consequence scenario handling, asset integrity, and technological risk management within the context of the Energy Transition.



⁷³ HSE-G-037
Guideline.

In 2023, specific measures were implemented to prevent or mitigate potential negative impacts:



Management of emerging risks

- Communication and enforcement of guidelines, including assurance and quality control protocols for asset integrity, contractor management guidelines with a focus on material elements, and guidelines for secure plant and equipment isolation (SAS).
- Integration of process safety protocols within the scope of emerging Energy Transition technologies, such as hydrogen, CO2 capture, liquefied natural gas, energy storage, photovoltaic systems, wind energy, and biomass.



Process safety management grounded in risk assessment

- Updating of high-consequence scenario inventories to align with new disaster and major accident risk management tools mandated by national legislation⁷⁴.
- Monitoring and assessment of barriers for high-consequence scenarios utilizing Dynamic Risk Management (DRM) methodologies.
- Evaluation of the effectiveness of physical barriers, leveraging insights from the asset integrity tool - SAP.



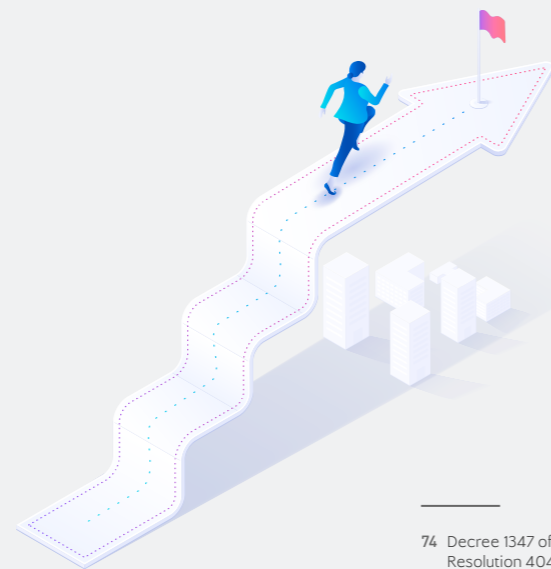
Consistency, commitment, and visible leadership in process safety

- Follow-up on the closing of process safety gaps across Upstream and Downstream segments and projects.
- Implementation of gap analysis in process safety across EG subsidiaries.



Analysis of trends and experiential learning

- Updating, dissemination, and implementation of the HSE incident management protocol.
- Second-party internal audits focused on HSE management, with an emphasis on incident management.

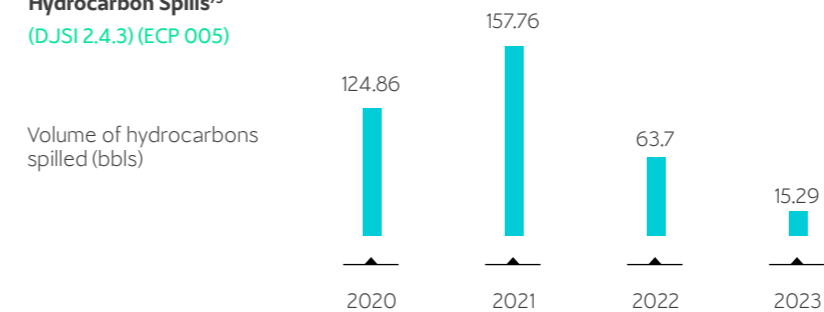


⁷⁴ Decree 1347 of 2021, Resolution 40411 of 2021, and Resolution 0559 of 2022.

Operations with Zero Containment Losses

In 2023, only 15.29 barrels of hydrocarbons were spilled due to operational causes in incidents exceeding one (1) barrel, marking a remarkable **76% decrease compared to 2022**. This achievement not only surpassed the internal limit set at 63.7 Bbls for 2023 but also represents the best performance recorded in the past five (5) years.

Figure 6.14.1.
Hydrocarbon Spills⁷⁵
(DJSI 2.4.3) (ECP 005)



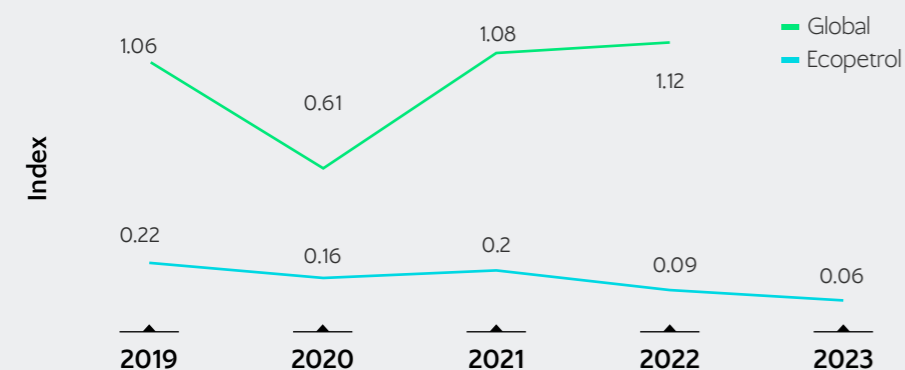
This remarkable success is attributed to the systematic execution of integrity and reliability plans, which led to the replacement of over 128 km of pipelines between 2022 and 2023. Furthermore, the enhancement of operational risk analysis by integrating environmental sensitivity criteria has enabled the prioritization of infrastructure interventions. Moreover, the modification, standardization, and implementation of the methodology for calculating spilled volumes have provided insights into variations

compared to previous years, thereby reinforcing decision-making processes concerning preventive and corrective maintenance.

Considering the latest index reported by the *International Association of Oil & Gas Producers* (IOGP) in 2022, Ecopetrol stands at an impressive 92% below the index reported for the *Onshore* segment, concerning the number of oil spills per million tons of production for incidents exceeding one (1) barrel.

⁷⁵ Data coverage, as a percentage of the assets operated by the Company for all periods, corresponds to 100%.

Figure 6.14.2.
Oil Spills per Million Tons of Production for Ecopetrol Compared to the IOGP World Reference (>1 Barrel – Onshore)⁷⁶



In relation to the volume of spills per million tons of production for incidents exceeding one (1) barrel, Ecopetrol demonstrates a remarkable performance, being

89.5%

below the index reported in 2022 for the *Onshore* segment.

Figure 6.14.3.
Volume of Oil Spills per Million Tons of Production for Ecopetrol Compared to the IOGP Global Reference - Onshore⁷⁷



⁷⁶ As for the global index, no data is available for 2023, as this report is usually released in the latter half of the subsequent year. Therefore, the 2023 report is expected to be disclosed in October 2024.

⁷⁷ As for the global index, no data is available for 2023, as this report is usually released in the latter half of the subsequent year. Therefore, the 2023 report is expected to be disclosed in October 2024.

Table 6.14.1.
Process Safety Events (PSE) for Loss of Primary Containment (LOPC) of the Most Significant Consequence (Level 1)

(SASB EM-EP-540a.1)

	2020	2021	2022	2023
Total number of hours worked in the year (employees and contractors)	39,952,404.92	43,899,948.45	94,465,218.16	89,989,673.19
Number of Process Safety Events (PSE) for Loss of Primary Containment (LOPC) of the most significant consequence (Level 1)	5	2	2	3
Rate of Process Safety Events (PSE) for Loss of Primary Containment (LOPC) of the most significant consequence (Level 1)	0.025	0.009	0.004	0.007

Table 6.14.2.
Frequency Index of N1 Incidents (IFSP N1)

(DJSI 3.5.8) (ECP 006)

	2020	2021	2022	2023
Number of N1 incidents per million hours worked	0.05	0.03	0.02	0.02
Data coverage (as % of employees)	100	100	100	100
Goal associated with the number of N1 incidents per million hours worked	-	0.05	0.04	0.04

Table 6.14.3.
Number of Process Safety Incidents Occurred in 2023, by Severity Level⁷⁸

(GRI 11.8.3)

Level	Segment			Total number of incidents occurred
	Upstream	Midstream	Downstream	
Level 1	3	2	0	5
Level 2	2	4	5	11
Level 3	-	-	-	4,695

⁷⁸ Includes: Hocol, Cenit, ODL, ODC, Ocesa, and Esenttia.

Key Accomplishments

- Achieved an IFSP N1 of 0.02, with respect to a limit of 0.04 events per million man-hours worked per year. For the EG, this indicator stood at 0.03, below the limit of 0.07.
- The IFSP N2 decreased to 0.05 events per million man-hours worked per year, marking a 17% reduction compared to 2022, with a limit of 0.08. For the EG, this indicator resulted in 0.07, below the limit of 0.13.
- A significant reduction of 73.6% in total barrels of hydrocarbons spilled due to operational incidents was achieved compared to the average of the last three (3) years (2020 to 2022).
- Strengthened inspection, monitoring, pipeline replacement, post-inspection recommendation implementation, and pipeline layout changes to mitigate the risk of pipeline containment losses.
- Condition and risk analysis focused on high-impact static equipment.
- Developed a standard for process safety management in contractors and updated safe isolation practices, drill reception, and well intervention practices.
- Exceeded the established goal of 94.38% for the KRI Knowledge and Reduction of High-Consequence Scenario Risk indicator⁷⁹, achieving a result of 95.98%.
- The number of high-consequence scenarios with 'High' disaster potential decreased by 50% compared to 2022 (reduction by one (1) scenario).
- The inventory of high-consequence scenarios was updated based on new instruments for disaster and major accident risk management included in national legislation⁸⁰.
- Unified overarching guidelines for Disaster Risk Management across the EG.
- Strengthened the integrated management of asset integrity sub-elements, as well as risk management.
- Designed, implemented, and communicated proactive indicator viewers and metrics for process safety (PS) management.
- Two (2) high-consequence scenarios without 'High' disaster potential were eliminated, and the risk level was reduced to tolerable levels in three (3) of them.
- Over 128 km of pipelines were replaced between January 2022 and August 2023.
- Consolidated 'PS GAP Analysis' self-assessment instances at the EG.
- Strengthened the PS Center of Excellence in the EG and the technical working groups in the different sub-elements.
- Implemented new inspection technologies aligned with predominant threats and mechanisms of damage to operational infrastructure.
- Developed and implemented rigorous exercises for identifying bad actors and eliminating failures and defects.
- Enhanced PS competencies, primarily through the HSE's Technical Competency Strengthening Program (PROCER).



⁷⁹ This indicator measures the reduction of high-consequence scenarios with disaster potential.

⁸⁰ Decree 1347 of 2021, Resolution 40411 of 2021, and Resolution 0559 of 2022.

Human Talent

(GRI 3-3) Ecopetrol aims to enhance the creativity, collaboration, and teamwork that define its workforce, motivating them to break down silos and achieve shared objectives. This endeavor is essential for Generate Value Through T ESG and addressing the challenges outlined in the fulfillment of the 2040 Strategy.

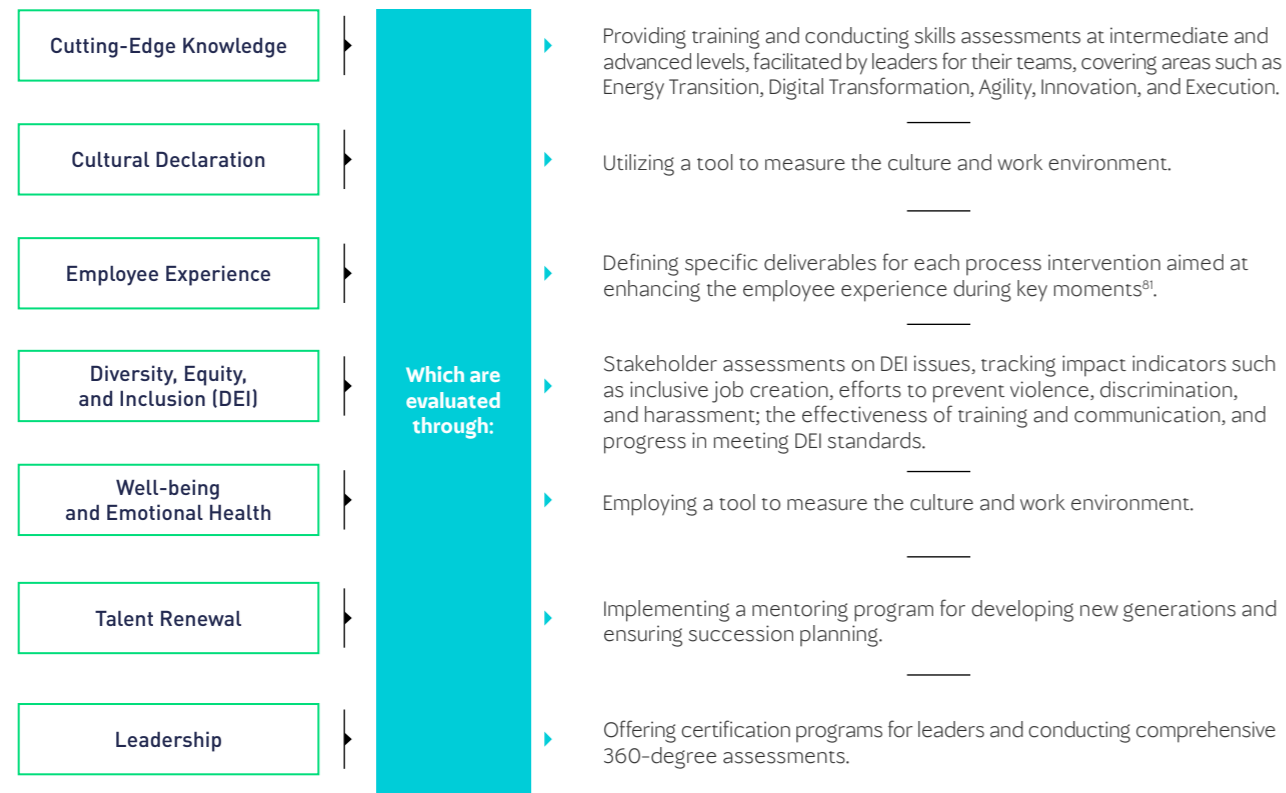
Under the Cutting-Edge Knowledge pillar of the 2040 Strategy, Ecopetrol has committed to ensuring that 70% of its workforce possess cutting-edge skills by 2040. This entails acquiring

competencies to navigate the challenges of growth, the Just Energy Transition, and Generate Value Through T ESG.

The Company strives to instill a sense of pride among its employees for being part of the organization, while also fostering their skills and nurturing leadership qualities. This commitment translates into tangible business outcomes that align with strategic objectives, positively impacting society, the environment, and the country's economy.



In pursuit of these goals, Ecopetrol actively harnesses the potential of its teams through **seven (7) key dimensions**:



⁸¹ The moments correspond to the interactions within a process between the employee and any Company area. For example, in the recruitment and selection process, some moments pertain to their employment such as the signing of admission documents.

⁸² This indicator assesses the percentage of key skills implementation necessary for executing the 2040 Strategy. A skill is deemed installed when the learning and practice criteria aligned with the assigned level for each worker are fulfilled, resulting in the acquisition of a badge. The evaluation encompasses skills such as Agility, Innovation, Digital Transformation, Execution, and Energy Transition. Nevertheless, the applicable skills for this indicator may be subject to modification pending validation by the Academic Council of Ecopetrol University.

To effectively manage risks associated with human talent, the Company's strategic risk map has identified the risk of "Lack of Human Talent Required for the Energy Transition." This risk aims to address the knowledge, skills, and behaviors necessary for executing the 2040 Strategy while aligning with the operational model, processes, and cultural declaration, in line with environmental dynamics.

Ecopetrol actively monitors the availability of human talent possessing the requisite skills to tackle the challenges of the Energy Transition. This is facilitated through the implementation of the Cutting-Edge Knowledge⁸² indicator, integrated into the Balanced Scorecard (BSC). Additionally, the Ecopetrol University, comprising the Academic Council and the School and Academy Committees, fosters knowledge and learning management across the organization.

Moreover, the Company conducts regular culture and work environment measurements, sharing the results and analyses with the teams. This collaborative effort encourages collective proposals for improvement, as outlined in the annual culture plan, with monthly monitoring conducted throughout the EG.

Furthermore, through Culture Cells, Ecopetrol addresses gaps in its (Anti)culture-Culture, sharing insights with vice presidents to inform actions aimed at cultivating the desired cultural environment.

Similarly, committees with process cells monitor recommendations and employee loyalty, working on identified improvement opportunities through six-week cycles of co-creation and design. Implementation spans between 18 and 24 weeks, with continuous measurement to refine products and services. The impacted users actively participate in this process, ensuring offerings that better cater to their needs. In 2023, Ecopetrol embarked on the implementation cycle of its initial co-creations. There is also a vice president committee and human talent segment systematics, where the results of the previous work cycle are presented bimonthly and monthly, respectively, to receive feedback.

Impact on Human Rights





(GRI 3-3) Ecopetrol recognizes its employees as one of its main assets and is dedicated to ensuring and advocating for the respect and promotion of Human Rights. It takes proactive measures to ensure that employees have the right to work in dignified, favorable, and adequate conditions. This commitment stems from the understanding that employee well-being not only facilitates the effective enjoyment of their rights but also positively impacts organizational performance.

To achieve this, Ecopetrol prioritizes the exercise of the right to freedom of association and collective bargaining. These practices foster positive relationships between employees and employers, building trust through the alignment and fulfillment of mutual interests. This approach not only encourages employee engagement within the Company but also facilitates transparent dialogue for productive and economic improvements in line with the principles of decent work.

Furthermore, Ecopetrol places a high priority on Human Rights related to labor, such as personal integrity and the right to health and safety in the workplace. Consequently, the Company implements initiatives aimed at enhancing these rights and freedoms within work teams.

Additionally, Ecopetrol is committed to promoting diversity, embracing differences, and cultivating inclusive environments. It strives to create spaces where all individuals feel welcomed, valued, and treated with equity and respect. Furthermore, the Company ensures equal opportunities for all employees to contribute the best of themselves, while upholding the principles of equality, non-discrimination, and freedom of expression.

Goals

Strategic options	Short Term (0 to 2 years)	Medium Term (3 to 5 years)	Long Term (over 5 years)
 Cutting-Edge Knowledge	<ul style="list-style-type: none"> Execute the learning pathway to enhance Energy Transition skills across five (5) thematic areas, involving 7,849 employees. 	<ul style="list-style-type: none"> Foster a culture of continuous learning within the EG. 	<ul style="list-style-type: none"> Achieve a 70% talent rate equipped with cutting-edge skills to bolster the 2040 Strategy.
 Strengthening of Culture: People and Organization	<ul style="list-style-type: none"> Disseminate the results of the 2023 culture survey. Align the cultural ownership strategy with the Steering Committee. Conduct organizational climate measurements. 	<ul style="list-style-type: none"> Conduct ongoing pulse measurements. Address result gaps based on culture-related evidence and established cultural agreements. Participate in the Steering Committee discussions regarding cultural matters. 	<ul style="list-style-type: none"> Inculcate the behaviors outlined in the Cultural Declaration throughout all Group companies.

Strategic options	Short Term (0 to 2 years)	Medium Term (3 to 5 years)	Long Term (over 5 years)
 Employee Experience	<ul style="list-style-type: none"> Implement enhancements in Human talent's critical moments. Define end-to-end (E2E) "Employee Voice" processes, encompassing Communications and Personnel Services. Design and implement the technological roadmap, with a focus on the "Employee Voice" tool. Implement a new service model between the Procurement and Services Vice Presidency (personnel operations) and the Human Resources Corporate Vice President. 	<ul style="list-style-type: none"> Measure and oversee the end-to-end employee experience during critical moments. Enforce Employee Experience guidelines. Offer training to front-line⁸³ leaders and collaborators on experience and service-related topics. 	<ul style="list-style-type: none"> Implement improvement cycles in employee experience guided by insights from employee feedback.
 Well-being and Emotional Health	<ul style="list-style-type: none"> Improve well-being infrastructure in the regions. Establish projects for emotional health networks in the areas. Design the well-being and emotional health ecosystem. 	<ul style="list-style-type: none"> Enhance partnerships (clubs and regional partners). Implement a balanced work-life strategy for the organization. 	<ul style="list-style-type: none"> Ensure elevated levels of emotional security for the EG.
 Talent Renewal and Leadership	<ul style="list-style-type: none"> Ensure competency assessment for the entire population and common elements across the EG. Consolidate the certification scheme and its initial update, considering the model's evolution. Consolidate the methodology for identifying the needs of new generations in the areas and adjust program deployment accordingly. Define the tracking system for emerging talent and high potentials. Identify common development elements among EG leaders (related to assessment). Strengthen the coaching program. Expand mentorship coverage, adopting a diverse approach. Define a scheme to promote development through exposure via assignments, rotations, internships, engagement in initiatives, and shadowing processes. Activate cross-functional succession committees within the EG. Define and implement a differentiated development scheme for the successor population. Structure and pilot the mobility scheme to foster talent development among EG companies. 	<ul style="list-style-type: none"> Conduct assessments every two (2) years using a 360-degree methodology, including common evaluation elements within the EG. *Periodically review the certification scheme to incorporate/renew elements based on system maturity and population. *Integrate the certification scheme across EG companies. *Develop and execute the Seedlings and High Potentials program within EG companies (subject to resources). *Periodically review the content and structure of defined programs for the development of new generations (seedlings and high potentials). *Integrate the Culture and Leadership School with the EG. *Facilitate ongoing mobility between EG companies, emphasizing development. *Conduct cross-functional EG committees. *Increase the number of competent candidates based on talent map classification. *Implement and evaluate differentiated development practices within the EG. 	<ul style="list-style-type: none"> Commence triennial review cycles to refine focus and/or establish new operational frameworks in response to trends.

⁸³ First line faced by employees on matters of experience and service.

Diversity, Equity, and Inclusion

(DJSI 3.1.1) In line with its *Guide on Human Rights and Business*, the Code of Ethics and Conduct and the Diversity and Inclusion Guide, Ecopetrol adopts a zero-tolerance stance against all forms of discrimination and harassment. This commitment involves implementing preventive measures and providing training, particularly focusing on reporting procedures, incident escalation, identifying behaviors constituting harassment, discrimination, or violence, and applying corrective and disciplinary actions when a related conduct is confirmed. The Company

ensures that these practices are integrated into its operations, extending to the Board of Directors, Senior Management, and all Ecopetrol and Group personnel.

Ecopetrol operates a **Diversity, Equity, and Inclusion Program**, founded on the principles of meritocracy, equity, and justice. The program strives to comprehensively integrate DEI principles into the Generate Value Through TESG pillar and the Company's processes, covering all Stakeholder Groups, notably employees, communities, suppliers, and their workforce.

The program encompasses **five (5) key components**:

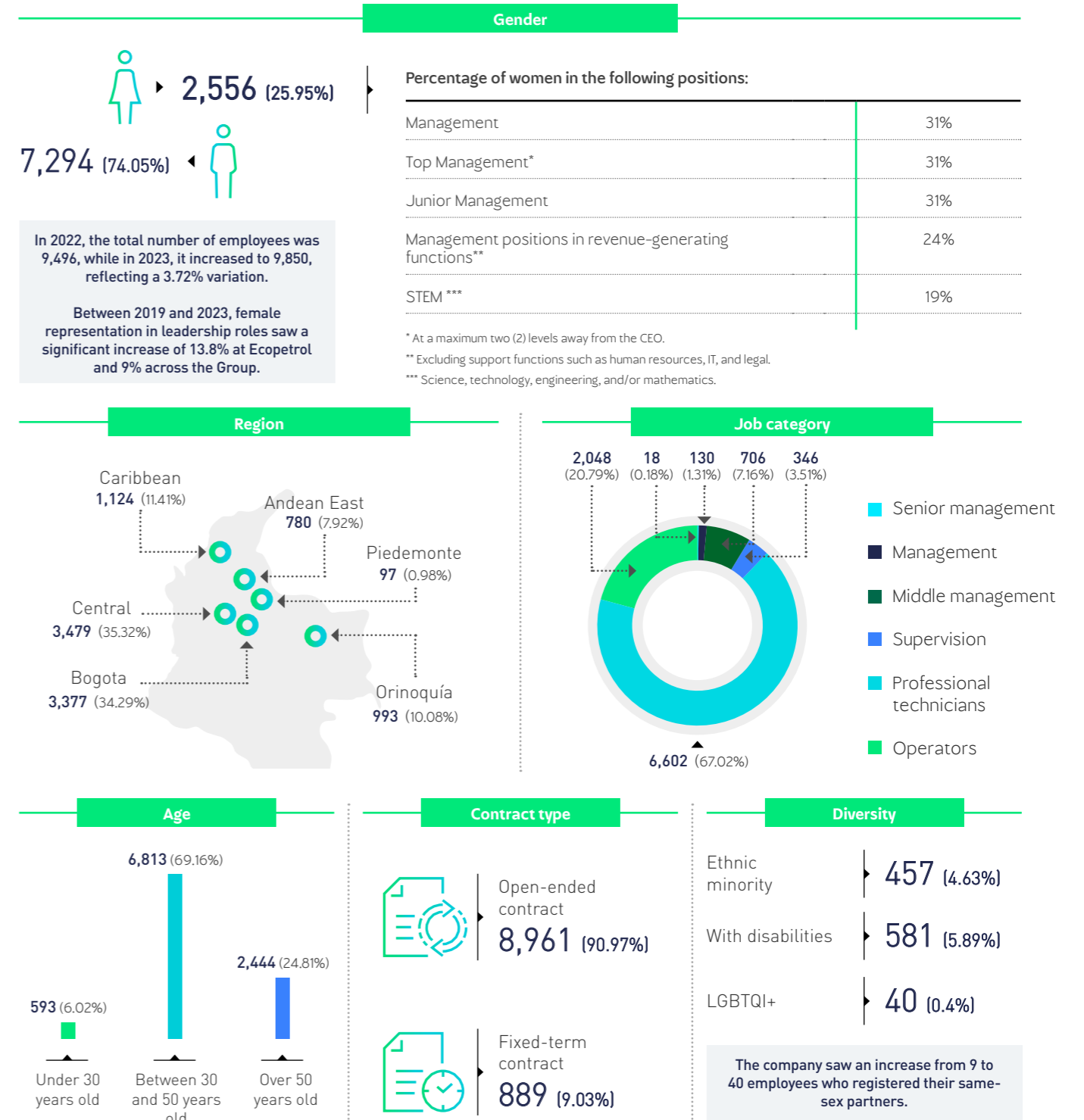
- 1 Gender.
- 2 Disability.
- 3 Victims, ex-combatants, and retired members of the public forces.
- 4 Ethnicity, origin, and sociocultural conditions.
- 5 Sexual orientation and gender identity.

(DJSI 3.1.1)
For further details on the various initiatives within the Diversity, Equity, and Inclusion Program, please scan the provided QR code.



84. For more information on **Prevention of Discrimination, Sexual Harassment, and Workplace Harassment** at the Company, please visit the following link: <https://www.ecopetrol.com.co/wps/portal/Home/tesg/social/labor-standards/prevention-discrimination-harassment>

Ecopetrol employees by gender, age, job category, contract type, region, and other indicators of diversity* (GRI 2-7) (GRI 405-1) (GRI 11.11.5) (DJSI 3.1.2) (SFC 7.4.1.1.1.vii) (WEF 11)



By 2023, the East and South regions are replaced by the Andean East region and the Piedemonte (foothills) region is included in the report for the first time.



(GRI 406-1) (GRI 11.11.7)
(DJSI 1.5.5) (WEF 20E)
In 2023, there were no reported⁸⁵ cases of discrimination⁸⁶.

(DJSI 3.1.1) Ecopetrol maintains a Work Coexistence Committee dedicated to fostering an environment of respect, impartiality, tolerance, calmness, dialogue, and conciliation, all within a framework of total confidentiality. This committee develops agreed-upon improvement plans, when necessary, and ensures their implementation to nurture human relationships that contribute to overall well-being.

(DJSI 3.1.1) (DJSI 1.5.5) However, one (1) case of sexual harassment was reported within the Company in 2023. Following this report, appropriate actions were taken, including notification to the Office of the Attorney General of the Nation, the Regional Vice Presidency affected by the incident, and the Physical Security Management to implement preventive measures. Unfortunately,

the perpetrator of the harassment could not be identified, thereby limiting further actions.

Throughout 2023, Ecopetrol conducted training and specialized education sessions on diversity and inclusion, prevention of sexual and workplace harassment, discrimination prevention, and gender equity, among other relevant topics.

Moreover, Ecopetrol maintains a network of ethical mentors who disseminate information within their areas of expertise regarding sexual harassment, discrimination, and human rights. Additionally, the Company engages 36 high-level managerial employees to support and advocate for the implementation of affirmative measures related to DEI, along with another 1,065 employees.

The overall experience of individuals in terms of diversity and inclusion within Ecopetrol is assessed positively, with a favorability rating of 90%.

85. Any individual who becomes aware of or suspects a situation involving a worker or recipient of Ecopetrol's Code of Ethics and Conduct that may constitute a violation is obliged to report the incident through the Ethics Line. All reports received are analyzed following the Ethical Affairs Management Procedure, adhering to the principles of the Code and other relevant regulations. This channel is corporate and operated by an independent international company, ensuring complete transparency in the process. The system guarantees: i) availability year-round, 24 hours a day, seven days a week; ii) reports in Spanish, English, and Portuguese; iii) anonymous reporting; and iv) confidentiality of information in line with applicable international standards.

86. For reasons such as race, color, sex, religion, political opinions, nationality, social origin, age, disability, migratory status, HIV, gender, sexual orientation, genetic predisposition, lifestyle, among others.

(DJSI 3.1.3) Ecopetrol also tracks progress in the racial and ethnic composition of its employee workforce through the biennial Culture Survey. In 2023, the ethnic self-identification data of workers provided the following results:

Ethnic self-identification among Ecopetrol Employees*

- 58.2% Mestizos
- 28.3% White
- 2.1% Afrodescendants
- 2.1% Other ethnicities
- 1.0% Black
- 0.5% Indigenous

Ethnic self-identification among workers in management positions at Ecopetrol.**

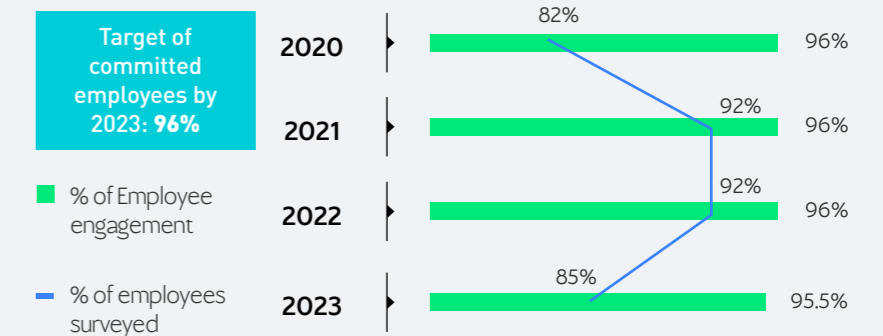
- 54.4% Mestizos
- 37.7% White
- 1.5% Afrodescendants
- 1.0% Other ethnicities
- 0.4% Black
- 0.0% Indigenous

Coverage reaches 82% of the workforce.
*Other ethnicities include Palenqueros, Raizales, and Rom.
**7.9% of respondents opted not to disclose their ethnicity.
**Encompassing junior, middle, and senior management (as a % of total management workforce). 5.0% of respondents opted not to disclose their ethnicity.

Culture

Each year, Ecopetrol conducts a series of surveys to evaluate the level of job satisfaction and the extent to which its workers internalize the Company's cultural declaration.

Figure 6.15.1
Percentage Of Employees Committed To The Company
(DJSI 3.4.6)



*The % of engaged employees considers the following variables:
- I am proud to work in the Ecopetrol Group.
- I am motivated to go beyond what is normally expected, to contribute to the success of the Company.*

Other well-being metrics assessed

Employee satisfaction⁸⁷
87%

Employee well-being⁸⁸
88%

Employee Net Promoter Score (eNPS)⁸⁹
63%

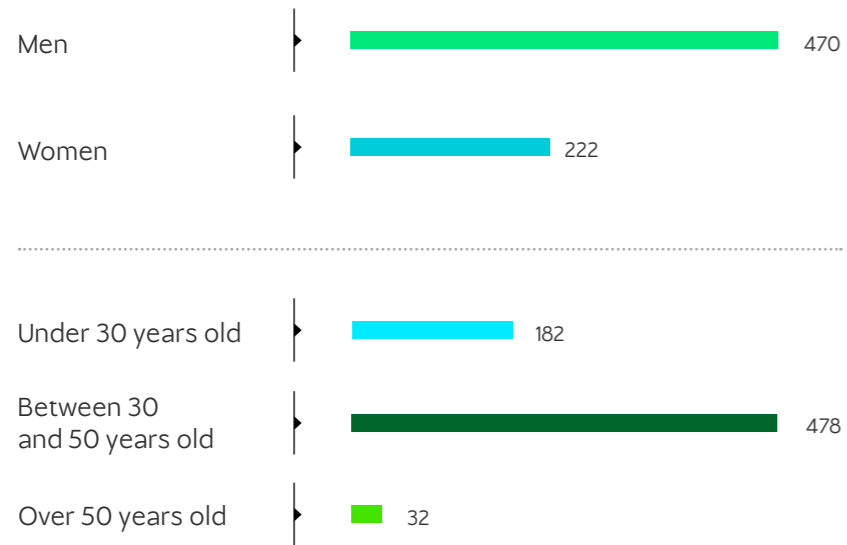
87. Evaluates the responses to the following question: "Most of the time, I feel happy and satisfied within the Company".

88. Assesses variables related to diversity, inclusion, atmosphere of cooperation and trust, work-life balance, benefits provided, promoted well-being activities, professional growth, among others.

89. Evaluates employees' job satisfaction by measuring their willingness to recommend the Company to others.

Attraction and retention of specialized talent

Figure 6.15.2.
Number Of New Hires, By Gender And Age
(GRI 401-1) (GRI 11.10.2) (WEF 17)



(ECP 010) Ecopetrol offers a variety of programs to attract and develop young talent and/or recent graduates:

New Generations Programs

These programs invest in developing new generations of talent to anticipate and address future challenges. By 2023, these programs had accumulated 252 beneficiaries, comprising 170 third-generation seedbeds, 62 fourth-generation seedbeds, and 20 high potentials.

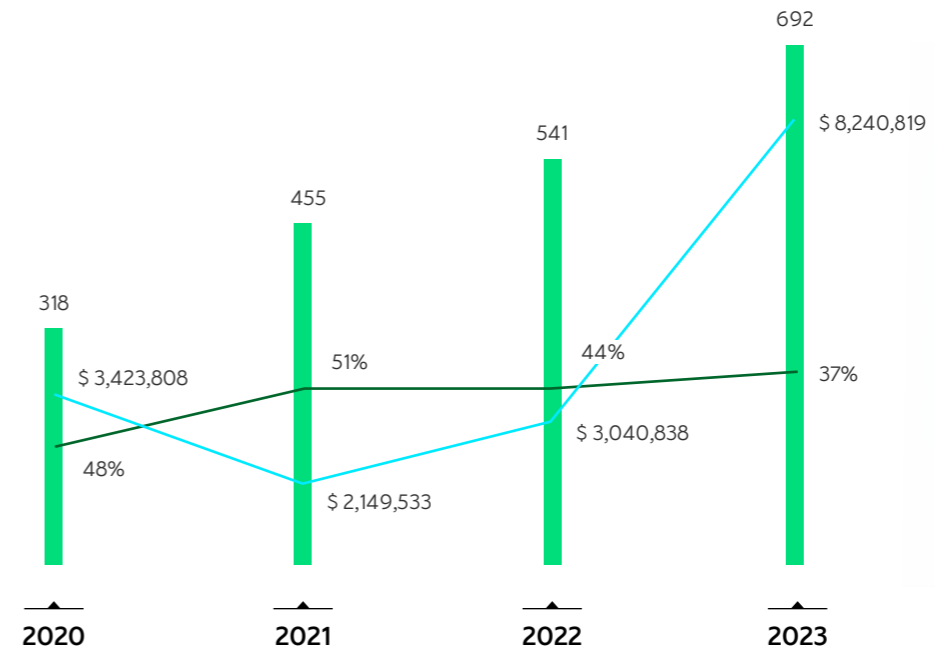
Seedbed Program

This initiative promotes the development of promising talents as catalysts for change and cultural transformation within Ecopetrol. It aims to invigorate the talent pool, bolster ongoing projects, and ensure smooth generational succession. In 2023, all 170 professionals who commenced their training in 2021 successfully graduated, completing their training with a 100% success rate, with each seedbed participant⁹⁰ accumulating 694 hours of training.

High Potentials Program

This program is designed to expedite the holistic development of professionals displaying high growth potential. It seeks to enhance their leadership, strategic thinking, and management capabilities necessary for navigating the evolving business landscape. By consolidating the foundation of the next generation of talent at Ecopetrol, it ensures the retention of the organization's most talented professionals.

Figure 6.15.3.
Internal Hiring
(DJSI 3.4.1)



■ Total number of hires
— Average hiring cost
— Percentage of open positions filled by internal candidates



90. Energy Council, value chain, industrial visits, TEC de Monterrey, rotations, participation in culture cells.



Ecopetrol maintained its first-place position in the “Merco Talent” ranking as the best company for attracting and retaining talent in Colombia in 2023.

Professional Development of Employees

To ensure strategic alignment within the Company and promote the exchange of best practices across departments and subsidiaries, Ecopetrol has established mechanisms to facilitate employee assignments to Group companies and external entities. Additionally, transfers to different regions within the organization are facilitated, all guided by principles of fairness and the assurance of competitive conditions.



During 2023, a total of **749** transfer were implemented⁹¹.

Internal Mobility

Internal mobility entails the transfer of employees within various departments of the Company, either on a permanent basis to a new work location or temporarily, with provisions made for the employee's eventual return to their original site.

Figure 6.15.4.
Distribution of Internal Mobility by Gender

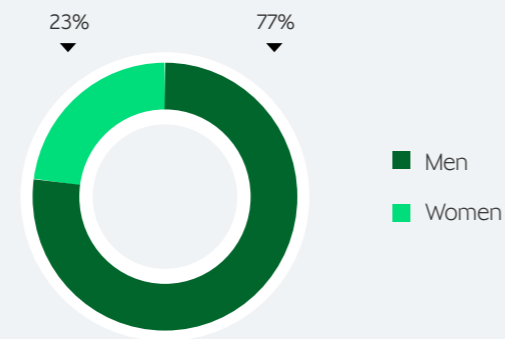
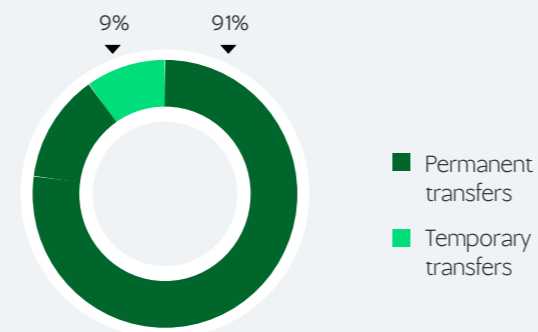


Figure 6.15.5.
Distribution of Internal Mobility by Type of Mobility



External Mobility

It involves the transfer of employees between companies. This type of mobility occurs when there is an organizational need to fill a leadership, tactical, or operational role either within an EG company or as part of a collaboration agreement with other entities. This process may or may not entail the suspension of the worker's employment contract. However, at the level of state entities, such transfers are always carried out without suspending the contract.

Figure 6.15.6.
Distribution of external mobility by gender of workers

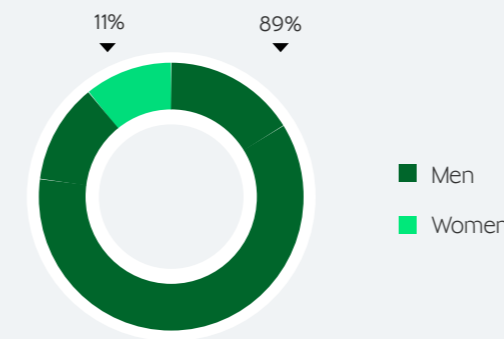


Figure 6.15.7.
Distribution of external mobility by type of mobility

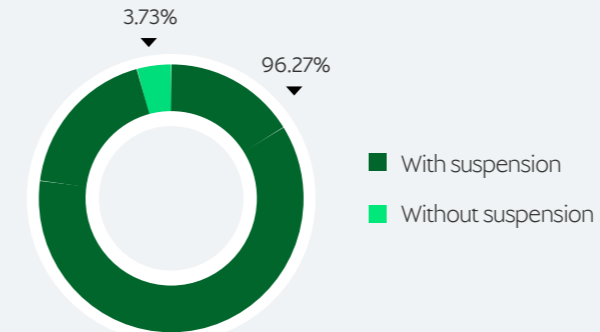


Figure 6.15.8.
Distribution of External Mobility by Gender

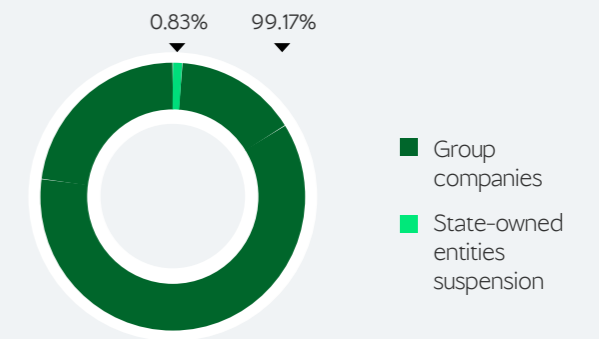
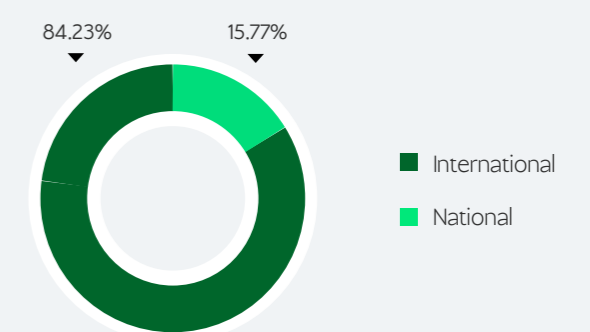
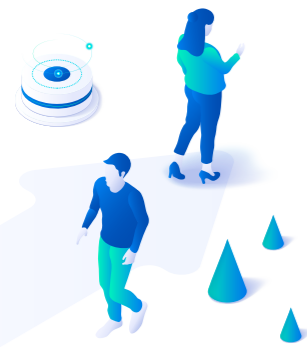


Figure 6.15.9.
Distribution of external mobility by geographic scope



As of 2023, there were **241** ongoing assignments in external mobility.

⁹¹. An employee may be transferred more than once (1) during the year.



(ECP 010) In line with its commitment to ensuring the coverage of vacancies in leadership positions, Ecopetrol has implemented a comprehensive succession program across the EG. This program involves the continuous assessment of current leaders and potential successors, enabling the formulation of tailored development plans for their early readiness. It is a cyclical process where new critical leadership roles are evaluated and integrated annually, alongside the identification of new candidates for potential succession.

As of 2023, successors have been appointed for 104 critical leadership roles, comprising two (2) in Senior Management, 20 in Senior Management, and 82 in Middle Management. To support this endeavor, the Company has established a pool of 497 successor candidates, consisting of 107 (22%) women and 390 (78%) men. The outcomes of this process are consolidated into 11 talent maps at the EG level.

Throughout 2023, several initiatives were implemented to enhance leadership competencies among Ecopetrol's workforce:

Leadership Certification

A structured approach to reinforce desired behaviors in a leader, encompassing criteria related to knowledge, application, and the outcomes of their leadership practices.

Support for Newly Appointed Leaders

Assistance provided to professionals who have recently taken on leadership positions.

Culture and Leadership School

A comprehensive learning program designed to cultivate and enhance leadership abilities, consisting of:

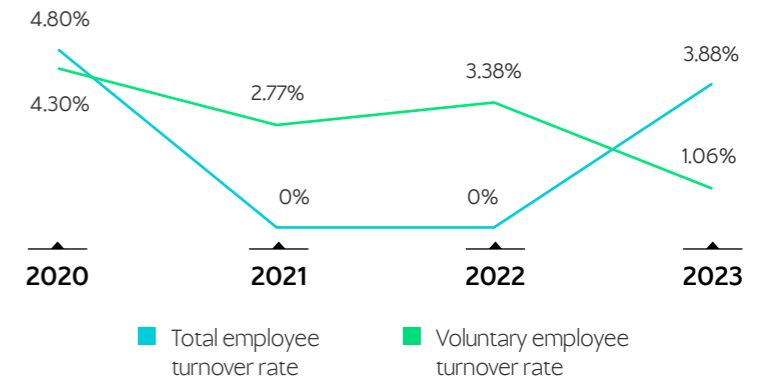
- Formal training: educational courses offered in collaboration with partner institutions.
- Learning through external resources: coaching and mentoring opportunities.
- Exposure and practical experience: assignments in diverse roles.



As part of the Leadership School initiatives, **17 workshops were conducted on "Prioritizing Life: Human Performance as a Key Aspect of Safety,"** attended by **533 leaders**. This significantly contributed to the achievement of the Cutting-Edge Knowledge metric, reaching a compliance rate of **99.8%**, and also facilitated the attainment of the leadership certification objective. Furthermore, the Supervisor Leader Program was launched for the supervisor cohort, attracting **250 participants in 2023**.

Employee Turnover

Figure 6.15.10.
Employee Turnover Rate⁹²
(GRI 401-1) (GRI 11.10.2) (DJSI 3.4.5) (WEF 17)



⁹² Data coverage, as a percentage (%) of all employees, is equal to 100% for all reporting periods.

Table 6.15.1.
Employee Turnover Rate, by Job Category, Age, Gender, and Region
(GRI 401-1) (GRI 11.10.2) (DJSI 3.4.5) (WEF 17).

	Number of terminations	Employee turnover rate (%)
Total employee turnover rate	382	3.88
Total voluntary employee turnover rate	104	1.06
Turnover rate by job category		
Senior Management (Extended Management Committee – CEO, vice presidents, and managers on the extended committee)	7	0.07
Management (all other managers)	26	0.26
Middle Management (department heads, coordinators, and leaders A, B, C, and D)	37	0.38
Supervision (supervisors)	9	0.09
Professional Technician (professional-technical job map)	241	2.45
Operational (operational job map)	62	0.63
Turnover rate by age		
Under 30 years	32	0.32
Between 30 and 50 years	149	1.51
Over 50 years	201	2.04
Turnover rate by gender		
Women	115	1.17
Men	267	2.71
Turnover rate by region		
Bogotá	211	2.14
Caribbean	22	0.22
Central	116	1.18
Andean East	18	0.18
Orinoquia	15	0.15
Piedemonte	0	0.0

(GRI 401-1) (GRI 11.10.2) (DJSI 3.4.5) (WEF 17) In 2023, Ecopetrol implemented a new methodology for calculating the turnover rate. Previously, it divided the average number of new hires and departures by the average workforce at the beginning and end of the same period. To align with GRI standards, the turnover rate is now calculated by dividing the number of employees leaving the Company voluntarily or due to dismissal, retirement, or death (understood as the employee turnover number) by the total number of employees at the end of the evaluated period.

Furthermore, in 2023, Ecopetrol made changes to its operational regions. The East and South regions, reported in previous years, were replaced by the Andean East region, with the inclusion of the Piedemonte region for the first time.

Throughout 2023, Ecopetrol continued to implement the Retirement Plan approved by the Board of Directors, which expired on December 31, 2023. This plan served as a strategic human talent planning strategy to facilitate the mutual separation of employees with over 20 years of service and who met other predetermined criteria.

During 2023, 47 individuals opted for the Retirement Plan, bringing the total number of employees who exited under this scheme between 2020 and 2023 to 627.



● **Well-being and Quality of Life**

(GRI 401-2) (GRI 11.10.3) (DJSI 3.4.4) Ecopetrol implements a Well-being and Emotional Health Ecosystem known as “More Energy,” designed as a series of facilitators to invigorate employees. It begins by empowering individuals to strengthen their personal support networks, all within the framework of comprehensive well-being supported by organizational resources.

Within the personal protection circle, the Company offers support and tools to employees for effectively managing their relationships, life goals, and environment as needed. In doing so, Ecopetrol recognizes that meaningful human connections are crucial for life satisfaction and well-being.



Within the **organizational protection circle**, Ecopetrol provides a range of resources aimed at work teams to address their well-being based on their preferences, environment, and life stage, organized into **four (4) pillars**:

1

Healthy Mind

Ecopetrol provides its employees with a robust support network to ensure their emotional well-being:

- **Friendly Line:** This service offers support from professional psychologists⁹³, easily accessible through Ecopetrol's customer service line.
- **Emotional Emergency Brigades:** Interdisciplinary teams dedicated to addressing emotional crises, available for both individuals and teams.
- **Psychology and Psychiatry Coverage:** A network of professionals part of the Integral Health Management team, catering to the emotional needs of employees.
- **SER Network:** Comprising over 150 Ecopetrol volunteers, this network promotes mental health conversations and awareness, fostering trust to prevent and address mental health issues.
- **Meetings:** These gatherings feature invited professionals who facilitate discussions on the significance of emotional health for overall well-being. In 2023, these meetings facilitated over 13,000 virtual connections and approximately 600 in-person interactions.

2

Recognition and Gratitude

Tools and initiatives to cultivate a culture of appreciation:

- **Recognition through "Central Employee":** a platform designed to acknowledge colleagues in accordance with the Company's cultural values.
- **Praise via Microsoft Teams:** a feature enabling the sharing of commendations and recognitions among colleagues and teams using the platform's regular functionality. It also facilitates recognizing external individuals, such as partners contributing to daily operations.
- **Abotonados:** an annual event honoring individuals who have completed 10, 20, or 30 years of service at Ecopetrol.
- **Exceptional Performance Recognition:** a celebration of employees who demonstrate outstanding performance, recognizing not only their skills and dedication but also the positive impact they have on their teams and the organization.
- **Excellence Awards:** a ceremony acknowledging all execution and innovation projects undertaken by EG company teams throughout the year, contributing to the overall strategy.
- **The EG Foundation:** a charitable organization supporting vulnerable families on their journey to sustainability through programs funded by members' contributions and volunteer efforts.

3

Work-Life Balance

Ecopetrol implements various initiatives to support employees in achieving a healthy balance between their work and personal lives, offering flexible schedules and opportunities for leisure time with family and friends:

- **Time Bank:** Employees have access to a compensated week aimed at promoting quality family time.
- **Tools and Resources:** Ecopetrol provides a range of tools and resources to facilitate work-life balance, including a balance guide, a guided meditation platform, and 'Viva Insights', among others.
- **e+ Well-being Talks:** These sessions feature experts and notable individuals discussing topics related to employee well-being and offering practical tools for self-management.

4

Wellness Program

The wellness program encompasses a diverse range of tools and partnerships designed to enhance employees' well-being, allowing them to share, celebrate, and enjoy life according to their preferences, needs, and life stages:

- **Fitpal:** This partnership extends to all Ecopetrol employees, granting access to a platform offering physical training in various disciplines, with live and pre-recorded classes available 24/7. In 2023, over 6,000 users utilized this platform for their fitness needs.
- **Fitpal Go:** Complementing the Fitpal Online agreement, Fitpal Go offers access to a network of over 600 partner centers for in-person exercise, sports, and training in the cities where Ecopetrol operates.
- **Clubs:** These entities are dedicated to promoting well-being among employees and their families in the regions where Ecopetrol is present, offering facilities, activities, plans, and programs tailored to their needs.
- **Regional Visits:** Our well-being deployment plan extends to different regions. In 2023, six campaigns were conducted directly in these regions to bring well-being offerings and partners to workers, especially those not permanently connected to information systems.
- **Events and Celebrations:** These spaces are integral to our well-being plan, fostering a positive work environment and team integration in line with our Company's cultural principles. Notable events include Family Day, Ecopetrol's Birthday, EG Sports Olympics involving over 2,500 organization athletes, "Iguana K" sports races, end-of-year "We are one team" gathering, Christmas tour, cultural declaration tour, and gratitude week.

For further details regarding the Ecosystem of Well-being and Emotional Health "More Energy", please scan the QR code provided below.

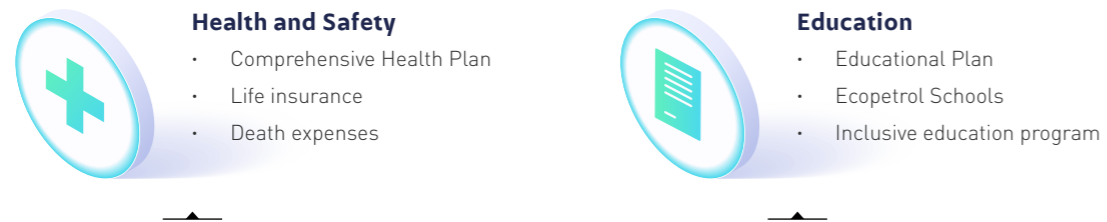


⁹³. Available Monday to Friday from 6:00am to 10:00pm and Saturday and holidays from 8:00am to 5:00pm.



Benefits

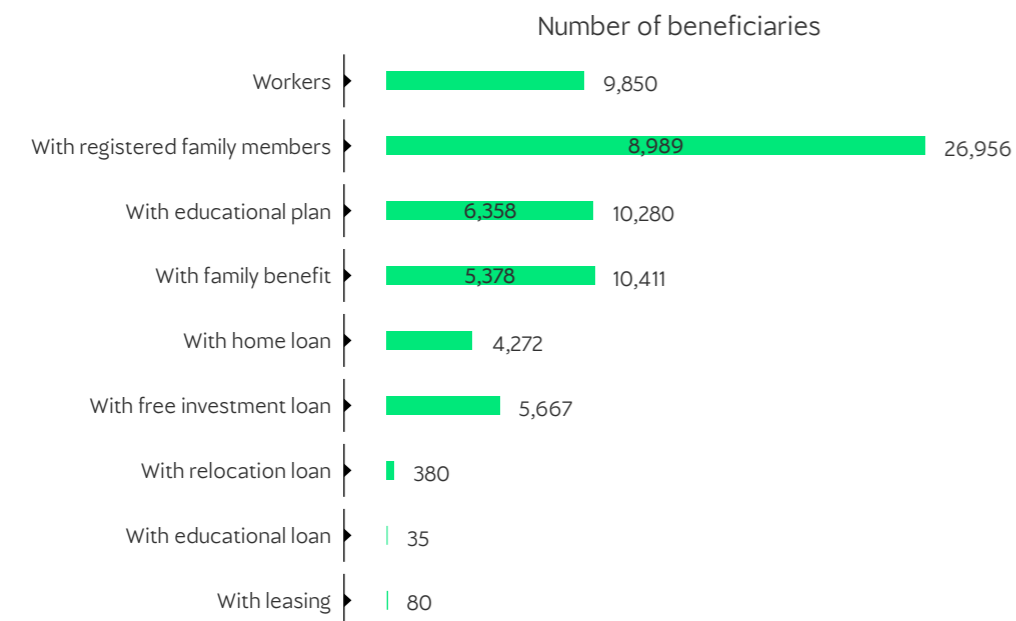
(DJSI 3.4.4) Ecopetrol provides an enticing and competitive benefits package designed to enhance the well-being of employees and their families, with a focus on five (5) key aspects:



Services Portfolio



Figure 6.15.11. Benefit coverage⁹⁴



⁹⁴ The information within the bars reflects the number of workers benefitted, with the bar's height representing the frequency. Since each worker can have multiple beneficiaries, the number of beneficiaries may exceed the number of workers. In cases where only one data point is present, it indicates that the number of beneficiaries equals the number of workers.

Health

Operating under the exempt regime of the General System of Social Security in Health established by Law 100 of 1993, Ecopetrol serves as both the insurer and provider of health services, as well as the occupational risk administrator for its employees.

Life Insurance

In compliance with legal requirements and collective agreements, all Ecopetrol employees are eligible to receive life insurance coverage from the Company, irrespective of their type of employment contract.



Ecopetrol financially supports workers with children mainly through the family subsidy benefit, comprehensive health plan and educational plan.

⁹⁵ Includes the number of active employees benefitted.

Education

Ecopetrol offers educational assistance for employees' children, covering 90% of tuition and fees. The program encompasses three (3) levels of preschool, five (5) levels of primary education, six (6) levels of secondary education, and one (1) higher education career, aligned with the academic path chosen by the student.

In 2023, Ecopetrol invested COP 236,417 billion in education benefits for employees and their families, representing 13.27% more than in 2022 and 27.31% more than in 2020.

Figure 6.15.12. Investment made by Ecopetrol in the Educational Plan

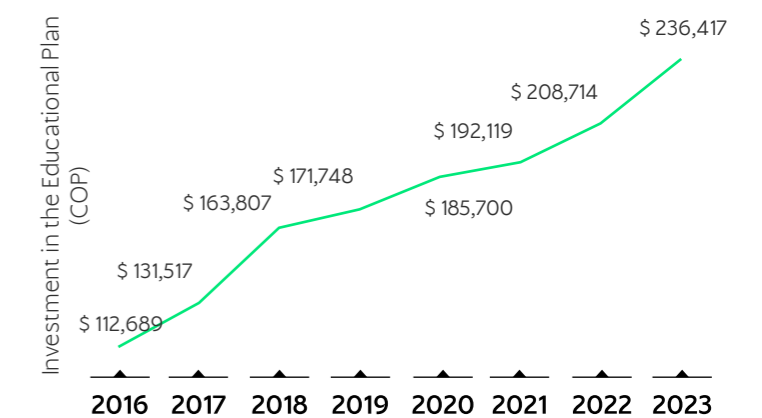
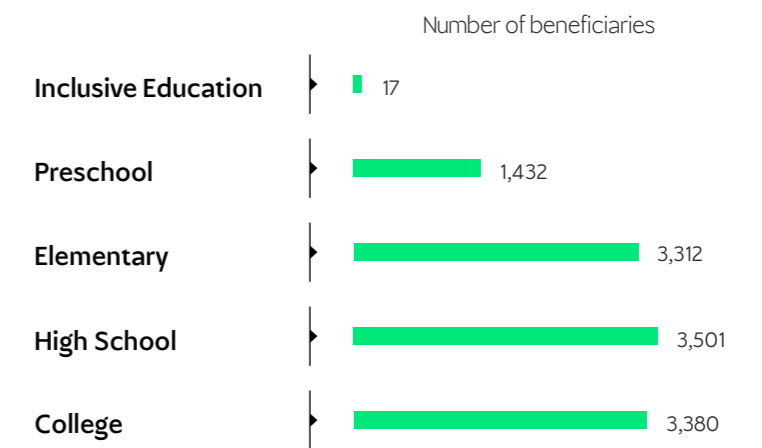


Figure 6.15.13. Distribution of the Educational Plan during 2023⁹⁵



(ECP 008) 13,283 beneficiaries (active workers and pensioners) of the Educational Plan during 2023

Savings and Investment

(DJSI 3.4.4) Among the benefits associated with this program, the following are notable:



Mutual Savings Plan:

Encourages savings by matching one (1) peso for every (1) peso saved by the worker. The maximum contribution limit for this savings plan is 3% of the employee's basic salary.

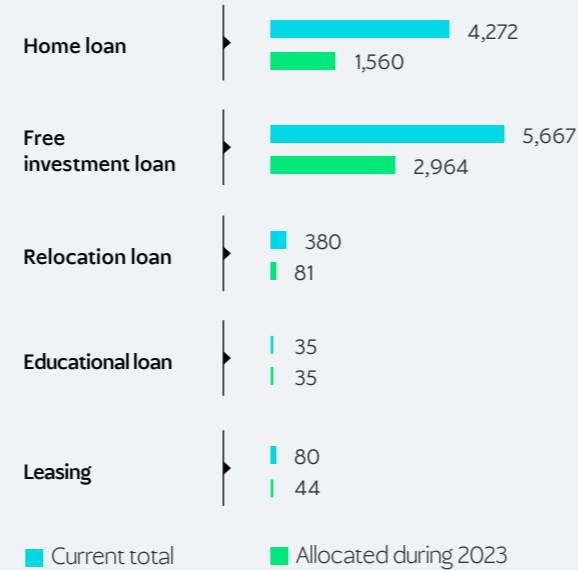


Family Subsidy:

A benefit aimed at easing the financial responsibilities of supporting the family. This subsidy consists of a monetary allowance provided by Ecopetrol to workers earning a basic salary for each child under 18 years old. It is disbursed monthly, with additional payments made in February and August of each year, subject to availability.

Loans

Figure 6.15.14.
Total Number of Loans and Disbursements Made in 2023

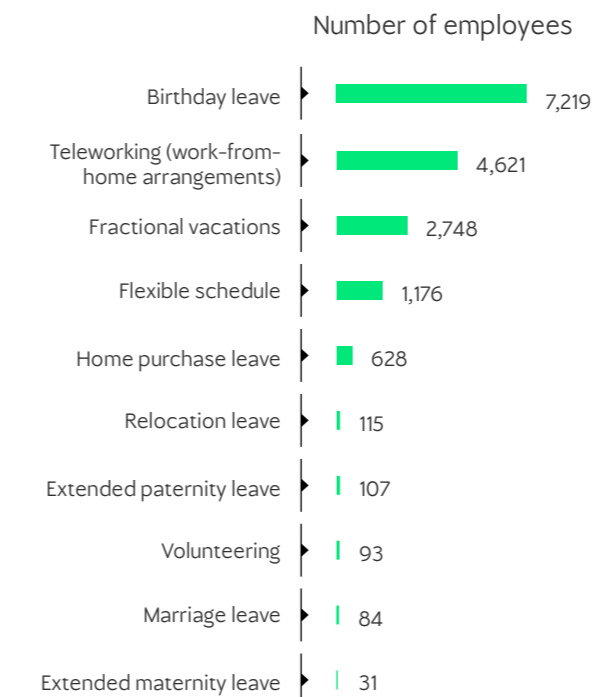


According to the restriction set by the SEC regarding the allocation of personal loans to Executive Officers, individuals currently holding the positions of CEO, COO, and Finance Corporate Vice President are ineligible for this loan.

Non-monetary Benefits

(DJSI 3.4.4) Ecopetrol prioritizes and ensures a balance between the work and personal lives of its employees. Apart from providing legally mandated leaves, it also offers additional benefits that provide flexibility to employees during crucial moments in their lives.

Figure 6.15.15.
Number Of Employees Who Received Non-Monetary Benefits During 2023



Extended maternity and paternity leave are paid permits that offer additional time beyond the provisions established by law.

- **Extended maternity leave⁹⁶:** Employees working in shifts are entitled to two (2) extra weeks of paid leave once their legal maternity leave ends. Similarly, those not working in shifts are granted paid leave upon their return, allowing them to accumulate breastfeeding time and enjoy half-days off for the subsequent four (4) weeks.
- **Extended paternity leave⁹⁷:** Ecopetrol provides fathers with three (3) additional days to spend with their children, exceeding the legal requirement.



Ecopetrol also provides **breastfeeding facilities** at each workplace. These spaces are dignified, private, hygienic, ventilated, waterproof, accessible, comfortable, and equipped with freezers for storing and preserving breast milk during working hours.



Additionally, Ecopetrol offers comfortable, spacious, and secure **housing** to workers and their families in the municipalities of Barrancabermeja and El Centro. This allows them to reside close to the industrial facilities without incurring rental or public service costs, freeing up resources for childcare. Approximately 355 workers utilize these accommodations.



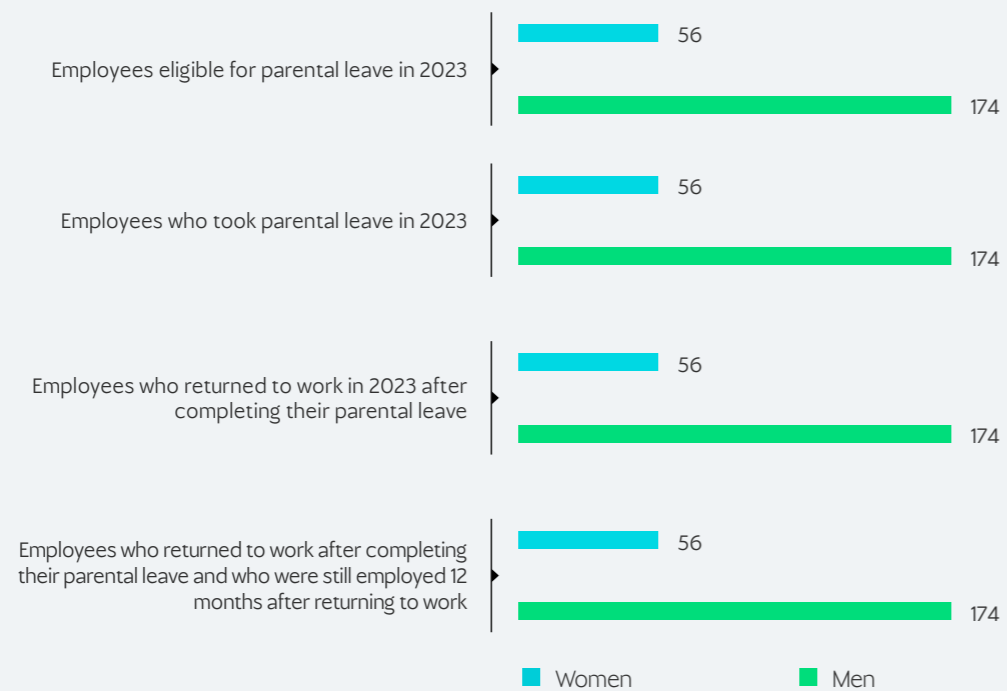
The Company operates **schools** in Barrancabermeja, El Centro, and Tibú, offering high-quality education at no cost to the children of workers in these areas. These schools are conveniently located near Ecopetrol's facilities and employees' residential areas. In 2023, 1,300 workers took advantage of these Ecopetrol-owned schools, benefiting 1,907 students in preschool, primary, and secondary education.

⁹⁶ According to Law 1822 of 2017, every female worker is entitled to 18 weeks of paid maternity leave, which must be compensated at the salary she earns at the time it commences.

⁹⁷ According to Law 2114 of 2021, every worker has the right to two (2) weeks of paid leave, applicable to children born to their spouse or permanent partner, as well as to the adopting father.



Figure 6.15.16.
Employees' parental leave
(GRI 401-3) (GRI 11.10.4) (GRI 11.11.3)



As of 2023, all employees who took parental leave remained employed with the Company.

Amidst organizational demands, digital transformation, sustainable mobility, and Human talent management focused on fostering employee loyalty, attraction, retention, and well-being while aligning with the Company's productivity, **teleworking (work-from-home agreements)** continues to be implemented, as defined since March 2022.

Furthermore, to support the balance between employees' families and work life, **flexible schedules** are provided as a benefit. This offers the opportunity to select a schedule different from the standard one, adhering to the guidelines set for the Company's workplaces in each region of the country.

Compensation

Table 6.15.2.
Employee Compensation (annual average)
(GRI 405-2) (GRI 11.11.6) (DJSI 3.1.4) (WEF 12)

Salary Ratio	Average female salary (COP)	Average male salary (COP)	Proportion ⁹⁸
Executive level (base salary only)	963,474,000	1,119,662,571	0.86
Executive level (base salary + other cash incentives)	1,059,821,400	1,282,817,400	0.82
Management level (base salary only)	438,528,660.2	462,079,816	0.94
Management level (base salary + other cash incentives)	482,936,690	508,367,938.6	0.95
Non-management level	215,033,451.7	200,545,488.2	1.07

(GRI 405-2) To calculate this indicator, Ecopetrol considers the operations located in Colombia as significant.

(ECP 026) (WEF 13)

In 2023, male workers experienced a 2.22% higher salary compared to their female counterparts, primarily due to the greater presence of men in leadership roles.

(GRI 202-1)

The disparity between the legal minimum wage and that of Ecopetrol in 2023 reached 129%.

(ECP 027) Short Term Variable Compensation represents a recognition of results granted by Ecopetrol to its employees at its discretion. Therefore, its disbursement hinges upon the attainment of predefined objectives and is subject to approval by the Board of Directors.

This compensation is disbursed annually, contingent upon the business performance outlined in the EG's Balanced Scorecard, with deductions applied for:

- HSE incidents.
- Ethical and disciplinary infractions.
- Internal control and risk factors.
- Individual employee performance.

All employees are eligible for this compensation provided they meet the eligibility criteria stipulated in the current regulations. The assessment of variable compensation for 2023 occurs between January and April 2024, following the conclusion of the year's performance evaluation process.

Table 6.15.3.
Short Term Variable Compensation paid in 2023

Variable Compensation	2023
Number of employees eligible for variable compensation (employment period: 2022)	9,180
Percentage paid in 2023	112%

98. A ratio of 1 indicates that men and women at the same level receive identical base salaries (plus applicable incentives). When the ratio exceeds 1, it signifies that women earn more than their male counterparts. For instance, a ratio of 1.5 suggests that women earn 50% more than men at the same level.

99. The legal minimum wage in force for 2023 was COP 1,160,000.



In 2023, 9,790 (99%) Ecopetrol employees successfully completed 99% of their Annual Learning Plan, culminating in the completion of 1,300,000 learning materials spanning various modalities.

Knowledge Management and Learning

(GRI 404-2) (GRI 11.7.3) (GRI 11.10.7) Ecopetrol's Corporate University serves as the conduit for knowledge and learning management within the EG, benefiting over 16,000 EG employees.

(GRI 404-1) (GRI 11.10.6) (GRI 11.11.4) (DJSI 3.3.1) (WEF 16)

Figure 6.15.17.
Average Employee Training Hours, by Gender

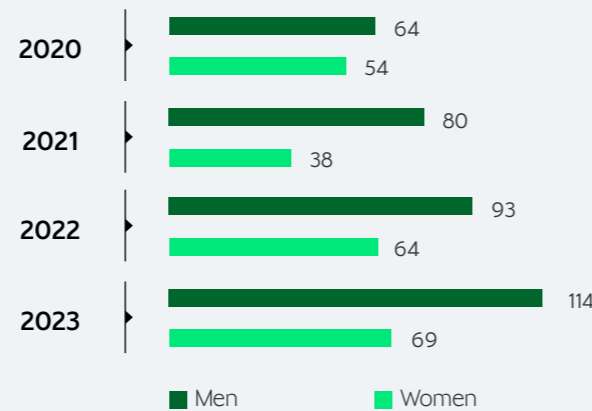


Figure 6.15.18.
Average Employee Training Hours, by Age

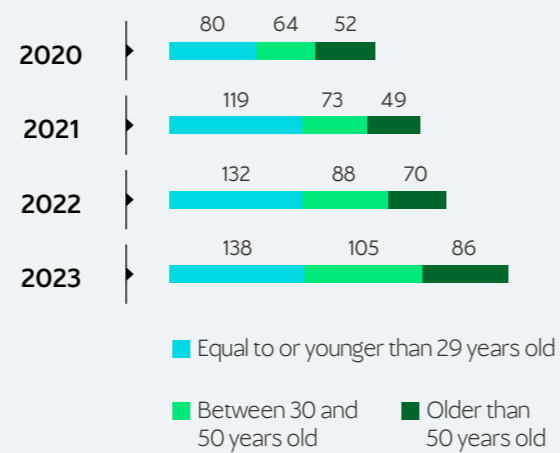


Figure 6.15.19.
Average Employee Training Hours, by Nationality

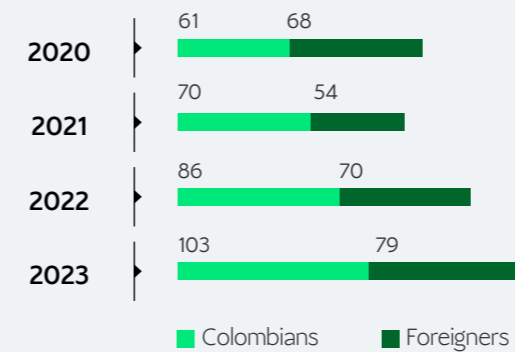


Figure 6.15.20.
Average Employee Training Hours, by Job Category

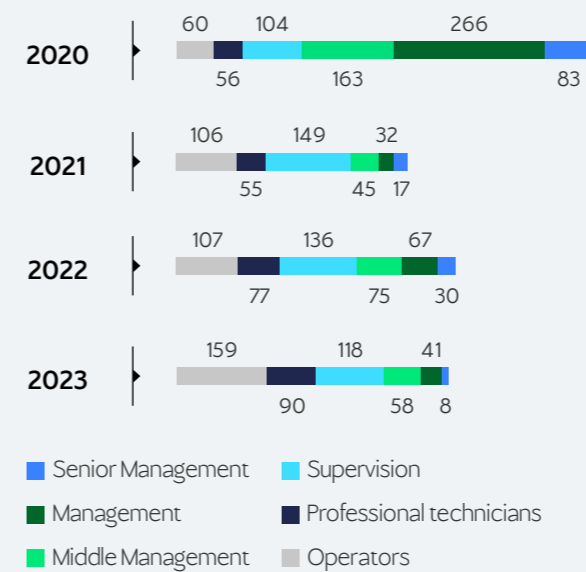
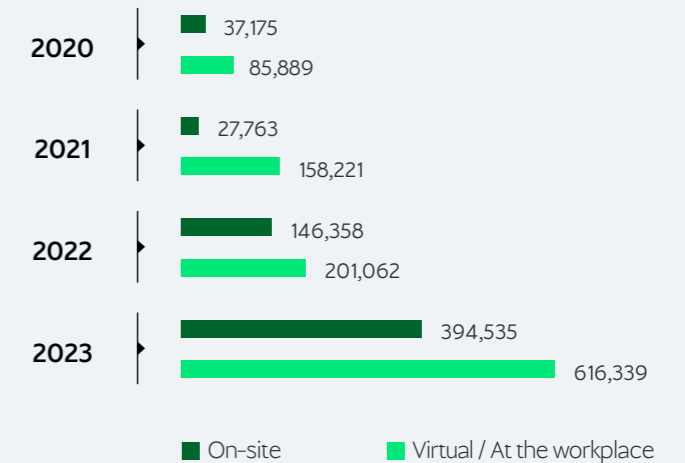


Figure 6.15.21.
Employee Training Hours, by Type of Training



(DJSI 3.3.1) (ECP 008)
During 2023, average training and development hours per employee were

102.62,

reflecting an average investment of

COP 4,186,453

per worker by Ecopetrol.

Over the course of the year, Ecopetrol allocated a total of COP 40,985,379,762 towards the training and development of its employees.

In relation to the training of workers in the five (5) prioritized skills under the Cutting-Edge Knowledge pillar of the 2040 Strategy, the following results were obtained:

Table 6.15.4.
Number of EG workers trained per prioritized skill¹⁰⁰

Skills	Nivel	
	Basic	Intermediate and Advanced
Energy Transition	6,834	1,008
Digital Transformation	4,625	466
Agility	4,031	555
Innovation	4,085	450
Execution	3,310	571



As of December 31, 2023, 8,842 Ecopetrol employees underwent training on topics related to Energy Transition and Climate Change, encompassing areas such as environment, water, and waste management¹⁰¹.

(TCFD G-3) Ecopetrol employees completed **over 31,000 learning materials covering energy efficiency, circular economy, gas, hydrogen, climate change, and Energy Transition.** Furthermore, the Energy Transition Forum convened 350 in-person participants and 2,566 virtual participants. The Offshore Program engaged more than 30 professionals, facilitated three (3) internships at Ecopetrol Brazil, and over 100 professionals participated in the Gas Program, benefiting from 11 initiatives, four (4) fieldwork activities with over 50 participants, and 18 internships at ICP laboratories.




100. A worker could participate in more than one (1) skill or level.

101. Includes data from 2022 and 2023.

(ECP031)

In 2023, 1,728 employees underwent training on human rights policies and procedures, addressing relevant aspects for operations, amounting to a total of 2,301 training hours.

(DJSI 3.3.2) Additionally, in line with the Company's commitments, Ecopetrol has instituted programs aimed at updating and enhancing its employees' skills:

Program name	Energy Transition Program	Digital Innovation Program
 Objective	Contribute to ensuring that the Company's technical team possesses the necessary skills to achieve corporate objectives in the five (5) work fronts defined in the 2040 Strategy: Circular Economy, Renewable Energies, Decarbonization, Fuel Quality, and Energy Efficiency.	Develop digital and innovation competencies at Ecopetrol to enhance operational performance and enable the sustainability and growth strategy. It also aims to incorporate and develop knowledge and/or skills required for challenges, technologies, and strategic decisions.
 Impact on Ecopetrol's benefits	<ul style="list-style-type: none"> Develop circular thinking within the organization. Enhance skills for structuring business cases for renewable energies. Reduce organizational emissions and manage the GHG inventory. Optimize energy demand. Facilitate the understanding of the fundamentals of Energy Transition among all Ecopetrol employees. 	<ul style="list-style-type: none"> Enhance decision-making through data management. Foster innovative thinking within the organization. Improve projects and initiatives through agile methodologies.
 Percentage of participating employees	16%	10%

(GRI 404-2) (GRI 117.3) (GRI 11.10.7) (ECP 010)

Ecopetrol also offers the following training initiatives for its employees:



Basic Comprehensive Operator Training Program (FIBO):

Designed to imbue new employees with the Company’s cultural values, fundamental operational and industry concepts, operational excellence within a DEI environment, and exceptional performance. The program spans three (3) months and involves the participation of approximately 200 workers.



Life Transition Program:

Geared towards employees nearing retirement (0 to 3 years until meeting requirements). It comprises two (2) components: the first focuses on emotional management and life planning, while the second provides guidance on pension-related matters, with a focus on the legal aspects of pension recognition. The program’s benefits include improved pension settlements, effective and timely responses to inquiries, and enhanced information gathering. Since its inception, the program has served around 140 workers, with physical presence in the cities of Cartagena, Barrancabermeja, and Villavicencio, as well as virtual accessibility nationwide.

For more insights into Knowledge Management and Learning, please consult the corresponding chapter in this report.



● **Employee Performance Evaluation**

(DJSI 3.4.2) (ECP 009) Ecopetrol employs various techniques and methodologies to assess employee performance, including:

Team-based Performance Appraisal

Alignment and measurement by business area teams with the Company’s strategic priorities. Additionally, since 2020, Ecopetrol places value on each employee’s team-oriented behaviors through the evaluation of the cultural competency “We are one team: we strengthen our abilities through collaboration”.

Agile Conversations

These are gauged based on the leader’s interactions with each team member, employing a 1:1 conversation methodology between the leader and their employee. This practice is further reinforced through the continuous exchange of feedback.

Management by Objectives

In 2023, Ecopetrol reinforced multidimensional performance evaluation practices at all organizational levels, emphasizing continuous feedback. This approach enables individuals to give and/or receive feedback on their performance not only from their direct supervisors but also from colleagues, subordinates, clients, and other stakeholders. Therefore, providing feedback on employee performance throughout the year contributes significantly to performance management.

360° Multidimensional Competency Evaluation

This evaluation is applicable to the Company’s leaders. Through this process, Ecopetrol has delineated a scale consisting of four (4) levels of development: (1) leader with potential for improvement, (2) developing leader, (3) competent leader, and (4) exceptional leader. Subsequently, leaders are categorized into one of these levels to establish a development support plan. This assessment approach has been gradually implemented across various leadership tiers, commencing with a focus on vice presidents and subsequently expanding to encompass managers, department heads, and coordinators.

In light of the organizational changes within the Company, the next 360° evaluation cycle is slated for 2024, following the completion of the period for assimilating the leadership model adopted in 2022.

Table 6.15.5.
Percentage of Employees who Underwent a Performance and Professional Development Evaluation During 2023, by Gender and Job Category
(GRI 404-3)

	Men	Women	Total
Senior Management	0.14%	0.02%	0.16%
Management	0.88%	0.38%	1.26%
Middle Management	5%	2.27%	7.27%
Supervision	3.53%	0.06%	3.59%
Professional Technicians	45.63%	21.16%	66.79%
Operational	19.22%	1.71%	20.93%
Total	74.4%	25.6%	100%

The performance evaluation process covers all workers with a valid employment contract in the Company (100%), except for those who, at the end of the evaluation period, meet one or more of the following conditions:

- 1 Signed their first employment contract with Ecopetrol in the evaluated year after October 1st and before December 31st of that year.
- 2 Had a work contract concluded or terminated before June 1st of the year being evaluated and have not re-entered the Company.
- 3 Workers in mobility between Group companies who have worked more than nine (9) months of the evaluated year in other subsidiary companies, except for cases where a different condition has been agreed upon in the mobility process.
- 4 Were covered under Article 140 of the Substantive Labor Code.
- 5 Had an accumulated absence equal to or greater than nine (9) months in the year being evaluated, either due to medical incapacities, licenses, or permits.

(ECP 009) Worker competency assessment is part of the inputs for defining training programs. These assessments are conducted under the principles of validity, objectivity, confidentiality, and integrity. Typically, the process is led by experts and/or technical references and leaders within the Company. Currently, 91% of the petro-technical population and 65% of the population associated with operations and maintenance are undergoing valid assessments.



(GRI 2-30) (DJSI 3.1.5) (WEF 21E)

82.5%
of Ecopetrol employees
are covered by
collective bargaining
agreements.

Labor and Union Relations

(ECP 011) On April 10, 2023, the direct negotiation stage began within the unified collective bargaining process, in which Ecopetrol reached an agreement with Unión Sindical Obrera de la Industria del Petróleo (USO) on May 22, 2023, for the new CLA. Within the same negotiation process, agreements were signed with the following union organizations: ADECO, SINDISPETROL, ASINTRAHC, SINTRAMEN, ASOPETROGAS, SUP, ASTECO, and UTIPEC.

As of date, there are 33 coexisting union organizations in the Company, of which 25 correspond to industry unions and eight (8) to company unions¹⁰².

¹⁰² According to the classification established in Article 356 of the Substantive Labor Code, these are: USO, ADECO, SINDISPETROL, UTIPEC, SINATRINH, SINTRAMANPETROL, ASINTRAHC, USTRASEN, SINTRAMEN, USOLEODUCTOS, ASINPE, SINTRAPETGAS, SINDINAPETROLEO, SINANPE, SINDEP, UNTRAPETROL, SINOME, ASOPETROGAS, SINTRAPECOL, ASONALPETROL, SINLALPETROL, SUP, ASOPETROL, SINTRAORONEGRO, ASPEC, TRASINE, SITRAECO, ASTECO, SINPECO, SINPROECOP, APROTECO, and ASTIPHEC (not listed in any particular order).



This new collective bargaining regime is slated to last four (4) years, commencing from January 1, 2023, through December 31, 2026. The agreements reached, grounded on principles of reasonableness, austerity, and efficiency, encompass various aspects:



Salary increments aligned with the annual Consumer Price Index (CPI) plus 1.5% for 2023 and CPI plus 1.6% for subsequent years within the term.



Enhancements in employee working conditions.



A commitment to perpetuating Diversity, Equity, and Inclusion (DEI) initiatives with a focus on gender.



Recruitment of new personnel to fortify the company's operations.

Concerning commitments pertaining to human rights issues, these are delineated in Chapter XVII of the CLA. Under this chapter, Ecopetrol collaborates with USO to advocate for respect, compliance, and dissemination of human rights within the Company and its operational regions.

These agreements are overseen by the National Human Rights Commission Ecopetrol-USO.

For further insights into human rights commitments, please refer to the "Human Rights (HR)" chapter of this report.

103. The program had a total duration of approximately 248 hours across different levels and allowed the enrollment of two (2) union leaders from Ecopetrol in the specialization in Collective Bargaining offered by Universidad de Los Andes.

Throughout 2023, more than **69 union leaders** participated in the **Training Program for Union Leaders**, an initiative devised by Ecopetrol in collaboration with **Universidad de Los Andes**, aimed at fortifying their leadership competencies and strategic acumen¹⁰³.



It is noteworthy that the current CLA acknowledges the categorization of managerial, technical, and trustworthy employees, alongside the coexistence of the salary and benefit structures outlined in Agreement 01 of 1977. In this

context, Ecopetrol operates under two (2) distinct salary regimes: the Collective Bargaining Agreement and Agreement 01 of 1977. The latter, issued as an administrative decree by the Board of Directors, doesn't constitute a collective agreement¹⁰⁴ but establishes the

salary and benefit framework for managerial, technical, and trustworthy personnel who voluntarily opt-in or fall under its exclusion clause. Both regimes are mutually exclusive, delineating distinct prerogatives, and necessitate comprehensive application irrespective of the regime adopted or applicable to the employee.

Ecopetrol administers union permits and adheres fully to the provision of economic benefits, assistance, travel expenses, airfare, security arrangements, and other guarantees mandated by the applicable conventional and legal framework.



(GRI 401-2) (GRI 11.10.3)
All Ecopetrol employees, regardless of contract type, receive benefits delineated according to their relevant salary and benefit regime¹⁰⁵.

Pension Obligations

(GRI 201-3) (GRI 11.11.2) (GRI 11.14.3)
According to the explicit provision of Article 279 of Law 100 of 1993, Ecopetrol S.A. employees were exempted from the application of the Comprehensive Social Security System outlined therein. Subsequently, Law 797 of 2003 mandated that employees who joined Ecopetrol after the law's enactment, specifically on January 29, 2003, become mandatory members of the General Pension System. However, the exception stipulated in the aforementioned Article 279 of Law 100 of 1993 regarding pensions was retained for workers who were affiliated before that date.

On July 31, 2010, in accordance with the provisions of Legislative Act 01 of 2005, the exempted pension scheme expired. Consequently, as of August 1, 2010, all Company employees who had not acquired a pension entitlement under Ecopetrol as of July 31, 2010, became affiliated with the General Pension System. Employees who retired and qualified for a pension from Ecopetrol as of July 31, 2010, continue to receive pension payments and social benefits (including employee health services and educational benefits for enrolled family members) from the Company.

104. This means that it does not arise from a negotiation process between the Company and non-unionized workers.

105. Collective Bargaining Agreement or Agreement 01.

For employees affiliated with the General Pension System, Ecopetrol makes the required periodic contributions by law, with the respective pension administrators assuming pension obligations. The health and education benefits they are entitled to form part of the labor liabilities assumed by Ecopetrol.

As of December 31, 2023, the number of pensioners under the responsibility of Ecopetrol S.A. amounts to 12,023, distributed as follows:

Table 6.15.6.
Number Of Pensioners under the Responsibility of Ecopetrol, By Region

Region	Number of pensioners	%
Bogotá	2,821	23.46
Caribbean	1,181	9.82
Central	6,580	54.73
Orinoquía	88	0.73
South	1,353	11.25

Specific Fund to Address These Obligations

In 2008, Ecopetrol partially commuted the value corresponding to pension payments from its pension liability, transferring these obligations and the funds supporting them to autonomous pension trusts (APTs). The transferred funds, along with their returns, cannot be repurposed or returned to the Company until all pension obligations have been fulfilled. The commuted obligation covers the payment of pensions and pension bonuses, while matters related to health and education remain within the Company's labor liabilities.



Key Accomplishments

Cutting-Edge Knowledge

- The target for the Cutting-Edge Knowledge Installation indicator was not only met but exceeded, reaching 101% for the EG and 103% for Ecopetrol.
- EG workers conducted over 67,000 training sessions.
- Accumulated more than 24,000 training hours.
- Ecopetrol leaders performed over 1,400 intermediate and advanced skills assessments of their employees.

Employee Experience

- In 2023, 27 deliverables were designed, which were in the measurement and/or iteration cycle, aiming to close gaps in the employee experience.

Strengthening of Culture: People and Organization

- (Anti)Culture dialogues were organized in 10 vice-presidential committees with the Culture Cells.
- Over 4,100 participants engaged in excellence awards, with 612 initiatives reflecting the principles of the Cultural Declaration.
- Over 150 individuals enrolled in the RED SER program to reinforce the "Life First" cultural principle and the Company's mental health program.
- More than 400 sessions conducted during Gratitude Week, emphasizing the importance of gratitude.



Wellbeing and Emotional Health

- The 'Fitpal' contract was renegotiated to prioritize in-person activities.
- 'Fitpal' / Employee Funds were available for several days in Cartagena, Barrancabermeja, Bucaramanga, Bogotá, Piedecuesta, and Villavicencio, focusing on well-being:
 - Cartagena.
 - Barrancabermeja.
 - Bucaramanga.
 - Bogotá.
 - Piedecuesta.
 - Villavicencio.

Key Accomplishments

Talent Renewal and Leadership

- Ecopetrol ranked second as one of the top choices for employment among younger generations, based on the 2023 Dream Career survey.
- 170 professionals graduated from the third-generation Seedlings Program and were integrated into the company's organizational structures.
- More than 1,000 leaders engaged in learning initiatives to enhance their skills and competencies, logging over 8,500 hours of training across more than 90 in-person sessions.
- The second year of training for Ecopetrol's 20 high-potential individuals was successfully completed, encompassing 552 hours of instruction in value chain management and leadership skills.
- Certification was achieved by over 690 leaders, demonstrating a compliance rate exceeding 95% in the designated indicators.
- The Mentorship Program's scope was broadened to encompass gender, age, role, and seniority, providing guidance to over 200 mentees and contributing to their personal and professional growth.



Diversity, Equity, and Inclusion

- First place in Diversity, Equity, and Inclusion practices in Latin America, as recognized by the National Consulting Center.
- Named Best Gender Practice in Colombia and the top company in the sector for Gender Equity, according to the Par Aequales Ranking.
- Climbed to the eighth position among companies with over 1,000 employees, achieving a score of 84 points in the Par Aequales Ranking.

Diversity, Equity, and Inclusion

- Forbes Colombia selected us as one of the 12 leading companies in diversity.
- Awarded the Friendly Biz Corporate Seal by the LGBT Chamber of Commerce of Colombia for our commitment to respecting and including the LGBT+ community.
- Improved from 53% to 92% and moved from sixth to first position in the Ranking of LGBTI Inclusive Companies.
- Received the Inclusive Company Seal, the highest recognition for inclusion, awarded by the National Business Association of Colombia (ANDI), the USAID Colombia Alliance for Reconciliation Program, ACDI/VOCA Colombia, and Deloitte.
- Achieved a rating of 4.0/5.0 (progressive level) in the Global Diversity, Equity, and Inclusion Benchmark (GDEIB).
- Granted the Equipares Silver Seal¹⁰⁶ (Gender Equity System) with a rating of 98.47% and a perfect score of 100/100 in relation to prevention and punishment of sexual harassment.
- Updated the Protocol for Prevention and Attention to Sexual Harassment and/or Workplace Discrimination.
- Collaborated with the International Organization for Migration (IOM) to design four content modules promoting the inclusion of indigenous and Afro-descendant individuals in the workplace and society.
- Commemorated Equity Month for All and raised awareness against discrimination, with special emphasis on Zero Discrimination Day, International Women's Day, National Men's Day, and Transgender Visibility Day.
- Launched the Inclusive Language and Communication Guide to eradicate microaggressions in the workplace and in the social environment.
- Conducted DEI Regional Expeditions (training program) for the second consecutive year, focusing on raising awareness for the prevention of violence, discrimination, and harassment, with the participation of 2,534 individuals across 13 operational sites.
- Introduced the first chapter on Diversity, Equity, and Inclusion and gender in the new CLA, reaffirming our commitment to gender equity.

¹⁰⁶ The Equipares Seal is a certification for companies and organizations that implement the Gender Equality Management System, granted by the Ministry of Labor and the Presidential Council for Women's Equity, with the technical support of the United Nations Development Program (UNDP).

Sustainable Territories

(GRI 3-3) Among the goals of the 2040 Strategy is to align the growth and operational agility of the Ecopetrol Group with the harmonious and sustainable development of the territories in which it operates.

To this end, Ecopetrol revised its Environmental **Management Strategy in 2023**, rebranding it as the Comprehensive Territory Management Strategy, in line with the Group's 2040 Strategy.

This evolution aims to advance comprehensive territory management, reaffirming EG companies as socioeconomic stakeholders in the territories they

operate in, fostering the co-creation of local development visions through social dialogue, relationship-building, and consensus-building. Moreover, the new strategy renews the corporate pledge to foster conditions for peace, coexistence, well-being, and prosperity for regions and communities, underpinned by a commitment to human rights.

Consequently, to address incidents stemming from territorial and public order dynamics that could disrupt normal operations, Ecopetrol identified "operational interruption incidents due to causes associated with territorial dynamics" as a pivotal

risk in its business risk map. In doing so, the Company acknowledges the imperative to integrate comprehensive territory management with its business, segments, and subsidiaries to create value, ensuring congruence between business growth and social transformation. This approach involves tackling systemic challenges within the national and regional contexts, employing inclusive criteria to address territorial opportunities and challenges as an essential prerequisite for the sustainable operation of the Ecopetrol Group.



The Company aims to drive a Just and Equitable Energy Transition in Colombia, thereby enhancing quality of life, bridging socioeconomic gaps, and creating social value in line with the SDGs.



● Impact on Human Rights

(GRI 3-3) Grounded in a commitment to respect and advance human rights, Ecopetrol implements impact management and investment initiatives across various sectors including education, inclusive rural development, public services, and community empowerment. Upholding the fundamental right to access information, Ecopetrol advocates for key rights such as the right to life, personal integrity, equality, non-discrimination, children's rights, food security, education, peace, and access to water and energy, among others.

Furthermore, Ecopetrol embraces a diverse and inclusive approach in its engagement with the communities residing in the areas where it

operates, particularly with ethnic groups. This approach aims to foster constructive relationships that honor community participation through prior consultation and uphold collective and environmental rights.

Recognizing the potential challenges posed by conflict in some of the regions where it operates, Ecopetrol intensifies its due diligence efforts to mitigate risks of human rights abuses involving the company, its suppliers, partners, and other stakeholders. This proactive stance includes promoting enhanced due diligence practices throughout its value chain to identify conflict triggers and establish effective prevention and mitigation measures.

Comprehensive Territory Management Strategy

(ECP 023) The Ecopetrol Group has adopted a Comprehensive Territory Management Strategy aimed at advancing territorial development and ensuring business sustainability across the EG's value chain. This strategy focuses on establishing trusted relationships with the Stakeholder Groups in the territories and making investments that promote shared prosperity while upholding principles of security, respect, and human rights promotion. The strategy is implemented through the following mission components:



Relationship with Society, the Community, and the State

building and strengthening trust-based relationships founded on respect for life and fundamental rights. Through continuous social dialogue, we aim to forge consensus on territorial visions and address territorial conflict factors in a comprehensive manner.



Social Value Generation

contributing to territorial development by making strategic, relevant, and impactful investments that foster sustainability, inclusion, and territorial peace throughout the value chain. Our efforts are aligned with the priorities set by local, regional, and national governments, as well as the Sustainable Development Goals (SDGs). Additionally, we actively manage partnerships and identify business models that encourage community participation.



Physical Security with a Human Rights Approach

prioritizing the safety of individuals, infrastructure, and EG operations, rooted in due diligence in human rights.

The three (3) components intersect across financial and administrative planning, risk management, continuous improvement, and excellence, forming an operational model for territorial management composed of processes and subprocesses.

This strategy also integrates cross-cutting approaches, which are holistic guidelines present in all **three (3) components**:

Just Energy Transition

This component focuses on proactive territorial management, considering socio-labor reconfiguration, sustainable alternatives for regions dependent on oil production, and the democratization of energy resources managed within an associative framework. It aligns with the challenges posed by climate change and commitments to reducing greenhouse gas emissions and decarbonizing economies.

Diversity and Inclusion

This aspect emphasizes a commitment to equity and non-discrimination, acknowledging and respecting diversity in all its forms, and fostering collective awareness of the value of differences in achieving peace and reconciliation.

Innovation and Technology

This component tackles comprehensive territory management through an innovative lens, involving the ability to create and disseminate new rules and practices that bolster a mindset for change. It aims to generate effective and sustainable solutions to problems, thereby adding value to communities, with the support of technology.



Engagement with Society, the Community, and the State

The essence of social dialogue lies in engaging Stakeholder Groups within the community, fostering dynamic, diverse, inclusive, and democratic processes. Ecopetrol is committed to integrating with and coexisting in local territories through collaborative efforts, gaining insights into the realities on the ground, and proactively addressing, resolving, and transforming conflicts. This approach not only enhances relationships with communities and local stakeholders but also facilitates the constructive alignment of corporate and territorial sustainable development goals.

This component is further developed through six (6) subcomponents:

- | | |
|---|---|
| <p>1 Social dialogue and consensus-building.</p> | <p>4 Institutional and community strengthening.</p> |
| <p>2 Citizen participation and commitment management.</p> | <p>5 Territorial planning.</p> |
| <p>3 Internal coordination.</p> | <p>6 Monitoring, analysis, and foresight.</p> |

(GRI 2-29) Consequently, through dialogue and engagement processes, the Company:

- Ensures dialogue as a concerted, democratic, and inclusive process with social actors in the territory.
- Supports municipal, departmental, and national governments.
- Plans dialogue processes, starting with broad and sufficient calls, agreeing with local stakeholders on common interest topics, according to the dynamics of each territory.

As a result of this management, adjustments are incorporated into internal policy documents guiding the Company's actions.

(GRI 413-1) (DJSI 3.6.1)
During 2023, 151 production assets (85.3%) were equipped with community participation and consultation programs, while 93 development projects (91.2%) were undergoing community consultation processes.

Social Dialogue and Consensus-Building

In 2023, Ecopetrol conducted **57 social dialogue processes** and 71 engagement initiatives, reaching out to **834,275 individuals**.

These processes involved hosting **191 sessions** with communities and local institutions, **focused on fostering trust (46%), cultivating a shared vision for development (10.5%), and facilitating conflict transformation (43.5%).**

Internal Coordination

In order to contribute cohesively to comprehensive territory management, the EG coordinates actions within its companies, as well as across various departments, business units, and segments. **These efforts aim to foster dialogue and alignment of initiatives in the territories, enriching strategic planning with a multidisciplinary perspective.** This ensures that the unique characteristics and mission objectives of each business line are taken into account.

Additionally, Ecopetrol has enhanced its collaboration with contractor companies, associations, subsidiaries, and partners to enhance their management practices in the territory.

Territorial Planning

Ecopetrol facilitates territorial planning by developing comprehensive territory management plans aligned with the operational plans of projects and assets, using annual **territorial characterizations¹⁰⁷**. In 2023, **comprehensive territory management plans were crafted for the period 2023-2026 for 10 territories.**

Citizen Participation and Commitment Management

This aspect ensures the fulfillment of commitments resulting from Ecopetrol's interactions with its Stakeholder Groups. It is governed by the Procedure for Stakeholder Commitment Management and the Instructions for Society, Community, and State Commitment Management.

The effectiveness of this management is assessed using the stakeholder commitment **management indicator, which achieved a 100% score in 2023.**

Institutional and Community Strengthening

Ecopetrol invests in initiatives aimed at strengthening both institutional capacities and community resilience. These efforts empower competent and trained individuals to address the challenges of territorial transformation.

In 2023, a total of **51,611 individuals benefited from programs and projects focused on institutional and community strengthening**. Notably, one of the completed projects involved empowering **180 youth leaders** in Puerto Wilches (Santander), in collaboration with the United Nations Office on Drugs and Crime.

Monitoring, Analysis, and Forecasting

Ecopetrol conducts descriptive, analytical, and forecasting activities through the Business Environment Observatory to understand the dynamics in the environment where the EG operates. **This process enables planning, prevention, informed decision-making, conflict resolution, and proactive measures to prevent issues that could impact business activities.**



¹⁰⁷ These characterizations are founded upon the mapping and systematic analysis of region-specific variables encompassing identity and context, as well as the examination of national and regional dynamics, trends in past-year conflicts, and comprehensive studies evaluating territorial impacts, benefits, risks, and opportunities.

Social Value Generation

(ECP 024) Ecopetrol engages in social investment projects across diverse regions of the country, aligning with its corporate strategy to foster the sustainable development of the territories in which it operates.

These social investments encompass both voluntary and mandatory projects, which are identified, negotiated, and prioritized through social dialogue platforms. They are then meticulously planned, structured, and executed with technical precision. The generation of social value centers on **three (3) objectives**, termed **strategic options**:



Boosting local economies

This initiative impacts job creation and income generation, fostering economic diversification for a Just Energy Transition. It also encourages the development of skills complementary to the hydrocarbon industry and supports the construction of road and community infrastructure to stimulate trade and enhance social cohesion.



Enhancing access to public services

This endeavor aims to increase access to clean water and basic sanitation, thus aiding in the reduction of multidimensional poverty¹⁰⁸. Furthermore, it facilitates access to gas services in households, promoting the Energy Transition to clean fuels. This not only safeguards public health and the environment but also allows women more time for self-care, as they no longer need to cook using wood or coal stoves.

¹⁰⁸. Specifically, in closing two (2) gaps: (i) lack of access to improved water sources and (ii) inadequate sanitation.



Education

This effort contributes to national education objectives by improving quality, coverage, and school retention rates. Additionally, it helps nurture an innovative mindset and culture among students.

The **strategic options** are implemented across five (5) investment categories outlined in the Company's Territorial Development Portfolio:



Education, Sports, and Health.



Inclusive Rural Development.



Entrepreneurship and Business Development.



Public and Community Infrastructure.



Public Services (water, energy, and gas).

In the short term (2024), this assessment is supported by:

- Optimization of the social investment model (process, technology, financial and technical vehicles).
- Implementation of impact measurement and social investment return methodologies.
- Identification and coordination with strategic partners.
- Definition of the national baseline for social license.
- Definition of the methodology and baseline for contribution to the SDGs.
- Contribution to the fulfillment of national, departmental, and municipal development plans.

All these initiatives contribute positively to Ecopetrol's financial performance and the risk profile of its production assets, reducing the likelihood of operational disruptions resulting from environmental events.

In addition, Ecopetrol has implemented various measures to enhance social value generation, including: Coordinating projects with communities and territorial entities to ensure local participation and relevance; Adopting transparent and inclusive processes for selecting partners and contractors, prioritizing local stakeholders; Establishing clear guidelines for project management and approval, ensuring adherence to ethical and legal standards; Implementing robust internal control systems and audit programs to monitor the progress and impact of social investment projects; Engaging in ongoing communication and promotion efforts to raise awareness of social investment initiatives and their benefits.



Goals

Specific goals are outlined for each strategic option:

Strategic options	Key Indicators	Short Term (2024)	Medium Term (2030)	Long Term (2040)
Revitalization of local economies	Employment generation ¹⁰⁹	25,000	105,000	230,000
	Engagement of rural families in productive chains	4,475	9,000	18,000
	Empowerment of youth (4IR ¹¹⁰) entrepreneurs, and SMEs	5,878	13,500	25,000
	Kilometers of tertiary road network intervened	958	1,800	3,000
Education	Benefited students	626,333	1,252,000	+ 2,000,000
	*Improvement of education quality *Increase in school retention rates *Greater school coverage	100% of prioritized municipalities ¹¹¹ with training programs and reduction of education gaps.		
Access to public services	Closing the gap in public service coverage			
	Improvement and access to drinking water (inhabitants)	1,329,704	1,900,000	2,400,000
	Access to natural gas through pipelines (users)	34,448	75,000	150,000



109. Jobs generated calculated using the Input-Output Model methodology of the National Planning Department (DNP). It includes all direct and indirect jobs generated by Ecopetrol's social investment.
110. Skills for the Fourth Industrial Revolution.
111. The prioritized municipalities are updated according to the update of territorial strategies (biannual).



In 2023, comprehensive regional agendas and portfolios were strengthened

through systematic engagement and dialogue with businesses, territorial authorities, and local stakeholders.

This concerted effort led to the negotiation of strategic projects in all the regions of operation of the Company. Furthermore, social investments in ZOMAC (Areas Most Affected by Conflict) and PDET (Territorial Development Programs) municipalities were enhanced by projects funded through tax-deductible works mechanisms. Additionally, special attention was directed towards honoring historical commitments made to the regions.

Table 6.16.1.
Progress Made Across Strategic Options from 2019 to 2023

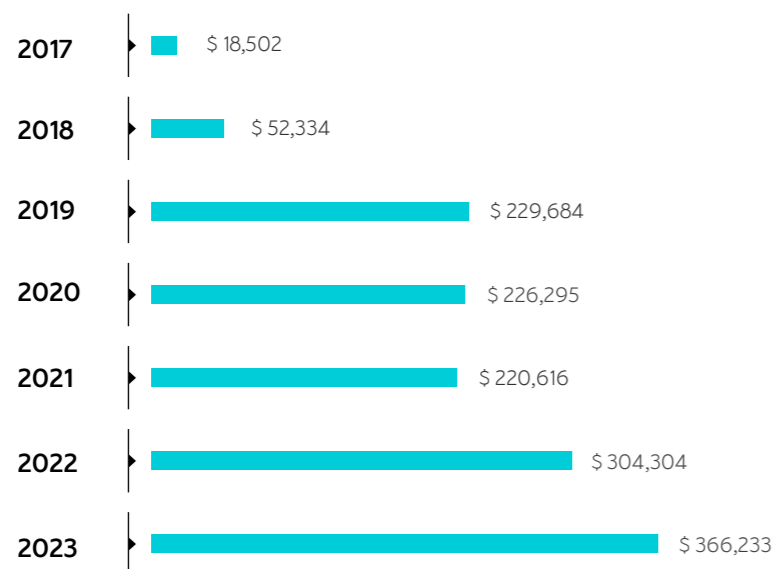
Strategic Option	Social Investment Line	Unit of measurement	2019	2020	2021	2022	2023	Goal 2019-2024	Results 2019-2023	Progress
Revitalization of local economies	Jobs generated by social investment	Number of direct and indirect jobs	0	0	1,773	4,235	12,457	25,000	18,465	74%
	Inclusive rural development	Number of producer families	134	509	1,099	2,179	8,641	4,475	12,562	281%
	Entrepreneurship and business development	Number of entrepreneurs, SMEs, and youth	0	728	491	10,531	8,670	5,878	20,420	347%
	Public and community infrastructure	Kilometers of roads intervened	204.93	237.37	62	204.18	197.93	958	906.41	95%
Education	Education, sports, and health	Number of students	62,461	202,707	192,623	128,258	150,203	626,333	736,252	118%
Access to public services	Public services: • Drinking water and basic sanitation	Number of residents with access to water	6,598	6,351	21,725	763,436	15,019	1,329,704	813,129	61%
	• Gas and energy	Number of households with access to gas	3,789	770	6,132	7,683	14,202	34,448	32,576	95%

Execution of Social Investment and Engagement

(GRI 203-1) (GRI 11.14.4) (WEF 28E) (WEF 32E) Ecopetrol's social investment and engagement in 2023 amounted to COP 366.233 billion, with 90.25% allocated to strategic¹¹² (voluntary) investment and 9.75% to mandatory investment¹¹³.

In 2023, there was a 20% increase in Ecopetrol's social investment and engagement compared to 2022, driven by the higher budget allocated to fulfilling commitments and Sustainable Territorial Development investment plans in the regions.

Figure 6.16.1.
Execution of Social Investment and Engagement between 2017 and 2023 (COP millions)



112. Ecopetrol's strategic investment is developed by identifying opportunities to contribute to local development within the framework of defined social investment lines. Projects and initiatives are prioritized in consultation with Stakeholder Groups (national, departmental, and local governments, society, and community), rigorously formulated and structured as integral parts of the company's comprehensive territory management plans to facilitate operations.

113. Mandatory investment comprises the investments that Ecopetrol makes to fulfill social obligations contained in contracts with the National Hydrocarbons Agency (ANH) and imposed by environmental authorities as part of the permit and licensing processes. Additionally, it includes other obligations stemming from processes to ensure the right to prior consultation, which are executed not only to meet legal requirements but also as opportunities to contribute to improving the socio-economic conditions of the territory.

Education, Sports, and Health - Ecopetrol Educa

Investments in education and sports aim to advance quality, coverage, and school retention. Through these endeavors, Ecopetrol contributes to upholding children's rights, fostering cultural dissemination, facilitating peaceful conflict resolution, and reinforcing democratic principles.

Throughout 2023, 150,203 students benefited from various initiatives, including:



Enhanced retention: Implementation of measures to ensure children remain in the educational system and utilize their free time productively. Notable projects in 2023 included "Music in the Borders" by Fundación Nacional Batuta, provision of school kits and furniture, and provision of technology for Public Educational Institutions.



Improved quality: Promotion of teacher training, provision of educational materials, and monitoring to ensure the effective and sustainable utilization of investments.



Expanded coverage: Diversification of higher education offerings and enhancement of educational infrastructure. Notable projects in 2023 encompassed the Ecopetrol Graduates program, the "Utopia" program in collaboration with Universidad de la Salle, and the improvement of public infrastructure.

Health investments aim to improve healthcare services' quality and narrow gaps in this field. In 2023, Ecopetrol initiated the following projects:



Operation of the Mobile Health Unit in Magdalena Medio: In partnership with the USO, Ecopetrol deployed a mobile health unit to bring healthcare services closer to vulnerable populations. This initiative will benefit 22,000 patients through the provision of general medical services, sample collection, and promotion of preventive measures. The unit will serve communities in Cantagallo (Bolívar), Barrancabermeja, Puerto Wilches, Sabana de Torres, Yondó, San Vicente de Chucurí (Santander), and Rionegro (Antioquia).



Health campaigns: Ecopetrol collaborated with the Rotary Club to organize campaigns for correcting cleft lips in Barrancabermeja (Santander), providing treatment to 100 patients with cleft lips or burns. Additionally, health campaigns were conducted in the Catatumbo region with the support of Fundación Operación Sonrisa, benefiting 800 children and mothers from the U'wa indigenous community.



By 2024, Ecopetrol aims to benefit over 626,000 children and youth. However, this target was exceeded in 2023, with 736,252 beneficiaries reached, achieving a compliance rate of 118%. This figure is equivalent to approximately 9.6% of enrollment in public primary and secondary educational institutions nationwide.

Inclusive Rural Development – Ecopetrol to the Farm



The aim of this initiative is to integrate rural communities into productive chains by seizing market opportunities, enhancing local capacities, and ensuring the sustainable management of natural resources.

Entrepreneurship and Business Development - Ecopetrol Entrepreneurship Program



Investment in this domain aims to bolster the economic landscape of targeted areas by fostering entrepreneurship and innovation, thereby facilitating income generation and creating quality employment opportunities.

Ecopetrol exceeded its target of benefiting **4,475 small producers** by 2024:



Reaching **12,562 producers** by 2023, surpassing expectations with a compliance rate **2.8 times higher than planned**. This achievement signifies significant progress in advancing sustainable territorial development, inclusion, and territorial peace, aligning with the commitments of local, regional, and national governments, as well as the SDGs. Ecopetrol collaborates with various national and international partners to realize these objectives.



In 2023, **19 projects** were successfully completed, benefiting **8,641 farming families** across the departments of Bolívar, La Guajira, Santander, Norte de Santander, Arauca, Casanare, Boyacá, Meta, Cundinamarca, Huila, and Putumayo.

As of December 2023:

26 projects involving **6,000 farming families** were ongoing, with **45%** of participants being women and **38% rural youth**. The objective is to further reduce the disparity between commercial opportunities in

the territory and the productive capacities of farming families, within a framework of economic, social, and environmental sustainability. Ecopetrol partners with organizations such as the Food and Agriculture Organization (FAO), the United Nations Office on Drugs and Crime (UNODC), the Cooperative Association for International Development (SOCODEVI), the Ministry of Agriculture and Rural Development, the Governorate of Huila, and

five (5) framework contracts with operators from the Comprehensive Agricultural Solutions Program (Agrosol).

Furthermore, Ecopetrol entered into a **new agreement with the FAO** to strengthen the consolidation of the agri-food system in Acacias, Castilla La Nueva, Guamal, Villavicencio, Cubarral, and Puerto Gaitán (Meta). This initiative aims to act as a transformative force for territorial rural development, integrating family farming organizations, sustainable production systems, agribusiness, and efficient logistics. In the second phase, coverage will expand to encompass more than **2,700 farming families and 33 farming organizations across these municipalities**.

- Ecopetrol has set a target of reaching **5,878 beneficiaries by 2024**. However, by 2023, a total of **20,420 entrepreneurs, SMEs, and youth had already benefited**, exceeding the goal ahead of schedule with a compliance rate **3.5 times higher** than planned, of which 8,670 were beneficiaries in 2023.
- Through the **Ecopetrol Entrepreneurship Program**, conducted in partnership with Business Incubator "Créame", **1,015 entrepreneurs and SMEs** received comprehensive training opportunities aimed at developing their competencies, reducing informality, and bridging competitiveness gaps. These initiatives were implemented across **46 municipalities spanning 12 departments**.
- To cultivate an entrepreneurial and innovative mindset, enhance both soft and hard skills among youth, address inequality gaps, and inspire them to become agents of change in their communities, **7,655 young people** benefited from these programs in 2023.

- The collaboration with Innovation Laboratory UNLAB 4.0 of the National University of Colombia facilitated the continuation of the "Youth 4.0 Innovating and Transforming Territories" program, which provided benefits to **4,611 young individuals aged between 14 and 28** in Puerto Wilches (Santander), Tauramena (Casanare), and Villavicencio (Meta).
- Furthermore, the **"Shake Yourself with the Youth of the Territory"** program concluded successfully, benefiting **3,044 young people across 10 municipalities**.
- Moreover, efforts were made to promote STEM education among **115 girls through the "She Is an Astronaut" program**, a collaboration with the She Is Foundation. This initiative aims to empower and motivate girls to challenge gender stereotypes and inspire others to embrace equality and the value of education.
- Additionally, **15 girls** were given the opportunity to participate in a week-long immersion program at the **NASA Space Center in Houston, United States**.

Public and Community Infrastructure - Ecopetrol Builds

Investment in this domain aims to improve land connectivity conditions to facilitate commercial exchange, reduce travel times and transportation costs, and establish spaces for coexistence, participation, education, sports, and recreation.



Road Infrastructure

Ecopetrol has set a target to intervene in 958 km of roads by 2024. **By 2023, 906.41 km** had been intervened, accounting for **95% of the target**, of which, 197.93 km comprised projects completed in 2023, benefitting over 95,708 people and contributing to regional revitalization, enhanced land mobility, and local job creation.

Significant projects include direct investments in the refurbishment of **57.66 km of tertiary roads** in the El Morro district in Yopal (Casanare), benefitting 3,676 individuals; maintenance of 19.38 km of tertiary roads in Cubará (Boyacá) and Toledo (Norte de Santander), benefitting 27,531 people; and upkeep of 5.20 km of the tertiary road network in San Vicente de Chucurí (Santander), benefitting 290 individuals, among others.

Ecopetrol prioritizes the transition to a circular economy; hence, the project to enhance, adapt, and execute works at the Ricaurte Station of the Transmilenio Mass Transit System in Bogotá, incorporating plastic recycling technologies for infrastructure use. This project received recognition at the **“Lazos de Sostenibilidad” awards**, winning first prize in the sustainable services category.

Moreover, a cooperative **agreement was established to intervene 43 km** of the road leading to the Rubiales hamlet in Puerto Gaitán (Meta). This collaboration involves the National Roads Institute (INVIAS), the Government of Meta, the Meta Infrastructure Agency, and local operating companies like Frontera Energy, Tecpetrol, Cepsa, and Hocol.



Public Infrastructure of Community Interest

In 2023, Ecopetrol completed the construction of **13 new infrastructures and intervened 21 structures for improvements, benefitting 276,903 inhabitants** in Ecopetrol’s areas of influence.

Also, the **construction of nine (9) institutions and the improvement of 12 educational infrastructures benefited 3,071 students**. Notable projects include: the enhancement of six (6) rural educational institutions in Rionegro (Santander) benefitting 182 students, the improvement of the Kennedy and Gibraltar Schools in Ubalá (Cundinamarca) benefitting 173 students, the adaptation of the rural agricultural educational institution in the Mingueo district in Dibulla (La Guajira) benefitting 1,058 students, the upgrade of two (2)

educational campuses in Cúcuta (Norte Santander) benefitting 24 students, and the construction of new classrooms at the Henry Daniels school in Castilla La Nueva (Meta) benefitting 310 students.

Moreover, **support for the infant and single mothers’** community stands out through the agreement with the Abu Dhabi Fund for Development and the Colombian Presidential Agency for International Cooperation, resulting in the construction of **eight (8) Child Development Centers** in Condoto and Acandí (Chocó), Curillo (Caquetá), Tibú and Abrego (Norte de Santander), Palmira (Valle del Cauca), Mitú (Vaupés), and Yopal (Casanare), benefitting **835 early childhood students**.

Similarly, the promotion of healthy lifestyles and sports practice is emphasized through projects involving the intervention of parks and sports venues. This includes the construction of a playground and bio-healthy park in the Alta Floresta district in San Miguel (Putumayo) benefitting 116 individuals, the construction of a covered court and bleachers in the Cuatro Bocas district in San Martín (Cesar) benefitting 541 individuals, the construction of a covered sports court in the Peñas Blancas district in Neiva (Huila) benefitting 550 individuals, and the improvement of the sports complex in the San Francisco district, Guacirco district in Neiva (Huila) benefitting 600 individuals.

Public Services

Investment in this area aims to enhance access and coverage of basic public services for communities in the areas of influence, with the goal of improving their quality of life and closing existing gaps arising from unmet basic needs.



Drinking Water and Basic Sanitation – Ecopetrol Water and Life

Ecopetrol aims to provide access to drinking water and basic sanitation to 1,329,704 people by 2024. **As of 2023, 813,129** individuals have already benefited, accounting for **61%** of the target, with 15,019 beneficiaries in 2023 alone. During this period, significant progress was made in executing projects aimed at bridging the gap in access to drinking water in rural areas. For instance, the completion of the Altos de Pompeya Drinking Water Treatment Plant in the rural area of Villavicencio (Meta), benefiting 1,329 people.

Additionally, as of 2023, **seven (7)** projects were underway, expected to benefit over **660,000 people**. Notable undertakings include sub-projects

2 and 3 of the Cúcuta metropolitan aqueduct, which will enhance access to drinking water in Villa del Rosario and Los Patios (Norte de Santander). Other initiatives include the replacement of distribution networks in the urban aqueduct of Villa del Rosario (Norte de Santander), benefiting 2,020 people in 2023, the construction of the San Silvestre Wastewater Treatment Plant and the sludge treatment system in Barrancabermeja (Santander), the expansion and optimization of the Guamal Urban Drinking Water Treatment Plant (Meta), benefiting 11,670 people in 2023, the establishment of one (1) production center and six (6) public water taps in the rural area of Manaure (La Guajira), and the construction of the Altamira Drinking Water Treatment Plant in Puerto López (Meta).



Energy and Gas – Ecopetrol Connects

Ecopetrol has set a goal to connect 34,448 households to gas networks by 2024. **As of 2023, 32,576 verified gas** connections have been completed, representing **95%** of the target. Among these, 14,202 households were connected in 2023 in various regions including Barranquilla (Atlántico), San Vicente de Chucurí (Santander), Aguazul (Casanare), Puerto Rondón, Fortul, Saravena, Arauquita, and Cravo Norte (Arauca), Guamal and Villavicencio (Meta), and La Plata, Garzón, and Gigante (Huila).

Moreover, as of 2023, **12 projects were ongoing to expand gas service coverage**. Agreements were also reached with the government of Casanare and the municipality

of Yopal for the construction of electricity grids in the El Morro district in Yopal (Casanare), benefiting **286 households across 14 hamlets**.

Utilizing the works for taxes mechanism, **the implementation of photovoltaic solar solutions for 766 households** continued to enhance electricity service coverage in rural areas of Valle del Guamuez, San Miguel, and Orito (Putumayo). The Territorial Renewal Agency issued Resolutions 546, 550, and 551 on August 23, 2022, approving Ecopetrol's income tax contributions.

Last but not least, discussions with the Ministry of Mines and Energy (MME) were conducted for the implementation of two (2)

projects under Decree 1704 of 2021: “Expansion of natural gas networks and connection rights for households in strata 1 and 2 in the Canelo, Diamante, Jazmín, and Almendro hamlets in Sabana de Torres (Santander)” and “Construction and expansion of natural gas pipeline networks, distribution, and household connections for the Labrancitas hamlet in Paz de Ariporo (Casanare).”

These initiatives underscore Ecopetrol's commitment to bridging gaps in accessing essential public services, ensuring energy access rights, and promoting the universalization of service, with gas positioned as a key driver of the Just Energy Transition.

Works for Taxes

(SASB EM-EP-530a.1) In 2023, the Ecopetrol Group (EG) maintained its leadership in implementing the works for taxes¹¹⁴ mechanism in Colombia, assigning 32 projects during the period, valued at COP 201,060 million, and benefiting over 529,000 Colombians. With these allocations, the EG has now accumulated a total of **91 projects worth COP 758,668 million** since the program's inception, representing **36%** of the total allocation in the country.

Throughout 2023, the EG successfully completed nine (9) projects executed through works for taxes, totaling COP 79,050 million. These projects have provided benefits to over 100,549 residents across 20 municipalities spanning six (6) departments.

114. Works for taxes is a mechanism established by the National Government in 2017, enabling organizations to allocate up to 50% of their income tax and complementary tax towards the direct execution of social impact projects in the Most Affected Areas by Armed Conflict (ZOMAC). These projects are geared towards constructing, enhancing, optimizing, or expanding infrastructure and supplying essential equipment to facilitate services including road infrastructure, drinking water, sewage, energy, education, and public health, among other sectors.

Physical Security with a Human Rights Approach

(ECP 028) Ecopetrol has developed an empowering plan to direct physical security initiatives with a strong emphasis on human rights. This plan aligns with the Comprehensive Territory Management strategy and places the cultural principle of “Life First” at its core. By implementing this plan, we demonstrate our unwavering commitment to respecting and promoting human rights, conducting thorough human rights due diligence, and adhering to international standards, notably the Voluntary Principles on Security and Human Rights, with an approach that prioritizes diversity, equity, and inclusion.

The pillars underpinning the management of this plan include:



Management in the protection of individuals.

These pillars are managed through security risk analysis and the identification of potential impacts on human rights, forming the basis for implementing actions that enable comprehensive risk management.

occurred in the municipality of Barrancabermeja (Santander): four (4) in the El Centro district and one (1) in the El Llanito district, allegedly carried out by illegal groups.



Management in the protection of critical and strategic national infrastructure.

Ecopetrol systematically and continually records alarms and incidents through environmental monitoring and analytics for prevention and conflict management. This process includes comparing data between different time periods, which facilitates timely and effective risk management.

In response, Ecopetrol enacted contingency plans to prevent potential harm to individuals and minimize the impact of hydrocarbon spills on ecosystems. Also, in collaboration with the Public Force, it conducted continuous control activities on hydrocarbon transport lines to prevent such incidents. Ecopetrol also collaborated with the Office of the Attorney General of the Nation in the judicial process against the criminal organizations involved in these illicit actions.



Management for operational viability.

During 2023, Ecopetrol endured five (5) attacks on the Company’s infrastructure, all of which

Table 6.16.2.
Number of Interruptions to Activities and Total Duration of Interruptions Associated with Projects Caused by Non-Technical Factors
(SASB EM-EP-210b.2)

	2022	2023
Number of interruptions	664	1,346
Total duration of interruptions (days)	970.25	2,620

The rise in interruptions primarily stems from a notable increase in blockades instigated by various community actors.

(GRI 410-1) (DJSI 3.6.5) Ecopetrol has explicitly affirmed its dedication to the Voluntary Principles on Security and Human Rights, embracing a management strategy that encompasses the following components:



Risk assessments

Ecopetrol recognizes that security management can have impacts on the territories where it operates. Therefore, it applies security-related human rights standards at three (3) levels: risk analysis to identify human rights impacts in the territories, transparent engagement standards, and commitment to public security and private security companies; and a robust system for addressing complaints. Within the risk management cycle, the risk of human rights violations by members of the public force with whom agreements are in place or by private security company employees in matters pertaining to security and human rights has been identified. This prompted the Company to establish controls to prevent and mitigate the materialization of human rights impacts affecting individuals. In light of this, Ecopetrol issued the 2023-2024 Human Rights Plan under the leadership of the Physical Security Management, which includes relevant activities on this subject.



Interactions with Public Security

Ecopetrol maintains a transparent relationship with the Ministry of National Defense, Armed Forces, and the National Police of Colombia, to collaborate jointly in achieving security conditions for inhabitants, infrastructure, and its operating areas, within a framework of strict compliance with the law, respect for human rights, and adherence to the Voluntary Principles on Security and Human Rights.

Agreements include security and human rights risk analysis, used to align collaboration to prevent human rights impacts. Similarly, Ecopetrol holds regular meetings to review and update the security and human rights risk analysis and exchange information about petitions and complaints received by the Company through the Citizen Participation System.

Ecopetrol signs collaboration agreements with the Public Force, which incorporate the “Human Rights and International Humanitarian Law” clause and emphasizes compliance therewith in legal and conventional terms, while also ensuring the independence of decisions by the Public Force.





Interactions with Private Security

Ecopetrol enters into contracts with private security companies, which contain a common clause based on the Voluntary Principles on Security and Human Rights in relation to private security, such as security and human rights risk analyses and training programs on human rights for contractor employees, among others.

To verify compliance with the obligations included in the clause, the Company constantly monitors through meetings and reports, suggesting improvement actions to continue strengthening the process jointly.



Audit and Evaluation of Security Contractors

The contracts entered into by Ecopetrol with private security companies include clauses regarding control and review mechanisms for compliance with obligations related to Voluntary Principles on Security and Human Rights. Contracts contain an ethics, transparency, and compliance clause, through which the Company is authorized to conduct administrative, financial, operational, and compliance audits, to verify compliance with anti-bribery laws and the guidelines established in the Company's Code of Ethics and Conduct.



Supervision of Security Providers to Ensure Compliance with their Obligation to Provide Security Consistent with the Rules of Conduct Established by Ecopetrol

The Company exerts risk control for monitoring security providers, ensuring they comply with their obligation to provide security in accordance with the rules of conduct described in Ecopetrol's Code of Ethics and Conduct. Providers must submit a biannual report accounting for compliance with human rights clauses.



Complaint Mechanisms Protecting Security Forces

Ecopetrol's Citizen Participation Office (CPO) receives complaints from all its Stakeholder Groups. Additionally, regular meetings are held with security forces to review and update security and human rights risk analyses and exchange information on concerns raised by the population through the complaint mechanism pertaining to human rights impacts in the territories.



Engagement with Ethnic Communities

During 2023, engagement with ethnic groups in the areas influenced by Ecopetrol's operations was based on intercultural dialogue and support for regional engagement initiatives, with the purpose of maintaining trustful relationships.

Ethnic Empowerment Initiative

Ecopetrol introduced the "Forming in Diversity" program, both virtual and in-person, designed to enhance dialogue processes with ethnic communities. The initiative is grounded in the principle of lifelong learning, offering education opportunities where individuals from community grassroots can independently and freely access information and self-learning resources at any stage of their lives. Leveraging social information and communication technologies, particularly instant

messaging platforms like chatbots, serves as an innovative tool facilitating easy access to diverse territories, in a cost-effective and asynchronous manner.

This program provides an effective means to sustain direct and continuous engagement with participating ethnic groups. In 2023, the initiative welcomed 583 indigenous participants, representing 11 Wayuu communities in La Guajira and three (3) Pastos and Ingas communities in Putumayo. Participants received training covering topics such as cultural enrichment, political and organizational consciousness, territorial matters, and self-governance.

Dialogue with the U'wa People

In 2023, Ecopetrol continued its engagement with the newly appointed Board of Directors of Asou'wa for the 2022-2025 term, with the aim of sustaining intercultural dialogue and implementing social investment proposals for the benefit of the U'wa People.

During the same year, construction commenced on the U'wa Thought Center, a collaborative initiative involving Asou'wa and the Boyacá Government. This center aims to provide a space where the community can participate in activities to enhance self-governance and preserve cultural practices.

Intercultural Dialogue with the Alto Unuma Meta Indigenous Reserve

Through dialogue and consensus-building with the Alto Unuma Meta Indigenous Reserve (RAUM) of the Sikuani ethnic group, located adjacent to the Rubiales Field, the Company has achieved a transition from mere neighbors to trusted friends. This transformation was rooted in mutual respect for cultural differences and the principles of indigenous self-governance. The consultative process with the reserve exemplified these values, fostering dialogue, understanding, agreement, and active community engagement. These efforts culminated in jointly formalized agreements, overseen by the Directorate of the National Authority for Prior Consultation (DANCP).

In the first week of December 2023, an intercultural gathering took place within the territory of the Alto Unuma Meta Indigenous Reserve (RAUM). The primary aim was to nurture positive relationships, foster trust, and uphold commitments, involving authorities, leaders, women, and youth from both the indigenous community of the Alto Unuma Meta Reserve (RAUM) and representatives from Ecopetrol. This initiative was conducted in alignment with and in fulfillment of the comprehensive territory management strategy.



Engagement Activities Involving Ethnic Communities in the Departments of Putumayo and Nariño

Ecopetrol fosters engagements with ethnic communities residing near its operations through continuous dialogue and transparent communication regarding its activities. This engagement strategy has facilitated the development of investment projects in regions where ethnic populations and rural communities intersect. The following projects are noteworthy:

Featured projects

Enhancement of Traditional Cultural Expressions through Cultural, Social, and Environmental Innovation within Ethnic Communities.

Support was extended to celebrate and revive culturally significant events for ethnic communities, including the Celebration of Afro-Colombian Identity, Intiraimi Celebration, Pendón Celebration, San Bartolomé Vigil, Uajjnayte Offering Day, Cofán Cultural Encounter, and Pawkar Raymi Celebration. This assistance to preserve ancestral traditions involved collaboration with various communities, including the Alnamawami Council, Inga Sumaluiai Council, Yanacona Council, Chicalá Pijao Council, Kamentsa Biyá Council, Pastos Siberia Council, Santa Rosa de Sucumbíos Reserve, Pastos Rumiayaco Reserve, Santa Rosa Sucumbíos Reserve, Ukumary Kankhe Reserve, Ishu Awá Reserve, and Community Councils Liberación y Futuro, Nueva Esperanza, and Nuevo Renacer.

Preservation of Ethnic Cultural and Ancestral Traditions

This initiative aims to promote the continuation of traditional activities such as music or dance, and it is actively underway in collaboration with the Santa Rosa de Guamuez Reserve, Pastos Rumiayaco Reserve, Santa Rosa Sucumbíos Reserve, Ukumary Kankhe Reserve, Ishu Awá Reserve, and Community Councils Liberación y Futuro, Nueva Esperanza, and Nuevo Renacer.

Agreement to Sponsor Ethnic Group Artisans within the Framework of “Expoartesano and Expoartesánias”

- **Expoartesano Miami 2023:** In its inaugural edition, this international craft fair showcased artisanal products from all 32 departments of Colombia over the course of three (3) days. Ecopetrol provided resources to facilitate the attendance of four (4) artisans at the event. Consequently, the artisans succeeded in positioning their products on the international stage and generating income from sales.
- **Expoartesano Medellín:** This local craft fair aims to showcase Colombia’s memory, traditions, and ancestral customs through the display of artisanal products. Ecopetrol supported the

participation of seven (7) artisans to ensure their presence at the event. The result of this initiative is the increased visibility of artisanal activities.

- **Expoartesánias:** As the most attended craft fair in Colombia, Expoartesánias features artisans from all regions of the country. In 2023, Ecopetrol sponsored the participation of 124 artisans from ethnic communities to preserve Colombia’s traditions and ancestral knowledge, promote the nation’s cultural heritage, and stimulate the popular economy of artisans through commercial connections at the local, national, and international levels.



Prior Consultation

(GRI 11.7.4) (GRI 11.17.1) (DJSI 3.6.2) (DJSI 3.6.4) (SASB EM-EP-210a.3)

Ecopetrol has implemented tools that guide and organize its engagement with ethnic communities and the advancement of activities in their territories, drawing on the following international and national instruments for the protection of human rights.:

- Guide on Human Rights and Business.
- Guide on Ethnic Community Relations.
- Guidelines for Coexisting with Ethnic Communities.
- Procedure for Conducting Prior Consultations.
- Guidelines for preparation of the participative base line with ethnic groups within the framework of environmental studies with Prior Consultation.

(GRI 11.15.1) (GRI 11.16.1) (SASB EM-EP-210b.1) Each project at Ecopetrol commences with an environmental licensing and authorization process¹¹⁵, commencing with the preparation of an environmental study aligned with the relevant terms of reference for oil and gas exploration or production. Consequently, prior to acquiring a new block or expanding operational areas, Ecopetrol verifies the presence of ethnic communities in the area and their geographical connection to the project.

In projects where ethnic communities are identified, Ecopetrol conducts an analysis, with their involvement, to assess potential environmental, cultural, and social implications, delineating the area of influence and formulating management measures. In instances where information about the presence of ethnic groups is available, the Company notifies the authorities about the potential impacts of the project on these communities.

The identification of impacts and implementation of control, mitigation, or compensation measures are obligatory for Ecopetrol’s operational activities, also applicable to its contractors and partners. Noteworthy impacts include:

- Formalization of direct and indirect employment.
- Revitalization of local economies.
- Territorial strengthening resulting from the management of royalties.
- Economic expectations at the local and regional levels, which may lead to conflicts.

Subsequently, Ecopetrol formally requests processing from the DANCP to assess the necessity of conducting prior consultation. In cases where it is deemed necessary, Ecopetrol initiates coordination of the consultative process with the DANCP before commencing the project.

In 2023, as part of its corporate and technical endeavors, Ecopetrol adhered to and complied with the provisions outlined in ILO Convention 169.

115. Specified in Decree 2076 of 2015, issued by the Ministry of Environment and Sustainable Development.

Ecopetrol consistently aims for the best agreements with communities, even in projects where prior consultation is not legally required.

During any phase of the project, ethnic communities that were not initially reported may be identified in the project areas. In such instances, as part of its human rights due diligence, Ecopetrol verifies the situation and notifies the DANCP of the presence of such a community in the area, requesting an appropriate determination regarding the need for prior consultation.

In 2023, Ecopetrol engaged in **eight (8) projects¹¹⁶ with prior consultation processes**: one (1) in pre-consultation and opening, one (1) formalized, five (5) in monitoring, and one (1) closed, as detailed below:

- Fifteen (15) prior consultation feasibility resolutions were obtained for 15 projects, with five (5) filed in 2022 and 10 in 2023. Out of these resolutions, the DANCP determined that the prior consultation mechanism was not applicable for 10 projects, while for the remaining five (5), prior consultation was deemed necessary.
- For the Orca Chuchupa B Flowline project, the pre-consultation and opening phase was initiated with 66 communities, followed by the engagement phase with 6 communities, totaling 72 communities involved.

- One (1) prior consultation was formalized for the Modification of the Global Environmental License for the Rubiales Field project, reaching full agreements with the Alto Unuma Indigenous Reserve.
- Five (5) projects with prior consultations formalized in previous years, involving 10 ethnic communities, remained in the monitoring stage.
- In May 2023, seven (7) prior consultation processes for the South Churuyaco Polygon Modification project were concluded with the support of the DANCP and the communities of the Santa Rosa de Sucumbíos El Diviso, Rumiayaco, Nasa UH, Ishu Awa, Ukumari Kankhe Indigenous Reserves, the Nukanchipa Yuyay Indigenous Partiality, and the Liberación y Futuro Community Council.
- As part of the DANCP engagement strategy, two (2) technical monitoring sessions were conducted for the consultations and one (1) training session for entity officials on industry-related topics.

In 2023, Indigenous Councils Bajo Mirador Yanacona and Chicalá Pijao filed legal actions against Ecopetrol concerning its operations in the El Caldero district, municipality of Orito. However, the court ruled in favor of Ecopetrol, as these communities had acquired land where industrial activities were already established. Additionally, several Afro-Colombian Community Councils in the coastal areas of the departments of Bolívar and Sucre requested prior consultation through legal actions, pertaining to the offshore Gorgon well operated by Shell. However, the court ruled in favor of Shell and Ecopetrol, as the well is located in ultra-deep waters where artisanal fishing does not take place.

(GRI 413-2) (GRI 11.15.3) (GRI 11.16.1) (DJSI 3.6.3) (ECP 025) Ecopetrol has also implemented the Procedure for the Resettlement of Populations in

the Development of Operations and Projects. This procedure aims to outline the conceptual and methodological route to prevent, mitigate, correct, and compensate for the economic and social impacts resulting from the involuntary displacement of populations due to operations and projects. It defines the Company's actions and responsibilities to restore socio-economic conditions and transform resettlement into an opportunity for improving the conditions of the resettled population.

This procedure is based on the UN Guiding Principles on Business and Human Rights and international policies on population resettlement, such as the IDB OP-710 standard, the World Bank's Resettlement Policy (OP 4-12), and the International Finance Corporation's (IFC) Manual for the Preparation of Resettlement Plans.



(GRI 411-1) (GRI 11.16.2) (GRI 11.17.2)
Within the operational scope of the Company, there were no reported instances of alleged violations of indigenous peoples' human rights during 2023, nor were there any cases of ethnic community resettlement.

116. One (1) project can involve several communities.



In 2023, there were 604 cases of involuntary resettlements in the population not affecting indigenous communities.

The agreed management measures with the resettled population include the following:



Information, communication, and participation programs with the aim of establishing an official, direct, and permanent communication channel with Ecopetrol, thereby facilitating the process for the resettled population and preventing manipulation by outside parties and alleviating the stress and uncertainty experienced by social units.



Social support program designed to coordinate strategies and actions among various institutions to ensure access to social services in resettled communities. It provides comprehensive support, including conflict resolution strategies, and identifies family and social networks that can assist in the resettlement process.



Support program for economic recovery.

Energy Communities

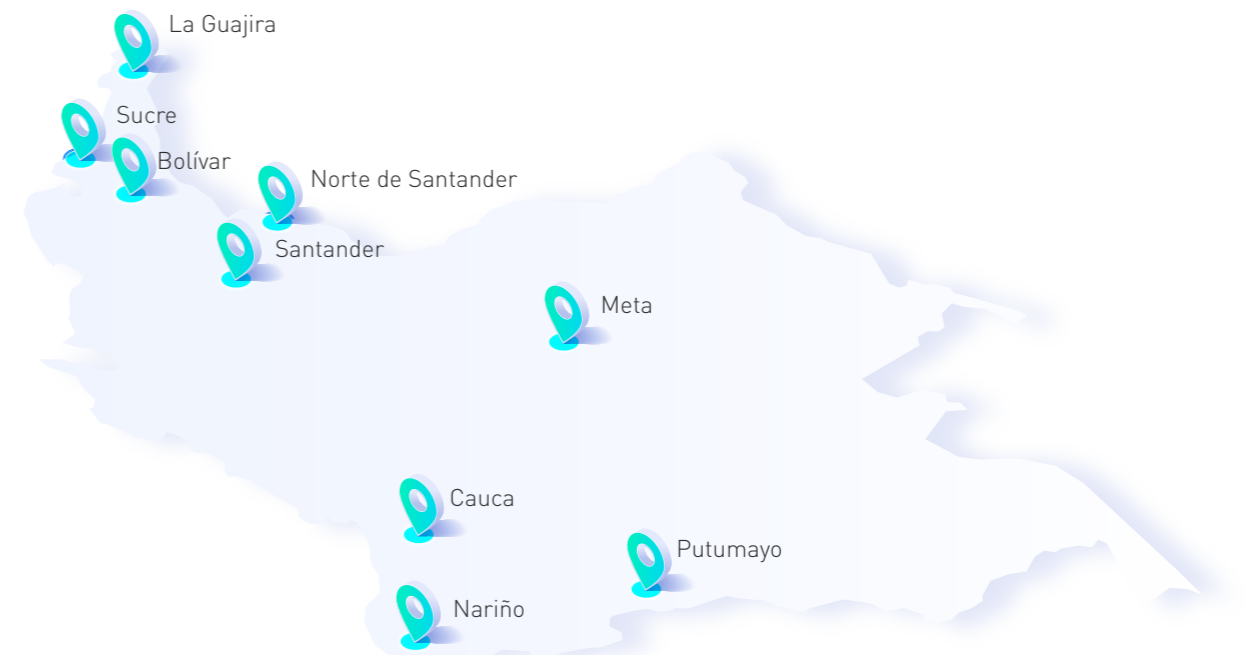
(SASB EM-EP-530a.1) Ecopetrol, as a pioneer in promoting a Just, Equitable, and Inclusive Energy Transition in Colombia, is actively engaged in exploring innovative models for community involvement in renewable energy projects. In collaboration with the Institute for Planning and Promotion of Energy Solutions (IPSE), the Mining and Energy Planning Unit (UPME), the Ministry of Mines and Energy (MME), Hocol, and Cenit, Ecopetrol has consolidated a portfolio of initiatives aimed at fostering Energy Communities¹¹⁷.

This initial portfolio defines Ecopetrol's role and level of participation, outlines technical, legal, and financial considerations, and assesses the

potential impact and returns of these initiatives. The implementation of these projects has the potential to benefit approximately 30,000 people by providing access to renewable energy, thus contributing to the transformation of their communities.

As of the end of 2023, **six (6) energy community projects with socio-environmental benefits** were structured, with implementation scheduled to commence in 2024. In the medium term, the aim is to establish a sustainable and socially impactful initiative.

The following departments have been identified as potential locations for implementing energy communities:



The EG reaffirms its dedication to bridging gaps in access to essential public services, facilitating access to energy, and promoting the universalization of energy services, by positioning gas as a key driver of the Just Energy Transition.

117. According to Decree 2236 of 2023, "energy users or potential users may establish Energy Communities to generate, market, or efficiently use energy through the use of non-conventional renewable energy sources, renewable fuels, and distributed energy resources".

118. This includes benefits such as increased trust levels, social feasibility of projects, and new business models with a high social impact.

Key Accomplishments

- The EG's Comprehensive Territory Management strategy was revamped, framing it as an integral part of the social fabric rather than the central focus of its business activities.
- Social investment and engagement in 2023 totaled COP 366.233 billion, resulting in a 74% increase in job creation, a 118% surge in education, 281% growth in inclusive rural development, a 347% rise in entrepreneurship and business development, a 95% enhancement in public and community infrastructure, a 61% improvement in drinking water and sanitation, and a 95% progress in energy and gas compared to the targets set for the 2019-2024 period.
- The EG achieved the highest participation nationwide for its leadership in the tax-incentive mechanism, with 32 projects assigned in this fiscal year, totaling COP 201.060 billion, which will benefit over 529,000 Colombians.
- Social investment was strengthened through rigorous and systematic management of the Portfolio for Sustainable Territorial Development.
- (GRI 203-2) (WEF 29E) Contributing to the **revitalization of local economies:**
 - Social investment initiatives led to the creation of 12,457 new jobs, encompassing both direct employment and indirect opportunities.
 - 8,641 rural families reaped the rewards of rural development programs and productive linkages.
 - 8,670 young individuals, entrepreneurs, and SMEs received support for business enhancement and skills development, aimed at fostering income generation and talent growth to bolster productivity.
 - Interventions were made in 197.93 km of roads to enhance connectivity and local employment prospects.
- In the realm of education: Over 150,203 students benefited from a range of interventions aimed at enhancing quality, expanding coverage, and improving school retention rates. These interventions included teacher training programs, implementation of effective pedagogical models, distribution of educational materials, provision of scholarships for higher education, and enhancements to public school infrastructure.
- **14,202 gas connections** were verified, providing access to drinking water for 15,019 residents.
- The prioritization of strategic alliances and the reinforcement of corporate foundations were established as crucial tactical elements for value creation in the territories where Ecopetrol operates.
- The Social Dialogue Guide for the EG was established to assist the team responsible for planning and executing social dialogue processes and spaces in the territories. It aims to unify criteria for planning, budgeting, executing, and closing commitments generated in communication spaces between the Company and social actors.
- 10 Comprehensive Territory Management Plans were developed and approved with the involvement of various vice presidencies of the Company. These plans serve as integral territory management tools for the five (5) Regional Management Offices of the Sustainable Territorial Development Vice Presidency.
- Ecopetrol conducted 57 social dialogue processes, encompassing a total of 191 spaces nationwide.
- The first Human Rights Plan for 2023-2024, focusing on physical security, was created. It includes a roadmap that integrates the human rights approach into Corporate Physical Security and the Business Crisis and Continuity Management System.
- The level of social trust, measured through the Oil Barometer, resulted in an approval rating of 74% for Ecopetrol and 70% for the EG in the regions where they operate, according to the scale derived from the Thompson and Boutellier methodology¹¹⁹.
- Prior consultations were conducted for eight (8) projects involving the participation of 90 ethnic communities.



119. 2023 Oil Barometer results, based on a sample of 2,111 respondents.

Cybersecurity and Information Security

(GRI 3-3) The 2040 Strategy demands heightened levels of maturity in Cybersecurity and Information Security to safeguard Ecopetrol's value as a smart and resilient entity against threats and cyberattacks.

The Company has fortified its cybersecurity and cyber defense solutions to preempt risks and ensure seamless business operations, thereby identifying "Cyberattacks, data leaks, or information loss" as a declared risk on the business risk map.

In pursuit of this goal, Ecopetrol has formulated a Cybersecurity strategy grounded in the 'Zero Trust' and 'Military Grade' risk paradigms, aimed at upholding maturity levels and minimizing enterprise cyber risk. This strategy encompasses **five (5) key areas**:

- 1 Culture, data, and privacy.
- 2 Supply chain.
- 3 Operational efficiency.
- 4 Protection of business operations (OT).
- 5 Cutting-Edge Knowledge.



Impact on Human Rights

(GRI 3-3) Access to information is not only a right but also a fundamental pillar for decision-making at Ecopetrol. By ensuring the integrity and confidentiality of information, Ecopetrol helps prevent violations of privacy rights and the protection of personal data, safeguarding personal integrity and freedom of expression. Additionally, this contributes to strengthening a secure and ethical digital environment.

In doing so, the Company mitigates barriers that could impede access to information, thereby avoiding limitations on communication both within the organization and with various stakeholders.

Goals

Short Term (0-2 years)

Culture, Data, and Privacy:

- Implement endo-marketing campaigns tailored to the business objectives.
- Mitigate the Company's exposure to cyber risks related to data leaks and/or loss, and safeguard personal and sensitive information.

Supply Chain:

- Integrate cybersecurity requirements into contracts during the planning phase and ensure supplier compliance with these requirements at the contractual level.
- Evaluate the cybersecurity posture of the suppliers that are critical to the Company.

Medium Term (3-5 years)

Operational efficiency: Upgrade the technological infrastructure to mitigate risks stemming from obsolescence in operational technology and information technology (OT & IT).

Operational Business Protection (OT): Enhance and prepare the Company to mitigate risks that could disrupt operational processes, ensuring the availability, confidentiality, and integrity of operations.

Long Term (beyond 5 years)

Allocate more than USD 240 million to innovation, technology, and digital transformation projects, with a focus on cybersecurity and cyber defense programs as part of the Cutting-Edge Knowledge pillar under the 2040 Strategy.

Involvement of the Board of Directors and Senior Management

(DJSI 1.9.1) The Technology and Innovation Committee under the Board of Directors provides management support on matters related to the Company's cybersecurity. **Saúl Kattan**, who chaired the committee as of December 31, 2023, previously served as the CEO of Empresa de Telecomunicaciones de Bogotá, a pioneering company in Latin America dedicated to fiber optics deployment, where he led its transformation into a triple-play company (offering mobile, television, and internet services). He also led the expansion of Colombia's renowned brand, "Café Juan Valdez," in the United States. Currently, he is the CEO of Kattan Consulting, a firm specializing in optimizing outcomes in the telecommunications sector. Furthermore, he orchestrated the acquisition of "DirectTV," one of the region's leading media companies.

For further details on the backgrounds and experiences of the members on the

Technology and Innovation Committee under the Board of Directors, please consult the "Corporate Governance Structure" chapter of this report.

From Senior Management, **Luis Felipe Rivera** has served as Science, Technology, and Innovation Vice President. He holds a degree in Systems Engineering from "Universidad Industrial de Santander", with a specialization in Management from Universidad ICESI. As of 2023, he was pursuing an MBA at the Adolfo Ibáñez University in Miami. With over 20 years of professional experience, his expertise spans various areas, including ICT structuring and management, process optimization, operations, and information security, as well as technological innovation and digital transformation. Additionally, between 2018 and 2023, he held the position of Director of Information Technologies at the Special Jurisdiction for Peace (JEP).



For more information on the profiles and experience of the members of the Technology and Innovation Committee of the Board of Directors, please refer to the "Governance Structure of the Company" chapter of this report.

Management of Cybersecurity and Information Security

Ecopetrol operates a Cybersecurity Management System aimed at orchestrating and executing cybersecurity and cyber defense capabilities to proactively address and mitigate cyber threats. This system encompasses all departments, processes, systems, and procedures within Ecopetrol and its affiliated entities. Additionally, the Company has established a cybersecurity plan based on internal risk assessments.

Ecopetrol adopts the Cybersecurity Framework developed by the National Institute of Standards and Technology (NIST CSF) as a foundational element for its operational framework and

organizational structure. This framework offers comprehensive guidance and best practices to enhance information security and effectively manage cybersecurity risks.

Integrated risk management is incorporated into Ecopetrol's operations using the Integrated Risk Management System, which aligns with ISO 31000 standards, the Cybersecurity Capability Maturity Model (C2M2), the Good Governance Code, the Code of Ethics and Conduct, the Comprehensive Policy, and the Compendium of Best Practices for Process Management and Integral Control, among other relevant guidelines and frameworks:



Comprehensive Policy

Recognizes information as a critical asset for management and decision-making, ensuring the communication and dissemination of relevant information to stakeholders. It emphasizes proper handling and adherence to current regulations governing quality, security, intellectual property, and privacy.



Information Security Manual

Aims to safeguard the Company's information by assigning responsibility for its protection to employees or contractors with access to or responsibility for it by virtue of their roles within the organization.



Code of Ethics and Conduct

Emphasizes information security and the prevention of leaks of strategic or confidential data. It strictly prohibits the disclosure of inappropriate, illegal, or discriminatory information.



Circular on Premises and Guidelines for Property, Responsibility, and Information Protection at Ecopetrol:

Indicates that the leakage or loss of sensitive information, being a Company asset, constitutes a fraudulent event with severe consequences for Ecopetrol and the individuals involved.



(DJSI 1.9.3) The Company regularly reviews its comprehensive cybersecurity process by identifying risks, controls, and assessments, and subsequently conducts evaluations to ensure its sufficiency and proper operation. Additionally, Internal Audit continuously validates the effectiveness of processes, and third-party reviews and verifications are also commissioned.

Ecopetrol maintains constant vigilance and monitoring of cyber threats, referencing Report 228 “State of Cybersecurity in Logistics in Latin America and the Caribbean” issued by the Economic Commission for Latin America and the Caribbean (ECLAC) and the United Nations.

Furthermore, the Company tracks the “Risk Reduction” indicator, which measures the reduction of business risk by assessing the effectiveness of cybersecurity and cyber defense capabilities in safeguarding critical information and preventing

disruptions to the Company’s processes. This measurement is conducted through a standardized metric scheme defined in the Cyber Risk-Based Approach Model established by Ecopetrol¹²⁰, also applicable to EG companies.

The Company operates a cybersecurity culture program aimed at instigating behavioral changes among users, promoting secure practices that mitigate risk exposure. Additionally, it provides a diverse array of cybersecurity courses as part of each employee’s Annual Learning Plan, complemented by endo-marketing, mobilization, and training campaigns.

Moreover, Ecopetrol employs a cybersecurity management methodology for suppliers, integrating cybersecurity considerations throughout the contracting processes, from pre-contractual stages to contract closure, and includes assessing the cybersecurity posture of critical suppliers.

120. Aligned with the ERM (‘Enterprise Risk Management’) framework.

Key Accomplishments

- Reduced the likelihood and impact of business risks related to “Cyberattacks, data leaks, or information loss,” bolstering the EG’s digital strategy for continuity and operational resilience while narrowing cybersecurity vulnerabilities by 35%.
- Conducted a total of 11 cyberattack drills, engaging over 340 individuals from various departments and EG companies. These exercises facilitated the assessment of responses to cybersecurity incidents in subsidiaries and critical suppliers, as well as the efficacy of operational continuity plans for vital facilities.
- Addressed over 1,100 instances of anomalous behavior linked to data leaks, more than 3,000 phishing threats, and over 1,400 fraudulent job offers. Initiatives to unify identity and access for 35,000 users were launched, contributing to the enhancement of Ecopetrol’s internet perimeter availability, now at 99.99%.
- Reinforced cybersecurity measures within the EG through more than 25 culture campaigns reaching 10,000 internal and external collaborators. The cybersecurity champion network expanded by 26%, growing from 300 to 380 members. Moreover, internal users enhanced their digital security practices by 10%, and 7,382 employees received training in data protection and information security. Notably, the NPS rose by 7%, reaching 96% in 2023.



Ecopetrol maintains constant vigilance and monitoring of cyber threats, referencing Report 228 “State of Cybersecurity in Logistics in Latin America and the Caribbean” issued by the Economic Commission for Latin America and the Caribbean (ECLAC) and the United Nations.



Science, Technology, and Innovation

(GRI 3-3) Science, Technology, and Innovation (ST+i) plays a pivotal role in driving the accomplishment of the 2040 Strategy by fostering the development, acceleration, and refinement of technology-driven solutions. In this landscape, operations or businesses are tasked with scaling up technologies to realize anticipated value.

The ST+i Strategy hinges on **three (3) fundamental pillars**: specialization and knowledge, innovation, and collaboration within ecosystems. Additionally, it emphasizes the generation of productivity and efficiency through seamless digital integration and the adoption of cutting-edge business technologies.

To this end, the Company has pinpointed **17 strategic challenges**, aligned with business priorities, to drive the attainment of objectives outlined in the Growing with the Energy Transition and Generate Value Through T ESG pillars of the Group's 2040 Strategy. Consequently, the ST+i portfolio is oriented towards investments in decarbonization and Energy Transition initiatives, while also ensuring continued investment in strategic hydrocarbon challenges, particularly related to recovery efforts.

The overarching goal of ST+i is to bolster the Ecopetrol Group's position as a global energy leader, effectively tackling the significant strategic challenges posed by the imperative of resilience in traditional business models and the ongoing Energy Transition.



The strategic challenges delineated within the Growing with the Energy Transition pillar, encompassing projects either in progress or earmarked for the 2024-2026 budget cycle, are designed to facilitate EBITDA diversification toward low-emission ventures and solidify solutions and technologies geared towards sustaining production over the medium and long term. These challenges are outlined in the ensuing initiatives:







- 1 Recovery.
- 2 Teca Nare Train.
- 3 Gas.
- 4 Clean Energies.
- 5 Energy Storage.
- 6 Multiphase Transport. Hydrogen.
- 7 Second Life of Refineries.
- 8 Synthetic Fuels.

Moreover, in its commitment to bolstering scientific and technological prowess, Ecopetrol has formulated a comprehensive development blueprint. This plan encompasses, among other facets, the procurement of cutting-edge equipment and the adaptation of infrastructure, the cultivation of advanced knowledge, the introduction of novel experimental methodologies, and the valorization of experimental data. These endeavors are geared towards effectively and expeditiously confronting the challenges of the Energy Transition, both within the Ecopetrol Group and on a national scale.

Ecopetrol champions process circularity, advocating for the utilization, recycling, and innovative reimagining of products and by-products within the Group's value chain. These practices serve as alternative avenues for fostering sustainable value generation and wealth accumulation. This approach incubates product and process technologies aimed at catalyzing the emergence of new, clean, and decarbonized markets, potentially shaping a novel strategy centered around water as a pivotal asset in the Group's operations and ventures.

Under the Generate Value Through TESG pillar, Ecopetrol has delineated nine (9) strategic challenges, each accompanied by targeted technology and innovation initiatives. These challenges encompass a spectrum of objectives, including methane reduction and flaring in TEAs, socio-economic empowerment of vulnerable communities, energy efficiency enhancement, water management, promotion of sustainable mobility, CCUS implementation, waste management and development of new materials, adoption of Climate Natural Solutions, and 'Net Zero' transmissions. The tangible outcomes of these initiatives underscore their positive impact on key performance indicators, such as:

-  Decarbonization.
-  Water neutrality.
-  Circular economy.
-  Energy efficiency.
-  Impact on territories.

Furthermore, within the experimental domains of the ICP, encompassing both laboratories and pilot plants, Ecopetrol effectively oversees the experimental and analytical procedures necessary for studies and specialized technical assistance (STAs), addressing pivotal challenges in industrial sustainability under the TESG framework. These challenges include enhancing reserves and asset productivity, facilitating the transition to renewable energies, decarbonizing processes across the value chain, integrating circular economy principles, and promoting sustainable mobility nationwide. Additionally, Ecopetrol extends its technical laboratory services to allies, business segments within the Ecopetrol Group, and strategically identified third parties.

Impact on Human Rights

(GRI 3-3) Through its ST+i initiatives, Ecopetrol innovates solutions to tackle the strategic challenges encountered by Ecopetrol Group. These efforts play a pivotal role in advancing the country's decarbonization agenda and fostering a Just Energy Transition, with a steadfast focus on energy security, efficient access to energy sources, environmentally responsible resource management, and the generation of substantial value for all stakeholders involved. By doing so, the Company promotes initiatives that uphold and advance fundamental rights, including environmental preservation, equitable access to energy, and the protection of water rights, among others.



Goals

The primary opportunities in both the short and long term are centered around **four key elements**:

1

Enhancing access to capital for innovation and technology through avenues like technology commercialization, fundraising initiatives, and collaborative partnerships for co-development.

- Advancing the development of sophisticated access mechanisms to solutions that effectively address the Group's challenges while simultaneously fostering advantages in ST+i.

2

Strengthening the establishment of collaborative bridges to co-create solutions with diverse partners and collectively address their strategic challenges.

3

Configuring the scalability potential of technologies through partnerships and innovative business models.

4

Empowering talent and the global network of laboratories to align with the objectives of the Energy Transition.

- Consolidate competitive advantages in delivering ST+i solutions for the Ecopetrol Group's business segments by leveraging expertise in solution design, scalability, and the widespread dissemination of information.
- Establish technological leadership and gaining competitive edges in ST+i solution lines within the Ecopetrol Group's portfolio, spanning areas such as heavy crude, water management, theft prevention, hydrogeology, natural carbon sinks, geological modeling, subsurface exploration, among others.



Benefits and Contributions Achieved

In 2023, significant strides were made in implementing the Group's ST+i Strategy, marked by the execution of technological and innovative projects. These endeavors yielded certified benefits for the businesses, totaling 777.95 million USD. These benefits encompassed various aspects, including augmented revenues from incremental production, reduced deferments, increased yields of naphtha and middle distillates, efficiencies in CAPEX utilization, and heightened productivity. This collective progress propelled Ecopetrol towards its objectives of sustaining production levels, generating EBITDA, and ensuring the operational continuity of the traditional business together with the Energy Transition.

Of the benefits derived from ST+i initiatives in 2023, 56% stemmed from advancements in business technology, 42% from the EG's digital transformation, and the remaining 2% from productivity and process enhancement projects. Moreover, revenue from technology commercialization and tax incentives secured for projects recognized as innovative by the Ministry of Science, Technology, and Innovation contributed to this success.

Figure 6.18.1.
ST+i Investments (MUSD)
(WEF 20)



Additionally, benefits totaling 777.9 million USD were realized in 2023, underscoring the effectiveness of leveraging the EG's Science, Technology, and Innovation Strategy.

In the 2024-2026 investment plan, the shift towards ST+i projects and initiatives in Energy Transition is prominently visible, surpassing investments in the traditional business.

Noteworthy among business technologies is specialized technical assistance aimed at diluting and evacuating heavy crude, coupled with catalyst performance enhancement. Digital technology programs like Integrated Fields, Commercial Management, and the implementation of digital technology and cybersecurity strategy in ISA also play a pivotal role. These endeavors contribute to incremental production and the generation of light oil, bolstering revenue through widened trading margins and fostering efficiencies in CAPEX. This ensures the continued safeguarding of the Group's cash reserves. Furthermore, Cutting-Edge Knowledge technologies are being identified and developed across various organizational initiatives; for instance, applied knowledge of metoceanography in the Orca-1 offshore exploratory project, which delineates the country's gas frontier in the Colombian Caribbean.

In **exploration**, an efficiency model has been devised to mitigate exploratory risk through bio-stratigraphic monitoring and reservoir quality petrographic analysis. This model was implemented in the sandstone reservoirs of the Alqamari-2 well, uncovering a new exploratory target in the western Caguán-Putumayo basin. This discovery makes a lasting contribution to hydrocarbon reserve additions.

Additionally, wells in the Castilla, Apiay, and Chichimene fields were stimulated using in-house developed nanofluids like NanoRPM (Nano Relative Permeability Modifier) and NWW (Water Wetter Nano Wetting Alterator), aimed at reducing water cut and enhancing oil productivity. The resulting production increments from these stimulations certified benefits close to \$26.11 million USD, leveraged within the ST+i framework.

Similarly, a comprehensive characterization of pyrolysis oils from various international and national technologies was successfully conducted to ascertain the suitable oil characteristics for loading into the UOP-II (cracking) unit at the Barrancabermeja Refinery. Building upon the technical framework outlined in the study, industrial trial loading of pyrolysis oil was facilitated, resulting in the production of circular PGR (pyrolysis gasoline), which underwent polymerization to yield the first circular polymer in Latin America. Furthermore, pilot plant pyrolysis studies of plastics and plastic dissolution were undertaken for the Cartagena Refinery to evaluate the impact of contaminants present in the pyrolysis process, with consideration for processing in the delayed coking plant.

In the **refining** sector, alternatives for the utilization and circularity of fossil carbon, a byproduct of petroleum and gas petrochemical processes, were successfully



identified and developed. Notably, one of the primary alternatives identified is the utilization of biochar, which involves employing coke as a means to enhance soil quality. This innovative approach aligns with Ecopetrol's sustainability vision, fostering increased productivity and environmental conservation.

Additionally, alternatives linked to agglomerated materials for building construction were assessed, enabling effective management of a significant volume of coke circularity and establishment of developmental alternatives such as countertops, building facades, tiles, and/or bricks. This initiative has a significant impact on Ecopetrol reducing its carbon footprint and creating opportunities for new markets.



For further insights into Science, Technology, and Innovation initiatives, please refer to the “Cutting-Edge Knowledge” section of this report.

In the **renewable energy** sector, a comprehensive technical-economic analysis was conducted for offshore wind energy generation in the Galerazamba region (First Step) in the Colombian Caribbean. Furthermore, with regard to high enthalpy geothermal energy, the Company developed a 3D natural fractures model, coupled with geophysical methodologies, to delineate prospective zones for geothermal pilot projects in the Botero-Londoño area. Subsequently, through collaboration between Ecopetrol and Hocol, geo-mechanical modeling and well trajectory-state design were executed for exploration wells in the Nereidas area, with each well estimated to have a production potential ranging between 5-7 MWe.

In the exploration of emerging technological solutions for CO₂ utilization, three (3) prototypes were designed, constructed, and installed for evaluation in real-world conditions. These prototypes encompass: (i) aqueous CO₂ mineralization, (ii) aqueous mineralization with

alkalization via electrochemistry, and (iii) bioconversion of CO₂, each with a capacity of two (2) cubic meters. Leveraging insights from laboratory-scale trials, these technologies offer the distinct advantage of directly harnessing gas, potentially yielding high-value products from CO₂ at reduced investment and operational costs.

Under the AQUA project, two (2) pilot tests¹²¹ were effectively conducted to assess the response of diverse plant species to the application of ECONANO nano-fertilizers across varying doses in nursery settings. This advancement propelled the maturity level of ECONANO technology to TRL 5. Results demonstrated that when applied at minimal doses, this technology fosters increased biomass production and significant enhancements in agronomic performance compared to traditional fertilizers, thereby minimizing nutrient loss in leachates—a notable stride in future fertilization practices.

Furthermore, the successful completion of the TPH Polishing pilot test at the Acacias station in the Castilla

field, following 60 days of operation, ensured compliance with water quality standards mandated by environmental regulations for utilization in agroforestry irrigation—a pivotal objective aligning with Ecopetrol’s TESG goals.

As part of the deep aquifer studies project, an Isotopic and Hydro-chemical Model was developed for the Central Sector of the Middle Magdalena Valley. Additionally, hydraulic potential was assessed through intervention at well CSBE-1327, validating a primary research hypothesis and confirming shifts in water quality within the southern sector of the Middle Magdalena Valley aquifer system.

On a different note, the accomplishments of the Econova Innovation Network are noteworthy, having mobilized over \$1.47 million USD, engaged more than 110 stakeholders, created over 120 jobs, accelerated over 30 startups, launched 38 open innovation challenges, and influenced over 800 companies and startups through agreements, workshops, and conferences.

121. One (1) with CENPALMA and another with AGROSAVIA.

A crucial aspect contributing to the success of ST+i initiatives lies in collaborations with the Ecopetrol Group’s key strategic partners. Under the agreement between Ecopetrol and the National Navy, the installation of emissions measurement equipment for combustion gases (O₂, CO, CO₂, NO, NO₂, SO₂) aboard research vessel ARC Simón Bolívar marks a pioneering achievement in the country. Additionally, for the first time, three (3) Ecopetrol officials participated in the Tenth Expedition to Antarctica, coordinated by the Colombian Ocean Commission through the Colombian

Antarctic Program.

Last but not least, the launch of the FACSAT2-Chiribiquete nanosatellite into space for greenhouse gas (CO₂ and methane) monitoring sets a significant milestone for Colombia. This historic feat resulted from the collaboration between Ecopetrol, the Colombian Air Force, the Ministry of Science, Technology, and Innovation, and the Ministry of National Defense, facilitated by the strategic cooperation agreement managed by the ICP.

Key Accomplishments

- Utilized the TESG and digital transformation strategy to enhance commercial and logistical processes, resulting in improved response times, centralized information, reduced margin of error, and automated reporting within Ecopetrol’s national operations through “STORM,” a pivotal platform for the EG’s international marketing expansion.
- Contributions were made to cultivate a more efficient and profitable supply chain by refining integrated operational scheduling decision-making processes. This encompassed heightened anticipation in decision-making (pertaining to purchases, sales, and logistics), reduced logistics costs, optimization and management of hydrocarbon inventories, information synergies, and optimization of proprietary gas sourcing and utilization.
- The Moriche, Jazmín, and Nare Sur fields underwent a transition to the new technological era in networks via the Evolution IT/OT project, entailing technological revitalization¹²². This facilitated the establishment of a robust, secure, reliable, scalable, and high-speed network, thereby bolstering current operations and equipping Ecopetrol to tackle emerging technological challenges.
- Streamlined supplier registration processes, manual order handling, and notification timing for categorized purchase orders through a unified portal, namely the SAP ARIBA project, facilitating seamless communication between suppliers and Ecopetrol.
- Established a knowledge management portal to foster the exchange of lessons learned and best practices in drilling and completion processes. Standardized of estimating times and costs, as well as well design and drilling campaigns, through the implementation of the ‘Well Cost’ module within the ‘Well Digital Planning’ project.

122. Dynamic segmentation, network equipment renewal, among others.



Ethics and Transparency

(GRI 3-3) (ECP 019) Ecopetrol acknowledges that ethics and transparency are essential for the successful development of sustainable businesses and for addressing the challenges outlined in the fulfillment of the 2040 Strategy. Ecopetrol's Comprehensive Policy establishes the principles governing the organization's behavior in all its processes and unequivocally condemns any actions that contradict these principles.

(DJSI 1.5.2) Furthermore, one of the guiding principles of Ecopetrol's Culture Declaration is "Always Ethical,"

emphasizing the importance of integrity in all decisions and daily activities undertaken by the Company's Board of Directors, Senior Management, employees, and partners. In line with this ethos, Ecopetrol has identified the risk of "ethical and compliance violations" in its Enterprise Risk Map and has implemented measures to prevent unethical behavior and promote responsible work practices and business conduct.

In this context, Ecopetrol has developed several key guidelines and initiatives, including:



[Ecopetrol's Comprehensive Policy.](#)



[Code of Ethics and Conduct.](#)



[Compliance Program.](#)

Through these initiatives, Ecopetrol fosters an ethical and transparent culture, which serves as a cornerstone for ensuring sustainability and continuous growth, effectively managing compliance risks¹²³, and nurturing trust-based relationships with its Stakeholder Groups. These efforts align with current legal standards, best practices in corporate governance, and a commitment to respecting human rights.

123. Fraud, corruption, bribery, conflicts of interest, ethical conflicts, theft, money laundering, financing of terrorism, financing of the proliferation of weapons of mass destruction, and violations of the FCPA law, among others.

For further information regarding Ecopetrol's Cultural Declaration, please click on the following [link](#).

For additional details on ethics and compliance regulations, click [here](#).



● Impact on Human Rights

(GRI 3-3) Ecopetrol recognizes that upholding ethical and transparent practices fosters the respect for human rights, thereby positively influencing rights such as personal integrity, privacy, data protection, freedom of expression, equality, and non-discrimination within its operations. Through this commitment, the Company aims to safeguard the rights of individuals from any infringements while also protecting the interests of both the Company and its diverse Stakeholder Groups.

(DJSI 1.5.2)

Ecopetrol affirms its dedication to human rights through its Code of Ethics and Conduct. It unequivocally denounces any form of discrimination that undermines the dignity and well-being of individuals, actively promoting adherence to both national and international standards governing human rights.

Goals

Short Term (2024-2027)

- Enhance the role of integrated risk management as a strategic tool supporting business areas and as a foundational element in risk-informed decision-making processes.
- Further advance the development of automated routines to streamline processes and enhance preventive measures, with the goal of effectively preventing or mitigating risks and reinforcing the Internal Control System within business operations.
- Foster environments of trust and credibility related to compliance matters amidst the challenges posed by the Just Energy Transition, decarbonization efforts, and the adoption of clean and low-emission energy frameworks.
- Strengthen corporate governance in compliance functions across the Group's subsidiaries.
- Develop a regulatory roadmap to obtain the certification in ISO 37001:2016 for anti-bribery management systems.
- Encourage active engagement of employees and other Stakeholder Groups in collective initiatives aimed at fortifying ethical culture, enhancing risk management practices, ensuring compliance, and promoting excellence.
- Implement automated routines for data analysis and information dissemination within a robust data governance framework.
- Transition to an automated process for generating proactive alerts leveraging counterpart segmentation matrices and utilizing statistical and Machine Learning tools.
- Expand the compilation of information associated with observations, findings, improvement plans, and lessons learned from audits and performances conducted by the Office of the Comptroller General (Contraloría) to encompass the entire EG.
- Streamline the recovery process of funds disbursed by related parties and/or insurers, pursuant to fiscal liability rulings by Office of the Comptroller General where Ecopetrol has been an affected entity, by consolidating efforts with the National Treasury Directorate.
- Implement technological advancements for monitoring and ensuring compliance with improvement plans at the EG level, in alignment with the tools provided by the Office of the Comptroller General.

Medium Term (2027-2030)

- Conduct assessments to gauge the effectiveness of preventive measures and make adjustments as needed.
- Establish Ecopetrol as a leader in ethical and compliance best practices at both national and international levels.

Long Term (2030-2040)

- Continuously enhance Ecopetrol's regulatory framework for ethics and compliance, including the Code of Ethics and Conduct, to align with national and international standards¹²⁴.
- Evaluate the efficacy of preventive ethics and compliance management by implementing an integrated system of automatic monitoring alerts and fostering ongoing improvement of the compliance program.
- Review the compliance program cycle, which includes normative decision-making, internal policy development, and continuous improvement efforts.
- Sustain Ecopetrol's positioning as a standard-bearer for ethical and compliance excellence on both domestic and global stages.



124. This is a goal projected for continuous improvement both in the medium and long term.

Code of Ethics and Conducts

(GRI 2-23) (GRI 415-1) (GRI 11.22.2) (DJSI 1.5.2) (DJSI 1.6.1) (DJSI 1.6.2) Ecopetrol's Code of Ethics and Conduct serves as a comprehensive set of guidelines defining the expected behavior standards for its employees and other Stakeholder Groups. These standards are rooted in the ethical principles of integrity, responsibility, respect, and commitment to life.

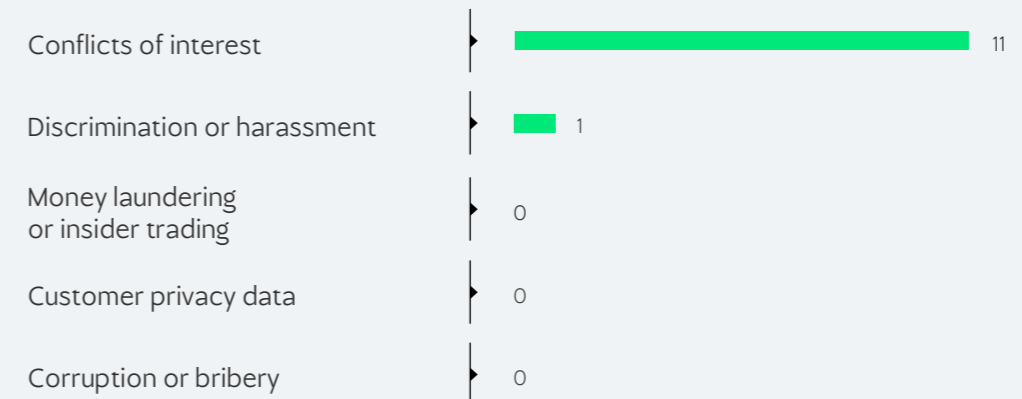
(DJSI 1.5.2) The Company adheres to a "zero tolerance" policy towards corruption, fraud, bribery, money laundering, financing of terrorism, support for illegal groups, construction and/or proliferation of weapons of mass destruction, or any violation of national or international regulations.

(DJSI 1.5.2) (DJSI 1.5.3) (DJSI 1.6.1) (DJSI 1.6.2) Furthermore, practices

influenced by conflicts of interest and ethical considerations are strictly forbidden. This includes any actions that hinder fair, free, loyal, and objective competition, as well as facilitation payments, political contributions and donations, diversion of funds meant for social investment, or sponsorships for political or unrelated activities not aligned with Ecopetrol's established objectives.

(SASB EM-EP-510a.2) The Company conducts thorough due diligence processes prior to establishing any partnerships, ensuring the establishment of sound business conduct principles in its commercial relationships. Additionally, it requires substantial documentation to verify the ethical behavior of its partners and mandates the adoption of procedures and policies to ensure their proper conduct.

Figure 6.19.1.
Violations of the Code of Ethics and Conduct
(DJSI 1.5.5)



It is incumbent upon all recipients¹²⁵ of Ecopetrol's Code of Ethics and Conduct to thoroughly understand and internalize its provisions.

125. The recipients of this Code encompass members of Ecopetrol's Boards of Directors and employees, along with all individuals or entities, whether natural or legal, who maintain any form of association with Ecopetrol or its Group. This includes beneficiaries, shareholders, contractors, suppliers, agents, partners, clients, allies, bidders, as well as the personnel and firms engaged by contractors for the fulfillment of agreed-upon activities.

Compliance Program and Preventive Measures

(GRI 2-24) (ECP 020) The Compliance Program, anchored by the Code of Ethics and Conduct, encompasses a comprehensive set of actions, guidelines, procedures, and best practices adopted by the EG to identify and assess the risks it encounters in pursuit of its corporate objectives, with the goal of establishing relevant mechanisms for prevention and control. The program adheres to national and international laws, regulations, guidelines, and best practices in combating corruption, fraud, bribery, money laundering, terrorism financing, and the proliferation of weapons of mass destruction (AML/CFT/WMD).

The objectives of the program are as follows:

- 1 To cultivate an ethical culture within the Company, guided by the principles outlined in the Code of Ethics and Conduct.
- 2 To identify and mitigate the Company's compliance risks while ensuring effective controls.
- 3 To facilitate the proper execution of processes necessary for business development, thereby averting risks stemming from control deficiencies.
- 4 To bolster the achievement of the Group's strategic objectives and ensure the integrity of financial statements.
- 5 To inspire confidence among all Stakeholder Groups and the general public.

(GRI 2-23) The Board of Directors bears the responsibility of ensuring the effectiveness of internal control and risk management systems, as well as fostering and reinforcing an ethical and transparent culture to prevent and mitigate compliance risks.

(SASB EM-EP-510a.2) The Manual for the Prevention of AML/CFT/WMD Risks outlines the procedure for acquiring counterpart knowledge, delineating due diligence actions and warning signs. Similarly, the Guide for Compliance Risk Prevention in Ecopetrol S.A.'s New Business Process provides directives for conducting due diligence on new business ventures, including mergers, acquisitions, investments, joint operation agreements or bids, and divestments, among others.

Conversely, Ecopetrol incorporates contractual clauses with its counterparts, wherein one of the ethics and transparency obligations entails the Company's entitlement to conduct administrative, financial, operational, or compliance audits on the counterpart and any third party providing services related to the purpose of the contract. This encompasses reviewing pertinent information to verify compliance with anti-bribery laws, the Code of Ethics and Conduct, and Ecopetrol's ethics and compliance guidelines. Furthermore, third parties engaging in commercial relationships with the Company commit to complying with national and international ethical and compliance standards and acknowledging and respecting Ecopetrol's Code of Ethics and Conduct through contractual clauses and formats.

Ecopetrol also delivers due diligence training to its employees, contractors, partners, suppliers, and associates.

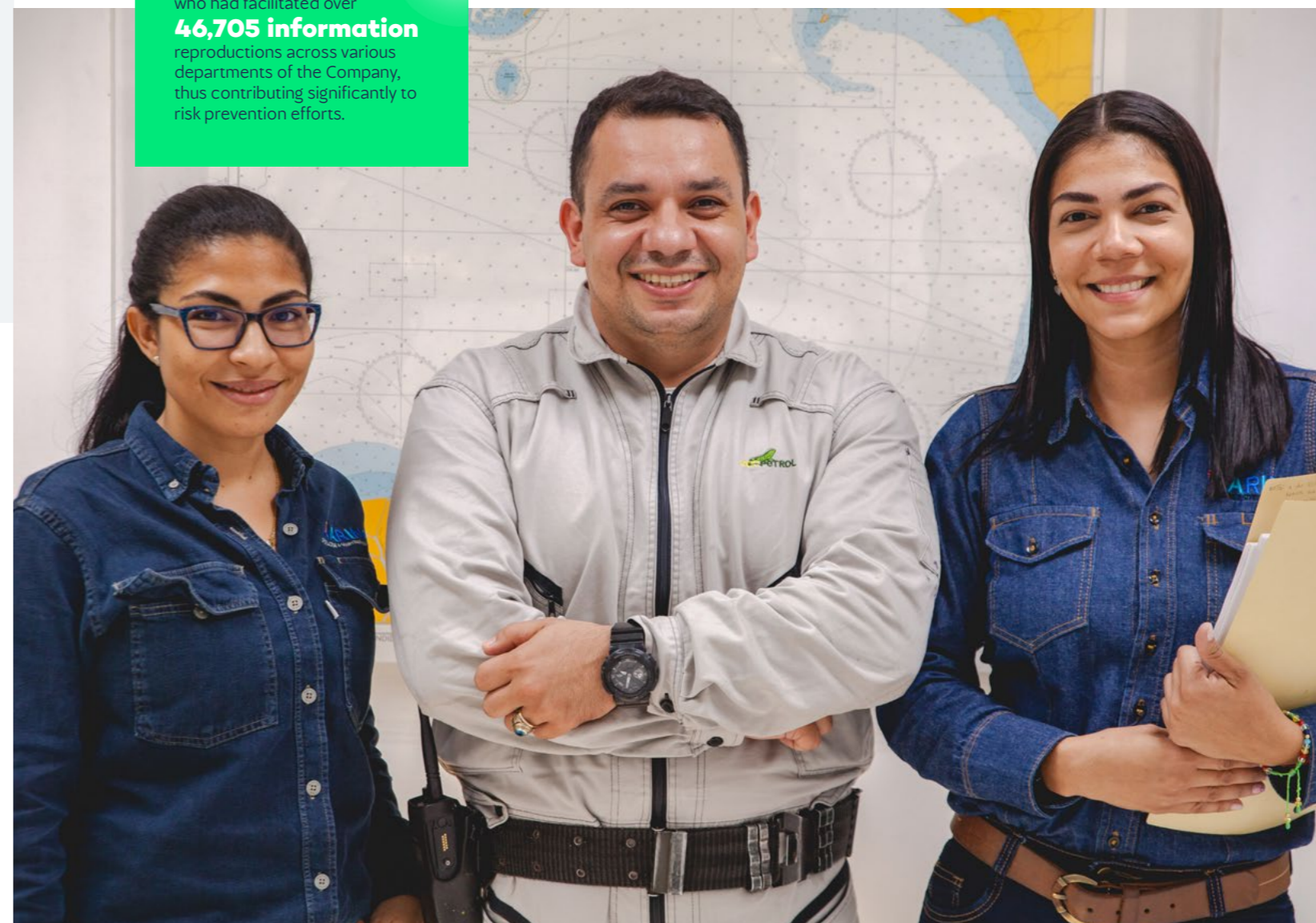
Moreover, Ecopetrol has established a **network of ethical mentors** to encourage exemplary ethical conduct, elevating this

recognition to exceptional employees in each area for their leadership and ethical conduct.

Ethical mentors, pivotal in supporting the Compliance Program, play a vital role in disseminating, encouraging, and reinforcing the internalization of

ethical guidelines at Ecopetrol. They are also tasked with communicating, training, and promoting the use of the ethics hotline¹²⁶, as well as addressing complaints and grievances while offering guidance to employees on compliance with the Code of Ethics and Conduct.

By the end of 2023, Ecopetrol boasted **71 ethical mentors** who had facilitated over **46,705 information reproductions** across various departments of the Company, thus contributing significantly to risk prevention efforts.



126. To learn more about the ethics hotline, please refer to Mechanisms for Ethical Counseling and Concerns.

(GRI 2-24) Considering its standards and behavioral expectations from suppliers, contractors, and partners, Ecopetrol conducts training and disseminates information to ensure the proper assimilation of ethical principles, thereby reinforcing the Company's preventive measures against risks associated with its business relationships.

(GRI 2-24) (GRI 205-2) (GRI 11.20.3) (WEF 4)
In 2023, Ecopetrol disseminated communication pieces and newsletters to all of its contractors, suppliers, and partners, covering the following subject areas:

- Code of Ethics and Conduct.
- AML/CFT/WMD.
- Fraud.
- Ethics hotline.
- Risks.

(GRI 2-23) (GRI 2-24) (GRI 205-2) (GRI 11.20.3) (WEF 4-1) The Executive Committee of Ecopetrol underwent training on topics related to ethical and transparent management. The training covered:

- Labor disconnection law.
- Irregular management of contractor resumes.
- Disciplinary control reform at Ecopetrol.
- Petition rights.
- Audits conducted by the Office of the Comptroller General of the Republic.
- Results of the Ethical Leadership Tour.
- Recognition of ethical mentors.

Furthermore, the Company provided training and educational materials on topics related to the Code of Ethics and Conduct, the Compliance Program (including sexual harassment), conflicts of interest, AML/CFT/WMD, rejection of discrimination, and human rights to over 3,500 suppliers and contractors, resulting in 5,847 recipients.



● Anti-Corruption and Citizen Service Plan

(GRI 205-1) (GRI 11.20.2) (DJSI 1.5.2) (DJSI 1.5.3) Aligned with its Code of Ethics and Conduct, and in adherence to Article 73 of Law 174 of 2011, Ecopetrol devised its Anti-Corruption and Citizen Service Plan to bolster corporate governance in mitigating associated risks. The plan's methodology encompasses the following components:



Corruption Risk Management - Corruption Risk Map.



Mechanisms for enhancing citizen service.



Mechanisms for transparency and information access.



Streamlining of procedures.



Accountability.



Additional initiatives.

As part of the 2023 process risk management cycle, significant compliance risks related to corruption, fraud, and bribery were identified and evaluated across all Ecopetrol operating locations and physical facilities.

Table 6.19.1.
Operations Evaluated in 2023 Associated with Corruption Risks
(GRI 205-1) (GRI 11.20.2)

Number of operations evaluated associated with corruption risks	45
Percentage of operations evaluated associated with corruption risks	100

This exercise identified 75 risks related to corruption and bribery, as well as 129 related to fraud. The primary corruption risks identified include:



Irregularities in the procurement management of goods and services.



Conflicts of interest among participants and/or outsourced support in contract management.



Inadequate handling of commercial negotiations with counterparts.



Receiving gifts, courtesies, or hospitalities that are or may be perceived as bribery.

For further insights into the anti-corruption strategy and the quarterly assessments conducted in 2023, please scan the QR code provided.







Mechanisms for Counseling and Ethical Concerns

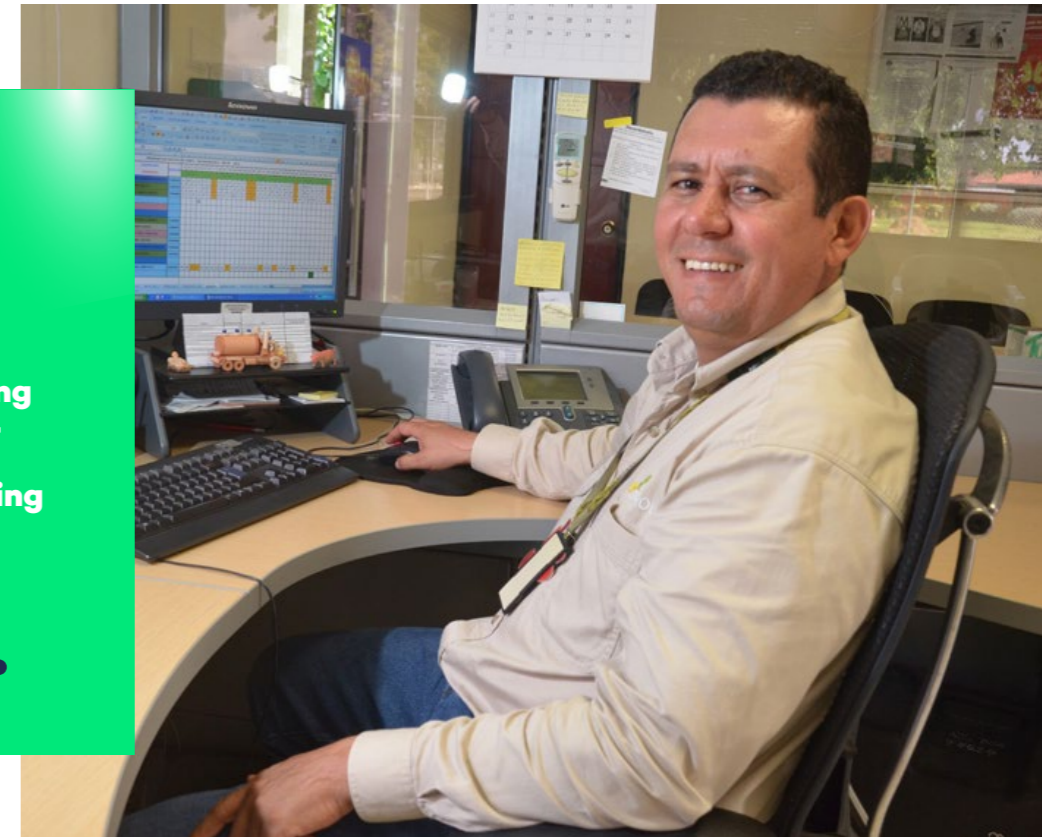
(GRI 2-25) Within the framework of its Comprehensive Policy and Corporate Bylaws, Ecopetrol publicly commits to cooperating with oversight bodies in situations that violate or disregard the requirements established in the Code of Ethics and Conduct. This commitment is further strengthened by the provisions of the Human Rights Guide, which stipulate that in situations where Ecopetrol has caused or contributed to causing adverse impacts on human rights, it shall provide corresponding compensation or remediation through available operational complaint mechanisms or within the framework of any other legitimate process.

Based on these principles, Ecopetrol establishes and provides Stakeholder Groups with the necessary mechanisms and platforms to communicate their expectations, grievances, and needs. This ensures a substantive and timely response to petitions, complaints, claims, and suggestions (PQRS) received.

Table 6.19.2.
Channels for Submitting Complaints and Claims

Stakeholder Groups	Channels for Submitting Complaints and Claims
 Employees, early retirees, retirees, and their beneficiaries (EMP)	<ul style="list-style-type: none"> Human Rights Commission under the Current Collective Labor Convention. Business Partner (BP) designated for each business unit. Citizen Participation Offices (CPOs) Email: quejasysoluciones@ecopetrol.com.co Work Coexistence Committee Health Hotline: National Toll-Free Line / Medical Advisory Line: 018000915556 (available 24/7) Bogotá Line: 2344333 <ul style="list-style-type: none"> Ethics Hotline Website: http://lineaetica.ecopetrol.com.co International Line (International Toll-Free Prefix): 018009121013 National Line in Bogotá: 2343900 or Extension 43900 for Ecopetrol employees. Ethics and Compliance Office, located in Ecopetrol's main building in Bogotá. Ethical mentors available nationwide.
 Suppliers, contractors, and their employees (PRO)	<ul style="list-style-type: none"> Telephone Line 2345000 Option 3 for Ecopetrol suppliers and contractors Bogotá Line: 2344333 Email: relacionamiento.proveedores@ecopetrol.com.co Supplier Meetings
 Society and community (SC)	<ul style="list-style-type: none"> Environmental professionals for ongoing engagement with communities and local authorities in all operating areas. Online form available to submit requests, complaints, and claims. Email: participacion.ciudadana@ecopetrol.com.co quejasysoluciones@ecopetrol.com.co Corporate Call Center. National toll-free phone line: 018000 918418 Service brigades. Offering personalized service in municipalities without the Company's permanent presence. Teleiguanas. Telephone booths directly connected to the corporate call center. Personalized service offices located in different municipalities across the country.
 Customers and partners	<ul style="list-style-type: none"> Line 2345000 Option 1 Environment Committees and/or Committees acting on their behalf.

(ECP 022)
During 2023, a total of 55,681 PQRS
were handled, comprising 38,817 petitions, 16,864 complaints, and 644 congratulations, resulting in a timely response rate of 99.96%¹²⁷.



Additionally, the Company monitored 18 dissatisfaction areas and generated 12 improvement plans, in collaboration with the responsible process areas, with 290 actions completed in due time.

(GRI 2-26) (WEF 5) Finally, Ecopetrol operates an ethics hotline that is publicly accessible and confidential, enabling the reporting of any situation involving a worker or recipient of the Code of Ethics and Conduct that may constitute a violation. This facilitates the early detection of issues and the implementation of preventive measures against potential ethics- and transparency-related risks. The hotline also handles inquiries pertaining to compliance risk prevention.

The ethics hotline is operated by an independent international company, thus ensuring transparency in the processes, and is available 24/7 in Spanish, English, and Portuguese for workers, contractors, suppliers, customers, partners, business associates, and other third parties. Reports received are analyzed in accordance with the Management Procedure for Ethics and Compliance Matters.

In 2023, Ecopetrol processed 513 dilemmas¹²⁸ and 884 inquiries¹²⁹ through the ethics hotline.

For further details about Ecopetrol's ethics hotline, scan the QR code provided.



¹²⁷ 20 cases were addressed beyond the legal terms.

¹²⁸ These are inquiries that may arise among recipients of the Code of Ethics and Conduct concerning its principles and guidelines. They serve the purpose of offering guidance to prevent involvement in inappropriate actions that contravene the Company's ethical standards.

¹²⁹ These inquiries pertain to due diligence procedures linked to the prevention of fraud, corruption, bribery, money laundering, terrorism financing, and violations of the FCPA (Foreign Corrupt Practices Act). By addressing these inquiries, potential red flags related to contractors, suppliers, partners, or employees, among others, are examined, and recommendations are provided to mitigate any identified risks.

(GRI 2-26) (GRI 205-2) Ecopetrol affirms its **zero-tolerance policy towards any form of retaliation** against individuals who utilize the provided channels to report any ethics- and transparency-related concerns. To ensure adherence to this policy, the Company assures:



Anonymity.



Confidentiality of information.



Data protection.



Ability to track the report.



Timely response to ensure reliability and security.



The Company actively encourages the use of the ethics hotline through training sessions, workshops, distribution of communication materials, and tailored streaming sessions for its diverse Stakeholder Groups. **In 2023, these outreach efforts covered 100% of the target population.**

(GRI 2-27) (GRI 205-3) (GRI 206-1) (GRI 11.19.2) (GRI 11.20.4) (DJSI 1.4.7) (WEF 4-1) (WEF 5E) None of the ethical and compliance issues investigated in

2023 were linked to bribery, facilitation payments, violations of the FCPA¹³⁰ (Foreign Corrupt Practices Act), financial fraud, breaches of social or economic laws or regulations, unfair competition, monopolistic practices, actions against free competition, or any events impacting the accuracy or integrity of the Company's financial statements. Similarly, neither Ecopetrol nor its representatives faced sanctions or investigations by external authorities associated with corruption, bribery, fraud, or FCPA violations.

130. This is the Foreign Corrupt Practices Act enacted in the United States, which aims to prevent corporate corruption by acts committed outside its territory by individuals or entities with ties to that country.

Conflicts of interest

(GRI 2-15) (DJSI 1.5.2) (SFC 7.4.1.3.1.viii) Ecopetrol's Corporate Bylaws, the Good Governance Code, the Internal Regulations of the Board of Directors, the Code of Ethics and Conduct, and the Instructions for the Management and Prevention of Conflicts of Interest and Ethical Conflicts establish internal procedures for the management, administration, and resolution of situations related to the conflict of interest regime.

Members of the Board of Directors, the CEO, and employees of Ecopetrol are obligated to disclose any conflict situations they encounter. Similarly,

they must report any direct or indirect relationships they hold with Ecopetrol, other companies within the Group, suppliers, customers, or any other Stakeholder Groups that could give rise to conflicts of interest or affect decision-making and the fulfillment of their duties. To facilitate reporting, specific formats have been defined, including the Related Parties Declaration, Conflict of Interest, and Independence of Board of Directors Members (ICS-F-012), and the Declaration of Conflicts of Interest, Ineligibilities, and Incompatibilities (ICS-F-014) for other employees.

To consult the Instructions for the management and prevention of conflicts of interest and ethical conflicts, please scan the following QR code.



Ecopetrol's guidelines on conflicts of interest apply to bidders, contractors, suppliers, customers, partners, and stakeholders through the Code of Ethics and Conduct, contractual clauses, and applicable formats.



In the event that an Ecopetrol **administrator**¹³¹, including members of the Board of Directors, find themselves in a conflict of interest situation, they must adhere to the mentioned procedures, in addition to complying with the provisions of the 7th paragraph of Article 23¹³² of Law 222 of 1995. This includes disclosing the conflict of interest to the Board of Directors and abstaining from involvement in the matter, with such actions being documented in the corresponding minutes. They are also required to periodically subscribe to and update, as necessary, the format established by the Corporate Compliance Vice Presidency for reporting conflict situations or any other circumstances that may compromise their objectivity or independence in decision-making or in the fulfillment of their duties.

In situations involving a non-managerial **employee**, they are required to inform their immediate supervisor in writing about the conflict situation and provide a copy to the Corporate Management of Ethics and Compliance. During contractual procedures, the disclosure should also be sent as an informational copy to the designated authorized official. The immediate supervisor has the authority to determine whether or not a conflict exists, and this decision must be documented in writing and reported to the Management of Ethics and Compliance for assessment and oversight.

If there are potential conflict situations with **counterparts**, they must be brought to the attention of the designated authorized official or their equivalent, who will analyze the situation and provide a written and reasoned response, resolving the issue and implementing necessary mitigation measures. Furthermore, a copy will be forwarded to the Corporate Management of Ethics and Compliance. If necessary, a consultation may be escalated to the aforementioned Management, who will offer guidance before making a decision.

The Corporate Compliance Vice Presidency utilizes a matrix of related parties to monitor potential conflicts. This includes adhering to Chapter 3.2.7 of the Business Group's Accounting Policies Manual, which delineates the determination and disclosure requirements for related parties in both separate and consolidated financial statements, along with the responsibilities and procedures for their identification and disclosure.

Consequently, all disclosures of potential conflicts identified by the Corporate Compliance Vice Presidency in 2023 were managed in accordance with the established protocol and continue to be monitored and followed up on to this date.



Table 6.19.3.
Number of Reports Regarding Potential Conflicts of Interest Submitted

2021	176
2022	143
2023	107

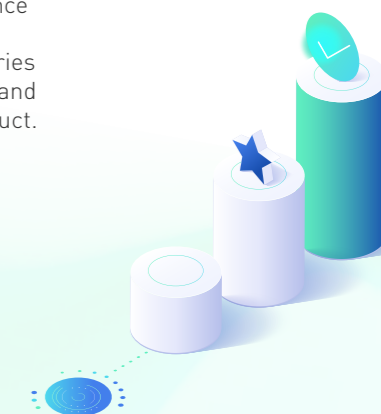
131. Authorized officials involved in procuring goods and services at Ecopetrol include both procurement personnel and requesting officials empowered to submit procurement requests. This is outlined in Ecopetrol S.A.'s Procurement Manual.

132. The provision states, "Refrain from participating, either personally or through a third party, in activities that involve competing with the company or engaging in acts where there is a conflict of interest, unless expressly authorized by the shareholders' meeting or general assembly of shareholders."

Key Accomplishments

(GRI 205-2) (ECP 020) (WEF 4)

- The Board of Directors approved the Anti-Corruption and Anti-Bribery Manual as well as the Anti-Fraud Manual. These documents adhere to the relevant national and international standards applicable to Ecopetrol and integrate industry best practices, including guidelines outlined in ISO 37001:2016 (anti-bribery management) and ISO 37301:2021 (compliance management system).
- Implemented training initiatives to foster an ethical culture within the Company, covering courses on Ecopetrol's Code of Ethics and Conduct, internal control, anti-corruption and anti-bribery management, Integrated Risk Management System, fiscal control, relationship with the General Comptroller of the Republic, and risk management and internal control, with a total of **10,842 completions**.
- In 2023, we achieved a perfect score of 100 points in the Dow Jones corporate ethics component.
- Handled 1,399 dilemmas and inquiries promptly and preventively, resulting in a 31% increase in the use of the ethics hotline as a preventive measure.
- Conducted seven (7) workshops with the community on the Code of Ethics and Conduct and the Compliance Program in the Caribbean (Cartagena), Central (Bucaramanga, Barrancabermeja, and Puerto Wilches), and South (Orito and Puerto Caicedo, Piedemonte) regions, with the participation of 179 people.
- 11,443 connections were made through e+ Talks on topics associated with conflicts of interest, bribery, corruption, human rights, organized crime, AML/CFT/RPFM risk management, due diligence, information leakage, fraud, and gifts, courtesies, and hospitalities.
- Fully trained ethical mentors, who disseminated information in their respective areas, supporting the preventive plan with over 46,705 interactions.
- Designed and distributed **53 communication pieces**, resulting in **440,683 electronic receptions** on topics associated with ethics and transparency.
- Conducted the second edition of the 2023 Prevention Strategy - Ethics Tour. During its implementation, Ecopetrol employees, subsidiaries, and EG suppliers received training on topics related to conflicts of interest, the Code of Ethics and Conduct, ethical principles, self-control systems, AML/CFT/RPFM risk management, diversity and inclusion, guidelines for gifts, courtesies, and hospitalities, human rights, among others. This resulted in a total of **10,726 interactions with Ecopetrol workers, 4,600 with subsidiary workers, and 4,500 with EG suppliers**.
- Implementation and assurance of the corporate compliance function in the new subsidiaries of the Compliance Program and the Code of Ethics and Conduct. For example: Ecopetrol US Trading, Econova.



07

Annual Corporate
Governance Report



In accordance with the provisions established in the Bylaws and the Good Governance Code, Ecopetrol's Board of Directors presents its shareholders with the annual report on compliance with corporate governance practices during the year 2023 at the General Shareholders' Meeting.

This report, in line with the recommendations of the Corporate Best Practices Code of Colombia, commonly known as the Country Code, is divided into **eleven chapters** as follows:

- | | |
|--|--|
| 1 Corporate governance model in the Ecopetrol Group | 7 Transactions with related parties |
| 2 Ownership structure of Ecopetrol | 8 Conflicts of interest |
| 3 General Shareholders' Meeting | 9 Dispute resolution mechanisms |
| 4 Board of Directors and its committees | 10 Information transparency, flow, and integrity |
| 5 Selection, development, and remuneration of Senior Management ¹³³ | 11 Shareholders' and investors' claims |
| 6 Control environment | |

To consult the applicable Code of Regulations, scan the following QR code.



133. The Financial Superintendence of Colombia defines them as individuals occupying the highest echelons of authority within the administrative or corporate realm of a company. They bear the responsibility for the routine management of the company's operations, overseeing the formulation, execution, and supervision of its objectives and strategies. This encompasses roles such as the corporate or general secretary, as well as the internal auditor.

1 The Corporate Governance Model in the Ecopetrol Group

Corporate Governance Model

Please refer to the "Corporate governance structure" chapter in the Integrated Management Report.

7.1.2. Key Corporate Governance Milestones in 2023

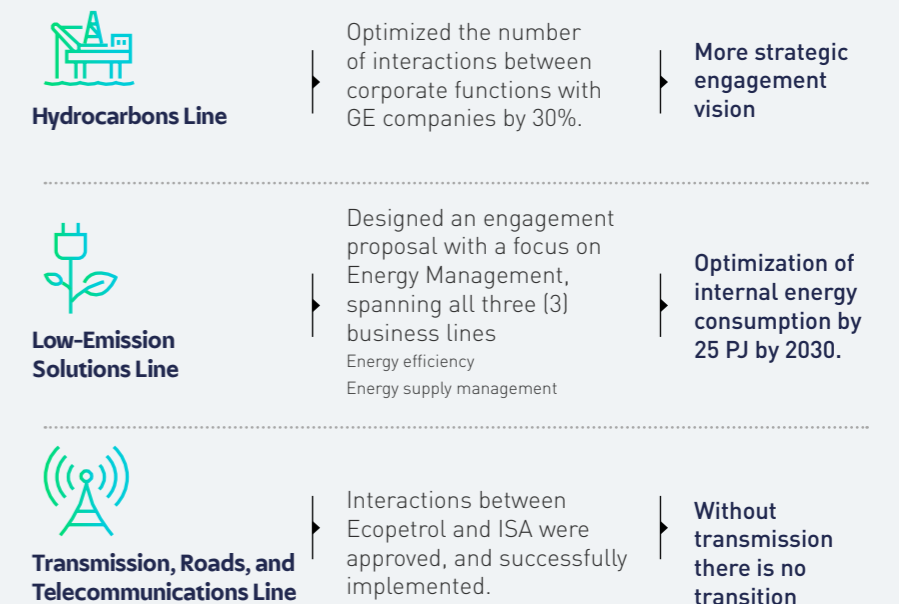
Throughout 2023, decisions were made within the framework of the corporate governance model to advance towards the objectives outlined in the Group's 2040 Strategy, with a focus on value creation and sustainability.

The following are the main milestones achieved in corporate governance:

Evolution of Ecopetrol's Engagement Model with Companies within the Ecopetrol Group

In 2023, the EG's Engagement Model underwent transformation towards a more strategic approach to interactions, aligning with the objectives of the 2040 Strategy. This resulted in a more agile, impactful, and cross-cutting model spanning the three (3) business lines that constitute the Group.

Figure 71.
Evolution of the Ecopetrol Group's Engagement Model in 2023



7.1.2.2. Alignment of Strategic Subject Areas in Business Line Committees and the Executive Committee within the Senior Management Committee Structure

For Ecopetrol, the Senior Management Committees (SMCs) serve as collegiate bodies that act as a management tool to assist the CEO of Ecopetrol S.A. in his duties, ensuring the proper fulfillment of its corporate purpose and the objectives of the Group. Among the SMCs are the Business Line Committees: Hydrocarbons, Low-Emission Solutions and Transmission, Roads and Telecommunications, and the ExCo, among others.

In 2023, the Business Line Committees: Hydrocarbons, Low-Emission Solutions and Transmission, and Roads and Telecommunications began their operations for the first time. These fora serve to monitor objectives, strategic issues, and business projections. Since their inception, these committees have played a pivotal role in managing and diversifying the Group's businesses. As evidence, 78% of the topics discussed in the Business Line Committees were aligned with the four (4) pillars of the 2040 Strategy "Energy That Transforms," reflecting their alignment with the subject areas addressed by the ExCo:

Figure 7.2.
Percentage of topics for each pillar of the strategy in the Executive Committee

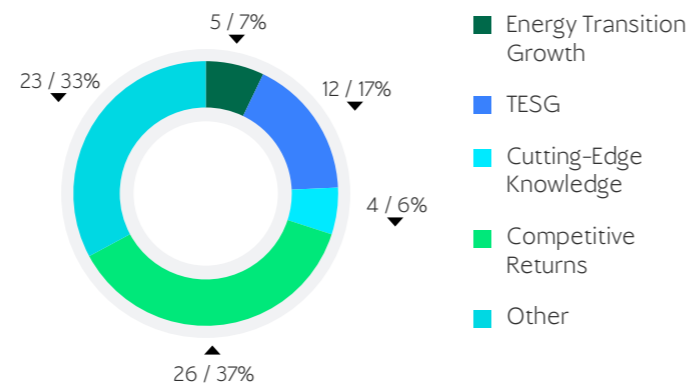
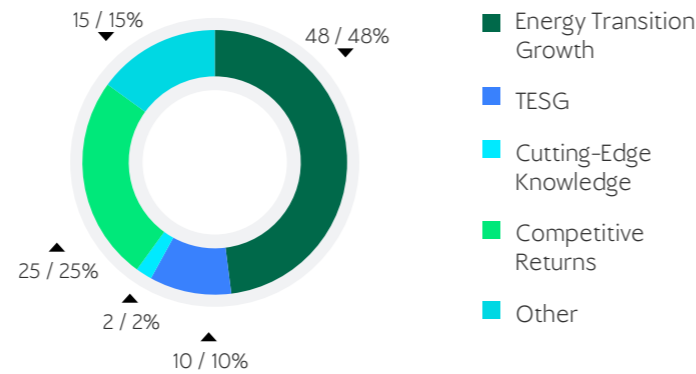


Figure 7.3.
Percentage of topics for each pillar of the strategy in the Business Line Committees



Training Plan for Corporate Governance Leaders in the Ecopetrol Group

The Corporate Governance and Board Leadership Training Program for 2023-2024 acknowledges Ecopetrol's responsibility to provide high-level training and furnish the necessary tools for leaders and directors to effectively fulfill their roles within the governance bodies, where the most pivotal decisions for the future of the EG are deliberated.

This program forms part of a comprehensive training plan tailored for both the directors of Ecopetrol's Board of Directors and the directors of the Boards of Directors of EG companies. Each group is segmented to address specific focuses according to their unique characteristics and needs.

Launch and Implementation of the Community of Directors and Secretaries of Ecopetrol Group Boards of Directors

In the latter half of 2023, the training plan for directors and general secretaries of the Group's subsidiary companies was put into action. Its aim was to promote advanced knowledge in corporate governance practices, effective board management, energy transition, TESG, among other topics pertinent to boards of directors. This initiative is deemed crucial for fostering coherence and adherence to the unified purpose and direction, which derives from the strategic guidance provided by Ecopetrol's Board of Directors.

succeed board directors. Leaders with potential were identified based on objective criteria, and they were subsequently offered enrollment in the training program.

For Ecopetrol as the parent company and leader of the Group, placing experienced and well-trained directors on the boards of subsidiary companies is crucial. In 2023, the program certified 66 leaders. Over the past two (2) years, a total of 100 leaders from various Group companies have been certified through the "Ecopetrol Group Boards of Directors" program.

This plan facilitated the formal training of both current board members and potential talents who, based on their skills and performance, could potentially assume board roles in the future. In line with this initiative, in 2023, the Corporate Affairs Vice Presidency and General Secretariat, with the support of the Human Resources Corporate Vice Presidency (VTH), identified a map of potential talents for the second consecutive year to

The directors and general secretaries of the Group's controlled companies who have undergone training in the last two (2) years are part of the "Ecopetrol Group Directors Community," a community focused on the training and continuous improvement of directors and Board management.

From the Corporate Governance Model, the Senior Management Committees (SMCs)

are utilized to ensure that these governance bodies serve as a platform for fostering crucial discussions and advancing strategic objectives.

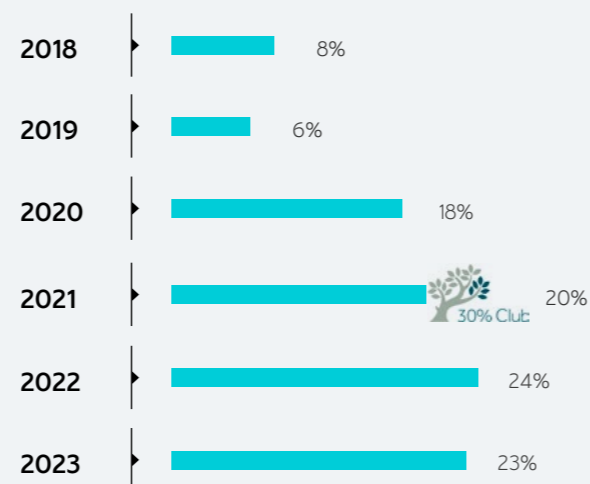




Progress in Diversity Matters in the Boards of Directors of Ecopetrol Group Controlled Companies

In line with the commitment made in 2021 with Ecopetrol's adherence to the 30% Club, the Company continued to promote actions to increase the participation of women on boards of directors as one of the main corporate governance objectives, in harmony with the Company's Diversity and Inclusion program. During this year, Ecopetrol demonstrated progress in the participation of women on the boards of Group companies, which increased from 18% at the end of 2020 to 23% in December 2023.

Figure 7.4.
Progress in the Participation of Women on the Boards of Directors of Ecopetrol Group Companies



Ecopetrol as a Benchmark in Corporate Governance and Best Practices

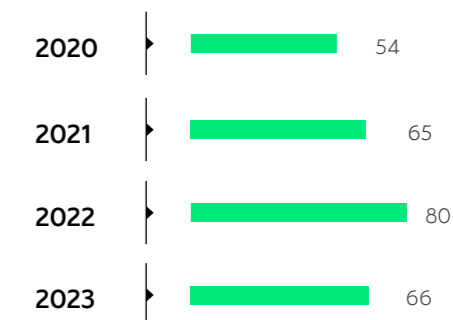
Figure 7.5.
Ecopetrol as a Benchmark in Corporate Governance and Best Practices



Ecopetrol participated in the Corporate Sustainability Assessment (CSA), resulting in the production of a Company Benchmarking Report (CBR) integrated into the Dow Jones Sustainability Index (DJSI). This report analyzes companies' performance on Environmental, Social, and Governance (ESG) issues, as well as their overall sustainability, short-term exposure to associated risks and opportunities, and their capacity to anticipate and adapt.

In 2023, Ecopetrol achieved a total score of **73 out of 100**, positioning itself as one (1) of the three leading companies in the oil and gas sector for sustainability practices according to the DJSI.

With regard to the **economic and governance dimension**, Ecopetrol attained a score of 66/100, placing it in the 98th percentile among companies with the highest performance compared to the oil and gas sector's average of 40/100.

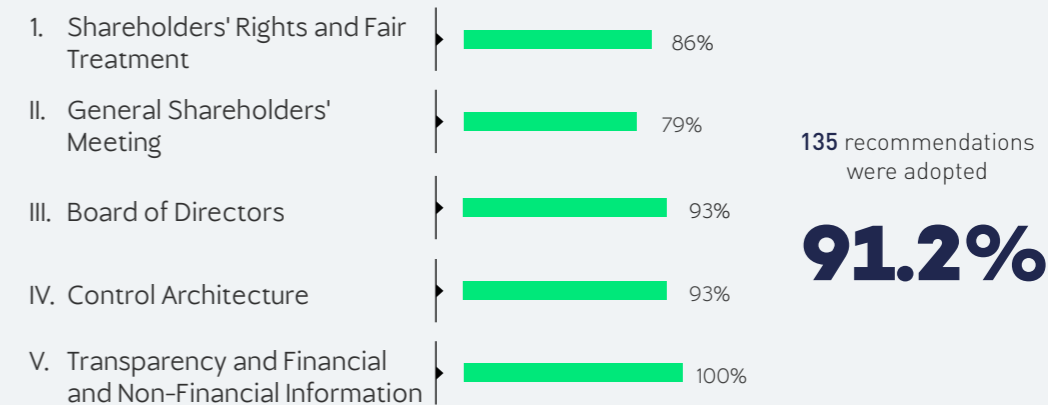


Ecopetrol contributed to the launch of the updated G20/OECD Corporate Governance Principles and participated in the publication of the 2023 edition of the OECD Corporate Governance Factbook for Latin America.



The evaluation on the adoption of the Colombian Corporate Governance Best Practices Code (Country Code), submitted to the Financial Superintendence of Colombia, reflects Ecopetrol's adherence to the recommendations outlined in the Country Code concerning corporate governance practices. In 2023, Ecopetrol embraced 91.2% of the recommendations outlined in the Country Code.

Figure 7.6.
Adoption of the 2023 Country Code



2 Ownership Structure of Ecopetrol S.A.

Capital, Ownership Structure, and Share Composition

Please refer to the "Competitive Returns" chapter of the Integrated Management Report.

Major Shareholders

Please refer to the "Competitive Returns" chapter of the Integrated Management Report.

Share Trading

Please refer to the "Competitive Returns" chapter of the Integrated Management Report.

Relationships of a Family, Commercial, Contractual, or Corporate Nature between Significant Shareholders and the Company, or amongst Significant Shareholders

The "Corporate governance structure" chapter of the Integrated Management Report on "Transactions with Related Parties" and section 8 of this report on "Conflicts of Interest" address the management of relationships of a family, commercial, contractual, or corporate nature between significant shareholders and the Company, or amongst significant shareholders.

Similarly, transactions between EG companies are included in the Group's Special Report, in compliance with Article 29 of Law 222 of 1995, annexed to Ecopetrol's Integrated Management Report.

Share Capital

Please refer to the "Competitive Returns" chapter of the Integrated Management Report.

Shareholders Agreement

In accordance with the commitment incorporated in the Nation's Declaration, as the majority shareholder of Ecopetrol, ratified on February 16, 2018, statutorily adopted and still in force, the Nation must include in the ninth line of its list of candidates (slate), a person designated by the ten minority shareholders with the highest shareholding (shareholders with the highest shareholding). Consequently, whenever Board members must be appointed and elected, such shareholders sign an agreement nominating or endorsing a candidate to join the slate presented by Ecopetrol's majority shareholder for consideration by the General Shareholders' Meeting.

On February 21, 2023, the shareholders with the highest shareholding, namely, six (6) pension fund administrators and stock funds, entered into a shareholders' agreement and nominated Juan José Echavarría Soto as a candidate to join the Board of Directors, who was included as an independent member in the ninth line of the slate submitted for consideration by the General Shareholders' Meeting at the ordinary meeting on March 30, 2023.

In compliance with the provisions of Article 43 of Law 964 of 2005, Ecopetrol informed the market about the agreement signed among its shareholders.



3 General Shareholders' Meeting

Best Corporate Governance Practices for Conducting General Shareholders' Meetings Beyond Regulatory Requirements

Ecopetrol, aligning with its commitment to transparency and shareholder protection, goes beyond mere compliance with legal mandates governing General Shareholders' Meetings. The company has adopted the following exemplary practices:

To consult the minutes of the General Shareholders' Meeting, please scan the following QR code.



Extended Notice Period

Notices for ordinary meetings are issued 30 calendar days in advance, and 15 calendar days for extraordinary meetings. This extended timeframe allows shareholders more opportunity than legally mandated to review Company information and make informed decisions, with the notice publication marking the beginning of the notification period.

Announcement Disclosure

Announcements regarding General Shareholders' Meetings are shared on social media platforms like Facebook, Twitter, and LinkedIn, while still adhering to all legal advertising requirements.

Meeting Reminders

Shareholders receive reminders about upcoming meetings on the Sunday preceding the scheduled events, both via Ecopetrol's website and through publication in widely circulated newspapers. These reminders include details on meeting dates and procedures for representation.

Publication of Documents

Meeting-related documents, including meeting announcements, agenda items, management proposals, and the CVs of Board of Directors and auditor nominees, are readily accessible on the Company's website.

Live Streaming

To ensure broader access to meeting proceedings, both for shareholders and Stakeholder Groups unable to attend in person, live streaming of General Shareholders' Meetings is provided on Ecopetrol's website.

Publication of Minutes

Complete meeting minutes, covering both ordinary and extraordinary General Shareholders' Meetings, are available for shareholder and public review on the Company's website.

Commitments of the Majority Shareholder

From July 26, 2007, to February 2028, the Nation, as the majority shareholder, has committed to:

- Ensure that any disposal of assets amounting to 15% or more of Ecopetrol's market capitalization is discussed and decided upon in the General Shareholders' Meeting. Additionally, the Nation can only vote affirmatively if the vote of minority shareholders equals or exceeds 2% of the shares subscribed by shareholders other than the Nation.
- Support initiatives with its vote aimed at allowing the inclusion of additional items not listed on the agenda at extraordinary General Shareholders' Meetings, provided these initiatives are proposed by one (1) or more shareholders representing at least 2% of the subscribed shares.

General Shareholders' Meeting

Ecopetrol's ordinary General Shareholders' Meeting was convened on March 30, 2023. During this meeting, the Company ensured the protection of shareholders' rights through comprehensive information disclosure and representation of participating shareholders.

The meeting announcement was published on the Company's website and in "El Tiempo," a widely circulated national newspaper, 30 calendar days in advance.

During the legal and statutory term of 15 business days prior to the meeting of the highest social body, the relevant documents were made available to shareholders for the exercise of the right of inspection.

The ordinary General Shareholders' Meeting achieved the required deliberative and decision-making quorum as stipulated by law and Article 19 of the Bylaws. Shareholders exercised their voting rights, and all agenda items subject to voting were approved.

Out of the nine (9) members of the Board of Directors, five (5) attended the ordinary Shareholders' Meeting.

In adherence to the securities market regulations applicable to Ecopetrol, a copy of the minutes of the ordinary meeting was submitted to the Financial Superintendence of Colombia within 15 business days following the meeting.

The main decisions adopted were as follows:

- Approval of the reports submitted by Management and the Board of Directors.
- Approval of the audited individual and consolidated financial statements as of December 31, 2022.
- Approval of the profit distribution project, which entailed distributing an ordinary dividend of \$487 pesos per share and an extraordinary dividend of \$106 pesos per share, totaling dividends of \$593 pesos per share.
- Election and determination of the statutory auditor's fees for the remaining period of 2021-2025.
- Election of Board members for the remaining period of 2021-2025.

Furthermore, as part of the commitment to the Energy Transition and in alignment with the EG strategy and TSEG goals, the General Shareholders' Meeting was carbon neutral for the first time. Achieving carbon neutrality involved reducing printing, assembly times, and material usage at the event, implementing circular economy practices, and calculating the CO2 emissions of the meeting to offset them by purchasing bonds from a project aimed at preventing degradation and deforestation of native forests in Bajo Calima and Bahía Málaga (Buenaventura). Additionally, an interactive area named "The Energy Transition Route" was set up at the venue for attendees.

A total of
3,922 individuals
physically attended the ordinary meeting, while
3,590 shareholders
were represented.
10,015 participants
joined via streaming during the session through YouTube and Facebook.

Measures Ensuring Adequate Shareholder Representation

With the approval of its Board of Directors, Ecopetrol adopted the following measures to ensure the adequate representation of its shareholders, which were disclosed to the general market through the Financial Superintendence of Colombia and the Company's website. Under these measures, the Board of Directors instructed Ecopetrol's Administration to:

- 1 Inform shareholders of their right to appoint a proxy to represent them and outline the legal requirements for the powers of attorney granted for this purpose.
- 2 Inform Company employees that they cannot advise shareholders to vote for a specific list.
- 3 Refrain from suggesting or determining the names of shareholder proxies.
- 4 Instruct those tasked with verifying the powers granted by shareholders that powers failing to meet the minimum legal requirements will be deemed invalid, and those lacking a clearly defined representative's name will not be accepted.
- 5 Refrain from suggesting, coordinating, or aligning with shareholders on: (i) submitting proposals at the General Shareholders' Meeting and/or (ii) voting in favor of or against any proposition presented at the meeting.
- 6 Refrain from accepting powers of attorney granted to individuals directly or indirectly associated with Ecopetrol's management or employees.
- 7 Designate the Legal Vice Presidency to oversee the review of powers of attorney.
- 8 Designate Ecopetrol's Corporate Affairs Vice Presidency and General Secretariat to ensure the implementation and compliance with the aforementioned measures.

To facilitate shareholders' proper representation at the General Shareholders' Meeting, the Company provided shareholders with an instruction manual and power of attorney templates that could be utilized as needed. These templates serve as suggestions, with shareholders retaining the option to draft their own powers of attorney, provided they adhere to relevant legal requirements (Article 184 of the Commercial Code or any subsequent regulatory amendments).

Furthermore, a voting instruction template was published to enable shareholders wishing to do so to communicate their voting preferences on agenda items to their proxy or representative. This initiative aimed to streamline shareholder and proxy participation and voting during the meetings¹³⁴.

¹³⁴ These measures are taken by adopting the recommendations issued by the Financial Superintendence of Colombia in recommendation 112 of the Country Code.

Engagement and Communication with Shareholders and Investors

For detailed information, please consult the "Competitive Returns" chapter of the Integrated Management Report.





4 Functioning of the Board of Directors and Its Committees

Composition of the Board of Directors

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Appointment Process of Board Members

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Independent Members of the Board of Directors

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Profile of Board Members

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Integration of the Board of Directors

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

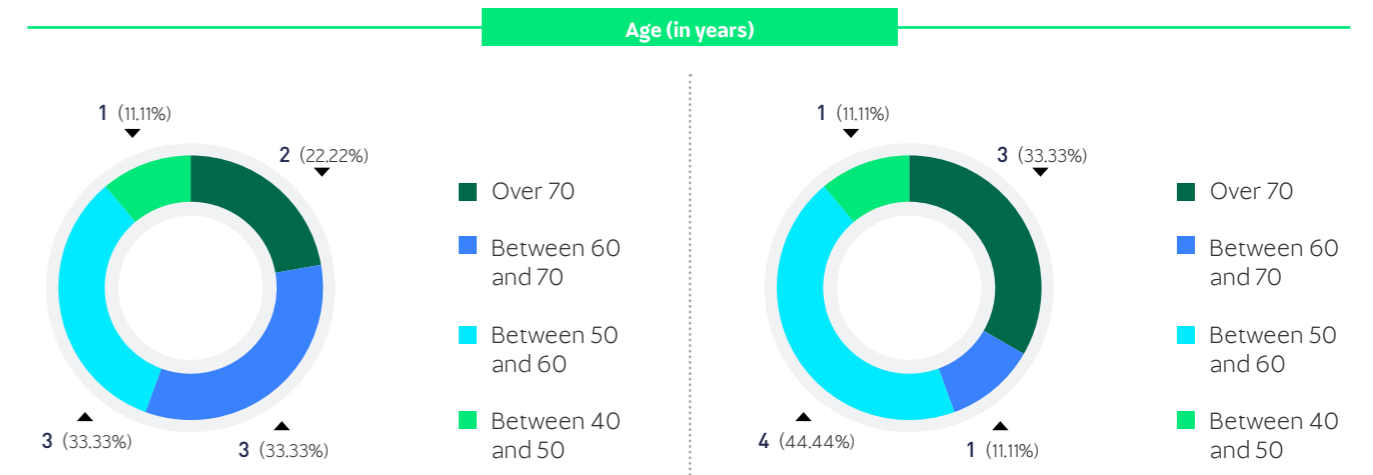
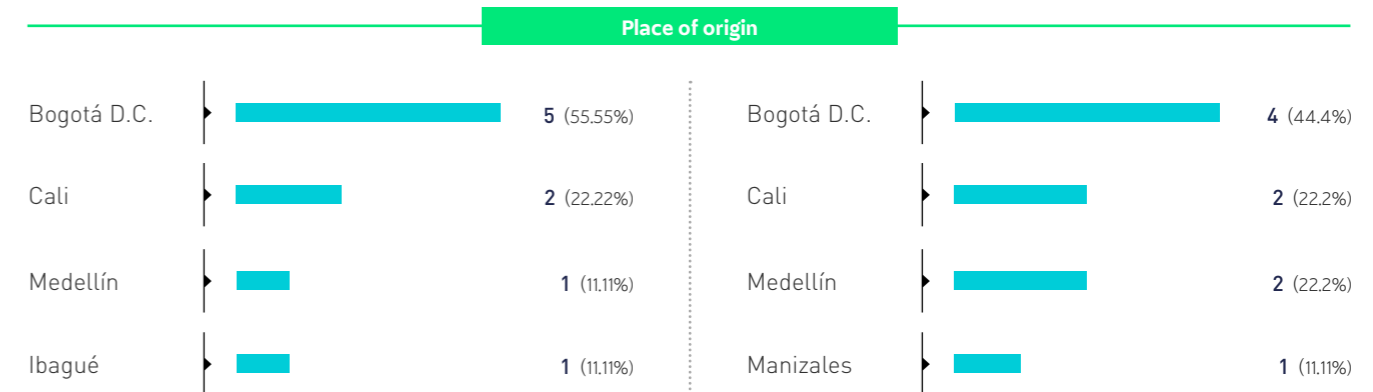
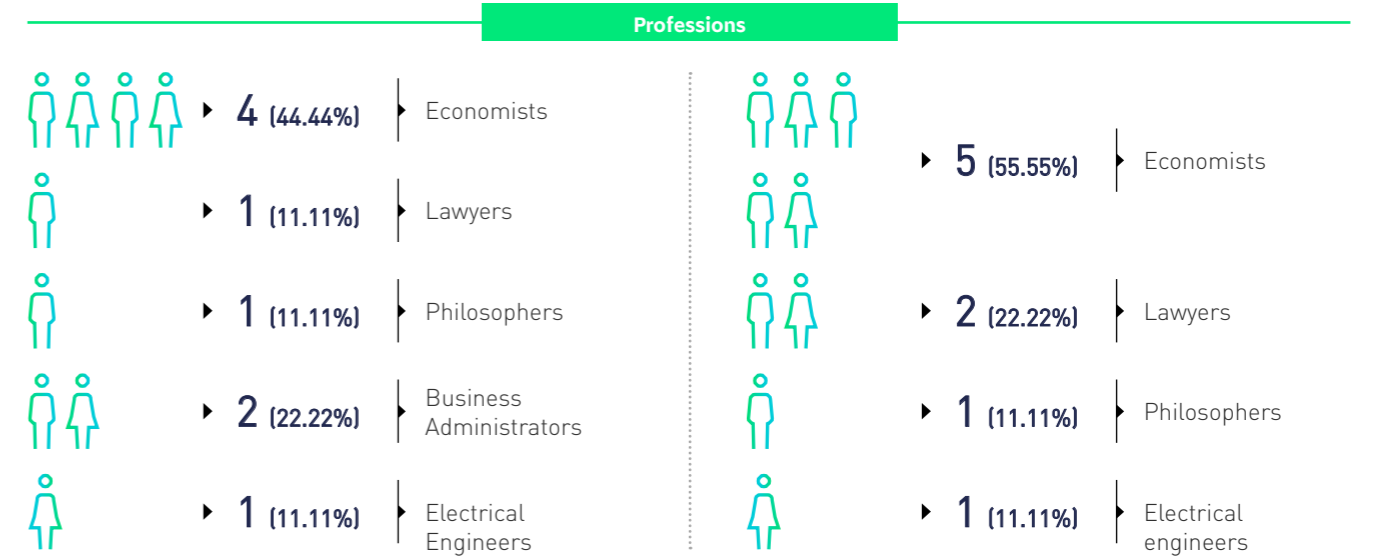
7.4.6. Diversity in the Composition of the Board of Directors

(SFC 7.4.13.1.iv) Ecopetrol recognizes that having Board members with diverse backgrounds, hailing from various regions of Colombia, and spanning different generations enhances discussions within both the Board of Directors and its supporting committees. This fosters a variety of perspectives in sessions and contributes to the strategic vision of this governance body.

Figure 7.7.
Diversity and Inclusion Criteria
(GRI 405-1)

Until March 30, 2023

From March 30, 2023,
to December 31, 2023



Chairman, Vice Chairman, and Secretary of the Board of Directors

The Board of Directors will select one (1) Chairman¹³⁵ and one (1) Vice Chairman from among its Independent Members. The Chairman will preside over and lead both ordinary and extraordinary meetings, while the Vice Chairman will step in for the Chairman in cases of temporary or absolute absence, possessing identical powers. Among the responsibilities of the Chairman is to ensure that the Board of Directors delineates and executes the strategic direction of the Company and Group. They also serve as a link between shareholders and the Board, coordinating and planning the Board's operations through the annual thematic work agenda, which is approved by the Board based on Management's proposal.

Additionally, the Board of Directors has a secretary¹³⁶ who assists the Chairman in carrying out their duties and ensures smooth operation. The secretary, who also holds the position of Corporate Affairs Vice President and General Secretariat, is tasked with convening meetings according to the annual schedule and any additional ones requested, managing the timely provision of information supporting the board's sessions, and offering advice and support to Board members as needed to fulfill their responsibilities, among other duties.

135. Articles 11 and 12 of the Internal Regulations of the Board of Directors.

136. Article 13 of the Internal Regulations of the Board of Directors.

Remuneration of Board Members

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Functions and Responsibilities of the Board of Directors

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Functioning of the Board of Directors, Information Management, and Decision-Making Process

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Strategic Decisions Made by the Board of Directors

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Updates on Topics of Interest

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Board of Directors Committees

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Functions and Management of Board of Directors Committees

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Board of Directors Evaluation

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Board of Directors Evaluation Results

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

Relations between the Board of Directors and the External Auditor, Financial Analysts, Investment Banks, and Rating Agencies

In 2023, the representative of the Statutory Auditor's Office attended all ordinary meetings held by the Audit and Risk Committee, presenting reports and contributing to relevant discussions.

Similarly, the Board of Directors received financial and market analyses throughout the year.

External Advisory Services Received by the Board of Directors

Throughout 2023, the Board continued to benefit from external and independent expertise provided by analysts, aiding in informed decision-making processes.



5 Selection, Development, and Compensation of Senior Management

Selection Policy

In compliance with Ecopetrol's Corporate Bylaws and the Good Governance Code, the Board of Directors holds the authority to appoint the Company's CEO.

With the exception of the CEO's role, all positions within Ecopetrol undergo a rigorous selection process. The Human Resources Corporate Vice Presidency (VTH) oversees the comprehensive management of the Company's human resources. Through the implementation of best practices, policies, rules, and regulations, the VTH supports the Company's strategies aimed at fortifying human capital, thereby creating conducive environments for individuals and teams to achieve proposed objectives. This includes fostering the development of their human, technical, and leadership capabilities, ensuring the organization's sustainability and competitiveness.

In alignment with the Company's diversity and inclusion objectives, various affirmative actions have been enacted to enhance the participation of underrepresented groups¹³⁷:



Training and coaching programs have been introduced for the selection team and individuals in leadership positions involved in the inclusive recruitment and selection process. These initiatives focus on bolstering diversity, equity, and inclusion competencies. Topics covered include conducting inclusive recruitment practices, implementing guidelines to mitigate the impact of unconscious biases in selection, conducting unbiased interviews, considering differential treatment, and aligning with diversity-related business objectives.



One (1) of the Company's three (3) strategic diversity objectives for all roles is to foster "greater diversity in talent," with the aim of achieving, by 2030, a selection process participation rate ranging from 40-70% for individuals from underrepresented groups or those facing greater barriers to labor inclusion.



With regard to leadership vacancies, an affirmative measure mandates the inclusion of at least one female candidate in open selection processes. This measure has enabled Ecopetrol to break the glass ceiling, achieving a 31% participation rate of women in these roles in 2023, compared to the 18% at the time of first implementation in 2018.

Compensation Policy

For comprehensive details, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.



137. It pertains to demographic minority groups that encounter structural, social, and economic obstacles to their inclusion, stemming from factors such as age, gender, disability, ethnic/racial background, religion, or sexual orientation.

Senior Management Performance Evaluation

For fiscal year 2023, the Ecopetrol Group's Balanced Scorecard (EG BSC) delivered outstanding outcomes driven by robust operational performance, notable advancements in decarbonization efforts, value creation through the implementation of Science, Technology, and Innovation solutions, and endeavors to capture efficiencies and optimize resource utilization within the Ecopetrol Group (EG) to further propel the energy transition.

The 2023 EG BSC set objectives and indicators aligned with the pillars of the 2040 Strategy: i) Growing With The Energy Transition, ii) Generating Value With SosTECnibilidad, lii) Cutting-Edge Knowledge, and iv) Competitive Returns, in addition to upholding one of the most vital cultural principles for the Ecopetrol Group: "Life First."

The breakdown is as follows:



The 2023 EG BSC concluded with a compliance rate of 107%, supported by the Actual versus Planned outcomes of each objective and indicator.

Commencing with the cultural cornerstone of **Life First**, which underscores the EG's unwavering commitment to the life and holistic health of its personnel and collaborators. In fiscal year 2023, the Total Recordable Injury Frequency (TRIF) Index took precedence, gauging the number of recordable injuries arising from or occurring during work, including: fatalities, medical disabilities, restricted work, or medical treatments, per million hours worked. In 2023, the EG achieved a result of 0.26 versus the planned 0.33, with a total of 42 incidents recorded across 161.8 million hours worked.

Under the **Competitive Returns** pillar, sustainable cash generation for shareholders was safeguarded through stringent capital discipline and efficient resource utilization, yielding a Free Cash Flow of COP 17.26 trillion versus the planned COP 13.47 trillion. Additionally, efficiencies were realized in Operational Expenditures (OpEx), Capital Expenditures (CapEx), and Revenue, stemming from initiatives aimed at enhancing the cost structure of operations and investments, resulting in COP 4.5 trillion versus the planned COP 3.6 trillion.

The **Growing with the Energy** Transition pillar aims to uphold competitiveness across the integrated hydrocarbons chain, expand gas supply, bolster Offshore Exploration, drive growth in the Transmission and Roads sectors, and advance the emerging field of New Renewable Energies to mitigate the impacts of Climate Change, such as low-carbon hydrogen (H₂) production and carbon capture, usage, and storage (CCUS). The achievements of 2023 were underpinned by **four key objectives**:

1

Development of Energy Solutions (H₂, CCUS):

Approved the business model for hydrogen-based electric mobility and the Strategic Plan for CCUS, and consolidated a portfolio of alternative CO₂ uses.

2

Growth in Transmission and Roads

Substantial progress was made in electric infrastructure development for the energy transition, including the commissioning of 718 kilometers of circuit, energizing 4,750 Megavolt-amperes, and securing new investments totaling \$1.935 billion dollars in the electricity business (transmission, connections, reinforcements, and expansions).

3

Gas and LPG Supply:

Advancements were made in the progression of exploratory projects such as Uchuva, Glaucus, and Piedemonte, with agreements signed for the early commercialization of these projects.

4

Contribution to the Country's Energy Sovereignty

by 1. Achieving Equivalent Crude Oil Production of 736.6 thousand barrels of oil equivalent per day (kboed), marking the highest production in the last 8 years; 2. Attaining Optimal Refinery Loading, with a result of 420 thousand barrels per day (kbd) versus the planned 428; 3. Fulfilling 100% of gasoline and diesel production to meet national demand.

Continuing with the pillar of **Generating Value With SOSTECNIBILIDAD**, which aims to ensure the sustainability of EG's businesses over time through environmental and social strategies, prioritizing decarbonization, energy efficiency, circular water management, and local development of the territories where operations take place. The results for 2023 were measured against two objectives:

1

Decarbonization of Operations.

focusing on 1. Reduction of Greenhouse Gas Emissions (GHG), generating 581,532 tons less of CO₂ equivalents (CO₂e) in direct Scopes 1 and 2 emissions, with 379,000 specifically attributed to methane; 2. The strategy for closing the GHG gap by 2030, and 3. Water Management Efficiency, with lower freshwater intake, greater reuse of captured water, and the recycling of production water.

2

Sustainable Territorial Development.

The EG contributed to the revitalization of local economies by intervening in 219 km of roads and supported national education goals benefiting over 200 thousand students. Additionally, the Company facilitated access to public services, providing gas connections to over 17 thousand new households and granting access to drinking water to over 20 thousand individuals. Furthermore, according to the Oil Barometer survey, the community's perception towards Ecopetrol S.A. improved significantly in terms of Legitimacy, Acceptance, Approval, and Trust.

In the realm of **Cutting-Edge Knowledge**, where the EG endeavors to cultivate the necessary capabilities to tackle challenges for growth and sustainability, and to bolster Human talent through transformative practices and training programs aimed at optimizing performance, significant strides were made in Science, Technology, and Innovation (ST+i), amounting to \$778 million dollars (MUSD) compared to the planned \$596 million dollars. Furthermore, advanced skills were cultivated in categories prioritized by the organization, encompassing agility, innovation, energy transition, digital transformation, and execution.

These achievements underscore the outstanding outcomes attained in the key pillars and objectives for 2023, a testament to the collaborative efforts of all Ecopetrol Group employees, as well as the exceptional leadership demonstrated by the CEO and Senior Management.

6 Control Environment

External Controls

Audit Processes

For detailed information, please consult the "Competitive Returns" chapter of the Integrated Management Report.

Inspection, Supervision, and Control Authorities

In Colombia, the principal regulatory authorities overseeing activities related to Ecopetrol's corporate objectives include the Ministry of Mines and Energy (MME), the National Hydrocarbons Agency (ANH), and the Energy and Gas Regulation Commission (CREG). Additional oversight is exerted by the Ministry of Environment and Sustainable Development, the National Authority of Environmental Licenses (ANLA), the Ministry of the Interior, and the Regional Autonomous Corporations.

Furthermore, the Superintendence of Public Utilities conducts surveillance and control functions over Ecopetrol's operations, with concurrent oversight from the Financial, Ports and Transportation, Health, and Industry and Commerce Superintendencies. Last but not least, the Superintendence of Companies further exercises residual control.

Given Ecopetrol's legal framework and the responsibilities of public officials, employees holding such positions are subject to disciplinary oversight by the Office of the Attorney General of the Nation. Moreover, due to the management of public resources, both employees and members of the Board of Directors are subject to fiscal control by the Office of the Comptroller General of the Republic.

Lastly, as Ecopetrol's shares are listed on the Colombian Stock Exchange (BVC) and the New York Stock Exchange (NYSE), the Company is subject to regulation by the BVC and the U.S. Securities and Exchange Commission (SEC), respectively. The issuance of securities in Colombia falls under the oversight of the Financial Superintendence of Colombia.

Credit Rating Agencies

The major credit rating agencies (S&P, Moody's, and Fitch) underscored the Company's robust financial profile, access to capital markets, and strategic significance for the country. Throughout 2023, Ecopetrol upheld its global credit ratings from all agencies, as outlined below:



Fitch (Nov. 23): Fitch accentuated Ecopetrol's strong liquidity profile, buoyed by cash generation, access to capital markets, a suitable debt structure, and the contribution of EBITDA from Interconexión Eléctrica S.A. E.S.P. (ISA). It also acknowledged strides in reducing the FEPC's accounts receivable balance, stability in the Company's operational metrics, and Ecopetrol's strategic importance to Colombia, given that the Nation owns 88.5% of its share capital.



Moody's (Sep. 23): Moody's reaffirmed Ecopetrol's investment-grade rating. The ratings persistently reflect the Company's status as Colombia's leading oil and gas producer, along with the significance of its substantial power transmission business in Colombia and other Latin American countries.



S&P (Jul. 23): Ecopetrol stands as a pivotal player in Colombia's oil and gas sector, undergoing an ongoing energy transition with specific objectives, maintaining consistent profitability margins, and achieving revenue diversification through its various business lines.

Internal Controls

Internal Control System (ICS)

For detailed information, please consult the "Competitive Returns" chapter of the Integrated Management Report.

Integrated Risk Management System

For detailed information, please consult the "Competitive Returns" chapter of the Integrated Management Report.

Business Risk Map

For detailed information, please consult the "Competitive Returns" chapter of the Integrated Management Report.

Emerging Risks

For detailed information, please consult the "Competitive Returns" chapter of the Integrated Management Report.



Internal Corporate Audit Management (GCA)

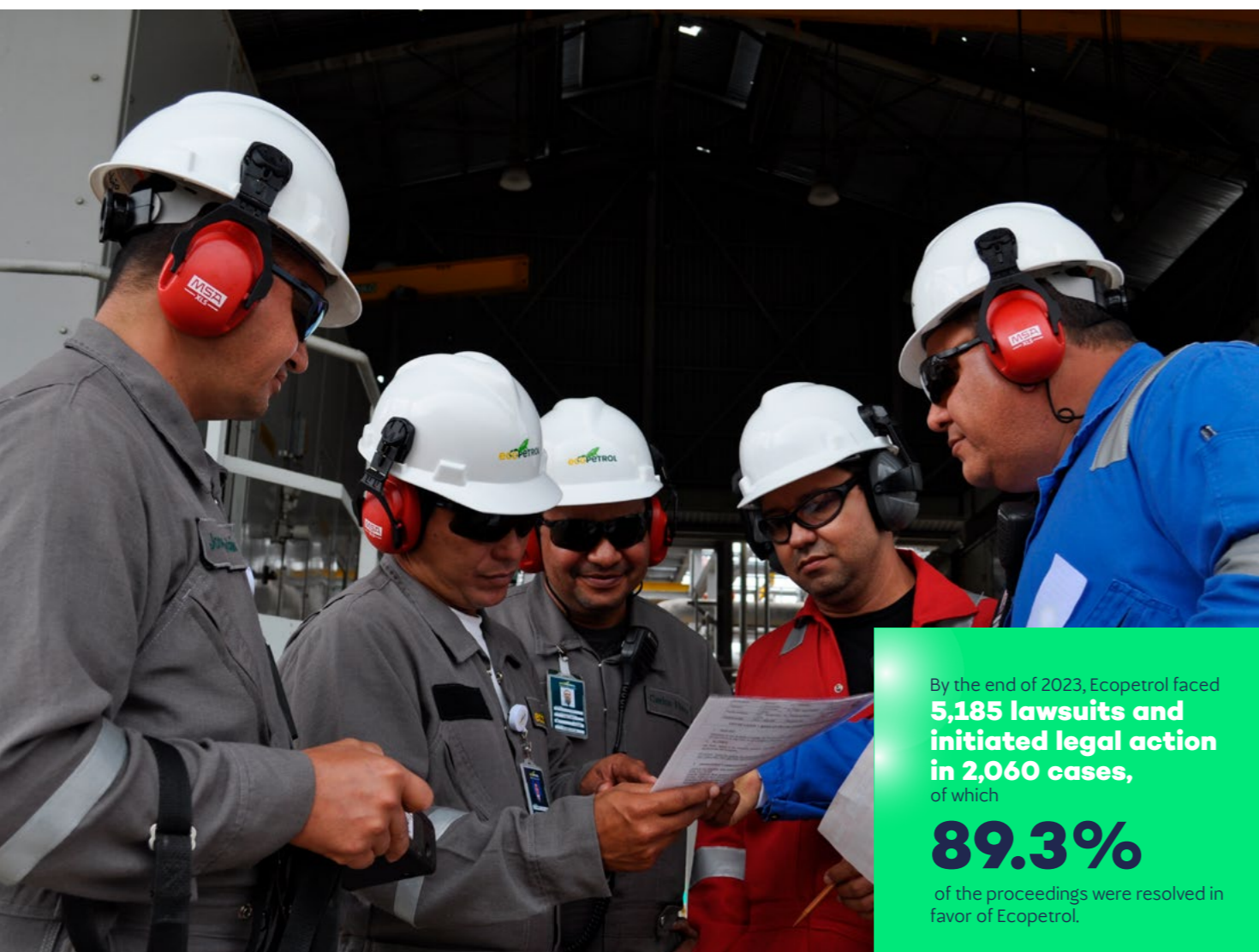
In 2023, audit activities focused on processes and investment projects that, according to the risk assessment conducted by internal audit, exhibited a "Very High" or "High" level of relevance to the achievement of strategic objectives. These audits covered the following topics:

- Managing exploratory and gas development projects to assess their alignment with Ecopetrol's 2040 Strategy and their contribution to the projection of the hydrocarbon production matrix, aiming for a composition of 30% gas.
- Verifying the impact of Enhanced Recovery projects on compliance with objectives and targets in the Upstream business line.
- Ensuring that the maturity and execution capability of Near Field Exploration (NFE) opportunities accelerate the progression of resources to reserves and reduce the time to production of the "first Hydrocarbon."
- Proper financial and operational management of various related operations contracts, and effective management of Ecopetrol's related operations, reviewing aspects of governance, risk, control, processes, and procedures adopted in oil asset management with partners.
- Evaluating activities undertaken for the maturation and management of refining projects to ensure compliance and sustainability of their value expectations (schedule, economics, and regulations).
- Verifying whether the planning and management of contracted logistic services meet the needs of the supply chain and are adequately provided.
- Checking processes for generating and consolidating the hydrocarbon balance (crude oil, gas, fuel products, and petrochemicals) throughout the EG's supply chain (production, refining, and transportation).

During 2023, compliance with the General Audit Plan (GAP) stood at 104%. 55 audit assignments executed out of 53 planned.

- Verifying commercial management by aligning and supporting commercial and logistical processes with the STORM technological solution (System of Trading, Operations, and Risk Management), including its interaction with other processes and tools, and overseeing change management for its implementation and operation.
- Ensuring effective execution of the Science, Technology, and Innovation process, from solution identification to incorporation, commercialization, and realization of business technology benefits.
- Assessing the governance, risk, and control of inventory management and optimization of materials and warehouses at Ecopetrol and the Cartagena Refinery.
- Managing Human talent in coordination with business areas, including leadership programs and succession plans for critical positions at Ecopetrol.
- Verifying the development of Ecopetrol's Environmental Strategy across strategic pillars like (i) climate action; (ii) water neutrality; (iii) biodiversity and ecosystem services; (iv) circular economy; and (v) clean air, evaluating governance, risk management, and established controls.
- Assessing the governance, risk, and control of the Health Management System to ensure adequate provision of healthcare services.
- Verifying industrial and process safety management, emphasizing HSE incident treatment in Ecopetrol's direct and contracted operations.
- Evaluating sub-processes pertaining to supplier management, procurement, and contractual oversight to meet operational needs and organization-defined objectives.
- Assessing governance, management mechanisms, control, and monitoring of investment vehicles to ensure alignment with the EG's strategy and results.
- Evaluating the technological solutions of the digital agenda (Wave 1 and 2) to verify performance, benefits, and business usage.
- Evaluating governance, risk, and controls in the lifecycle of robotics solutions (Bots) at Ecopetrol, ensuring their proper planning, operation, and sustainability.
- Assessing the recovery practices for critical information technology assets that enable business processes to return to normalcy in the event of disruptions.
- Evaluating the contract renewal process for critical services supporting the Company's operations and digital infrastructure.
- Reviewing the tracking, monitoring, and compliance of the strategic plan and the low-carbon hydrogen roadmap, and ensuring the necessary synergies, interdependencies, and partnerships for execution.
- Reviewing the adequacy of the energy marketing contract with GECELCA S.A. E.S.P. (Generadora y Comercializadora de Energía del Caribe S.A. E.S.P.) to ensure the reliability and availability required in operations and the cost-benefit analysis to capture value through the contract.

Audit activities comprised assurance, advisory, and compliance projects aligned with current external and internal standards. As a result of executing the General Audit Plan (GAP), responsible areas developed improvement plans to mitigate identified risks, continuously monitored by Management and the Audit and Risk Committee under the Board of Directors to ensure effective implementation.



By the end of 2023, Ecopetrol faced **5,185 lawsuits and initiated legal action in 2,060 cases**, of which **89.3%** of the proceedings were resolved in favor of Ecopetrol.

7 Transactions with Related Parties

For detailed information, please consult the "Corporate Governance Structure" chapter of the Integrated Management Report.

8 Conflicts of Interest

For detailed information, please consult the "Ethics and Transparency" chapter of the Integrated Management Report.

9 Dispute Resolution Mechanisms

Ecopetrol is subject to dispute resolution mechanisms provided for by law, including mechanisms such as direct negotiation, conciliation, and arbitration.

(SFC 7.4.1.1.2.) Below are the disputes involving Ecopetrol, which were resolved through dispute resolution mechanisms during the course of 2023:

Table 7.1.
Disputes Resolved Through Dispute Resolution Mechanisms

Stakeholders	Type	Settled amount (COP)	Effective payment date
Governorship of Cundinamarca - Bogotá Chamber of Commerce	Payment Agreement	12,046,017,600	March 15, 2023
VETRA Exploración y Producción de Colombia S.A.S	Conciliation	1,772,602,937	July 13, 2023
National Hydrocarbons Agency	Mediation. Agreement resolving differences in royalty marketing contract for 2020-2022. The final value implies savings, not a payment.	82,062,566,865	August 24, 2023
National Hydrocarbons Agency	Conciliation and compensation	344,716,613.81	August 24, 2023
PETREVEN	Conciliation	6,134,190,000	September 6, 2023
National Hydrocarbons Agency	Mediation. Signing of exploration and production agreement in Magangué	N/A	October 12, 2023
National Hydrocarbons Agency	Mediation. Signing of exploration and production agreement in Farallones	N/A	October 12, 2023
FRONTERA ENERGY	Transaction	16,327,204,080	December 19, 2023

10 Transparency, Flow, and Integrity of Information

(SFC 7.4.13.1.xii) Communication with its Stakeholder Groups is a top priority for Ecopetrol, hence it leverages all available channels for engagement. Alongside traditional communication methods, the Company has bolstered interaction through digital platforms like Facebook, Twitter, Instagram, LinkedIn, and TikTok, resulting in significant outcomes.

Ecopetrol boasts **482,305** followers on Facebook, **58,507** on Instagram, **263,097** on Twitter, **1,076,785** on LinkedIn, and **9,231** on TikTok, totaling **1,889,925** across all profiles on both national and regional social media platforms.

During 2023, the Financial Superintendence of Colombia published **70** relevant information releases, accompanied by **404** press releases. Additionally, **77** documents were published in the United States, adhering to the various formats required by the SEC for disclosure in that market.

These releases were promptly disseminated to the market and are accessible in the relevant information section of the Financial Superintendence of Colombia's website at <https://www.superfinanciera.gov.co>. They can also be found on the SEC's website, under the 'Filings' section at <https://www.sec.gov/>, as well as on Ecopetrol's website at <https://www.ecopetrol.com.co>.



In terms of followers, Facebook recorded a 6.4% increase in 2023, alongside a 2.8% on Twitter, and 14.1% on LinkedIn. Meanwhile, Instagram experienced a notable growth of 31.5%.

11 Shareholders' and Investors' Claims

No claims were filed by shareholders and investors related to compliance with the Good Governance Code for the year 2023.





08

Report On Article 446 of the
Commercial Code



Profit and loss statement for the year ending December 13, 2023, specifying depreciation, depletion, and amortization expenses:

	For the year ended December 31, 2023
Income from contracts with customers	118,456,460
Cost of sales	(90,854,705)
Gross profit	27,601,755
Administrative expenses	(2,161,870)
Operating and project expenses	(3,147,172)
Impairment of long-term assets	(2,384,140)
Net operating expenses	(488,014)
Operating profit	19,420,559
Net financial revenues	
Financial income	2,201,008
Financial expenses	(8,197,464)
Net los from exchange rate differences	2,596,161
	(3,400,295)
Share in company revenues	11,052,215
Profit before income tax	27,072,479
Income tax expense	(8,010,388)
Net income for the period	19,062,091
Basic earnings per share (pesos)	463.6
Depreciation, depletion, and amortization	6,856.928

Profit Distribution Plan for 2023

Below is the profit distribution plan for 2023, approved by the Board of Directors for consideration by the General Shareholders' Meeting on March 22, 2024:

Net income after provision for income tax	19.062.090.905.658
+ Release of reserves from previous fiscal years	
Occasional reserve for sustainability	8.174.839.184.265
Reserve for excess tax depreciation (Art. 130 ET)	7.665.757.580.902
Excess tax depreciation reserve (Art. 130 ET.)	509.081.603.363
- Minus mandatory reserves for the current year	2.415.290.693.929
Legal reserve (10%)	1.906.209.090.566
Reserve for excess tax depreciation (Art. 130 ET)	509.081.603.363
Available to the General Shareholders' Meeting	24.821.639.395.994
Proposed distribution:	
For dividend payment:	
According to dividend policy (Payout 60.0% of Net Income)	11.430.441.123.874
Extraordinary dividend (Payout 7.3% of Net Income)	1.397.967.619.467
Subtotal (Total Payout of 67.3%)	12.828.408.743.341
For the establishment of an occasional sustainability reserve	11.993.230.652.653
Total	24.821.639.395.994
Total ordinary dividend to be paid per share (pesos)	278
Total extraordinary dividend to be paid per share (pesos)	34
Total dividend to be paid (pesos)	312

Directors' Remuneration

In compliance with the resolution passed by the General Shareholders' Meeting in 2012, documented in Minute No. 026, the directors' remuneration for attending Board of Directors and/or Committee meetings equates to six times the prevailing legal monthly minimum wage.

Additionally, the Bylaws were amended during the General Shareholders' Meeting in 2018, as recorded in Minute No. 036, removing Paragraph Four of Article 23, which previously differentiated between fees for in-person and remote meetings. Board members

do not receive any form of variable compensation. The total amount disbursed in 2023 for directors' fees amounted to \$4,983 (2022 - \$3,582).

The aggregate compensation paid to active members of the Management Committee as of December 31, 2023, stood at \$35,906 (2022 - \$27,359). Directors as of December 2023 are ineligible to receive pension and retirement benefits.

The total sum of allowances and representation expenses for the Management Committee in 2023 was \$1,748 (2022 - \$3,259).

Expenses for advisory services related to processing matters before public or private entities

	For the year ended December 31, 2023
Specialized, administrative, and financial advisory services	118,456,460

Cost-free assignments

	For the year ended December 31, 2023
Specialized, administrative, and financial advisory services	118,456,460



Advertising and public relations expenses

	For the year ended December 31, 2023
Media plan - Broadcasts	5,830

No public relations expenses were incurred during the aforementioned period.

Funds and other assets held by the company abroad, as well as foreign currency obligations

	A 31 de diciembre de 2023	
	(Millions of USD)	(Millions of COP)
Cash and cash equivalents	427	1,634,534
Trade receivables and other accounts receivable	1,402	5,357,616
Other financial assets	657	2,512,634
Other assets	152	580,135
Total assets	2,638	10,084,919
Loans and financing	18,506	68,677,278
Trade payables and other accounts payable	1,529	5,845,022
Other liabilities	54	201,310
Total liabilities	20,089	74,723,610

Consolidated subsidiaries and joint ventures

Company	Functional currency	Ecopetrol's percentage share	Activity	Country/ Registered address	Geographical area of operation	Net equity	Net income (loss) for the period	Total assets	Total liabilities
Refinería de Cartagena S.A.S.	Dollar	100%	Hydrocarbon refining, product marketing, and distribution	Colombia	Colombia	24,740,594	3,491,071	37,267,018	12,526,424
Genit transporte y logística de hidrocarburos S.A.S.	Colombian Peso	100%	Hydrocarbon storage and pipeline transportation	Colombia	Colombia	16,611,674	4,706,947	19,592,580	2,980,906
Ecopetrol Global Energy S.L.U.	Dollar	100%	Investment vehicle	Spain	Spain	13,936,493	779,372	13,936,782	289
Hocol Petroleum Limited.	Dollar	100%	Investment vehicle	Bermuda	Bermuda	3,974,558	31,568	3,974,628	70
Esentia S.A.	Dollar	100%	Production and marketing of polypropylene resin	Colombia	Colombia	2,577,343	228,978	3,043,370	466,027
Ecopetrol Capital AG	Dollar	100%	Surplus acquisition and financing for companies within the Ecopetrol Business Group	Switzerland	Switzerland	2,662,417	140,961	9,893,302	7,230,885
Black Gold Re Ltd.	Dollar	100%	Reinsurance company for companies within the Ecopetrol Business Group	Bermuda	Bermuda	1,075,957	99,298	1,349,418	273,461
Andean Chemicals Ltd.	Dollar	100%	Investment vehicle	Bermuda	Bermuda	1,879,782	153,558	1,884,301	4,519
Interconexión Eléctrica S.A. E.S.P	Colombian Peso	51.41%	Provision of public electricity transmission services, infrastructure project development, and commercial exploitation, as well as the development of systems, activities, and services related to information technology and telecommunications	Colombia	Latin America	26,366,394	2,466,453	71,217,176	44,850,782
Inversiones de Gases de Colombia S.A. Invercolsa S.A.	Colombian Peso	51.88%	Holding with investments in natural gas and LPG transportation and distribution companies in Colombia	Colombia	Colombia	654,544	341,249	658,602	4,058
Econova Technology & innovation S.L.	Dollar	100%	Execution of activities related to Science, Technology, and Innovation (ST+i)	Spain	Spain	262	(315)	570	308
Ecopetrol Singapore PTE. LTD	Singapore Dollar	100%	Holding with investment in an international crude oil and refined products trading company	Singapore	Asia	653,065	661,672	653,174	109
Joint ventures									
Equión Energía Limited	Dollar	51%	Exploration, exploitation, and production of hydrocarbons	United Kingdom	Colombia	1,329,394	38,718	1,401,176	71,782
Ecodiesel Colombia S.A. (1)	Colombian Peso	50%	Production, marketing, and distribution of biofuels and oleochemicals	Colombia	Colombia	170,060	55,099	265,330	95,270

(1) Information available as of November 30, 2023.

Opinion of the Statutory Auditor

● Consolidated as of December 31, 2023



Informe del Revisor Fiscal

A la Asamblea de Accionistas de:
Ecopetrol S.A.

Opinión

He auditado los estados financieros consolidados adjuntos de Ecopetrol S.A. (en adelante, el Grupo), que comprenden el estado consolidado de situación financiera al 31 de diciembre de 2023 y los correspondientes estados consolidados de resultados, de resultados integrales, de cambios en el patrimonio y de flujos de efectivo por el año terminado en esa fecha, así como las notas explicativas a los estados financieros que incluyen información sobre las políticas contables materiales.

En mi opinión, los estados financieros consolidados adjuntos, presentan razonablemente, en todos sus aspectos de importancia, la situación financiera consolidada del Grupo al 31 de diciembre de 2023, los resultados consolidados de sus operaciones y los flujos consolidados de efectivo por año terminado en esa fecha, de conformidad con las Normas de Contabilidad y de Información Financiera aceptadas en Colombia (NCIF) adoptadas por la Contaduría General de la Nación.

Bases de la opinión

He llevado a cabo mi auditoría de acuerdo con Normas Internacionales de Auditoría aceptadas en Colombia. Mis responsabilidades en cumplimiento de dichas normas se describen en la sección *Responsabilidades del Auditor en la Auditoría de los Estados Financieros Consolidados* de este informe. Soy independiente del Grupo, de acuerdo con el Manual del Código de Ética para profesionales de la contabilidad, junto con los requisitos éticos relevantes para mi auditoría de estados financieros en Colombia, y he cumplido con las demás responsabilidades éticas aplicables. Considero que la evidencia de auditoría obtenida es suficiente y apropiada para fundamentar mi opinión.

Asuntos clave de auditoría

Los asuntos clave de auditoría son aquellos asuntos que, según mi juicio profesional, fueron de mayor importancia en mi auditoría de los estados financieros consolidados adjuntos. Estos asuntos se abordaron en el contexto de mi auditoría de los estados financieros consolidados tomados en su conjunto, y al momento de fundamentar la opinión correspondiente, pero no para proporcionar una opinión separada sobre estos asuntos. Con base en lo anterior, más adelante, detallo la manera en la que cada asunto clave fue abordado durante mi auditoría.

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He cumplido con las responsabilidades descritas en la sección *Responsabilidades del Auditor en la Auditoría de los Estados Financieros Consolidados* de mi informe, incluso en relación con estos asuntos. En consecuencia, mi auditoría incluyó la realización de los procedimientos diseñados para responder a los riesgos de incorrección material evaluados en los estados financieros consolidados. Los resultados de mis procedimientos de auditoría, incluidos los procedimientos realizados para abordar los asuntos que se mencionan a continuación, constituyen la base de mi opinión de auditoría sobre los estados financieros consolidados adjuntos.

Impacto de las reservas de petróleo y gas natural, en el cálculo de la depreciación y agotamiento, y el deterioro de los activos de larga duración para el segmento de exploración y producción (Upstream).

Descripción del Asunto Clave de Auditoría

Como se describe en las **Notas 3.1 y 3.2** de los estados financieros consolidados adjuntos, la estimación de reservas de petróleo y gas natural, impacta en el cálculo de la depreciación y agotamiento, y en la determinación de los flujos de efectivo futuros utilizados para el análisis de deterioro de los activos de larga duración del segmento de Exploración y Producción (Upstream). La depreciación y agotamiento de los activos de larga duración para el segmento de exploración y producción se calculan utilizando el método de unidades de producción, utilizando como base las reservas probadas desarrolladas produciendo (PDP) y probadas no produciendo (PNP). Estos tipos de reservas son cantidades estimadas de petróleo y gas natural que tienen certeza razonable que serán comercialmente recuperables en años futuros a partir de yacimientos conocidos bajo las condiciones económicas y operativas existentes.

La estimación de las reservas de petróleo y gas natural requiere la evaluación de supuestos financieros y no financieros como son; precios del petróleo, factores económicos (costos operativos (OPEX) e inversiones futuras (CAPEX)), y tasas de producción, entre otros. Debido a la complejidad involucrada en la estimación, la Administración utilizó firmas especializadas independientes (en adelante “especialistas externos”) para la estimación del volumen de reservas de petróleo y gas natural.

La realización de procedimientos de auditoría para evaluar la estimación de la Compañía de las reservas de petróleo y gas natural requirió un alto grado de juicio del auditor y un mayor grado de esfuerzo, debido a la naturaleza y evaluación de los supuestos utilizados por la Administración para su medición y el uso del trabajo de los especialistas externos.

Respuesta de Auditoría

Obtuvimos un entendimiento del proceso, evaluamos el diseño y probamos la eficacia operativa de los controles que abordan los riesgos de incorrección material relacionados con la medición y valuación de la estimación de las reservas de petróleo y gas natural, incluidos los controles sobre la revisión ejecutada por la Administración de la metodología utilizada para desarrollar la estimación y los supuestos importantes descritos anteriormente y los controles sobre la integridad y exactitud de los supuestos financieros y no financieros proporcionados a los especialistas.



Para evaluar la estimación de las reservas de petróleo y gas natural, obtuvimos los informes de los especialistas externos, contratados por la Administración, y evaluamos la competencia y objetividad de los especialistas externos y los internos asignados por la Administración responsables de supervisar la preparación de la estimación de reservas por parte de los especialistas, a través de la consideración de sus calificaciones profesionales, experiencia, independencia y uso de prácticas aceptadas en la industria. Adicionalmente, evaluamos la integridad y precisión de los supuestos financieros y no financieros descritos anteriormente y utilizados por los especialistas en el cálculo de la estimación de las reservas de petróleo y gas natural.

Sobre la estimación de las reservas, evaluamos que los movimientos de reservas cumplieran con las regulaciones de la SEC (U.S. Securities and Exchange Commission), que la evaluación de la Administración del límite económico llegue hasta el punto en el que el flujo de efectivo operativo de un proyecto se vuelve negativo, que la integridad y precisión de los supuestos financieros y no financieros utilizados por la Administración estuvieran acorde con los datos de la documentación fuente, y la integridad de los datos históricos, realizando pruebas retrospectivas de datos históricos para evaluar la razonabilidad de la estimación a lo largo del tiempo. También probamos la precisión matemática de los cálculos de la depreciación y agotamiento, incluida la comparación de las cantidades probadas de reservas de petróleo y gas natural desarrolladas utilizadas en los cálculos con el informe de reservas de la Compañía, y revisamos el modelo sobre cálculo del valor recuperable del deterioro de activos de larga duración del segmento de exploración y producción, evaluando la consistencia entre la estimación de reservas de petróleo y gas natural elaborada por los especialistas, con los volúmenes de reservas incluidos por la Administración en los modelos de deterioro y entre otros procedimientos.

Estimación del valor recuperable de los activos de larga duración de la Refinería de Cartagena

Descripción del Asunto Clave de Auditoría

Como se describe en las **Notas 4.13 y 17** de los estados financieros consolidados adjuntos, la Administración evalúa, en cada fecha de presentación de los estados financieros consolidados, si existe un indicador de que los activos de larga duración puedan estar deteriorados. Si existe algún indicador, o cuando se requiere una prueba de deterioro anual para una Unidad Generadora de Efectivo (UGE), la Administración estima el valor recuperable de la UGE. El valor recuperable de una UGE es el mayor entre su valor razonable menos costos de disposición y su valor en uso. Cuando el valor en libros de una UGE excede su valor recuperable, la UGE se considera deteriorada y se castiga hasta su valor en libros. Una pérdida por deterioro previamente reconocida se revierte (recupero) solo si ha tenido un cambio en los supuestos utilizados para determinar el valor recuperable de la UGE desde que se reconoció la última pérdida por deterioro. La reversión está limitada de modo que el valor en libros de la UGE no exceda su importe recuperable, o el valor en libros que se hubiera determinado si no se hubiera reconocido una pérdida por deterioro en periodos anteriores. En 2023, la Compañía reconoció un recuperado por deterioro en la UGE, Refinería de Cartagena, de COP \$ 1,494,224 millones como se revela en la **Nota 17.2** de los estados financieros consolidados adjuntos.



Auditar la estimación de la Administración relacionada con la determinación del valor recuperable de la UGE fue compleja y requirió la participación de especialistas, debido a la naturaleza altamente subjetiva de los supuestos utilizados en el modelo. En particular, los supuestos significativos fueron: tasa de descuento (costo promedio ponderado de capital - WAAC por sus siglas en inglés), y los márgenes estimados de refinación, que se ven afectados por expectativas sobre condiciones futuras del mercado o económicas, tales como los precios de venta de productos refinados y precios de compra de petróleo crudo.

Respuesta de Auditoría

Obtuvimos un entendimiento del proceso, evaluamos el diseño y probamos la eficacia operativa de los controles que abordan los riesgos de incorrección material relacionados con la medición y valuación del valor recuperable de la UGE, incluidos los controles sobre la revisión ejecutada por la Administración de la metodología utilizada para desarrollar dicha estimación y los supuestos significativos descritos anteriormente.

Nuestros procedimientos de auditoría incluyeron, entre otros; evaluar la metodología utilizada y probar los supuestos significativos descritos anteriormente, así como otra información relevante utilizada en la estimación de la Administración, al comparar los supuestos significativos utilizados en el modelo, con las tendencias actuales de la industria y el mercado. Adicionalmente, evaluamos la razonabilidad de las proyecciones de la Compañía, comparándolas con los resultados reales y tendencias comparables de la industria, y probamos la precisión de las proyecciones de la Administración.

Involucramos a nuestros especialistas en valuación en la revisión de la tasa de descuento (costo promedio ponderado de capital - WAAC por sus siglas en inglés), la revisión de las estimaciones de los precios futuros del crudo y productos refinados y la información financiera proyectada utilizada en la estimación del margen estimado de refinación por parte de la Administración.

Asimismo, evaluamos la revelación incluida en los estados financieros consolidados adjuntos.

Responsabilidades de la Administración y de los responsables del gobierno de la Compañía en relación con los estados financieros consolidados

La Administración es responsable por la preparación y correcta presentación de los estados financieros consolidados de acuerdo con las Normas de Contabilidad y de Información Financiera aceptadas en Colombia (NCIF) adoptadas por la Contaduría General de la Nación; de diseñar, implementar y mantener el control interno relevante para la preparación y correcta presentación de los estados financieros consolidados libres de incorrección material, bien sea por fraude o error; de seleccionar y de aplicar las políticas contables apropiadas; y, de establecer estimaciones contables razonables en las circunstancias.

Al preparar los estados financieros consolidados, la Administración es responsable de evaluar la capacidad del Grupo para continuar como negocio en marcha, revelando, según corresponda, los asuntos relacionados con este asunto y utilizando la base contable de negocio en marcha, a menos que la Administración tenga la intención de liquidar el Grupo o cesar sus operaciones, o no tenga otra alternativa realista diferente a hacerlo.



Los encargados del gobierno de la controlante son responsables de la supervisión del proceso de información financiera del Grupo.

Responsabilidades del Auditor en la Auditoría de los Estados Financieros Consolidados

Mi objetivo es obtener una seguridad razonable sobre si los estados financieros consolidados tomados en su conjunto están libres de incorrección material, ya sea por fraude o error, y emitir un informe que incluya mi opinión. La seguridad razonable es un alto nivel de aseguramiento, pero no garantiza que una auditoría realizada de acuerdo con las Normas Internacionales de Auditoría aceptadas en Colombia siempre detectará una incorrección material cuando exista. Las incorrecciones pueden surgir debido a fraude o error y se consideran materiales si, individualmente o acumuladas, podría esperarse que influyan razonablemente en las decisiones económicas que los usuarios tomen con base en los estados financieros consolidados.

Como parte de una auditoría de acuerdo con las Normas Internacionales de Auditoría aceptadas en Colombia, debo ejercer mi juicio profesional y mantener mi escepticismo profesional a lo largo de la auditoría, además de:

- Identificar y evaluar los riesgos de incorrección material en los estados financieros consolidados, ya sea por fraude o error, diseñar y ejecutar procedimientos de auditoría que respondan a esos riesgos, y obtener evidencia de auditoría que sea suficiente y apropiada para fundamentar mi opinión. El riesgo de no detectar una incorrección material debido a fraude es mayor que la resultante de un error, ya que el fraude puede implicar colusión, falsificación, omisiones intencionales, declaraciones falsas o sobrepaso del sistema de control interno.
- Obtener un entendimiento del control interno relevante para la auditoría, para diseñar procedimientos de auditoría que sean apropiados en las circunstancias.
- Evaluar lo adecuado de las políticas contables utilizadas, la razonabilidad de las estimaciones contables y las respectivas revelaciones realizadas por la Administración.
- Concluir sobre si es adecuado que la Administración utilice la base contable de negocio en marcha y, con base en la evidencia de auditoría obtenida, si existe una incertidumbre material relacionada con eventos o condiciones que puedan generar dudas significativas sobre la capacidad del Grupo para continuar como negocio en marcha. Si concluyo que existe una incertidumbre importante, debo llamar la atención en el informe del auditor sobre las revelaciones relacionadas, incluidas en los estados financieros consolidados o, si dichas revelaciones son inadecuadas, modificar mi opinión. Las conclusiones del auditor se basan en la evidencia de auditoría obtenida hasta la fecha de mi informe, sin embargo, eventos o condiciones posteriores pueden hacer que una entidad no pueda continuar como negocio en marcha.
- Evaluar la presentación general, la estructura, el contenido de los estados financieros consolidados, incluyendo las revelaciones, y si los estados financieros consolidados representan las transacciones y eventos subyacentes de manera que se logre una presentación razonable.
- Obtener evidencia de auditoría suficiente y adecuada en relación con la información financiera de las entidades o actividades de negocio que hacen parte del Grupo, con el fin de expresar mi opinión sobre los estados financieros consolidados. Soy responsable de la dirección, supervisión y ejecución de la auditoría de grupo y, por tanto, de la opinión de auditoría.



Comuniqué a los responsables del gobierno de la Compañía, entre otros asuntos, el alcance planeado y el momento de realización de la auditoría, los hallazgos significativos de la misma, así como cualquier deficiencia significativa del control interno identificada en el transcurso de la auditoría.

También proporcioné a los responsables del gobierno de la Compañía una declaración de que he cumplido los requerimientos de ética aplicables en relación con la independencia y comunicado con ellos acerca de todas las relaciones y demás cuestiones de las que se podría esperar razonablemente que pudieran afectar mi independencia y, en su caso, las correspondientes salvaguardas.

Entre los asuntos que han sido objeto de comunicación con los responsables del gobierno de la Compañía, determiné los que han sido de la mayor significatividad en la auditoría de los estados financieros consolidados del período actual y que son, en consecuencia, asuntos clave de la auditoría. Describí esos asuntos en mi informe de auditoría salvo que las disposiciones legales o reglamentarias prohíban revelar públicamente el asunto o, en circunstancias extremadamente poco frecuentes, se determine que un asunto no se debería comunicar en mi informe porque cabe razonablemente esperar que las consecuencias adversas de hacerlo superarían los beneficios de interés público del mismo.

Otros Asuntos

Los estados financieros consolidados bajo normas de contabilidad y de Información Financiera aceptadas en Colombia (NCIF) adoptadas por la Contaduría General de la Nación de Ecopetrol S.A. al 31 de diciembre de 2022, que hacen parte de la información comparativa de los estados financieros consolidados adjuntos, fueron auditados por mí, de acuerdo con normas internacionales de auditoría aceptadas en Colombia, sobre los cuales expresé mi opinión sin salvedades el 27 de febrero de 2023.

Edwin René Vargas Salgado
Revisor Fiscal y Socio a Cargo
Tarjeta Profesional 80050-T
Designado por Ernst & Young Audit S.A.S. TR-530

Bogotá D.C, Colombia
27 de febrero de 2024

● Separated as of December 31, 2023



Informe del Revisor Fiscal

A la Asamblea de Accionistas de:
Ecopetrol S.A.

Opinión

He auditado los estados financieros separados adjuntos de Ecopetrol S.A (en adelante, la Compañía), que comprenden el estado separado de situación financiera al 31 de diciembre de 2023 y los correspondientes estados separados de resultados, de resultados integrales, de cambios en el patrimonio y de flujos de efectivo por el año terminado en esa fecha, así como las notas explicativas a los estados financieros que incluyen información sobre las políticas contables materiales.

En mi opinión, los estados financieros separados adjuntos, tomados de los libros de contabilidad, presentan razonablemente, en todos sus aspectos de importancia, la situación financiera de la Compañía al 31 de diciembre de 2023, los resultados de sus operaciones y los flujos de efectivo por año terminado en esa fecha, de conformidad con las Normas de Contabilidad y de Información Financiera aceptadas en Colombia (NCIF) adoptadas por la Contaduría General de la Nación.

Bases de la opinión

He llevado a cabo mi auditoría de acuerdo con Normas Internacionales de Auditoría aceptadas en Colombia. Mis responsabilidades en cumplimiento de dichas normas se describen en la sección *Responsabilidades del Auditor en la Auditoría de los Estados Financieros* de este informe. Soy independiente de la Compañía, de acuerdo con el Manual del Código de Ética para profesionales de la contabilidad, junto con los requisitos éticos relevantes para mi auditoría de estados financieros en Colombia, y he cumplido con las demás responsabilidades éticas aplicables. Considero que la evidencia de auditoría obtenida es suficiente y apropiada para fundamentar mi opinión.

Asuntos clave de auditoría

Los asuntos clave de auditoría son aquellos asuntos que, según mi juicio profesional, fueron de mayor importancia en mi auditoría de los estados financieros separados adjuntos. Estos asuntos se abordaron en el contexto de mi auditoría de los estados financieros tomados en su conjunto, y al momento de fundamentar la opinión correspondiente, pero no para proporcionar una opinión separada sobre estos asuntos. Con base en lo anterior, más adelante detallo la manera en la que cada asunto clave fue abordado durante mi auditoría.

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He cumplido con las responsabilidades descritas en la sección *Responsabilidades del Auditor en la Auditoría de los Estados Financieros* de mi informe, incluso en relación con estos asuntos. En consecuencia, mi auditoría incluyó la realización de los procedimientos diseñados para responder a los riesgos de incorrección material evaluados en los estados financieros. Los resultados de mis procedimientos de auditoría, incluidos los procedimientos realizados para abordar los asuntos que se mencionan a continuación, constituyen la base de mi opinión de auditoría sobre los estados financieros separados adjuntos.

Impacto de las reservas de petróleo y gas natural, en el cálculo de la depreciación y agotamiento, y el deterioro de los activos de larga duración para el segmento de exploración y producción (Upstream).

Descripción del Asunto Clave de Auditoría

Como se describe en las **Notas 3.1 y 3.2** de los estados financieros separados adjuntos, la estimación de reservas de petróleo y gas natural, impacta en el cálculo de la depreciación y agotamiento, y en la determinación de los flujos de efectivo futuros utilizados para el análisis de deterioro de los activos de larga duración del segmento de Exploración y Producción (Upstream). La depreciación y agotamiento de los activos de larga duración para el segmento de exploración y producción se calculan utilizando el método de unidades de producción, utilizando como base las reservas probadas desarrolladas produciendo (PDP) y probadas no produciendo (PNP). Estos tipos de reservas son cantidades estimadas de petróleo y gas natural que tienen certeza razonable que serán comercialmente recuperables en años futuros a partir de yacimientos conocidos bajo las condiciones económicas y operativas existentes.

La estimación de las reservas de petróleo y gas natural requiere la evaluación de supuestos financieros y no financieros como son; precios del petróleo, factores económicos (costos operativos (OPEX) e inversiones futuras (CAPEX)), y tasas de producción, entre otros. Debido a la complejidad involucrada en la estimación, la Administración utilizó firmas especializadas independientes (en adelante “especialistas externos”) para la estimación del volumen de reservas de petróleo y gas natural.

La realización de procedimientos de auditoría para evaluar la estimación de la Compañía de las reservas de petróleo y gas natural requirió un alto grado de juicio del auditor y un mayor grado de esfuerzo, debido a la naturaleza y evaluación de los supuestos utilizados por la Administración para su medición y el uso del trabajo de los especialistas externos.

Respuesta de Auditoría

Obtuvimos un entendimiento del proceso, evaluamos el diseño y probamos la eficacia operativa de los controles que abordan los riesgos de incorrección material relacionados con la medición y valuación de la estimación de las reservas de petróleo y gas natural, incluidos los controles sobre la revisión ejecutada por la Administración de la metodología utilizada para desarrollar la estimación y los supuestos importantes descritos anteriormente y los controles sobre la integridad y exactitud de los supuestos financieros y no financieros proporcionados a los especialistas.



Para evaluar la estimación de las reservas de petróleo y gas natural, obtuvimos los informes de los especialistas externos, contratados por la Administración, y evaluamos la competencia y objetividad de los especialistas externos y los internos asignados por la Administración responsables de supervisar la preparación de la estimación de reservas por parte de los especialistas, a través de la consideración de sus calificaciones profesionales, experiencia, independencia y uso de prácticas aceptadas en la industria. Adicionalmente, evaluamos la integridad y precisión de los supuestos financieros y no financieros descritos anteriormente y utilizados por los especialistas en el cálculo de la estimación de las reservas de petróleo y gas natural.

Sobre la estimación de las reservas, evaluamos que los movimientos de reservas cumplieran con las regulaciones de la SEC (U.S. Securities and Exchange Commission), que la evaluación de la Administración del límite económico llegue hasta el punto en el que el flujo de efectivo operativo de un proyecto se vuelve negativo, que la integridad y precisión de los supuestos financieros y no financieros utilizados por la Administración estuvieran acorde con los datos de la documentación fuente, y la integridad de los datos históricos, realizando pruebas retrospectivas de datos históricos para evaluar la razonabilidad de la estimación a lo largo del tiempo. También probamos la precisión matemática de los cálculos de la depreciación y agotamiento, incluida la comparación de las cantidades probadas de reservas de petróleo y gas natural desarrolladas utilizadas en los cálculos con el informe de reservas de la Compañía, y revisamos el modelo sobre cálculo del valor recuperable del deterioro de activos de larga duración del segmento de exploración y producción, evaluando la consistencia entre la estimación de reservas de petróleo y gas natural elaborada por los especialistas, con los volúmenes de reservas incluidos por la Administración en los modelos de deterioro y entre otros procedimientos.

Responsabilidades de la Administración y de los responsables del gobierno de la Compañía en relación con los estados financieros

La Administración es responsable por la preparación y correcta presentación de los estados financieros de acuerdo con las Normas de Contabilidad y de Información Financiera aceptadas en Colombia (NCIF) adoptadas por la Contaduría General de la Nación; de diseñar, implementar y mantener el control interno relevante para la preparación y correcta presentación de los estados financieros libres de incorrección material, bien sea por fraude o error; de seleccionar y de aplicar las políticas contables apropiadas; y, de establecer estimaciones contables razonables en las circunstancias.

Al preparar los estados financieros, la Administración es responsable de evaluar la capacidad de la Compañía para continuar como negocio en marcha, revelando, según corresponda, los asuntos relacionados con este asunto y utilizando la base contable de negocio en marcha, a menos que la Administración tenga la intención de liquidar la Compañía o cesar sus operaciones, o no tenga otra alternativa realista diferente a hacerlo.

Los encargados del gobierno de la Compañía son responsables de la supervisión del proceso de información financiera de la misma.



Responsabilidades del Auditor en la Auditoría de los Estados Financieros

Mi objetivo es obtener una seguridad razonable sobre si los estados financieros tomados en su conjunto están libres de incorrección material, ya sea por fraude o error, y emitir un informe que incluya mi opinión. La seguridad razonable es un alto nivel de aseguramiento, pero no garantiza que una auditoría realizada de acuerdo con las Normas Internacionales de Auditoría aceptadas en Colombia siempre detectará una incorrección material cuando exista. Las incorrecciones pueden surgir debido a fraude o error y se consideran materiales si, individualmente o acumuladas, podría esperarse que influyan razonablemente en las decisiones económicas que los usuarios tomen con base en los estados financieros.

Como parte de una auditoría de acuerdo con las Normas Internacionales de Auditoría aceptadas en Colombia, debo ejercer mi juicio profesional y mantener mi escepticismo profesional a lo largo de la auditoría, además de:

- Identificar y evaluar los riesgos de incorrección material en los estados financieros, ya sea por fraude o error, diseñar y ejecutar procedimientos de auditoría que respondan a esos riesgos, y obtener evidencia de auditoría que sea suficiente y apropiada para fundamentar mi opinión. El riesgo de no detectar una incorrección material debido a fraude es mayor que la resultante de un error, ya que el fraude puede implicar colusión, falsificación, omisiones intencionales, declaraciones falsas o sobrepaso del sistema de control interno.
- Obtener un entendimiento del control interno relevante para la auditoría, para diseñar procedimientos de auditoría que sean apropiados en las circunstancias.
- Evaluar lo adecuado de las políticas contables utilizadas, la razonabilidad de las estimaciones contables y las respectivas revelaciones realizadas por la Administración.
- Concluir sobre si es adecuado que la Administración utilice la base contable de negocio en marcha y, con base en la evidencia de auditoría obtenida, si existe una incertidumbre material relacionada con eventos o condiciones que puedan generar dudas significativas sobre la capacidad de la Compañía para continuar como negocio en marcha. Si concluyo que existe una incertidumbre importante, debo llamar la atención en el informe del auditor sobre las revelaciones relacionadas, incluidas en los estados financieros o, si dichas revelaciones son inadecuadas, modificar mi opinión. Las conclusiones del auditor se basan en la evidencia de auditoría obtenida hasta la fecha de mi informe, sin embargo, eventos o condiciones posteriores pueden hacer que una entidad no pueda continuar como negocio en marcha.
- Evaluar la presentación general, la estructura, el contenido de los estados financieros, incluyendo las revelaciones, y si los estados financieros representan las transacciones y eventos subyacentes de manera que se logre una presentación razonable.

Comuniqué a los responsables del gobierno de la Compañía, entre otros asuntos, el alcance planeado y el momento de realización de la auditoría, los hallazgos significativos de la misma, así como cualquier deficiencia significativa del control interno identificada en el transcurso de la auditoría.

También proporcioné a los responsables del gobierno de la Compañía una declaración de que he cumplido los requerimientos de ética aplicables en relación con la independencia y comunicado con ellos acerca de todas las relaciones y demás cuestiones de las que se podría esperar razonablemente que pudieran afectar mi independencia y, en su caso, las correspondientes salvaguardas.



Entre los asuntos que han sido objeto de comunicación con los responsables del gobierno de la Compañía, determiné los que han sido de la mayor significatividad en la auditoría de los estados financieros del período actual y que son, en consecuencia, asuntos clave de la auditoría. Describí esos asuntos en mi informe de auditoría salvo que las disposiciones legales o reglamentarias prohíban revelar públicamente el asunto o, en circunstancias extremadamente poco frecuentes, se determine que un asunto no se debería comunicar en mi informe porque cabe razonablemente esperar que las consecuencias adversas de hacerlo superarían los beneficios de interés público del mismo.

Otros Asuntos

Los estados financieros separados bajo normas de contabilidad y de Información Financiera aceptadas en Colombia (NCIF) adoptadas por la Contaduría General de la Nación de Ecopetrol S.A. al 31 de diciembre de 2022, que hacen parte de la información comparativa de los estados financieros separados adjuntos, fueron auditados por mí, de acuerdo con normas internacionales de auditoría aceptadas en Colombia, sobre los cuales expresé mi opinión sin salvedades el 27 de febrero de 2023.

Otros Requerimientos Legales y Reglamentarios

Fundamentado en el alcance de mi auditoría, no estoy enterado de situaciones indicativas de inobservancia en el cumplimiento de las siguientes obligaciones de la Compañía: 1) Llevar los libros de actas, registro de accionistas y de contabilidad, según las normas legales y la técnica contable; 2) Desarrollar las operaciones conforme a los estatutos y decisiones de la Asamblea de Accionistas y de la Junta Directiva; 3) La información contenida en las planillas integradas de liquidación de aportes, y en particular la relativa a los afiliados, y la correspondiente a sus ingresos base de cotización, ha sido tomada de los registros y soportes contables al 31 de diciembre de 2023, así mismo, a la fecha mencionada la Compañía no se encuentra en mora por concepto de aportes al Sistema de Seguridad Social Integral; y 4) Conservar la correspondencia y los comprobantes de las cuentas; 5) Contar con la existencia y funcionamiento del sistema integral para la prevención del lavado de activos y la financiación del terrorismo (SIPLA); y 6) Adicionalmente, existe concordancia entre los estados financieros separados adjuntos y la información contable incluida en el informe de gestión preparado por la Administración de la Compañía, el cual incluye la constancia por parte de la Administración sobre la libre circulación de las facturas con endoso emitidas por los vendedores o proveedores. El informe correspondiente a lo requerido por el artículo 1.2.1.2 del Decreto 2420 de 2015 lo emití por separado el 27 de febrero de 2024.

Edwin René Vargas Salgado
Revisor Fiscal y Socio a Cargo
Tarjeta Profesional 80050-T
Designado por Ernst & Young Audit S.A.S. TR-530

Bogotá D.C., Colombia
27 de febrero de 2024



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Notes to the
Financial Statements



Notes to the Consolidated Financial Statements December 13, 2023

(Figures expressed in Colombian pesos, unless otherwise stated)

Consolidated subsidiaries, partner companies, and joint ventures

Company	Functional currency	Ecopetrol's percentage share	Activity	Country/ Registered address	Geographical area of operation	Net equity	Net income (loss) for the period	Total assets	Total liabilities
Subsidiaries									
Refinería de Cartagena S.A.S.	Dollar	100%	Hydrocarbon refining, product marketing, and distribution	Colombia	Colombia	24,740,594	3,491,071	37,267,018	12,526,424
Cenit transporte y logística de hidrocarburos S.A.S.	Colombian Peso	100%	Hydrocarbon storage and pipeline transportation	Colombia	Colombia	16,611,674	4,706,947	19,592,580	2,980,906
Ecopetrol Global Energy S.L.U.	Dollar	100%	Investment vehicle	Spain	Spain	13,936,493	779,372	13,936,782	289
Oleoducto Central S.A. - Ocesa	Dollar	72.65%	Crude oil pipeline transportation	Colombia	Colombia	3,927,289	2,971,800	7,014,138	3,086,849
Hocol Petroleum Limited.	Dollar	100%	Investment vehicle	Bermuda	Bermuda	3,974,558	31,568	3,974,628	70
Ecopetrol America LLC.	Dollar	100%	Hydrocarbon exploration and exploitation	United States	United States	1,565,618	(136,483)	3,216,891	1,651,273
Hocol S.A.	Dollar	100%	Hydrocarbon exploration, exploitation, and production	Cayman Islands	Colombia	3,472,259	11,318	5,321,946	1,849,687
Esentia S.A.	Dollar	100%	Production and marketing of polypropylene resin	Colombia	Colombia	2,577,343	228,978	3,043,370	466,027
Ecopetrol Capital AG	Dollar	100%	Surplus capture and financing for companies within the Ecopetrol Business Group	Switzerland	Switzerland	2,662,417	140,961	9,893,302	7,230,885
Oleoducto de Colombia S. A. - ODC	Colombian Peso	73%	Crude oil pipeline transportation	Colombia	Colombia	416,079	404,994	845,948	429,869
Black Gold Re Ltd.	Dollar	100%	Reinsurance company for companies within the Ecopetrol Business Group	Bermuda	Bermuda	1,075,957	99,298	1,349,418	273,461
Andean Chemicals Ltd.	Dollar	100%	Investment vehicle	Bermuda	Bermuda	1,879,782	153,558	1,884,301	4,519
Oleoducto de los Llanos Orientales S. A. - ODL	Colombian Peso	65%	Crude oil pipeline transportation	Panama	Colombia	904,438	697,496	1,567,561	663,123
Interconexión Eléctrica S.A. E.S.P	Colombian Peso	51.41%	Provision of public electricity transmission service, infrastructure project development and commercial exploitation, and development of systems, activities, and services in information technology and telecommunications.	Colombia	Latin America	26,366,394	2,466,453	71,217,176	44,850,782

Company	Functional currency	Ecopetrol's percentage share	Activity	Country/ Registered address	Geographical area of operation	Net equity	Net income (loss) for the period	Total assets	Total liabilities
Inversiones de Gases de Colombia S.A. Invercolsa S.A.	Colombian Peso	51.88%	Holding company with investments in natural gas and LPG (liquefied petroleum gas) transportation and distribution companies in Colombia	Colombia	Colombia	654,544	341,249	658,602	4,058
Alcanos de Colombia S.A. E.S.P. (1)	Colombian Peso	29.61%	Provision of public utility service for natural gas, including the construction and operation of gas pipelines, distribution networks, regulation stations, metering, and compression stations.	Colombia	Colombia	330,460	141,650	820,122	489,662
Metrogas de Colombia S.A. E.S.P. (1)	Colombian Peso	33.49%	Provision of public utility service for the commercialization and distribution of natural gas; exploration, exploitation, storage, utilization, transportation, refining, purchase, sale, and distribution of hydrocarbons and their derivatives.	Colombia	Colombia	57,091	20,559	141,006	83,915
Gases del Oriente S.A. E.S.P. (1)	Colombian Peso	48.50%	Provision of public utility service for the distribution of natural gas and the development of all complementary activities related to the provision of this service.	Colombia	Colombia	90,681	60,588	203,703	113,022
Promotora de Gases del Sur S.A. E.S.P. (1)	Colombian Peso	31.44%	Promotion of national or foreign, public, or private capital involvement to achieve the gas massification project.	Colombia	Colombia	55,250	40,433	85,986	30,736
Combustibles Líquidos de Colombia S.A. E.S.P. (1)	Colombian Peso	41.61%	Wholesale marketing of natural gas, provision of public utility service for LPG distribution, and development of complementary activities related to the provision of this service.	Colombia	Colombia	61,759	1,351	79,823	18,064
Ecopetrol USA Inc.	Dollar	100%	Exploration and exploitation of hydrocarbons	United States	United States	11,898,257	985,030	11,914,539	16,282
Ecopetrol Permian LLC.	Dollar	100%	Exploration and exploitation of hydrocarbons	United States	United States	8,414,625	1,028,492	11,422,720	3,008,095
Ecopetrol Oleo é Gas do Brazil Ltda.	Real	100%	Exploration and exploitation of hydrocarbons	Brazil	Brazil	1,937,309	(203,243)	1,977,106	39,797
Esenttia Masterbatch Ltda.	Colombian Peso	100%	Manufacture of polypropylene compounds and masterbatches	Colombia	Colombia	357,206	203,097	469,328	112,122
Ecopetrol del Perú S. A.	Dollar	100%	Exploration and exploitation of hydrocarbons	Peru	Peru	57,570	872	60,894	3,324
ECP Hidrocarburos de Mexico	Dollar	100%	Offshore exploration	Mexico	Mexico	43,393	(1,811)	45,380	1,987
Ecopetrol Costa Afuera Colombia S.A.S.	Colombian Peso	100%	Offshore exploration	Colombia	Colombia	13,395	431	13,609	214
Esenttia Resinas del Perú SAC	Dollar	100%	Marketing of polypropylene resins and masterbatches	Peru	Peru	14,579	809	37,141	22,562
Esenttia Resinas de Mexico	Mexican Peso	100%	Marketing of polypropylene resins and masterbatches	Mexico	Mexico	(271)	(303)	134	405

Company	Functional currency	Ecopetrol's percentage share	Activity	Country/ Registered address	Geographical area of operation	Net equity	Net income (loss) for the period	Total assets	Total liabilities
Kalixpan Servicios Técnicos S de RL De CV.	Mexican Peso	100%	Specialized services in the oil and hydrocarbon industry	Mexico	Mexico	86	(87)	90	4
Ecopetrol US Trading LLC	Dollar	100%	International marketing of crude oil and refined products	United States	United States	58,927	61,252	1,330,201	1,271,274
Econova Technology & innovation S.L.	Dollar	100%	Execution of activities related to Science, Technology, and Innovation	Spain	Spain	262	(315)	570	308
Ecopetrol Singapore PTE. LTD	Singapore Dollar	100%	Holding company with investment in an international crude oil and refined products trading company	Singapore	Asia	653,065	661,672	653,174	109
Ecopetrol Trading Asia PTE. LTD	Singapore Dollar	100%	International marketing of crude oil and refined products	Singapore	Asia	653,095	661,951	3,558,012	2,904,917
Partner Companies									
Serviport S.A. (2)	Colombian Peso	49%	Services for loading and unloading of oil vessels, supply of equipment for the same purpose, technical inspections, and cargo measurements.	Colombia	Colombia	11,274	(4,692)	41,082	29,808
Sociedad Portuaria Olefinas y Derivados S.A. (3)	Colombian Peso	50%	Construction, use, maintenance, adaptation, and management of port facilities, ports, private docks, or docks serving the general public.	Colombia	Colombia	8,476	2,904	12,219	3,743
Joint ventures									
Equion Energía Limited	Dollar	51%	Exploration, exploitation, and production of hydrocarbons.	United Kingdom	Colombia	1,329,394	38,718	1,401,176	71,782
Ecodiesel Colombia S.A. (3)	Colombian Peso	50%	Production, marketing, and distribution of biofuels and oleochemicals.	Colombia	Colombia	170,060	55,099	265,330	95,270

(1) Indirect participation through Investments in Gases de Colombia S.A. Invercolsa S.A.

(2) Information available as of September 30, 2023, The investment is fully impaired.

(3) Information available as of November 30, 2023.

Notes to the Consolidated Financial Statements December 13, 2023

(Figures expressed in Colombian pesos, unless otherwise stated)

Subsidiaries, partner companies, and joint ventures of Interconexión Eléctrica SA ESP

Company	Activity	Country/ Registered address	ISA Percentage share	Assets	Liabilities	Net equity	Profit (loss)
Subsidiaries							
Consorcio Transmantaro	Electricity	Peru	60.00%	7,344,752	5,581,454	1,763,298	264,947
Interligação Eléctrica Evrecy	Electricity	Brazil	35.82%	338,371	37,254	301,117	(16,122)
Fundo de Investimento Assis	Autonomous Equity – Special Purpose Entity (SPV)	Brazil	35.82%	297,081	-	297,081	11,015
Fundo de Investimento Barra Bonita Renda Fixa Referenciado	Autonomous Equity – Special Purpose Entity (SPV)	Brazil	35.82%	14,829	-	14,829	1,112
Fundo de Investimento Referenciado di Bandeirantes	Autonomous Equity – Special Purpose Entity (SPV)	Brazil	28.76%	290,651	-	290,651	30,977
Fundo de Investimento Xavantes Referenciado di	Autonomous Equity – Special Purpose Entity (SPV)	Brazil	19.57%	609,614	-	609,614	54,566
Interconexiones Viales	Roads	Chile	65.00%	39	2	37	(4,145)
Interligação Eléctrica Waterpei	Electricity	Brazil	35.82%	556,177	49,953	506,224	51,352
Interligação Eléctrica Biguaçu	Electricity	Brazil	35.82%	424,904	62,939	361,965	59,638
Interligação Eléctrica De Minas Gerais	Electricity	Brazil	35.82%	452,785	36,657	416,128	783
Interligação Eléctrica Itapura	Electricity	Brazil	35.82%	157,436	17,588	139,848	18,699
Interligação Eléctrica Itaquerê	Electricity	Brazil	35.82%	523,334	48,894	474,440	60,763
Interligação Eléctrica Itaúnes	Electricity	Brazil	35.82%	480,882	60,603	420,279	25,801

Company	Activity	Country/ Registered address	ISA Percentage share	Assets	Liabilities	Net equity	Profit (loss)
Interligação Eléctrica Norte E Nordeste	Electricity	Brazil	35.82%	448,973	129,859	319,114	57,351
Interligação Eléctrica Pinheiros	Electricity	Brazil	35.82%	62,153	8,171	53,982	11,823
Interligação Eléctrica Riacho Grande	Electricity	Brazil	35.82%	158,806	32,556	126,250	11,066
Interligação Eléctrica Serra Do Japi	Electricity	Brazil	35.82%	378,842	36,487	342,355	46,124
Interligação Eléctrica Sul	Electricity	Brazil	35.82%	210,185	30,017	180,168	7,516
Interligação Eléctrica Tibagi	Electricity	Brazil	35.82%	233,320	24,446	208,874	26,181
Internexa	Telecommunications and ICT	Colombia	99.50%	543,656	472,450	71,206	(143,493)
Transamerican Telecommunication S.A.	Telecommunications and ICT	Argentina	99.50%	16,905	10,996	5,909	(12,330)
Internexa Brazil Operadora de Telecomunicações	Telecommunications and ICT	Brazil	99.56%	790	1	789	(134,535)
Internexa Chile	Telecommunications and ICT	Chile	98.50%	56,509	40,960	15,549	(13,073)
Interligação Eléctrica JAGUAR 6 S.A.	Electricity	Brazil	35.82%	190,819	12,840	177,979	9,872
Interligação Eléctrica JAGUAR 8 S.A.	Electricity	Brazil	35.82%	117,533	13,176	104,357	9,713
Interligação Eléctrica JAGUAR 9 S.A.	Electricity	Brazil	35.82%	417,572	49,551	368,021	72,511
Internexa Participações	Investment Vehicle	Brazil	99.52%	1,051	66	985	(91,887)
Internexa Perú	Telecommunications and ICT	Peru	99.65%	305,746	261,296	44,450	(26,531)
ISA Bolivia	Electricity	Bolivia	100.00%	121,428	10,866	110,562	10,284
ISA Capital Do Brazil	Investment Vehicle	Brazil	100.00%	5,298,623	355,011	4,943,612	841,993
ISA CTEEP	Electricity	Brazil	35.82%	27,486,842	13,765,784	13,721,058	2,461,680
ISA Interchile	Electricity	Chile	100.00%	5,545,359	4,251,713	1,293,646	121,276

Continued..

Company	Activity	Country/ Registered address	ISA Percentage share	Assets	Liabilities	Net equity	Profit (loss)
ISA Intercolombia	Electricity	Colombia	100.00%	455,003	321,892	133,111	52,374
ISA Intervial Chile	Roads	Chile	100.00%	4,256,273	620,579	3,635,694	533,512
ISA Intervial Colombia	Roads	Colombia	100.00%	638	-	638	51
ISA Inversiones Chile SpA	Investment Vehicle	Chile	100.00%	1,924,873	252,519	1,672,354	157,503
ISA Inversiones Chile Roads SpA	Investment Vehicle	Chile	100.00%	3,638,805	634	3,638,171	534,045
ISA Inversiones Costera Chile	Investment Vehicle	Chile	100.00%	70,173	184,224	(114,051)	(71,698)
ISA Inversiones Tolten	Investment Vehicle	Chile	100.00%	27	-	27	(5)
ISA Investimentos E Participações	Investment Vehicle	Brazil	100.00%	995,918	202	995,716	140,918
ISA Perú	Electricity	Peru	99.98%	898,335	707,216	191,119	43,063
ISA REP	Electricity	Peru	60.00%	1,859,619	1,313,560	546,059	290,512
ISA Transelca	Electricity	Colombia	100.00%	1,936,548	1,025,967	910,581	199,452
Linear Systems RE	Other Businesses	Bermudas	100.00%	93,546	57,914	35,632	7,232
Proyectos de Infraestructura del Perú	Electricity	Peru	100.00%	21,204	2,185	19,019	7,773
Ruta Costera	Roads	Colombia	100.00%	2,588,885	2,415,873	173,012	(4,870)
Ruta de La Araucanía	Roads	Chile	100.00%	681,824	357,953	323,871	60,950
Ruta de Los Ríos	Roads	Chile	75.00%	301,539	222,280	79,259	35,696
Ruta del Bosque	Roads	Chile	100.00%	12,595	1,523	11,072	(28,950)
Ruta del Loa	Roads	Chile	100.00%	1,365,486	1,054,542	310,944	70,097
Ruta del Maipo	Roads	Chile	100.00%	7,018,675	4,554,573	2,464,102	465,092
Ruta del Maule	Roads	Chile	100.00%	25	1	24	2,264
Sistemas Inteligentes en Red	Other Businesses	Colombia	99.77%	25,252	11,509	13,743	4,543
XM	Electricity	Colombia	99.73%	445,241	387,254	57,987	18,309

Company	Activity	Country/ Registered address	ISA Percentage share	Assets	Liabilities	Net equity	Profit (loss)
INTERCONEXIONES DEL NORTE S.A.	Electricity	Chile	100.00%	30,123	29,971	152	167
Consorcio Eléctrico YAPAY S.A	Electricity	Peru	60.00%	19,110	5,499	13,611	(6,221)
Investments in Joint Ventures							
Interligação Elétrica do Madeira	Energy transportation	Brazil	51.00%	5,739,716	2,578,898	3,160,818	356,863
Interligação Elétrica Garanhuns	Energy transportation	Brazil	51.00%	1,228,068	352,772	875,296	101,875
Interligação Elétrica Paraguaçu	Energy transportation	Brazil	50.00%	1,331,261	446,906	884,355	126,683
Interligação Elétrica Aimorés	Energy transportation	Brazil	50.00%	850,421	299,051	551,370	84,280
Interligação Elétrica Ivaí	Energy transportation	Brazil	50.00%	3,603,858	2,805,048	798,810	169,061
Transmissora Aliança de Energia Elétrica	Energy transportation	Brazil	14.88%	13,877,165	8,604,065	5,273,100	1,121,332
Interconexión Eléctrica Colombia Panamá-Panamá	Energy transportation	Panama	50.00%	5,572	3,383	2,189	(31,805)
Interconexión Eléctrica Colombia Panamá Colombia	Energy transportation	Colombia	1.17%	266	1	265	(2)
Transnexa (1)	Telecommunications transportation	Ecuador	50.00%	-	-	-	-
Derivex	Managing the trading system for financial derivative instruments related to electrical energy operations	Colombia	39.97%	2,568	-	2,568	(851)
Parques del Río	Roads	Colombia	33.00%	68	-	68	(34)
Conexión Kimal Lo Aguirre S.A.	Energy transportation	Chile	33.33%	933,357	576,150	357,207	873
Investments in partner companies							
ATP Tower Holdings	Telecommunications transportation	United States	24.70%	3,981,180	2,532,318	1,448,862	(95,648)



10

2023 Special
Group Report



● Ecopetrol Business Group “EBG”

According to Colombian legislation, the establishment of a business group entails the controlling company defining an objective or purpose through its direction over the collective entities within the group. This direction is provided without impeding the individual development of the corporate purpose or activities of each entity. In the case of the Ecopetrol Group, the overarching objective is outlined in the 2040 Strategy, “Energy That Transforms.”

It is essential to highlight that companies within the business group maintain their legal and administrative independence while adhering to their respective corporate purposes. The relationship with the parent company manifests in the subsidiary companies aligning their activities with the criteria set by the parent company, thereby adding value to the group.

As per legal provisions, the Ecopetrol Business Group, “EBG,” comprises Ecopetrol S.A. (“Ecopetrol and/or the Company”) as the parent company and its subsidiary companies (both national and foreign), with the formation of a duly declared business group.

Aligned with the 2040 Strategy, the Ecopetrol Group diversifies its portfolio across three (3) lines of business: i) hydrocarbons, ii) low-emission solutions, and iii) transmission and roads.

In 2023, the challenges faced by the EBG focused on advancing towards the goals outlined in the 2040 Strategy, aiming to generate value and ensure sustainability. Aligned with strategic pillars such as i) cash protection, ii) cost efficiency, iii) capital discipline, iv) and profitable and sustainable growth, investments have been directed towards facilitating the growth of companies and preserving the value of assets. These investments aim to provide

reliability, integrity, and continuity to the Group’s value chain.

The principle of financial consolidation governing the EBG dictates that the financial statements of Ecopetrol as the parent company and its controlled companies (directly and indirectly) are presented as a single economic entity. Consequently, the application of International Financial Reporting Standards (IFRS) adopted in Colombia, under the principles and standards of accounting and financial information (NCIF), reflects the synergies of transactions between specific segments of the hydrocarbon business line and the different companies of the Group according to their line of business. This optimization of unit costs, capacity to undertake integrated businesses, and increased efficiency in resource utilization collectively form a financial structure that optimizes the cost of capital and maximizes returns for shareholders.



Aligned with the 2040 Strategy, the Ecopetrol Group diversifies its portfolio across three (3) lines of business:
**i) hydrocarbons,
ii) low-emission solutions, and iii) transmission and roads.**

● Special Group Report

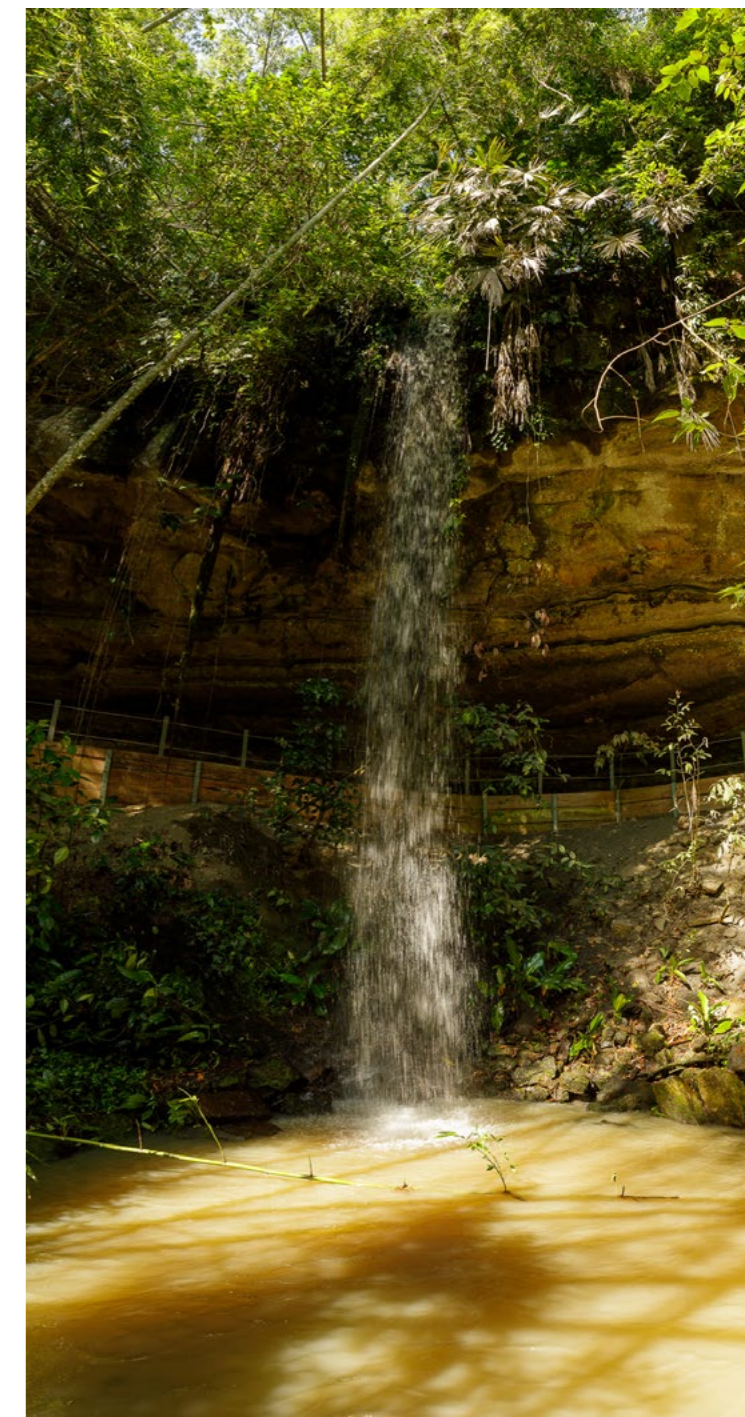
In accordance with the provisions outlined in Ecopetrol S.A.’s bylaws, the Board of Directors presents the shareholders with the following special report on the business group’s activities for the year 2023 during the General Assembly.

The Board of Directors, acting as a strategic guide, ensures that Ecopetrol’s economic relationships with its subsidiaries adhere to legal requirements, regulations on prevention, management, and resolution of conflicts of interest, and, importantly, operate within market conditions.

Ecopetrol employs instruments such as the transfer pricing guide between the economic affiliates of Ecopetrol S.A. This guide defines the parameters considered when determining remuneration for operations between Ecopetrol and its subsidiaries, ensuring consistency with agreements made with third parties.

The Special Group Report, as mandated by Article 29 of Law 222 of 1995, stipulates that transactions involving related parties must be disclosed in the Notes To The Financial Statements. Accordingly, the corresponding details are provided below. It is also worth noting that, alongside this report, the CEO of Ecopetrol submits a semiannual report to the Board of Directors, detailing operations, agreements, or contracts entered into with subsidiaries during the period. These reports outline the conditions of these transactions, which, in all cases, align with prevailing market conditions.

The economic relationships with subsidiary companies, consolidated throughout 2023, were conducted in accordance with the aforementioned parameters, as outlined below.



Significant transactions with related parties

Ecopetrol S.A. Notes To The Separate Financial Statements

(Figures expressed in Colombian pesos, unless otherwise stated)

Investments in companies

Composition and movements

	As of December 31, 2023	As of December 31, 2022
Subsidiaries		
Refinería de Cartagena S.A.S.	24,073,017	25,658,731
CENIT transporte y logística de hidrocarburos S.A.S.	17,396,978	18,738,840
Interconexión Eléctrica S.A. E.S.P	14,769,481	16,467,666
Ecopetrol Global Energy S.L.U.	13,835,350	16,012,542
Hocol Petroleum Limited	4,468,105	5,713,301
Ecopetrol Capital AG	2,662,417	3,196,506
Andean Chemical Limited	2,007,594	2,286,193
Esenttia S.A.	1,385,247	1,623,719
Inversiones de Gases de Colombia S.A. and subsidiaries	1,303,100	1,293,140
Black Gold Re Limited	1,075,957	1,243,639
Ecopetrol Singapore PTE. LTD	513,085	240,841
Econova Technology & Innovation, S.L (1)	264	-
Unrealized profit from crude oil sales - Ecopetrol Singapore PTE. LTD (2)	-	(366,325)
	83,490,595	92,108,793
Minus impairment Hocol Petroleum Limited	(537,598)	(537,598)
	82,952,997	91,571,195
Joint ventures		
Equión Energía Limited	1,037,418	1,191,154
Ecodiesel Colombia S.A.	85,030	54,614
	1,122,448	1,245,768
Minus impairment Equión Energía Limited	(408,183)	(400,196)
	714,265	845,572
	83,667,262	92,416,767

(1) In the first quarter of 2023, Ecopetrol S.A. announced the establishment of Econova, an open innovation network comprising five regional centers. These centers will serve as hubs for companies, academic institutions, and entrepreneurs to develop and implement disruptive ideas aimed at advancing energy transition, decarbonization, biodiversity conservation, and other critical challenges.

(2) As of December 2022, Ecopetrol S.A. adjusted the value of its equity method investments in Ecopetrol Singapore PTE LTD in accordance with IAS 28.28. This adjustment was made due to a commercial crude oil sale operation to the subsidiary, which was in transit at the cutoff date. The sale was completed and delivered to the respective customer in early 2023.

Related Parties

Subsidiaries, partner companies, and joint ventures

Below are the balances with subsidiaries, partner companies, and joint ventures as of December 13, 2023, and December 31, 2022:

	Accounts receivable	Other financial assets	Other assets	Accounts payable	Other liabilities
Subsidiaries					
Ecopetrol Trading Asia Pte Ltd	2,789,527	-	-	-	-
Refinería de Cartagena S.A.S.	1,969,085	-	-	699,854	-
Ecopetrol US Trading LLC	293,260	-	-	-	-
Esenttia S.A.	33,571	-	-	957	-
Inversiones de Gases de Colombia S.A. - Invercolsa S.A.	25,901	-	-	737	317
Cenit Transporte y Logística de Hidrocarburos S.A.S	18,825	-	257,213	357,090	782
Esenttia Masterbatch Ltda	8,346	-	-	7	-
Hocol S.A.	7,483	-	83,842	147,790	-
Oleoducto Central S.A. - Ocesa	5,133	-	-	435,763	-
Ecopetrol America LLC	1,835	-	-	661	-
Black Gold Re Limited	992	-	-	-	-
Ecopetrol Oleo & Gas do Brazil Ltda	719	-	-	-	-
Oleoducto de los Llanos Orientales S.A.	519	-	-	103,529	67
Interconexión Eléctrica S.A. E.S.P	405	-	-	1,278	-
Ecopetrol Capital AG	354	2,509,264	-	-	-
Ecopetrol Permian LLC	259	-	-	-	-
Oleoducto de Colombia S.A. - ODC	167	-	-	51,664	-
Ecopetrol Costa Afuera	143	-	-	-	-
Ecopetrol Usa Inc	126	-	-	-	7
Hocol Petroleum Limited	26	-	-	-	-
Andean Chemicals Limited	13	-	-	-	-
Ecopetrol Hidrocarburos México, S.A. de C.V.	10	-	-	-	10
Ecopetrol Singapore Pte Ltd	5	-	-	-	-
Econova Technology & Innovation, S.L	-	-	-	13	-
Joint ventures					
Ecodiesel Colombia S.A.	4,953	-	-	49,429	-
Equión Energía Limited	-	-	84	6,305	423
Partner companies					
E2 Energía Eficiente S.A. E.S.P.	7,215	-	-	87	-
Balance as of December 31, 2023	5,168,872	2,509,264	341,139	1,855,164	1,606
Current	5,168,872	2,509,264	77,426	1,855,164	1,606
Non-current	-	-	263,713	-	-
	5,168,872	2,509,264	341,139	1,855,164	1,606
	(Note 7)	(Note 9)	(Note 11)	(Note 19)	

The main transactions involving related parties for the twelve-month periods ending on December 31 are outlined below:

	2023		2022	
	Income	Costs and expenses	Income	Costs and expenses
Subsidiaries				
Ecopetrol Trading Asia Pte. Ltd.	24,551,663	-	17,336,196	-
Refinería de Cartagena S.A.S.	21,262,524	11,705,400	17,823,811	8,415,684
Ecopetrol US Trading LLC	2,281,664	81,925	-	-
Ecopetrol Capital AG	1,183,522	1,026,884	691,560	639,672
Inversiones de Gases de Colombia S.A. - Invercolsa S.A.	211,013	9,283	201,867	8,984
Esenttia S.A.	114,023	601	103,145	-
Cenit Transporte y Logística de Hidrocarburos S.A.S.	105,262	5,369,373	98,375	4,129,574
Hocol S.A.	104,610	570,465	125,494	748,194
Esenttia Masterbatch Ltda	91,495	-	191,453	-
Oleoducto Central S.A. - Ocensa	58,296	5,178,796	42,065	4,625,637
Ecopetrol America LLC	4,106	11,546	1,314	7,938
Ecopetrol Oleo & Gas do Brazil Ltda	1,189	-	332	-
Black Gold Limited	1,129	-	1,568	-
Oleoducto de los Llanos Orientales S.A.	744	1,197,919	269	935,956
Ecopetrol Usa Inc	718	-	1,416	-
Interconexión Eléctrica S.A. E.S.P.	499	2,013	-	1,151
Ecopetrol Costa Afuera	310	-	223	-
Oleoducto de Colombia S.A. - ODC	171	674,051	132	627,481
Hocol Petroleum Limited	133	-	64	-
Ecopetrol Permian LLC	102	-	2,679	-
Andean Chemicals Limited	89	-	67	-
Ecopetrol Global Energy S.L.U.	45	-	17	-
Ecopetrol Perú	14	-	-	-
Ecopetrol Hidrocarburos México, S.A. de C.V.	24	-	459	-
Ecopetrol Singapore Pte Ltd	21	-	12	-
Oleoducto Bicentenario de Colombia S.A.S.	-	-	2	751,183
Joint ventures				
Ecodiesel Colombia S.A.	25,032	540,987	21,234	619,286
Equión Energía Limited	202	-	538	446
Partner companies				
E2 Energía Eficiente S.A. E.S.P.	91,105	2,518	90,117	7,627
	50,089,705	26,371,761	36,734,409	21,518,813

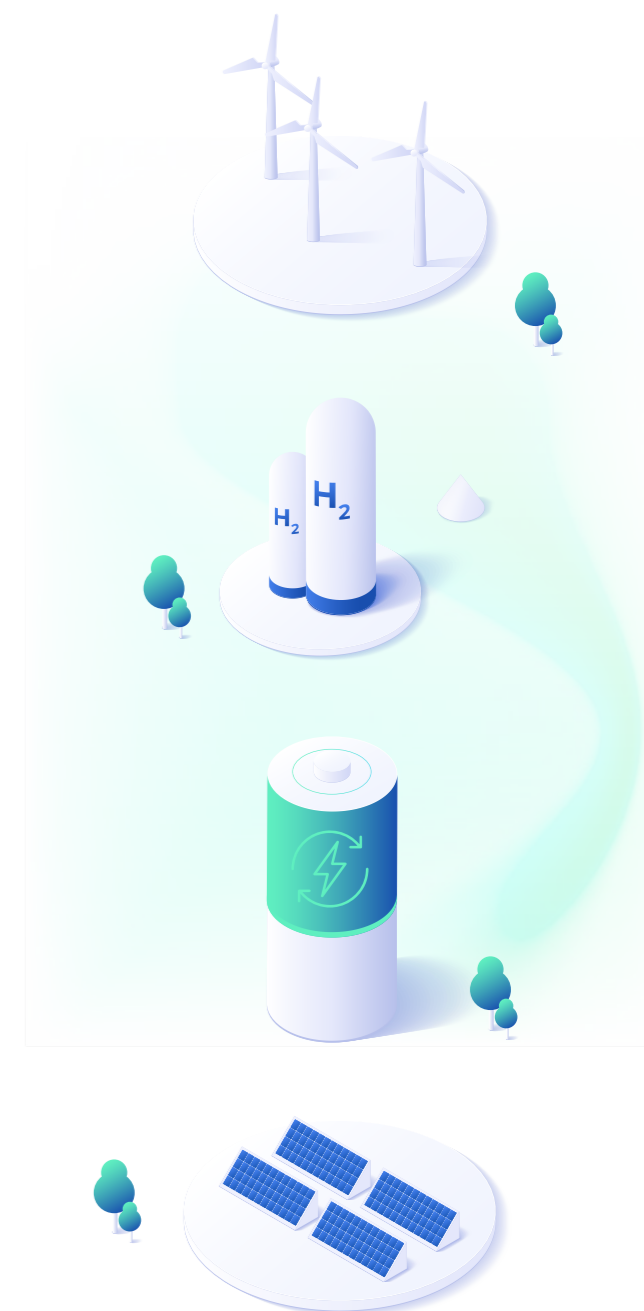
Main changes in the Ecopetrol Group's structure during 2023

The term "Ecopetrol Group" encompasses all companies in which Ecopetrol holds equity, whether directly or indirectly, irrespective of the degree of control. Thus, it represents a broad, non-legal concept aimed at fostering a shared identity conducive to integrating Ecopetrol's various investments in these entities, from the perspectives of management, direction, and culture.

As of December 13, 2023, the Ecopetrol Group comprised 13 subsidiaries, 84 affiliates, and 25 equity investments. In contrast, the Ecopetrol Business Group consisted of 122 companies. Presently, the Ecopetrol Group operates in countries such as Argentina, Brazil, Bolivia, Chile, Colombia, Spain, the United States, Mexico, Peru, Singapore, among others.

The main changes (highlighted in the table) as of December 13, 2023, are outlined below:

- 1 Incorporation of Econova Technology & Innovation, S.L. in Spain.
- 2 Commencement of the liquidation process for CONCENTRA INTELIGENCIA EN ENERGIA S.A.S. "ENERGY INTELLIGENCE," in which Ecopetrol held a direct shareholding of 4.76%.
- 3 Establishment of a new company: Interconexiones del Norte S.A., with Ecopetrol's indirect participation through Interconexión Eléctrica S.A. E.S.P.
- 4 Incorporation of CONSORCIO ELÉCTRICO YAPAI, with Ecopetrol's indirect participation through Interconexión Eléctrica S.A. E.S.P.
- 5 Liquidation of CONCENTRA.
- 6 OLEODUCTO BICENTENARIO DE COLOMBIA S.A.S.: The company was dissolved without liquidation due to a merger by absorption with Cenit, a subsidiary of Ecopetrol.



Summary of the shareholder structure and shareholding of the subsidiaries

Date updated: 31/12/2023

Company	Ecopetrol's Shareholding (Direct and/or indirect)
ALCANOS DE COLOMBIA S.A. E.S.P.	29.61%
ANDEAN CHEMICALS LIMITED	100.00%
ATP TOWER HOLDINGS LLC	12.70%
BLACK GOLD RE LIMITED	100.00%
CAMARA DE RIESGO CENTRAL DE CONTRAPARTE COLOMBIA	4.13%
CENIT TRANSPORTE Y LOGISTICA DE HIDROCARBUROS S.A.S.	99.93%
COLOMBIA PIPELINES LIMITED	51.00%
COMBUSTIBLES LIQUIDOS DE COLOMBIA S.A. E.S.P.	41.61%
COMPANHIA DE TRANSMISSAO DE ENERGIA ELECTRICA PAULISTA	18.41%
CONCESIÓN COSTERA-CARTAGENA-BARRANQUILLA S.A.S.	51.41%
CONEXIÓN KIMAL LO AGUIRRE S.A.	17.14%
CONSORCIO TRANSMANTARO	30.85%
CONSORCIO ELÉCTRICO YAPAI S.A.	30.85%
DERIVEX S.A.	20.75%
E2 ENERGÍA EFICIENTE S.A. E.S.P.	19.20%
ECODIESEL COLOMBIA S.A.	50.00%
ECONOVA TECHNOLOGY & INNOVATION S.L.	100.00%
ECOPETROL AMERICA LLC (c)	100.00%
ECOPETROL CAPITAL AG	100.00%
ECOPETROL COSTA AFUERA COLOMBIA S.A.S.	100.00%
ECOPETROL DEL PERÚ S.A.	100.00%
ECOPETROL ENERGÍA S.A. E.S.P.	100.00%
ECOPETROL GLOBAL ENERGY S.L.U.	100.00%
ECOPETROL OLEO & GAS DO BRASIL LTDA.	100.00%
ECOPETROL PERMIAN LLC (c)	100.00%
ECOPETROL SINGAPORE PTE. LTD	100.00%
ECOPETROL TRADING ASIA PTE. LTD	100.00%
ECOPETROL US TRADING LLC	100.00%
ECOPETROL USA INC	100.00%
ECP HIDROCARBUROS MEXICO	100.00%

Company	Ecopetrol's Shareholding (Direct and/or indirect)
EFIGAS S.A. E.S.P.	22.02%
EMPRESA PROPIETRIA DE LA RED -EPR-	5.71%
EQUION ENERGÍA LIMITED (a)	51.00%
ESENTTIA MASTERBATCH LTDA -ESENTTIA MB LTDA.	100.00%
ESENTTIA RESINAS DE MEXICO	100.00%
ESENTTIA RESINAS DEL PERU SAC	100.00%
ESENTTIA S.A.	100.00%
EXTRUCOL S.A.	22.70%
GAS NATURAL DEL CESAR S.A. E.S.P.	10.14%
GAS NATURAL DEL ORIENTE S.A. E.S.P.	18.13%
GASES DE LA GUAJIRA S.A. E.S.P.	27.44%
GASES DEL CARIBE S.A. E.S.P.	25.40%
GASES DEL ORIENTE S.A. E.S.P.	48.50%
HOCOL PETROLEUM LIMITED	100.00%
HOCOL S.A. (a) (d)	100.00%
INTERCHILE S.A.	51.41%
INTERCONEXIÓN ELÉCTRICA COLOMBIA PANAMÁ S.A.	25.71%
INTERCONEXIÓN ELÉCTRICA COLOMBIA PANAMÁ S.A. E.S.P.	0.60%
INTERCONEXIÓN ELÉCTRICA ISA BOLIVIA S.A.	51.41%
INTERCONEXIÓN ELÉCTRICA ISA PERÚ S.A.	51.41%
INTERCONEXIÓN ELÉCTRICA S.A. E.S.P.	51.41%
INTERCONEXIONES DEL NORTE S.A.	51.41%
INTERCONEXIONES VIALES SPA	33.42%
INTERLIGAÇÃO ELÉCTRICA AGUAPEÍ S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA AIMORÉS S.A.	3.30%
INTERLIGAÇÃO ELÉCTRICA BIGUAÇU S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA DE MINAS GERAIS S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA DO MADEIRA S.A.	3.36%
INTERLIGAÇÃO ELÉCTRICA EVRECV	6.60%
INTERLIGAÇÃO ELÉCTRICA GARANHUNS S.A.	3.36%
INTERLIGAÇÃO ELÉCTRICA ITAPURA S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA ITAQUERÉ S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA ITAUNAS S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA IVAÍ S.A.	3.30%

Company	Ecopetrol's Shareholding (Direct and/or indirect)
INTERLIGAÇÃO ELÉCTRICA JAGUAR 6 S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA JAGUAR 8 S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA JAGUAR 9 S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA NORTE E NORDESTE S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA PARAGUAÇU S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA PINHEIROS S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA RIACHO GRANDE	6.60%
INTERLIGAÇÃO ELÉCTRICA SERRA DO JAPI S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA SUL S.A.	6.60%
INTERLIGAÇÃO ELÉCTRICA TIBAGI S.A.	6.60%
INTERNEXA BRASIL OPERADORA DE TELECOMUNICAÇÕES S.A.	51.17%
INTERNEXA CHILE S.A.	50.35%
INTERNEXA PARTICIPAÇÕES S.A.	51.15%
INTERNEXA PERÚ S.A.	51.22%
INTERNEXA S.A.	51.15%
INTERVIAL CHILE S.A.	51.41%
INTERVIAL DE COLOMBIA S.A.S.	51.41%
INVERSIONES DE GASES DE COLOMBIA S.A. - Invercolsa S.A.	51.88%
ISA CAPITAL DO BRASIL S.A.	51.41%
ISA INTERCOLOMBIA S.A. E.S.P.	51.41%
INVERSIONES CHILE SPA	51.41%
INVERSIONES CHILE VIAS SPA.	51.41%
ISA INVERSIONES COSTERA CHILE SPA	51.41%
ISA INVERSIONES TOLTEN LTDA	51.41%
ISA INVESTIMENTOS E PARTICIPAÇÕES DO BRASIL LTDA	51.41%
KALIXPAN SERVICIOS TÉCNICOS S. de R.L. de C.V.	100.00%
LINEAR SYSTEMS RE LTD	51.41%
METREX S.A.	11.55%
METROGAS DE COLOMBIA S.A. E.S.P.	33.49%
OLEODUCTO CENTRAL S.A. - OCENSA	72.59%
OLEODUCTO DE COLOMBIA S.A. - ODC	72.96%
OLEODUCTO DE LOS LLANOS ORIENTALES S.A.	64.95%
PARQUES DEL RÍO S.A.S.	16.97%
PROMIORIENTE S.A. E.S.P.	3.63%

Company	Ecopetrol's Shareholding (Direct and/or indirect)
PROMOTORA DE GASES DEL SUR S.A. E.S.P.	31.44%
PROYECTOS DE INFRAESTRUCTURA DEL PERÚ S.A.C.	51.41%
RED CENTROAMERICADA DE TELECOMUNICACIONES	5.65%
RED DE ENERGÍA DEL PERÚ	30.85%
REFINERÍA DE CARTAGENA S.A.S.	100.00%
RODEO MIDLAND BASIN LLC (e)	49.00%
RUTA DE LA ARAUCANÍA SOCIEDAD CONCESIONARIA S.A.	51.41%
RUTA DE LOS RÍOS SOCIEDAD CONCESIONARIA S.A.	38.56%
RUTA DEL BOSQUE SOCIEDAD CONCESIONARIA S.A.	51.41%
RUTA DEL LOA SOCIEDAD CONCESIONARIA S.A.	51.41%
RUTA DEL MAIPO SOCIEDAD CONCESIONARIA S.A.	51.41%
RUTAL DEL MAULE SOCIEDAD CONCESIONARIA S.A.	51.41%
SANTIAGO OIL COMPANY (a)	51.00%
SISTEMAS INTELIGENTES DE RED S.A.S.	51.18%
SOCIEDAD COLOMBIANA DE SERVICIOS PORTUARIOS S.A. - Serviport S.A.	28.19%
SOCIEDAD PORTUARIA DEL DIQUE	0.51%
SOCIEDAD PORTUARIA OLEFINAS Y DERIVADOS S.A.	50.00%
TRANSAMERICAN TELECOMUNICACIONES S.A.	51.15%
TRANSELCA S.A. E.S.P.	51.41%
TRANSGAS DE OCCIDENTE S.A. (b)	12.74%
TRANSMISSORA ALIANÇA DE ENERGÍA ELÉCTRICA S.A.	7.65%
TRANSNEXA S.A.	25.61%
XM COMPAÑÍA DE EXPERTOS EN MERCADOS S.A. E.S.P.	51.27%
ZONA FRANCA DE CARTAGENA S.A.	11.00%

(a) - Foreign company that has a branch in Colombia.

(b) - Company in liquidation process. The shareholding composition is maintained as in the last report before the liquidation decree or decision.

(c) - In this company the capital stock is not divided into shares.

(d) - Company in which there is a difference between the number of shares contained in the investment certificate and the number represented in books (higher) for accounting reasons.

(e) - In this company capital stock is not divided into shares, the unit is included to maintain the format, likewise it is a joint account and therefore its accounting treatment is different from a traditional investment in a company.

Description of the companies that make up the Ecopetrol Group and their main achievements during 2023

versión español difiere de insumo

Hydrocarbons Business Line

Upstream Segment



Hocol S.A.

Ecopetrol's percentage share: Indirect ownership of 100% held through Hocol Petroleum Limited, a Bermuda-based company.

Profile and Activity: Acquired by Ecopetrol in May 2009, this company is actively involved in the exploration, production, and transportation of hydrocarbons across various regions of Colombia. Hocol's operations span different areas in the country, encompassing Northern Colombia (Lower Magdalena Valley, Sinú San Jacinto, and Guajira), the Plains, Huila, and Tolima (Upper Magdalena Valley). The company's activities cover exploration and production blocks, with its primary production sourced from fields such as Ocelote, Chuchupa and Ballena, Bonga-Mamey, Bullerengue, and La Cañada, situated in Meta, Guajira, Lower Magdalena Valley, and Huila, respectively.

Key Accomplishments:

- During 2023, Hocol achieved an average production of 35.5 KBOED before royalties, with its financial strength enabling the full financing of the 2023 investment plan through cash generated from operations.
- Discoveries were made in the plains in partnership with Geopark (with a 50% stake) in the departments of Meta and Casanare. Contingent Resources, Discovered but yet to be Delimited, and Prospective Resources are estimated at 12 MBO (currently undergoing evaluation and certification), with 4 discoveries out of a total of 9 drilled wells.
- Hocol received recognition from the United Nations Global Compact for its commendable sustainability practices, particularly for its contribution to Sustainable Development Goal #9, which involved preserving and empowering ethnic and cultural expressions within Afro-descendant communities in operational areas. This initiative facilitated the integration of these expressions into a digital space within the metaverse.
- Acknowledgment from the ACP at the Sustainability Facts for the company's biodiversity conservation efforts, notably through the establishment of a natural reserve in the Ocelote field and protection initiatives for umbrella species.
- Hocol's management was certified by the International Organization of Human Capital Directors and AON technical experts for its exemplary practices in promoting the physical and mental well-being of individuals.
- Hocol further enhanced its environmental impact by protecting 12 endangered species and planting a total of 2,021,477 trees by the end of 2023.



Ecopetrol America LLC

Ecopetrol's percentage share: Indirectly owns 100% through Ecopetrol

USA Inc, which in turn holds indirect ownership primarily through Ecopetrol Global Energy S.L.U.

Profile and Activity: Incorporated in 2007 with the purpose of establishing presence in the Gulf of Mexico in the United States, one of the most promising areas globally, to execute a long-term strategy focused on increasing reserves and expanding the investment portfolio.

Key Accomplishments:

- The average production for 2023 was 6.8 kboed (Ecopetrol's production share before royalties), with production at the end of December reaching ~10 kboed (Ecopetrol's production share before royalties).
- Successful completion of operations at well MC 992 ST-1 in the Gunflint field, resulting in an incremental production of approximately 800 boed net EA.
- Successful completion of the DC90 development well in Dalmatian, contributing an additional production of around 2,400 boed net EA.
- Installation of a subsea pump at K2, resulting in increased production of 850 boed net EA by the end of the year. This pump will play a pivotal role in facilitating the drilling of new wells at K2 in the upcoming years.



Ecopetrol Permian LLC

Ecopetrol's percentage share: Indirect

ownership of 100% stake through Ecopetrol USA Inc, which, in turn, primarily holds an indirect ownership stake through Ecopetrol Global Energy S.L.U.

Profile and Activity: Incorporated in 2019 with the purpose of establishing presence in the Permian Basin in the United States, one of the most prolific and globally significant areas, to implement a long-term strategy focused on increasing reserves,

diversifying the investment portfolio into short-cycle assets, light crude oil, and gas, and enhancing expertise in unconventional reservoir development.

Key Accomplishments:

- Achieved a record average production of approximately 66.4 kboed (Ecopetrol's production share before royalties) in 2023.
- Set a production record for the partnership, reaching 163 kboed (before royalties) in early December 2023, with approximately 103 kboed attributed to ECP Permian.
- Initiated operations in the Delaware area.
- Notable TSEG achievements include a low CO2 emissions intensity of < 8 kgCO2e/boe, recycling over 19 Mbls of water, and substituting an average of 36% of diesel used in drilling and completion activities with compressed natural gas.



Ecopetrol Oleo e gas do Brazil LTDA

Ecopetrol's percentage share: indirect ownership of

100% through Ecopetrol Global Energy S.L.U. (99%) – Ecopetrol America LLC. (1%)

Profile and Activity: Established in 2006 as part of the upstream internationalization strategy, this company engages in industrial and commercial activities related to the exploration, production, refining, transportation, storage, distribution, and marketing of hydrocarbons and their products or derivatives. It also focuses on the development and marketing of conventional and alternative energy sources, both domestically and internationally, including Brazil.

Key Accomplishments:

- Ecopetrol is positioned in the pre-salt and post-salt plays of the Santos Basin.
- Approval of the FID for drilling the Pau Brazil prospect, scheduled to commence activities in the first half of 2024.

Ecopetrol Peru

Ecopetrol's percentage share: indirect ownership of 100%, primarily through Ecopetrol Global Energy S.L.U.

Profile and Activity: Established in 2007, Ecopetrol Peru holds a 30% stake in Block 101. After being returned to Perupetrol, the block is undergoing environmental remediation by the block operator (Repsol) in preparation for the closure of the company, estimated for 2024, pending completion of the respective environmental procedures.

Kalixpan servicios técnicos S. de R.L. de C.V

Ecopetrol's percentage share: indirect ownership through Hocol Petroleum LTD – HPL (99%) and Andean Chemicals LTD (1%)

Profile and Activity: Company incorporated in 2019 with the purpose of providing specialized technical and professional consulting and engineering, geophysical and geoscience services in the development, management and supervision of oil and hydrocarbon projects. Currently undergoing liquidation.



Equion energía limited

Porcentaje de participación de Ecopetrol:
51% owned directly by

Ecopetrol S.A.

Profile and Activity: In January 2011, Ecopetrol acquired a 51% stake in this company. Equion is a hydrocarbon company that operated in the foothills in the plains, developing various oil and gas production fields. Currently, the company is fulfilling termination commitments arising from partnership contracts, and it is also undergoing corporate simplification.



Ecopetrol Hydrocarbons México S.A de C.V

Ecopetrol's percentage share: indirect ownership of 100% through Ecopetrol Global Energy S.L.U. (99.99%) – Ecopetrol America LLC. (0.01%)

Profile and Activity: Founded in 2017, this company focuses exclusively on exploring and extracting hydrocarbons in the Mexican territory.

Midstream Segment



Cenit transporte y logística de hidrocarburos S.A.S

Ecopetrol's percentage share:
100% owned directly by Ecopetrol S.A.

Profile and Activity: Cenit, a company that began operations in 2013, leads the midstream segment within the Ecopetrol Business Group, focusing on the transportation and logistics of hydrocarbons and derivatives. It operates a network of transportation and storage systems with its main headquarters in Bogotá, D.C., and operations across the national territory.

Cenit owns, operates, and maintains 28 transportation systems, consisting of approximately 2,953 km of oil pipelines and approximately 3,706 km of multi-product pipelines. These pipelines transport crude oil and refined products, respectively, connecting production centers, import facilities, terminals, refineries, distribution points, and export facilities in Colombia.

Cenit – Oleoducto Bicentenario Merger: Oleoducto Bicentenario de Colombia S.A.S underwent a reorganizational merger process by which it was absorbed by Cenit Transporte and Logística de Hidrocarburos S.A.S. As a result of the merger, Oleoducto Bicentenario de Colombia S.A.S was dissolved without liquidation, and all its assets, liabilities, rights, and obligations were universally transferred to Cenit Transporte and Logística de Hidrocarburos S.A.S.

Key Accomplishments:

- Cenit continues to promote its principle of "Safety First," achieving a historic compliance in accident indicators in 2023 (Actual TRIF 0.12 vs Target 0.18), with a total execution of approximately 25.1 million man-hours.
- In 2023, Cenit fulfilled the volumetric commitments with its clients, transporting 608.3 KBPD and achieving 100% nomination fulfillment for both pipelines and multi-product pipelines:
 - Transporting approximately 302.4¹³⁸KBPD of crude oil through pipelines, marking a 1% increase compared to the previous year.
 - Transporting approximately 305.9¹³⁹ KBPD of refined products through multi-product pipelines, representing a growth of 2.6% compared to the previous year.
- Cenit has upheld its commitment to carbon neutrality, a status achieved since 2022 through ICONTEC's certification, resulting in a reduction of 6,371 tCO2eq of greenhouse gases. Significant progress has been made in integrating renewable energies to decrease the carbon footprint of operations, including solar energy generation projects at El Copey (8.8 MW), Ayacucho (4.4 MW), and Vasconia (2.5 MW).



138. The volumes of crude oil transported correspond to the following systems: Vasconia-Galán, Ayacucho-Galán, Ayacucho-Coveñas, and Trasandino Pipeline.

139. The volumes of products transported correspond to the following systems: Galán-Sebastopol, Galán-Salgar, Galán-Bucaramanga, Buenaventura-Yumbo, Cartagena-Baranoa, and Sebastopol.



Ecopetrol holds an indirect ownership of 73% in ODC, distributed as follows: 51.28% through Cenit S.A.S., and 21.72% through Hocol S.A..

Profile and Activity: Oleoducto de Colombia S.A. – ODC is primarily engaged in facilitating the transportation of heavy and medium crude oils between the Vasconia plant and the Coveñas terminal. Additionally, it provides crude loading services to tanker ships for export. The pipeline spans a length of 483 km with an approximate design capacity of 240 KBPD.

Key Accomplishments:

- ODC revamped its strategy through 2040, focusing on four pillars that delineate its purpose, commitment to business growth, and corporate strategy in alignment with the energy transition framework.
- In 2023, ODC successfully transported 190 KBPD, meeting its yearly target by implementing commercial incentives for blend crude customers, operational schemes for heavy crude, and accommodating additional ships beyond the transportation program.
- The company adhered to capital discipline principles, investing around \$21.82 million USD in line with its SOSTECNIBILIDAD strategy. This ensured operational continuity and achieved a service factor of 97%, surpassing industry standards.
- In October 2023, ODC received a follow-up report on carbon-neutral certification from Icontec, demonstrating 100% compliance with the commitments outlined in the certification.
- ODC reported revenues of \$918.4 billion and an EBITDA of \$701.4 billion, thus achieving record financial results in 2023. Both metrics exhibited a weighted average growth of over 10% in the past five years. Additionally, net profit reached \$405 billion, marking the second-best annual result in the company's history.
- In the realm of sustainable development, ODC made socio-environmental investments in 2023 that directly benefited over 230 youths, 20 productive units, and 6 institutions, also including the planting of 7,000 trees.



percentage share: As of December 28, 2023, Ecopetrol S.A. held an indirect ownership of 99.03% through Cenit and 0.97% through Hocol.

Profile and Activity: Oleoducto Bicentenario de Colombia S.A.S. was founded in 2010 with the primary objective of designing, constructing, owning, operating, maintaining, and commercially exploiting the transportation system spanning 230 kilometers from the Araguane Station (Casanare) to the Banadía Station (Arauca). It specializes in transporting crude oil production from the Eastern Plains, particularly from the foothills of the plains.

Key Accomplishments:

- OBC closed the year with revenues nearing \$911 billion, marking a 20% increase compared to the previous year. This growth was propelled by the provision of contingent services and additional leases. Furthermore, it achieved an EBITDA of \$798 billion with an 88% margin, surpassing the previous year's performance by 2%, showcasing strong financial management.
- The company reinforced its commitment to sustainable territorial development, achieving a 120% compliance rate with tree planting goals, supporting students, fostering local entrepreneurship, facilitating connections to public services, and enhancing institutions in its area of influence.
- No environmental incidents were reported, and the tree planting goal was met in its entirety, underscoring the company's dedication to environmental stewardship.
- Embracing the "Art of Taking Care of Yourself" philosophy, OBC concluded the year with zero TRIF incidents, maintaining a steadfast commitment to employee safety and well-being.
- OBC was recertified as carbon neutral for the second consecutive year, receiving recognition from ICONTEC and solidifying its position as a sustainability leader within the industry.



indirect ownership of 72.65% through Cenit S.A.S.

Profile and Activity: Ocensa's primary activity is the transportation of crude oil via pipelines, originating from the Cusiana and Cupiagua stations in the department of Casanare, and terminating at the Coveñas loading port in the municipalities of San Antero, department of Córdoba, and Coveñas, department of Sucre. The pipeline comprises ten pumping or booster stations, a pressure reduction station, a maritime terminal, 836 kilometers of land pipelines, and 12 kilometers at sea, with tanks capable of storing up to five million barrels, two bases for coordinating maintenance activities, and a control center.

Key Accomplishments:

- OCENSA achieved an EBITDA of \$5.344 billion (1.236 billion USD), marking a 10% increase compared to 2022, reflecting sustainable growth in profitability and effective financial management.
- According to the 2023 customer satisfaction survey, OCENSA received an overall rating of 90%, maintaining a positive trend since 2019 and solidifying its position above 90%. Customers highlighted the company's customer service, system reliability, and transparency.
- The company maintained a TRIF indicator of zero for the year 2023, demonstrating its continued commitment to the safety and well-being of its employees.
- Allocated approximately \$20 billion to social impact projects by December 13, 2023, contributing to the sustainable development of local communities and strengthening its commitment to corporate social responsibility.
- OCENSA maintained carbon neutrality certification in all its operations during 2023, demonstrating its leadership in environmental sustainability and its commitment to mitigating climate change.



Ecopetrol S.A. holds an indirect ownership of 65% through Cenit S.A.S.

Profile and Activity: Oleoducto de los Llanos Orientales S.A. – ODL is primarily engaged in the exploration, exploitation, processing, and transportation of hydrocarbons and related activities. The transportation system has a nominal capacity of 310 KBPD, operating via a 235-kilometer line between the Rubiales Firefighter Station (Meta) and the Monterrey Station (Casanare), with a 25-kilometer branch connecting the pipeline to the Cusiana Station (Casanare). It also includes various facilities for receiving heavy crude and conducting dilution processes, among other functions.

Key Accomplishments:

- ODL transported approximately 244 KBPD, exceeding the volume transported in 2022 by 15%, marking the second-best year in the company's history in terms of transported barrels.
- ODL achieved unprecedented operating revenues, reaching \$1.421 billion, a 26.4% increase compared to the previous year. This achievement is attributed to increased transported volumes and a favorable exchange rate. Additionally, EBITDA reached COP 1.194 billion, a 29% increase over the previous year, with an EBITDA margin of 84%, surpassing the established plan by 2%.
- Operating under the principle of "Life First," ODL maintained remarkable safety indicators, keeping TRIF and Process Safety Frequency Index (PSFI) Level I indicators at zero.
- Achieved 120% compliance with its environmental and social sustainability goals, including the planting of 22,550 trees, support for 879 students, and assistance to nearly 300 local enterprises.
- The company was granted the Carbon Neutrality certification for the second consecutive year and reduced approximately 737 tCO2eq through the optimization of its pumping processes. Additionally, it surpassed its greenhouse gas emissions reduction target with a compliance rate of 131%, demonstrating its commitment to environmental sustainability.
- ODL was honored with the Equipares award from the Ministry of Labor for its efforts in reducing gender gaps and promoting a culture of respect and diversity in the workplace. Furthermore, it was recognized as one of the best companies to work for in 2023, ranking 16th in its category, according to the Great Place to Work study.

Downstream



Refinería de Cartagena S.A.S

Ecopetrol's percentage share: 100% (inclusive of both direct and indirect ownership).

Profile and Activity: The Cartagena Refinery stands out as one of the most modern facilities in Latin America, adhering to stringent international standards. It processes a significant portion of heavy crude in its operations, leveraging both locally sourced and international crude oils to produce clean fuels and high-value petrochemicals. Production at the Cartagena Refinery consistently meets the stringent sulfur content requirements outlined in Resolution 40444 of 2023, with diesel containing less than 12 ppm sulfur and gasoline less than 45 ppm sulfur (with maximum thresholds set at 15 ppm for diesel and 50 ppm for gasoline).

The refinery's primary objective is to meet the country's fuel demands, particularly in the northern region. Excess production is distributed domestically through the ports of Pozos Colorados, Buenaventura, and Barranquilla, accounting for 56% of diesel and Jet fuel and 33% of gasoline produced in Colombia.

Key Accomplishments:

- In 2023, the Cartagena Refinery achieved a historic annual throughput record of 197.8 thousand barrels per day (KBD) and the second-highest gross refining margin at \$19.7 USD per barrel.
- Successful completion of plant shutdowns: Amina U-120, Butamer U-106, and Crude U-001.
- A notable 41% increase in refined product production compared to 2022.
- Recorded the second-highest EBITDA in history, reaching 937 million USD.
- Realized significant benefits from efficiency program initiatives totaling 80 million USD.
- Achieved an 11% improvement in the energy intensity index (IIE) compared to 2022, contributing to cost optimization and refinery decarbonization efforts.
- Reduced greenhouse gas emissions by 46,429 Ton CO₂eq.
- Received ICONTEC water footprint certification (verification) for the years 2019, 2020, 2021, and 2022, meeting the ISO 14046 standard.



Ecodiesel Colombia S.A.

Ecopetrol's percentage share: Ecopetrol S.A. holds a direct ownership stake of 50%.

Profile and Activity: Established in 2007 within the biofuels sector, Ecodiesel Colombia S.A. operates a biodiesel production plant in Barrancabermeja with a capacity of up to 144 thousand tons per year. Through operational efficiencies and maintenance, the plant surpassed its theoretical capacity of 120,000 tons per year. Noteworthy achievements include reducing conversion rates from 1.010 to 1.006 and improving loading rates to 17 tons per hour.

Key Accomplishments:

- Recorded zero work accidents in 2023, marking 469 accident-free days, and no environmental incidents involving spills or leaks.
- Became the first biodiesel-producing company in the country to achieve Carbon Neutrality Certification by ICONTEC.
- Achieved a monthly biodiesel production record of 12,571 tons in March, totaling 144,996 tons for the year, representing a 5.2% annual growth (+7,224 tons).
- Attained a monthly glycerin production record of 1,563 tons in July, totaling 17,281 tons for the year, reflecting a 5% annual growth (+823 tons).
- Achieved record sales of 144,831 tons of biodiesel, with a 4.53% growth compared to 2022, generating operational revenues of \$793 billion pesos.
- Positioned as a leader in its area of influence and within the national biodiesel sector, holding a 20.7% domestic market share.



Esenttia

Ecopetrol's percentage share: 100%.

Profile and Activity: ESENTTIA, a company in the petrochemical sector, became a part of the Ecopetrol Group in 2008. Situated in Cartagena, it stands as the leading producer in Colombia's polypropylene market, boasting a nominal production capacity of 500,000 tons per year.

Key Accomplishments:

- Achieved 12 million USD in cost efficiencies and operational budget optimizations.
- Successfully completed investment projects totaling 20 million USD, realizing CAPEX efficiencies of 767,000 USD. Major projects include:
 - Recircular: Construction of a 12 Kton/year recycled resin production plant using the mechanical recycling process, with completion progress at 95%.
 - Plant 2 Expansion: Expansion of Plant 2's polypropylene production capacity to 70 Kton/year, with completion progress at 99%.
 - CO₂ Substations: Replacement of the CO₂ system in the plant's electrical substations with a new CFM200 agent, finalized in 2023.
 - SAP EWM: Deployment of the SAP EWM module and licenses, along with equipment to enhance communication, completed in 2023.
 - Ranked #7 in the outstanding employer and innovation category by Revista Dinero, acknowledging comprehensive talent management, work environment, and innovation achievements.



Commercial Segment



Ecopetrol Trading
ASIA PTE. LTD.

Ecopetrol's
percentage share:

Ecopetrol holds 100% indirect ownership through Ecopetrol Singapore Pte. Ltd.

Profile and Activity: Ecopetrol Trading Asia Pte. Ltd., established in 2022, focuses primarily on the international marketing of crude oil and products from the Ecopetrol Group in the Asian market. Situated in Singapore, a hub for Asian marketing, it enables an understanding of customer purchasing dynamics and the value of crude oil for clients in Asia.

Key Accomplishments:

- Ecopetrol Trading Asia marketed 85.9 million barrels in 2023 and achieved an EBITDA of 170.5 million USD, exceeding the financial plan by 70%.
- Additionally, ECPTA achieved operational efficiencies (0.5 million USD) in contract negotiation processes, financial efficiencies (11 million USD) through dynamic cash management, tax efficiencies (12 million USD) following the agreement (Global Trader Program) with Enterprise Singapore (a government agency), and Capex efficiencies (2.3 million USD) due to cost reduction in the implementation of the SAP financial module.
- In its second year of operation, Ecopetrol Trading Asia achieved brand positioning for Apiay crude, Mares crude, and Fuel Oil in Asia. It closed deals with new customers and expanded the portfolio of destinations to 5 countries (China, India, Brunei, Malaysia, Singapore, Japan).
- As part of the commercial decarbonization initiative, ECPTA successfully marketed 6 mmbbls of carbon-offset crude.
- In July 2023, ECPTA received the commercial excellence award from EG for its outstanding performance in its first year of operation.

Ecopetrol Singapore PTE. LTD

Ecopetrol's percentage share: Ecopetrol S.A. holds 100% direct ownership.

Profile and Activity: Established with the aim of solidifying its presence in the Asian market by acquiring new customers and expanding into new destinations, as well as fostering stronger commercial ties on the continent, Ecopetrol Singapore Pte. Ltd. operates with a subscribed share capital compliant with Singapore regulations, with Ecopetrol S.A. holding 100% direct ownership. Moreover, this company fully owns the share capital of Ecopetrol Trading Asia Pte. Ltd.



Ecopetrol
Hydrocarbons México
S.A de C.V

Ecopetrol's percentage share: Ecopetrol S.A. holds 99%, with indirect ownership through Andean Chemicals Ltd. (1%).

Profile and Activity: Established in March 2018, the company commenced operations in December of the same year with the goal of marketing the electrical energy required by the Ecopetrol Group. However, due to the acquisition of 51.4% of ISA's shares, it became necessary to cease its marketing activities for contractual and regulatory reasons. In October 2023, the Board of Directors of Ecopetrol Energía approved the dissolution and liquidation of the company, which is currently undergoing the necessary procedures for effective liquidation.



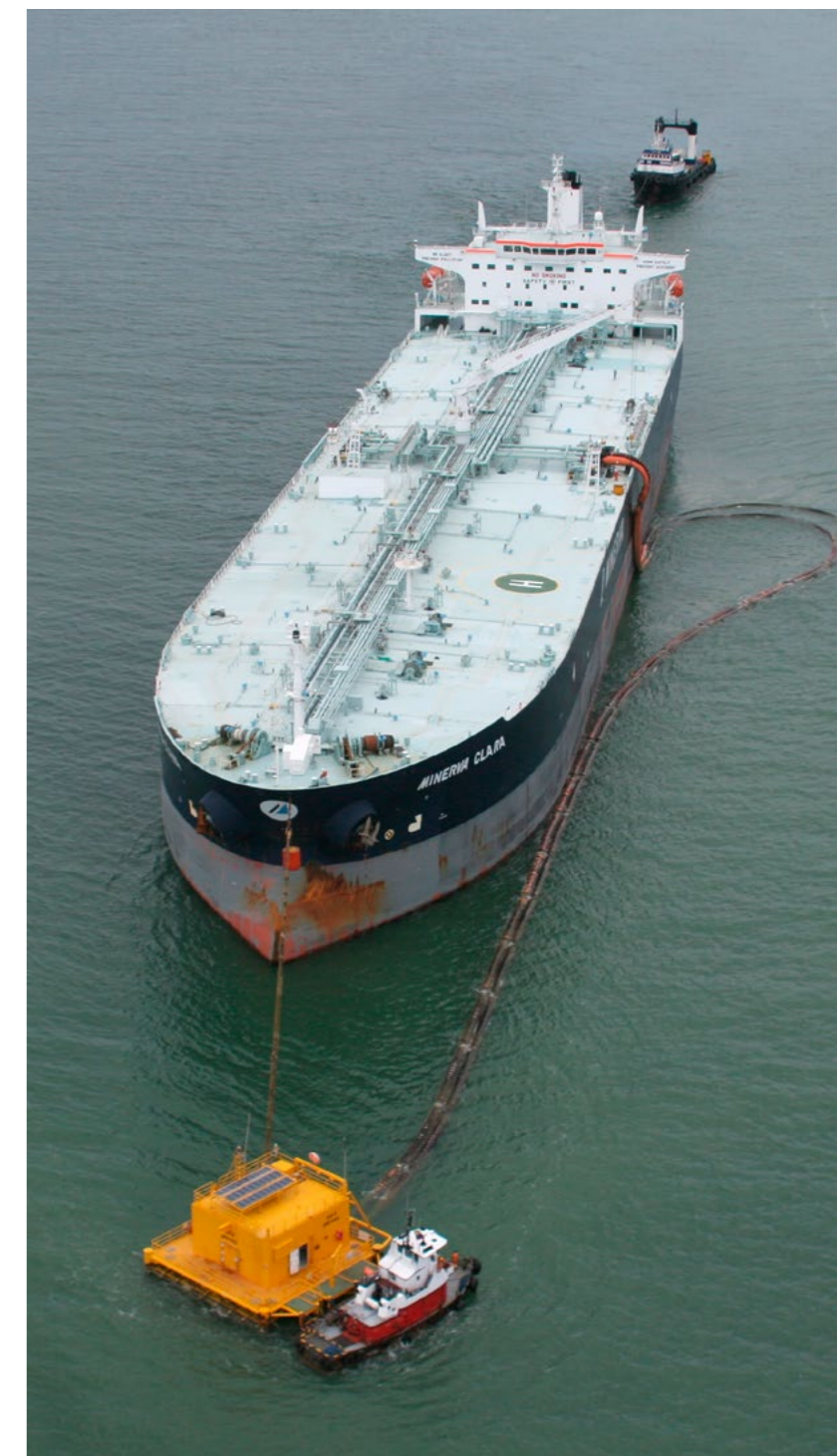
Ecopetrol US Trading LLC

Ecopetrol's percentage share: Ecopetrol S.A. indirectly owns 100% through its subsidiary Ecopetrol USA Inc.

Profile and Activity: Established in 2022, Ecopetrol US Trading LLC is a Houston-based company in the United States, focusing on the international marketing of crude oil, refined products, petrochemicals, and industrial goods from the Ecopetrol Group and third parties in the Gulf market of the United States. Commencing operations in October 2023, Ecopetrol US Trading aims to strengthen the Ecopetrol Group's presence in the United States, working in synergy with subsidiaries such as Ecopetrol USA, Ecopetrol America, and Ecopetrol Permian. With this commercial subsidiary, Ecopetrol reinforces its internationalization strategy and strives to be closer to its end customers, maximizing value for the EG.

Key Accomplishments:

- Marketed 9.3 Mbls of crude, products, and petrochemicals, exceeding the financial plan target of 8.8 Mbls. The company achieved an EBITDA of 19.5 million USD and a net profit of 15.4 million USD, surpassing the financial plan by 163% and 185%, respectively.
- Ecopetrol US Trading successfully positioned Slurry within the export portfolio to new counterparts and maximized margins of crude and fuel oil through long term contracts, seizing a favorable market opportunity.
- Completed the early exit from the SAP S/4-Hanna Commercial Information System, enabling the registration of subsidiary operations in line with the EG's corporate guidelines.
- A team of traders with extensive knowledge of the US market was consolidated in November 2023, aiming to access new opportunities, leverage proximity to counterparts, and streamline the chain by reducing intermediaries.





Low-Emissions Business Line



Inversiones de gases de Colombia S.A. – Invercolsa

Ecopetrol's percentage share: Ecopetrol S.A.

holds a 51.88% direct ownership stake.

Profile and Activity: Inversiones de Gases de Colombia S.A. – Invercolsa is a company specializing in investments within the energy sector, particularly in gas and LPG distribution and marketing companies, transportation, and other related ventures. Operating across Colombia, Invercolsa originated from the spin-off of natural gas assets from Colgas S.A. Through its controlled and non-controlled subsidiaries, Invercolsa has established a presence in 19 departments, with a particular focus on Huila, Tolima, Santander, and the Caribbean Coast.

Key Accomplishments:

- Total EBITDA, including equity accounting, reached \$531.1 billion Colombian pesos (mMCOP), marking an 8.5% growth compared to the same period in the previous year. Net profit closed at 369.2 mMCOP, reflecting a +4.4% growth from the previous year.
- The volume of natural gas marketed increased by +1.3Mm³ (0.5%), and the secondary market saw a notable increase of +8.5Mm³ (21%) compared to the same period in 2022.
- Invercolsa serves a substantial user base of 4.0 million gas service connections, encompassing both controlled and non-controlled subsidiaries.
- In 2023, Invercolsa launched a Non-Bank Financing initiative.

Transmission and Roads Business Line



The financial information of ISA and its subsidiaries is consolidated and directly reported by ISA.

Interconexión Eléctrica S.A. ESP – ISA

Ecopetrol's percentage share: Ecopetrol holds a direct ownership stake of 51.4%. Additionally, Ecopetrol participates indirectly through ISA in other companies.

Profile and Activity: In 2021, Ecopetrol acquired a 51.4% stake in ISA, representing a significant step in the journey towards energy transition. ISA's primary objective is to provide the public service of electricity transmission, in compliance with Laws 142 and 143 of 1994. Furthermore, ISA is engaged in the development of systems, activities, and telecommunications services, as well as direct or indirect participation in activities related to the transportation of other energy sources. It also provides technical and non-technical services relevant to its purpose and undertakes the development and commercial exploitation of infrastructure projects.

3.7 Vehicles

Econova Technology & Innovation, S.L.U.

Ecopetrol's percentage share: 100% held directly by Ecopetrol.

Profile and Activity: Established under the Spanish tax regime for holding foreign securities (ETVE), with its effective management headquarters in Spain. Its corporate purpose is focused on leveraging Ecopetrol's ST+i Strategy and that of its Business Group to access technologies, new opportunities, and markets through the development of new business models and investment in technology-based companies. It also involves participation in ecosystems and open innovation networks that support the search for and access to financial resources to leverage the ST+i Strategy.

Black Gold RE

Ecopetrol's percentage share: 100% held directly by Ecopetrol.

Profile and Activity: Black Gold Re Limited is the Captive Reinsurer of the Ecopetrol Group (EG), established on August 24, 2006. It is responsible for facilitating and optimizing the placement of Ecopetrol's Corporate Insurance Program and that of its subsidiaries by adjusting the levels of risk cession or retention to ensure the protection of its assets and operations. This strengthens the negotiation capacity with the insurance market, minimizing the adverse effects of market cycles. Black Gold RE designs and implements individual coverage strategies and deductibles according to the requirements of each business segment at Ecopetrol and its subsidiaries, capturing and controlling a portion of the placement cost, and generating economic benefits for the EG.

Andean Chemicals LTD.

Ecopetrol's percentage share: 100% held directly by Ecopetrol.

Profile and Activity: Andean Chemicals Ltd. (ACL) is a company established in Bermuda, serving as an investment vehicle of Ecopetrol S.A., channeling the necessary resources for downstream segment companies, among others in the business group.

Hocol Petroleum Limited

Ecopetrol's percentage share: 100% held directly by Ecopetrol.

Profile and Activity: An investment vehicle that becomes part of the portfolio through the acquisition of Hocol S.A., serving upstream companies operating in Colombia (Hocol S.A. and Ecopetrol Costa Afuera Colombia).

Ecopetrol Global Energy S.L.U

Ecopetrol's percentage share: 100% held directly by Ecopetrol.

Profile and Activity: An investment entity for companies across various segments with international operations, primarily focusing on upstream activities. Established under the Spanish tax regime for holding foreign securities (ETVE), with its operational headquarters in Spain.

Ecopetrol Capital AG

Ecopetrol's percentage share: Ecopetrol S.A. holds 100% direct ownership.

Profile and Activity: The company is primarily engaged in providing financing and executing financial transactions for group companies.





11

Annexes



Value Chain

Affiliation with associations.

(GRI 2-28) (DJSI 1.5.1)

Ecopetrol is dedicated to fostering sustainable development within the sector and the nation. In pursuit of this commitment, the Company actively engages in diverse dialogues at local, regional, and international levels, advancing discussions aligned with Ecopetrol's 2040 Strategy. Below is a comprehensive list of associations and alliances in which the Company actively participates:

- Aiming for zero methane emissions by 2030 – (OGCI)
- IRENA's Alliance for the decarbonization of the industry
- Gender Equity Committees and Alliances with ANDI, COCIER, MME, Naturgas, the Society of Petroleum Engineers, and Women in Oil & Gas
- Colombian Association of Carbon Market Actors (Asocarbono)
- Colombian Natural Gas Association (Naturgas)
- Association of International Energy Negotiators
- Colombian Association of Oil and Gas (ACP)
- Association of Oil, Gas, and Renewable Energy Companies in Latin America and the Caribbean (ARPEL)
- National Association of industrialists (ANDI) - Bolívar Section, Santander Section, and Environmental Section.
- Colombian Association of Energy Geologists and Geophysicists (ACGGP)
- Colombian Association of Petroleum Engineers (ACIPET)
- Latin American Petrochemical and Chemical Association (APLA)
- Energy Intelligence Group Inc.
- Colombian Chamber of Oilfield Goods and Services (CAMPETROL)
- Colombian Chamber of Diversity
- CEO Water Mandate.
- Center for Chemical Process Safety (CCPS)
- Climate Finance Leadership Initiative (CFLI)
- Water for Colombia Coalition
- Clean Air and Climate Coalition
- Casanare Regional Competitiveness Commission (CRCI)
- Regional Energy Integration Commission (CIER)

- Regional Competitiveness Commission - Santander Competitivo
- Oil Industry Committee (CINPAC)
- Putumayo Regional Competitiveness Commission
- Colombian Safety Council
- National Natural Gas Operation Council (CNO-Gas)
- Content Security Policy
- Colombian Institute of Technical Standards and Certification (INCONTEC)
- Extractive Industries Transparency Initiative (EITI)
- Amanecer Foundation
- Alcaraván Foundation
- Alto Magdalena Foundation
- Magdalena Medio Development Foundation (FUBDESMAG)
- Global Reporting Initiative (GRI)
- Guías Colombia
- Hydrogen Council
- IPIECA
- Colombian Institute of Technical Standards and Certification.
- Oil and Gas Decarbonization Accelerator Charter (OGDA)
- Más Guajira Taskforce (ANDI)
- Latin American Society of Operators of Maritime Oil Terminals and Single Point Mooring Systems (SLOM)
- UN Global Compact
- WEF - World Economic Forum
- Welligence INC.
- World Energy Council
- Zero Routing Flaring by 2030



Corporate Governance Structure



Table 8.2.1.
Salary information of top executives at Ecopetrol¹⁴⁰
(DJSI 1.2.15)

Title	Minimum (COP)	Maximum (COP)
*CEO *COO *Upstream Vice President * Finance and Sustainable Value Corporate Vice President * Refining and Industrial Processes Vice President	61	87
* Human Resources Corporate Vice President * Compliance Vice President * Legal Vice President * Science, Technology, and Innovation Vice President * Procurement and Services Vice President * Commercial and Marketing Vice President * Low Emission Solutions Vice President * Strategy and New Business Corporate Vice President * HSE Vice President * Sustainable Territorial Development Vice President * Corporate Affairs Vice President and General Secretariat	39	58

*Values expressed in millions of pesos.

140. Considering that the information pertains to subjects involving privacy and intimacy rights (such as resumes, employment history, pension records, and other personal and/or financial records of Company employees), and considering that this data is not within the public domain, in accordance with the protections outlined in Article 15 of the Political Constitution of Colombia and Law 1581 of 2012, regulated by Decree 1377 of 2013, the Company refrains from disclosing specific remuneration details. Instead, it provides salary ranges for Ecopetrol's Senior Management.

Cutting-edge Knowledge

Table 8.3.1.
Econova Projects that commenced execution in 2023

Testing of H2 + natural gas mixtures in domestic gas	The initiative aims to comprehend hydrogen behavior for domestic applications by conducting tests on the performance of hydrogen and natural gas mixtures in a specially adapted kitchen. The hydrogen kitchen was put into operation (utilizing a blend of 27% hydrogen and 73% natural gas).
Lightweight land mobility fueled by hydrogen	The objective is to establish hydrogen as a viable fuel for lightweight land vehicles through rigorous testing and monitoring in a dedicated test vehicle. Phases I, II, and III were 100% concluded, with the noteworthy production of the first hydrogen molecule.
Development of a sustainable multimodal aquatic transport system for Cartagena	The project involves the development of a technological solution geared towards enhancing mobility in Cartagena. This solution takes the form of a multimodal, emission-free aquatic transport system designed to contribute to the economic, social, and environmental development of the city. The vessel has been delivered and is now operational.



Table 8.3.2.
Challenges launched and conferences held through the Econova Innovation Centers in 2023

Econova Innovation Center	Challenges launched through the Open Innovation Program	Econova Conferences
Econova Caribe	<ul style="list-style-type: none"> Challenge 1: Emission reduction in transportation. Challenge 2: Promoting solid waste management. Challenge 3: Valorizing industrial wastewater. Challenge 4: Transforming the waste generated in the neighborhoods around Mamonal (Cartagena) into a clean energy resource. Challenge 5: Generating clean energy to illuminate public spaces in the neighborhoods around Mamonal. Challenge 6: Identifying the actual condition of current hydrogen transport systems. Challenge 7: Identifying the necessary adaptations and updates for the safe functioning of end-use technologies. Challenge 8: Developing new hydrogen business models. Challenge 9: Adapting infrastructure for the deployment of renewable energy. Challenge 10: Storage of renewable energy. Challenge 11: Financing for Energy Transition projects. 	<ul style="list-style-type: none"> Tech Tal CT+i Study: Reformulation of fuels and their impact on air quality. Circular economy in the hydrocarbon value chain. Green hydrogen and energy transition (two (2) sessions). From creativity to innovation. Energy transition and circular economy (four (4) sessions). General traits of renewable energies.
Econova Santander	<ul style="list-style-type: none"> Challenge 1: Generating and transferring energy from biomasses to a higher air flow. Challenge 2: Integrating natural coagulants into the large-scale water treatment process. Challenge 3: Technology for the recovery of aluminum present in water treatment processes. Challenge 4: Increasing participation of youth groups aged 18 to 28 in the digital products cooperative. Challenge 5: Creating a community of groups that promote the involvement and retention of new generations in the cooperative. Challenge 6: Establishing a comprehensive model/system to improve accuracy in electricity forecasts. Challenge 7: Developing a scenario simulation method to evaluate the effectiveness of the actions undertaken to improve service quality. Challenge 8: Effectively guiding visitors (patients, vendors, collaborators, family members) to access the services provided by the institution. Challenge 9: Optimizing the SINNOVA air conditioning system for efficient energy use. Challenge 10: Floating solar energy. Challenge 11: Low-speed wind energy. Challenge 12: Smart energy grids. Challenge 13: Hydrogen conversion device. Challenge 14: Decarbonization in buildings 	<ul style="list-style-type: none"> Towards a Decarbonization Route (eight (8) sessions). Fundamentals of decarbonization and climate change. Sustainable development. Life cycle analysis methodology and carbon footprint. High-precision technologies for greenhouse gas emission studies. Potential of biodiversity in commercial uses. The role of biotechnology in decarbonization. Water reuse: environmental strategy. Managerial skills in the entrepreneurial environment. Successfully start a business.

Econova Innovation Center	Challenges launched through the Open Innovation Program	Econova Conferences
Econova Bogotá	<ul style="list-style-type: none"> Challenge 1: Reducing slop generation¹⁴¹. Challenge 2: Safety in the operation of semi-portable cranes. Challenge 3: Monitoring valves at the refinery. Challenge 4: Intelligent support for risk zones. 	<ul style="list-style-type: none"> Metaverse, 'Edge computing,' and robotics. Fourth and Fifth Industrial Revolution (three (3) sessions). Cybersecurity. Second ANDI Innovation Gathering. Empower Tech 2023. Gender Policies in the Fourth Industrial Revolution - Econova.
Econova Meta	<ul style="list-style-type: none"> Challenge 1: Regenerating or disposing of oleophilic foam cartridges. Challenge 2: Adding value to treated production waters. Challenge 3: Maximizing electricity generation from wastewater streams. Challenge 4: Finding cost-effective alternatives for the disposal of production water. 	<ul style="list-style-type: none"> Tech CT+i Critical minerals for Energy Transition. Biodiversity (six (6) sessions). Digital marketing. Let's talk about Eco-Reserves, what are they, and why are they a tool for decarbonization? The role of biotechnology in decarbonization. Exploring Our Biodiversity Campaign. Innovative Experiences - Eco Zone Stand - Social Appropriation of Knowledge. "Emission Reduction Program with payment for results for the agricultural and environmental sector in the Orinoco region." "Relationship between emissions capture and reduction with Biodiversity" Agrosavia and Humboldt. Talk: "Clusiaceae in the Colombian Orinoco region as a contribution of Vascular Flora." "Research Seedbeds in Civil Engineering: Advances in TSEG Solutions® and Technological Development." "Gasmex GT5000 Terra: Transforming Our Ecosystems and Sustainable Strategies in Meta." Biodiversity in the feminine version "Women leaders transforming the environmental future." The field of biodiversity research in Colombia.

Call for the Mission of Wise Men

- Challenge 1: Renewable energy from biomass.
- Challenge 2: Optimization of plastic pyrolysis products.
- Challenge 3: Reuse of domestic wastewater.
- Challenge 4: Valorization of CO2 through industrial symbiosis.
- Challenge 5: Technology to improve air quality.

141. Final residues resulting from various oil transformation processes.

Stakeholder Groups

(GRI 2-29) The initial phase of the Stakeholder Group update entailed the identification of stakeholders or groups impacted by, or potentially affecting, Ecopetrol's activities, products, or services. This identification process was conducted through an analysis of both internal and external sources.

Following this phase and a thorough preliminary analysis, **12 Stakeholder Group were identified, each with its corresponding subgroups:**



The previous identification underwent a classification and prioritization process using two (2) methodologies:

1 Influence and dependency methodology¹⁴²

This methodology focuses on evaluating the priority of the Stakeholder Group based on their impact on Ecopetrol's decision-making (level of influence) and the extent to which they rely on the Company's activities, products, and/or services (degree of dependence).

2 The Salience Model Methodology based on the "Stakeholder Theory"¹⁴³

This approach categorizes the Stakeholder Group according to their capabilities and resources to influence Ecopetrol (power), their acknowledgment as a legitimate part of the Company's decision-making (legitimacy), and the urgency with which the Company needs to address their requests and interests (urgency).

After completing this prioritization exercise, they underwent a calibration process with the departments overseeing the relationships with each Stakeholder Group. As a consequence of this process, two (2) Stakeholder Groups identified in the earlier stage were excluded: multilateral organizations and guilds, associations, and voluntary initiatives. This decision was influenced by their limited current interaction with the Company or their highly concentrated relationships with specific actors within those categories. Furthermore, the Communities and Civil Society Stakeholder Group was subdivided into two (2) distinct groups: Communities and Civil Society Organizations, and Cooperation. The final calibration is then assessed based on the significance they hold for Ecopetrol:









In conclusion, the value propositions¹⁴⁴ for each identified Stakeholder Group were revised in alignment with the 2040 Strategy, the Company's specific relationship objectives with each group, and the expectations of the Stakeholder Groups. These refined value propositions underwent validation with the various vice presidencies responsible for overseeing the relationships with each Stakeholder Group.






144. Value Proposition: This is a statement that encapsulates the essential elements of a Company's value proposition tailored to a specific Stakeholder Group segment.

142. Accountability, UNEP, and Stakeholder Research Associates. (2006).

143. 4 Mitchell, R., Agle, B.m and Wood, D. (1997).

Table
Stakeholder Groups and Sub-groups at Ecopetrol:

Stakeholder Groups	Stakeholder Subgroups
 Partners	<ul style="list-style-type: none"> • Operating contract partners • Non-operating contract partners
 Employees	<ul style="list-style-type: none"> • Direct employees • Temporary employees • Pensioners • Employees' families • Labor unions
 Shareholders and investors	<ul style="list-style-type: none"> • Shareholders • Investors • Market analysts • Risk rating agencies • Financing companies • Market actors: SEC, SFC and Stock Exchanges
 Clients	<ul style="list-style-type: none"> • Crude oil, products, petrochemicals, chemicals, and industrial goods customers • Gas, LPG, and energy customers
 Suppliers and their workers	<ul style="list-style-type: none"> • Suppliers • Contractors • Contractor employees
 Media and opinion leaders	<ul style="list-style-type: none"> • International media • National media • Regional media • Opinion leaders

Stakeholder Groups	Stakeholder Subgroups
 State	<ul style="list-style-type: none"> • Ministries • Administrative departments • Regulatory, control, and oversight entities • Special Administrative Units • National agencies and authorities • Municipal and local government (Mayor's offices and Governorships) • Regional Autonomous Corporations and Sustainable Development Corporations • Public forces
 Communities	<ul style="list-style-type: none"> • Local communities • Ethnic communities • Rural communities • Landowners, titleholders, and occupants • Community leaders and human rights defenders • Community Action Boards • Community organizations • Environmental organizations • Social organizations • Neighborhood associations
 Scientific and academic community	<ul style="list-style-type: none"> • Universities / Research groups • *Technological Development Centers
 Civil Society and Cooperation Organizations	<ul style="list-style-type: none"> • Civil society groups • Non-government organizations • Non-profit entities • Associations • International cooperation organizations • Multilateral organizations
 Controlled companies	<ul style="list-style-type: none"> • Companies from the three business lines (Hydrocarbons, Low-Emission Solutions, and Transmission and Roads)



Climate Change

(TCFD G-2.1) (TCFD G-2.2)

Presidency (CEO's Office):

Directs and oversees the Company's operations, responsible for managing the Balanced Scorecard (TBG), and communicates progress to the Board of Directors.

Executive Operations Vice Presidency

Manages the Company's operations, oversees the execution of initiatives related to the Decarbonization Plan, and implements the Net Zero Emissions roadmap for the hydrocarbons business, along with objectives for improving fuel quality.

HSE (Health, Safety, and Environment) Vice Presidency

Guides climate change, circular economy, and biodiversity matters through the Sustainability and Decarbonization Management team. Specifically in climate change, this Vice Presidency leads the implementation of the Decarbonization Plan, establishes emission reduction, and offset goals, manages the Atmospheric Emissions Management System (SIGEA, as per its Spanish acronym), defines guidelines for emission offset management, and establishes climate change adaptation actions to reduce vulnerability and manage associated risks.

Corporate Strategy and New Businesses Vice Presidency:

Shapes the strategy related to the energy transition, including the development of low-emission opportunities.

Low Emission Solutions Vice Presidency

Drives the evolution of the Company's energy transition, integrating areas such as gas, biogas, liquefied petroleum gas (LPG), renewable energies, hydrogen, and carbon capture, use, and storage (CCUS).

Corporate Affairs Vice Presidency and General Secretariat

Ensures the governance of reports (including IIG, DJSI, and CDP Climate Change and Water, among others), monitors and analyzes the "Generate Value Through TSEG" pillar, and outlines roadmaps for material elements.



Table 8.5.1.
Reducing energy consumption
(GRI 302-4) (TCFDM-1.1)

Energy	Reducing energy consumption	Types of energy included in said reduction	Description of methods used for calculation
Information for the reduction of energy consumption	3,887,668,692,135,220 Joules	Fuel Electricity	In 2023, the Ecopetrol Group revised its 2040 strategy, introducing a novel strategic objective focused on energy efficiency. This objective aims to reduce 25 PJ in cumulative internal energy consumption from 2018 to 2030, spanning across different energy sources including gas, crude oil, electric power, and liquid fuels. This strategic update necessitates adjustments to reporting practices, as preceding years solely highlighted percentage reductions in electrical consumption. The new objective underscores the optimization of all energy sources utilized.

Methods for calculating consumption reduction

- Savings through operational control**

Savings are calculated according to the ISO 50001:2019 standard, establishing energy management indicators relative to baseline energy consumption.
- Savings through technological improvement**
 - Periodic savings calculation:* A base consumption is determined (through measurements or simulation), and the actual energy consumed is measured at regular intervals. The difference is established as the savings to be updated at the defined frequency.
 - Savings according to ISO 50001:* Savings and energy management indicators are calculated relative to energy consumption baselines defined by ISO 50006.
- Savings through IIE Management**

Savings are established based on the optimization of the energy intensity index obtained from using the Solomon methodology.

Water

Table 8.6.1
Produced water, flowback, and hydrocarbons contained in the discharges generated in the operation
(SASB 140a.2) (TCFD M - 1.1)

Produced water, flowback, and hydrocarbons contained in the discharges generated in the operation	Unit of measurement	403,595	388,117	430,551	461,942
Quantity of produced water generated during operation	ML	403,595	388,117	430,551	461,942
Quantity of flowback generated during operation	ML	NA	NA	NA	NA
Quantity of produced water and flowback generated during operation	ML	403,595	388,117	430,551	461,942
Quantity of injected produced water and flowback	ML	245,206	246,693	249,331	252,925
Percentage of produced water and flowback injected	%	60.4%	63.3%	57.7%	54.6%
Quantity of recycled produced water and flowback	ML	88,503	97,001	118,551	138,872
Percentage of produced water and flowback recycled	%	21.8%	24.9%	27.4%	30.0%
Quantity of produced water and flowback discharged	ML	72,050	45,777	64,345	71,579
Percentage of produced water and flowback discharged	%	17.8%	11.8%	14.9%	15.4%
Quantity of hydrocarbons contained in water discharges released into the environment	Ton	386.6	101.8	127	124.3

The cumulative volume recorded across various outlets for produced water is marginally greater than the total produced water (with a difference of 0.3%). This variation arises due to the possible introduction of additional water streams, including rainwater and/or wastewater from industrial water usage, into the produced water treatment systems.

Furthermore, it is important to highlight that:

- The volume of recycled produced water comprises reinjection for enhanced oil recovery (EOR), recirculation/reuse in various activities such as drilling, road irrigation, steam generation, etc., and repurposing for agroforestry irrigation in the ASA La Guarupaya and SAARA (Rubiales) Eco-reserves.
- The weighted average concentration of HTP in discharges from Ecopetrol S.A.'s exploration and production assets is 1.74 mg/L, significantly below the limit set by national regulations of 10 mg/L.
- The volume of injected produced water encompasses water injected for final disposal.

(SASB EM-EP-140a.2)
It is worth noting that Ecopetrol does not engage in hydraulic fracturing activities, and therefore does not generate any flowback fluid.

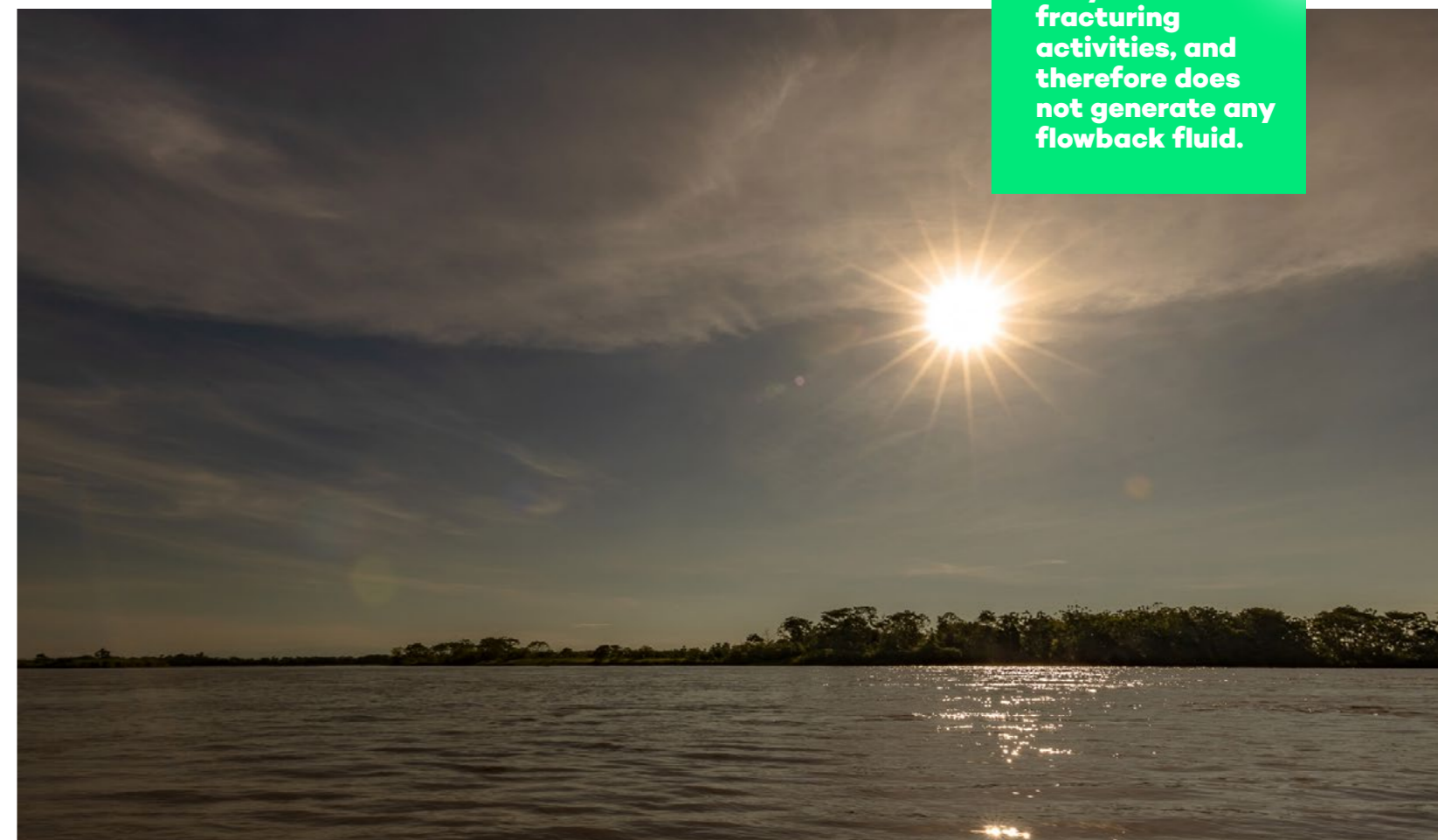


Table 8.6.2
Freshwater captured and consumed
(SASB 140a.1)¹⁴⁵ (TCFD M - 1.1)

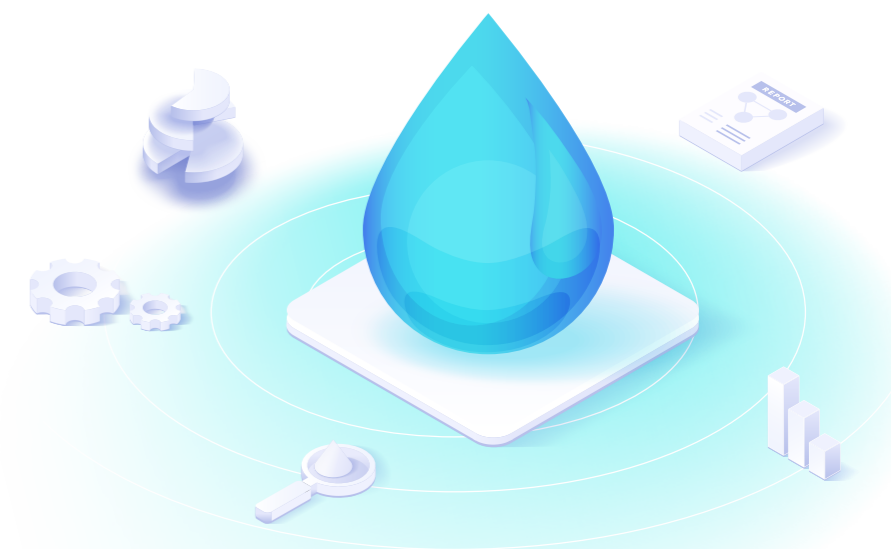
Freshwater captured and consumed	Unit of measurement	2020	2021	2022	2023
Amount of water extracted from freshwater sources	ML	23,445	11,590	9,614	10,292
Amount of freshwater consumed in Company operations	ML	12,847	9,693	8,755	9,578
Amount of water extracted from locations with high or extremely high water stress	ML	138	111	174	104
Amount of water consumed in locations with high or extremely high water stress	ML	0	0	69	0
Percentage of water extracted from locations with high or extremely high water stress	%	0.6	1.0	1.8	1.0
Percentage of water consumed in locations with high or extremely high water stress	%	0	0	0.8	0



145. The standard indicator only applies to Exploration and Production

In 2023, the Exploration and Production segment captured 10.3 million cubic meters of freshwater, representing a 7% increase from 2022, primarily due to increased injection activity for recovery in the La Cira Infantas and Tibú fields.

Areas with water stress are identified when the ratio between demand and the surface water supply in the basin exceeds 40%, according to hydrological information from the 2022 National Water Study conducted by IDEAM (Institute of Hydrology, Meteorology and Environmental Studies). The assets of Llanito, Lisama, Huila Norte, Tello, Río Ceibas, Yaguará, and Oripaya are under this condition.



Water consumption in water-stressed areas (DJSI 2.5.2)

In 2023, Ecopetrol's total freshwater consumption from basins under water stress conditions was 11.89 million cubic meters. This figure represents a 13% increase from the previous year, driven by higher demand at the Cartagena Refinery due to increased refined crude processing and water intake from the San Silvestre Marsh to address contingencies at the Barrancabermeja Refinery (DJSI 2.5.1). It is important to note that the objective of freshwater consumption is to reduce industrial freshwater extractions by 12% compared to the baseline set by the water neutrality ambition (2019). The Company recirculated 19 million cubic meters of effluents resulting from the use of captured water, equivalent to 46% of the total volume captured, surpassing the 2023 target of 40.1%.

During the last year, a 64% reduction in freshwater extraction in water-stressed areas was achieved, mainly through optimizations in the injection process in the Huila assets, where the volume of captured water required for recovery was reduced by more than 99%.

In 2023, the freshwater intensity at the Cartagena Refinery was 0.73 Bbl of freshwater per Bbl of refined oil, a 23% reduction compared to the previous year. In upstream assets (Llanito, Lisama, Huila Norte, Tello, Yaguará, Río Ceibas, and Oripaya), it was 0.11 Bbl of freshwater per Bbl of produced oil, equivalent to a 46% reduction from the previous year.

Biodiversity and Ecosystem Services

Table 8.71
Protected or Restored Habitats (Voluntary)
(GRI 304-3) (DJSI 2.7.5)

Criterion	Unit of measurement	2020	2021	2022	2023
Trees planted or contributed to communities, environmental authorities, or local governments	#	462,449	367,276	367,215	631,412
Established nurseries	#	22	22	29	10
Seedlings produced in nurseries	#	90,724	92,868	116,039	967,702
Areas planted or in the process of restoration	ha	3,201	2,772	35	474
Number of protected water sources	#	NA	NA	26	26
Conservation agreements signed	#	23	21	156	937
Hectares in managed conservation agreements	ha	14,048	314	17,879	162,503
Area in silvopastoral systems	ha	NA	NA	NA	4
Area in agroforestry systems	ha	NA	NA	NA	9
Established eco-efficient stoves	#	NA	NA	NA	12
Protected areas declared under any conservation figure	#	15	15	16	22
Hectares of protected areas declared under any conservation figure	ha	17,675	17,625	435	8,236
Ecological households	#	NA	NA	NA	NA
Photovoltaic systems	#	NA	NA	5	63
Apiaries - Meliponaries	#	NA	NA	NA	66
Intervened hydrographic subzones	#	NA	NA	16	11
Kilometers of protected water bodies	km	NA	NA	65	58.13
New or strengthened hydrometeorological stations	#	NA	NA	NA	NA
Threatened wild species in conservation processes	#	15	15	15	17
Number of Eco-reserves	#	6	15	15	20
Hectares of the Eco-reserve Network	ha	11,906	15,085	15,085	15,583

Note: While meeting the requirements for environmental compensation and ensuring an investment of no less than 1% for the use of water from natural sources, the objective is to preserve biodiversity and its ecosystem services within biodiversity hotspots. This is achieved through voluntary conservation agreements that incentivize sustainable use, land acquisition, ecological restoration, and reforestation.

Table 8.72
Protected or Restored Habitats (Mandatory)
(GRI 304-3) (DJSI 2.7.5)

Criterion	Unit of measurement	2020	2021	2022	2023
Trees planted or contributed to communities, environmental authorities, or local governments	#	220,605	67,470	248,377	301,813
Established nurseries	#	NA	2	3	1
Seedlings produced in nurseries	#	NA	21,122	39,442	22,029
Areas planted or in restoration processes	ha	5,438	5,549	230.2	1,031
Number of protected water sources	#	92	NA	89	71
Conservation agreements signed	#	29	161	469	803
Hectares in managed conservation agreements	ha	2,045	2,297	5,094.7	5,419
Area in silvopastoral systems	ha	NA	34	37.8	369.2
Area in agroforestry systems	ha	204	22	71.73	206.72
Established eco-efficient stoves	#	NA	5	55	46
Protected areas declared under any conservation category	#	NA	NA	NA	NA
Hectares protected under any conservation category	ha	NA	NA	NA	NA
Ecological homes	#	NA	NA	NA	61
Photovoltaic systems	#	NA	NA	5	6
Apiaries - Stingless beekeeping	#	NA	NA	0	NA
Intervened sub-watersheds	#	2	7	16	32
Kilometers of protected water bodies	km	22	31	26	140
New or strengthened hydrometeorological stations	#	NA	NA	0	NA
Threatened wildlife species in conservation processes	#	NA	NA	NA	NA
Number of Eco-reserves	#	NA	NA	NA	NA
Hectares in the Eco-reserve Network	ha	NA	NA	NA	NA



Materials and Waste

Table 8.8.1
Amount of waste diverted from disposal at the facilities
(GRI 306-4) (TCFDM-1.2.2) (WEF 17 -E)

Waste diverted from disposal	2020 (TonM)	2021 (TonM)	2022 (TonM)	2023 (TonM)
Hazardous waste to be prepared for reuse	NA	NA	0	0
Recycled hazardous waste	NA	NA	0	97
Hazardous waste sent to other recovery operations	NA	NA	0	0
Total hazardous waste diverted from disposal	NA	0	0	97
Non-hazardous waste to be prepared for reuse	3,158.06	13,420	0	0
Recycled non-hazardous waste	NA	NA	0	69,785
Non-hazardous waste sent to other recovery operations	NA	NA	0	0
Total non-hazardous waste diverted from disposal	3,158.06	13,420	0	69,785

Table 8.8.2
Amount of waste diverted from disposal outside the facilities
(GRI 306-4) (TCFDM-1.2.2) (WEF 17 -E)

Waste diverted from disposal	2020 (TonM)	2021 (TonM)	2022 (TonM)	2023 (TonM)
Hazardous waste to be prepared for reuse	3,103.01	6,074.62	17,922	9,396
Recycled hazardous waste	780.71	31.22	1,923	865
Hazardous waste sent to other recovery operations	0	0	0	0
Total hazardous waste diverted from disposal	3,883.72	6,105.84	19,845	10,261
Non-hazardous waste to be prepared for reuse	12.95	0.094	9,486	1,648
Recycled non-hazardous waste	17,861.58	27,922.31	41,556	10,9211
Non-hazardous waste sent to other recovery operations	10,830.53	62,23.11	1,454	291
Total non-hazardous waste diverted from disposal	28,705.06	34,145.514	52,496	111,150

Table 8.8.3
Amount of waste directed to disposal outside the facilities
(GRI 306-5) (DJSI 2.4.2) (TCFDM-1.2.2) (WEF 17 -E)

Waste directed to disposal	2020 (TonM)	2021 (TonM)	2022 (TonM)	2023 (TonM)
Hazardous waste sent for incineration (with energy recovery)	NA	NA	NA	NA
Hazardous waste sent for incineration (without energy recovery)	2,599.72	461.45	773	349
Hazardous waste transported to a landfill	30,209.79	6,034.52	7096	4884
Hazardous waste sent to other disposal operations	103740.91	124,773.86	160,997	98,926
Total hazardous waste directed to disposal	136,550.41	131,269.83	168,866	104,159
Non-hazardous waste sent for incineration (with energy recovery)	NA	NA	NA	NA
Non-hazardous waste sent for incineration (without energy recovery)	45.56	2.37	55	26
Non-hazardous waste transported to a landfill	125,792.22	94,729.72	108,682	72,489
Non-hazardous waste sent to other disposal operations	NA	57,421.03	109,145	52,319
Total non-hazardous waste directed to disposal	125,837.78	152,153.12	217,882	124,834



● Waste Disposal

(DJSI 2.4.1)

Key Definitions

Total recycled/reused waste

This encompasses the portion of waste generated as a result of a company's operations (e.g., during the extraction and processing of raw materials, manufacturing, consumption of end products, or any other human activity) that has been diverted from disposal through preparation for reuse, recycling, composting, or other recovery operations. This involves the processing of waste products, components, or materials to be reused instead of resorting to new products, components, or materials that would otherwise have been utilized for the same purpose. Excluded from this category are waste incinerated with energy recovery or waste managed by third parties (e.g., municipal waste management companies) unless it is evident that the waste is recycled, prepared for reuse, or converted into compost by a third party.

Total waste disposed

This represents the aggregate of all waste directed to disposal, encompassing waste deposited in landfills, incinerated with energy recovery, incinerated without energy recovery, or otherwise subjected to disposal methods (e.g., deep-well injection). This category also includes waste with "unknown disposal methods," such as waste managed by municipal waste management companies where there is no available information on the methods of disposal. For each disposal method, the value includes both on-site and off-site disposal.

Waste deposited in landfills

This constitutes the total volume of solid waste disposed of on, below, or above the ground at designated disposal points. Note 1: In the context of waste reporting, landfill disposal refers to the deposition of solid waste in sanitary landfills, excluding uncontrolled waste disposal, such as open burning or dumping. Note 2: This definition is derived from the United Nations Environmental Statistics Glossary: Methodological Studies, Series F, No. 67, 1997.

Waste incinerated without energy recovery

This represents the total volume of waste directed to disposal through incineration, a technique aimed at reducing volume, weight, and modifying its composition. This process involves subjecting the waste to a high-temperature oxidation process through controlled combustion, with no energy recovery taking place.

Waste incinerated with energy recovery

This encompasses the total volume of waste directed to disposal through incineration, where the energy value present in the waste is harnessed. This process is exclusively carried out in waste incinerators. This category excludes waste that adheres to the Technical Guidelines on Environmentally Sound Co-processing of Hazardous Wastes in Cement Kilns, issued by the Basel Convention.

● Hazardous Waste

(DJSI 2.4.2)

Key Definitions

Hazardous Waste

Waste classification recognizing the chemical composition or other properties that render them capable of causing illness, death, or other harm to humans and other forms of life when mishandled or released into the environment. This definition also encompasses the management of "regulated non-hazardous waste." Examples of such waste include corrosive and toxic metals, asbestos, and grinding dust.

Waste deposited in a secure cell

This category comprises the total volume of solid waste disposed of on, below, or above the ground at designated disposal points. It includes waste treated by autoclave and subsequently deposited in a secure cell. Note 1: In the context of waste reporting, landfill disposal refers to the deposition of solid waste in secure cells. Note 2: This definition is derived from the United Nations Environmental Statistics Glossary: Methodological Studies, Series F, No. 67, 1997..

Waste incinerated without energy recovery

This figure represents the total amount of waste directed to disposal through incineration, a technique that reduces volume, weight, and modifies composition through high-temperature oxidation in controlled combustion. However, no energy recovery occurs in this incineration process.

Total hazardous waste disposed of

This figure represents the cumulative amount of hazardous waste directed for disposal, including biosanitary waste undergoing autoclave treatment, waste deposited in a landfill or secure cell, incinerated with energy recovery, incinerated without energy recovery, or otherwise disposed. It also encompasses hazardous waste with "unknown disposal methods," for instance, when a third party handles hazardous waste without providing information on the final disposal method used. For each disposal method, the value includes both on-site and off-site disposal.

Total recycled/reused hazardous waste:

This category encompasses the portion of hazardous waste generated from a company's operations, (e.g., during the extraction and processing of raw materials, manufacturing of products, consumption of end products, and other human activities), which have undergone preparation for reuse, recycling, or other recovery operations, excluding incineration with energy recovery. This process is conducted in a manner that ensures the safety and protection of human health and the environment. Comparatively, hazardous waste management by third-party entities (companies specialized in hazardous waste management) can be assessed as recycled/reused hazardous waste if the third party engages in recycling, preparing for reuse, or reusing the hazardous waste (refer to additional clarification in the 'Special Data Requirements for Waste' section).

Responsible Supply Chain

Vendor evaluation (DJSI 1.7.6)

Definitions



Vendor selection

A comprehensive documentary investigation into vendors' risks of encountering negative ESG impacts and their business relevance. This involves considering available data sources such as ESG risks categorized by country, sector, or raw material, as well as expenditure and business significance.



Documentary assessments

This form of vendor evaluation is conducted by the purchasing company or on its behalf. It typically entails a questionnaire in which vendors provide information and supporting evidence related to their ESG policies, practices, performance, and public statements.



Substantial actual/potential negative impacts

This refers to the influence that an organization exerts on the economy, environment, and/or society, which, in turn, can indicate its contribution (positive or negative) to sustainable development. Negative impacts encompass those caused or contributed to by an organization or directly linked to its activities, products, or services due to its association with a vendor.



Significant vendors

Vendors identified as carrying substantial risks of negative ESG impacts or holding significant commercial relevance to the company, or a combination of both. The portfolio of sustainability-focused vendors should be a central focus of a company's vendor ESG monitoring and development program.



Vendor Selection (DJSI 1.7.5)

Definitions



Vendor selection

A comprehensive documentary investigation into vendors' risks of encountering negative ESG impacts and their business relevance. This involves considering available data sources such as ESG risks categorized by country, sector, or raw material, as well as expenditure and business significance. The methodology and selection process are crafted by Ecopetrol.



Non-Tier 1 Vendors

These vendors provide products and services through Tier 1 vendors. Non-Tier 1 vendors operate beyond the scope of Tier 1 vendors, functioning, for instance, at tiers 2, 3, or n within a company's supply chain.



Tier 1 Vendors

This category includes vendors directly supplying goods, materials, or services (including intellectual property (IP)/patents) to the Company. In cases where the Company does not specify, we assume it is a Tier 1 vendor.



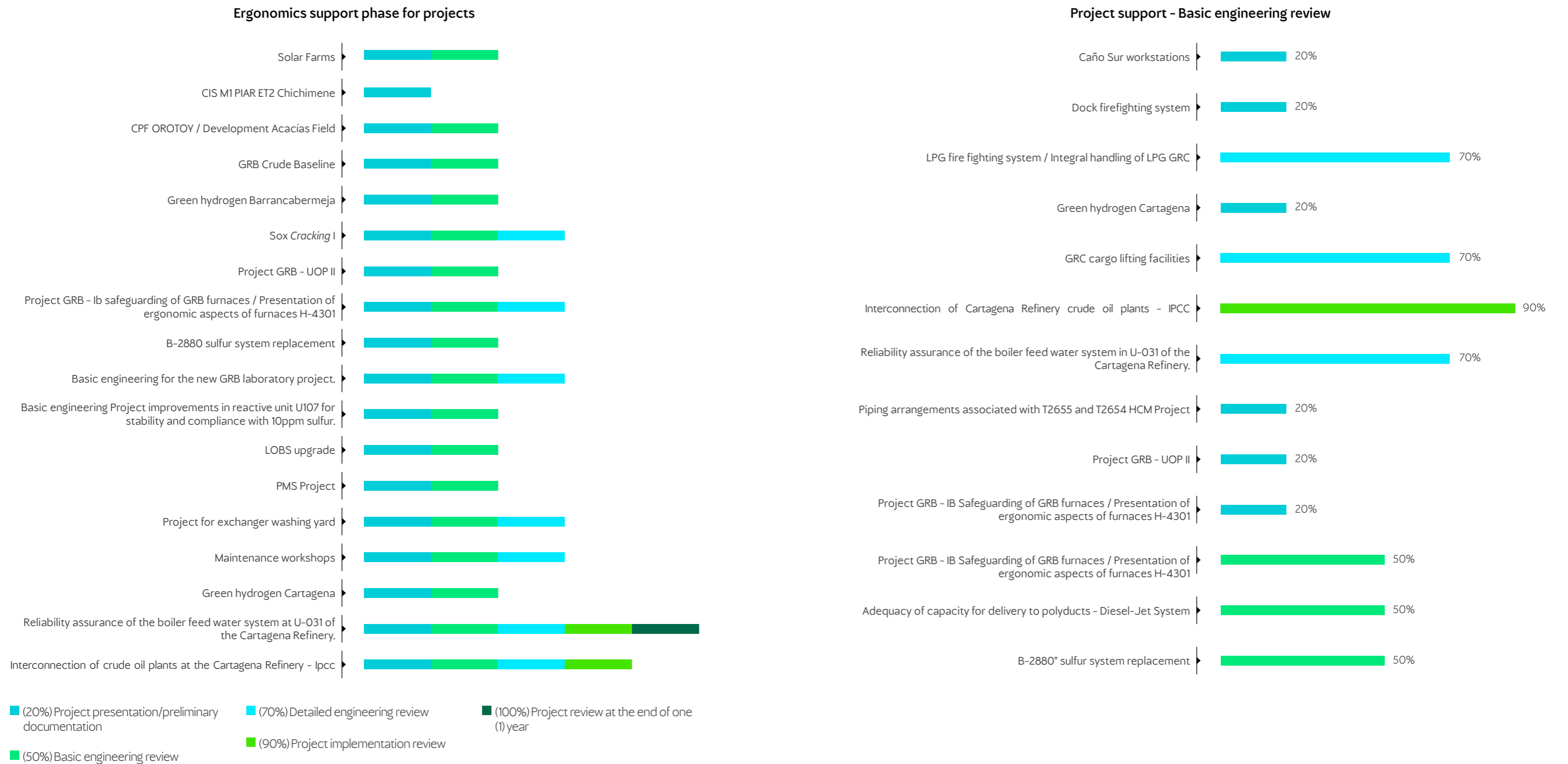
Significant vendors

Vendors identified as carrying substantial risks of negative ESG impacts or holding significant commercial relevance to the company, or a combination of both. The portfolio of sustainability-focused vendors should be a central focus of a company's vendor ESG monitoring and development program. (Segmentation is conducted at the end of each year, and the outcomes are applied in the subsequent year; for vendor management purposes in 2023, segmentation results from December 2022 are utilized.)



Occupational Health

Figure 8.9.1.
Supported projects with technical guidance on industrial hygiene and ergonomics in 2023.



Positions with Very High, High, or Medium risk levels in industrial hygiene or ergonomics conditions

Table 8.9.1.
Positions with Very High, High, or Medium risk levels in industrial hygiene or ergonomics conditions.

Refining and Industrial Processes Vice Presidency (VRP)

12 offices	GRB	Drainage Pump House 5 Active Mechanic in Cooling Tower Fans Reaction Operator Acid Plant Operator Field Welder Workshop Welder Mechanical Technician for Automotive Equipment
	GRC	Laboratory Analyst in the HF Area Field Operator PFO - VRU Section Cutting Operator PCQ Cracking Plant Operator Crane Operations Technician

Three (3) positions for the Innovation and Technology Center - Colombian Institute of Petroleum:

3 offices	ICP	Geochemical Analyst Drilling Mud and Cement Analyst Pilot Plant I Operator
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For the Upstream Vice Presidency, a total of 14 positions, distributed as follows:

14 offices	VPI	Plant Operator Phase I Floreña Crude Technician Cupiagua Station
	VRC	Subsurface Maintainer - Subsurface Operator Gas Plant Operator - Sardinata Station
	VRO	Hydrocarbon Receipt and Delivery Operator Castilla 2 Yard Patroller
	Vicepresidencia Regional Andina Oriente (VAO)/ Gerencia de Operaciones de Desarrollo y Production Oriente (GOR)	Battery 2 Operator Fuel Operator PAD 7 CCY Battery 2 Operator Pia Battery Operator
	VAO/ Gerencia de Operaciones de Desarrollo y Production Andina (GPA)	Caribe Battery Operator Churuyaco Battery Operator Mansoya Battery Operator Subsurface Operator (Slickline) Injection Patroller - Dina Plant Operator

Table 8.9.2.
Ergonomics activities

Unit	2023 Work Plan
GRC	GRC has outlined two (2) comprehensive projects encompassing all 11 departments: one (1) focusing on the Valve Milestone and another on Equipment and Tools. In the case of the Valve Milestone project, a 20% allocation was designated for 2023, equivalent to 20 critical valves. These valves, identified through the initial diagnosis, are distributed across nine (9) departments.
GRB	Two (2) cross-cutting interventions were established: one (1) for designing extensions for valves with horizontal wheels and another for developing a mobile ladder to access valves in elevated work areas. Furthermore, forty (40) interventions were specified for prioritized valve cases categorized as high and very high risk, spanning eight (8) departments. A separate intervention, involving the evaluation of chairs, was conducted for control rooms.
VRO	The Apiay Management intervention was devised for all three (3) control rooms, while the Castilla Management intervention targeted nine (9) prioritized valves. In Chichimene, three (3) prioritized valves underwent intervention.
VPI	A specific plan was established for prioritized valves in Cusiana (turbine area).
VAO	The information pertaining to valves and control rooms in Huila, Putumayo, and Rubiales underwent a thorough validation process.



Table 8.9.3.
Progress of the Human Factors and Cognitive Skills Project

Unit	Position	Total number of employees	Phase I	Total number of employees	Phase II	Total number of employees
GRC	Contract Administrators	9	Aware	9	Cognitive test application	9
	Supervisors/ Shift Supervisors	56		56		53
	Department Heads / Managers	34		18		30
	Control Room Operators	117		NA		NA
VAB	Contract Administrators	15		15		13
GRB	Control Room Operators	60		60		NA
Total		291		158		105
Unit	Position	Phase III	Total number of employees	Phase IV	Total number of employees	
GRC	Contract Administrators		9		8	
	Supervisors/ Shift Supervisors		45		34	
	Department Heads / Managers	Individual feedback	20	Training	18	
	Control Room Operators		NA		98	
VAB	Contract Administrators		10		NA	
GRB	Control Room Operators		NA		NA	
Total			84		158	

Table 8.9.4.
Total Recordable Incident Rate (TRIR) for direct employees
(SASB EM-EP-320a.1)

Required Information	2020	2021	2022	2023
Total hours worked in the year	9,567,670.91	9,110,190.95	11,458,713.16	9,470,726.51
Number of fatalities reported throughout the year	0	0	0	2
Number of work-related injuries recorded	6	4	3	0
Number of work absences recorded	3	1	2	1
Number of work-related ill health cases recorded	1	0	1	0
Near-miss incidents reported throughout the year	NA	NA	NA	NA
Total Recordable Incident Rate (TRIR)	0.14	0.08	0.07	0.02
Fatality rate	0	0	0	0.04
Near-miss frequency rate	NA	NA	0	0

Table 8.9.5.
Total Recordable Incident Rate (TRIR) for indirect employees
(SASB EM-EP-320a.1)

Required Information	2020	2021	2022	2023
Total hours worked in the year	30,384,734.01	34,789,757.5	83,006,505	80,518,946.68
Number of fatalities reported throughout the year	0	0	0	0
Number of work-related injuries recorded	15	19	32	6
Number of work absences recorded	13	16	26	14
Number of work-related ill health cases recorded	NA	NA	NA	0
Near-miss incidents reported throughout the year	NA	NA	NA	NA
Total Recordable Incident Rate (TRIR)	0.09	0.10	0.07	0.05
Fatality rate	0	0	0	0
Near-miss frequency rate	NA	NA	0	0

Table 8.9.6.
Total Recordable Incident Rate (TRIR) for all employees
(SASB EM-EP-320a.1)

Required Information	2020	2021	2022	2023
Total hours worked in the year	39,952,404.92	43,899,948.45	94,465,218.16	89,989,673.19
Number of fatalities reported throughout the year	0	0	0	2
Number of work-related injuries recorded	21	23	35	6
Number of work absences recorded	16	17	28	15
Number of work-related ill health cases recorded	1	0	1	0
Near-miss incidents reported throughout the year	NA	NA	0	0
Total Recordable Incident Rate (TRIR)	0.11	0.10	0.07	0.04
Fatality rate	0	0	0	0.004
Near-miss frequency rate	NA	NA	0	0

Table 8.9.7.
Training hours in health, safety, and emergency management, by type of employees
(SASB EM-EP-320a.1)

Type of employee	2022	2023
Direct employees	155,301	155,119
Indirect employees	43,192	149,854

Table 8.9.8.
Training hours in health, safety, and emergency management for employees
(SASB EM-EP-320a.1)

Training hours	2022	2023
Total training hours in health, safety, and emergency management provided to employees in the year	198,493	304,973
Total number of Company employees	15,483	31,563
Average training hours in health, safety, and emergency management per employee	12.82	9.66

Figure 8.9.2.
Absenteeism due to occupational illness

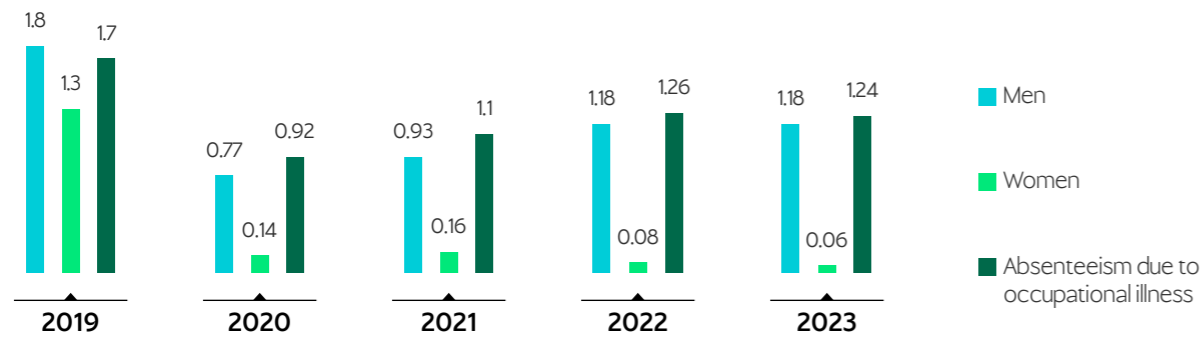


Figure 8.9.3.
Frequency of absenteeism due to occupational illness (absence events per million hours worked)

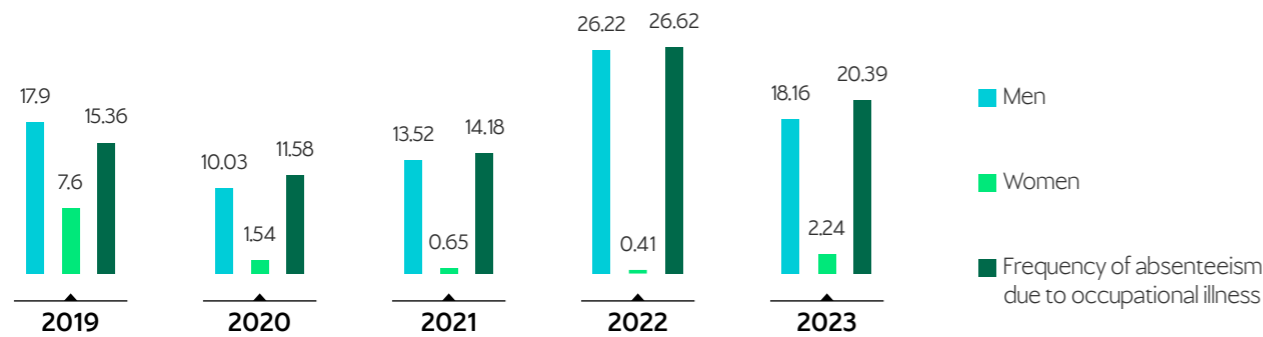


Figure 8.9.4.
Rate of absenteeism due to occupational illness
(Number of absences due to work-related illness per 1,000 workers)

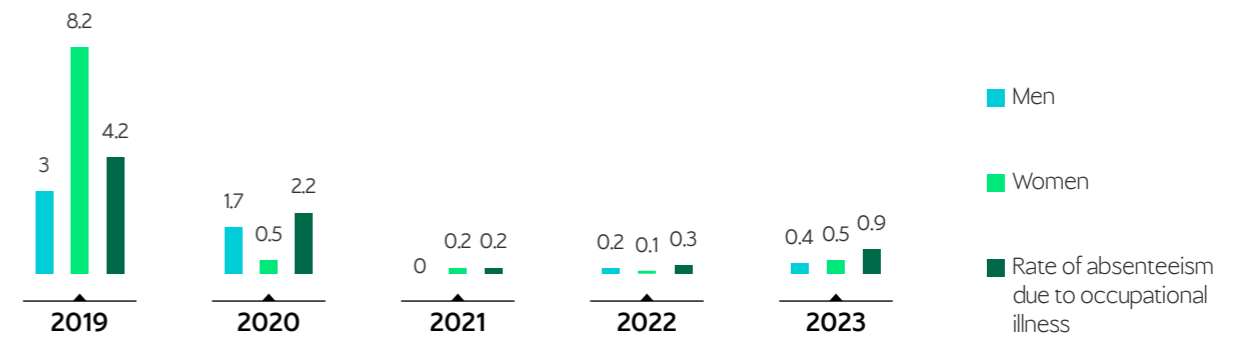


Figure 8.9.5.
Rate of absenteeism due to occupational illness by days of absence
(Number of days of absenteeism due to work-related illness per 1,000 workers)

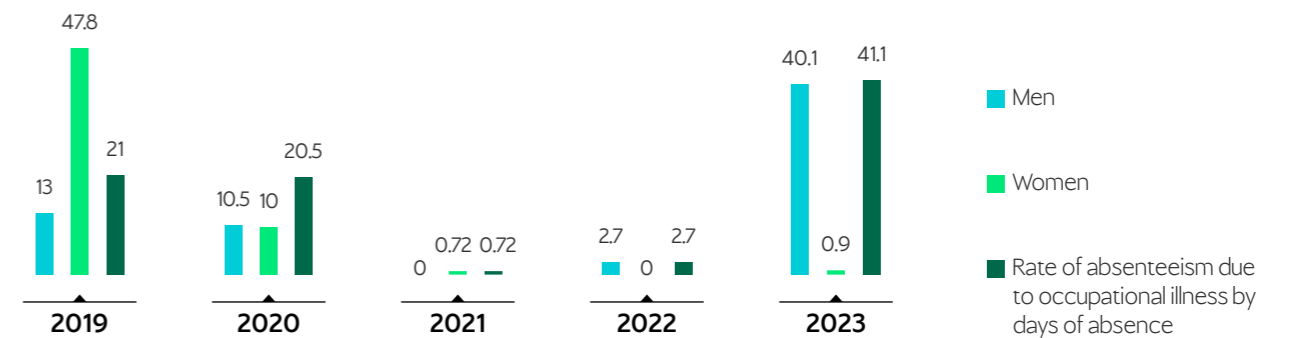
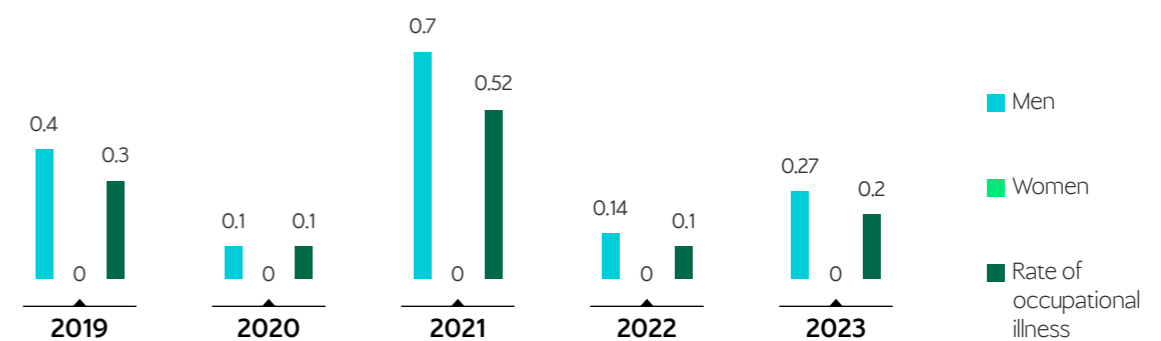


Figure 8.9.6.
Ecopetrol S.A.'s Occupational Illness Rate
(Diagnoses of occupational illness in active workers per 1,000 workers) 2019-2023



Human talent

Ecopetrol employees, by gender, age, job category, type of contract, region, and other diversity indicators.

(GRI 2-7) (GRI 405-1) (GRI 11.11.5) (DJSI 3.1.2) (WEF 11)

Table 8.10.1

General labor indicators	Men	Women	Otro	No declarado	Total
Total number of employees	7,294	2,556	0	0	9,850

Table 8.10.2

Employees by type of contract and gender	Men	Women	Total
Open-ended	6,633	2,328	8,961
Fixed-term	661	228	889
Total	7,294	2,556	9,850

Table 8.10.3

Employees by gender and region	Men	Women	Total
Andean East	677	103	780
Bogotá	1,883	1,494	3,377
Caribe	969	155	1,124
Central	2,898	581	3,479
Orinoquía	793	200	993
Piedemonte	74	23	97
Total	7,294	2,556	9,850

Table 8.10.4

Employees by type of contract and region	Open-ended	Fixed-term	Total
Andean East	648	132	780
Bogotá	3,258	119	3,377
Caribe	1,066	58	1,124
Central	3,068	411	3,479
Orinoquía	841	152	993
Piedemonte	80	17	97
Total	8,961	889	9,850

Table 8.10.5

Employees by job category and gender	Men	Women	Total
Senior Management	14	4	18
Management	88	42	130
Middle Management	485	221	706
Supervision	340	6	346
Professional Technicians	4,489	2,113	6,602
Operators	1,878	170	2,048
Percentage Senior Management	77.77	22.22	100
Percentage Management	67.69	32.30	100
Percentage Middle Management	68.69	31.30	100
Percentage Supervision	98.26	1.73	100
Percentage Professional Technicians	67.99	32.00	100
Percentage Operators	91.69	8.30	100

Table 8.10.6

Employees by job category and age	Under 30 years old	Between 30 and 50 years old	Over 50 years old	Total
Senior Management	0	4	14	18
Management	0	75	55	130
Middle Management	0	482	224	706
Supervision	0	190	156	346
Professional Technicians	389	4,816	1,397	6,602
Operators	204	1,246	598	2,048
Percentage Senior Management	0	22.22	77.77	100
Percentage Management	0	57.69	42.30	100
Percentage Middle Management	0	68.27	31.72	100
Percentage Supervision	0	54.91	45.08	100
Percentage Professional Technicians	5.89	72.94	21.16	100
Percentage Operators	9.96	60.84	29.19	100

Table 8.10.7

Employees by job category and other diversity indicators	Ethnic minority	People with disabilities ¹⁴⁶	LGBTQI+	Total
Senior Management	0	0	0	0
Management	3	2	0	5
Middle Management	18	16	3	37
Supervision	21	33	4	58
Professional Technicians	168	245	28	441
Operators	247	285	5	537
Percentage Senior Management	0	0	0	0
Percentage Management	60	40	0	100
Percentage Middle Management	48.64	43.24	8.10	100
Percentage Supervision	36.20	56.89	6.89	100
Percentage Professional Technicians	38.09	55.55	6.34	100
Percentage Operators	45.99	53.07	0.93	100

The percentages in table 8.10.7 are calculated over the total number of people belonging to some diversity category of the same labor category. For example: number of professional technicians with disabilities (245) / total number of professional technicians belonging to some diversity category (441) = 55.55%.

146. Physical disability is predominant, with 60%, followed by mental disability with 21%.

New hires by gender, age and region

(GRI 401-1) (GRI 11.10.2) (WEF 17)

Table 8.10.8.

Gender	Number of new hires	Hiring rate (%)
Women	222	32.08
Men	470	67.92
Total	692	100

Table 8.10.9.

Age	Number of new hires	Hiring rate (%)
Under 30 years old	182	26.30
Between 30 and 50 years old	478	69.08
Over 50 years old	32	4.62
Total	692	100

Table 8.10.10.

Region	Number of new hires	Hiring rate (%)
Andean East	92	13.29
Bogotá	256	36.99
Caribe	35	5.05
Central	169	24.42
Orinoquía	121	17.48
Piedemonte	19	2.74
Total	692	100

Table 8.10.11.

Parental leave for employees

(GRI 401-3) (GRI 11.10.4) (GRI 11.11.3)

Parental leave	Men	Women	Total
Return-to-work rate	100%	100%	100%
Employee retention rate	100%	100%	100%



Table 8.10.12.
Employee participation in training for the prevention of violence, discrimination, and harassment

Training	Participants
Code of Ethics and Conduct, ethical principles, respect, rejection of discrimination and sexual harassment, and microaggressions.	16,781
Ethical Tour – challenges	19,826
Tools for the prevention, identification, and handling of sexual harassment in work and contractual environments (weekly talk for life).	141
Logbook for emotionally safe environments (Integrity Week).	858
Training on the Work Coexistence Committee.	159
DEI Training (formal): *DEI expeditions in the regions. *Inclusive leadership. *DEI immersion. *“Women - energy that transforms.” *Workplace and sexual harassment with a gender focus. *Prevention of violence, discrimination, and harassment. *Gender equity in the regions. *Life first: conflict, society, and nature. *Ecopetrol Vendors Summit. *International diversity congress.	17,150
DEI Training (informal): *2023 She Is Global Forum *2023 Summit Pride *Various farmers' and entrepreneurs' markets. *Generosity month. *Disability day. *LGBTI Pride month. *Productive Panel – Chain inclusion.	47,610

Figure 8.10.1.
Number of employees who took parental leave during 2016-2023, by gender

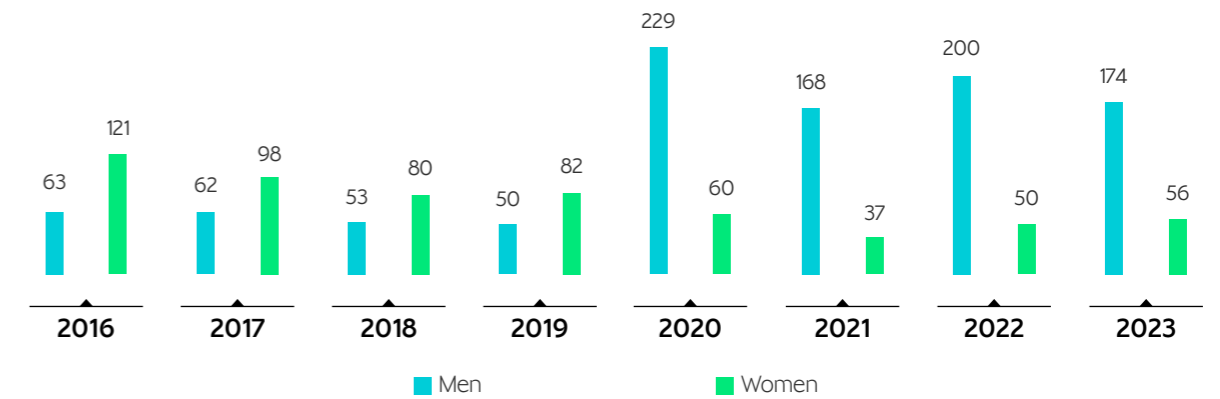


Figure 8.10.2.
Number of employees who returned to work after completing parental leave and remained employed during 2016-2023, by gender

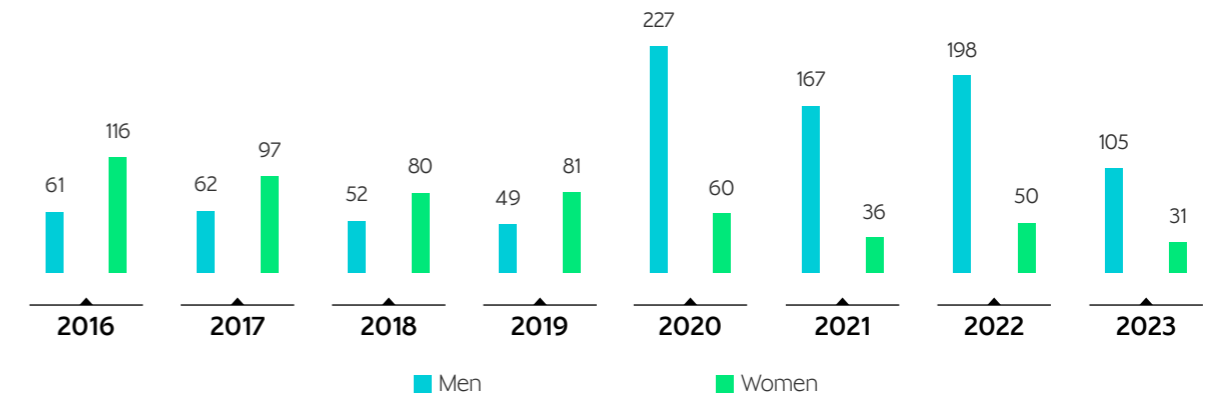
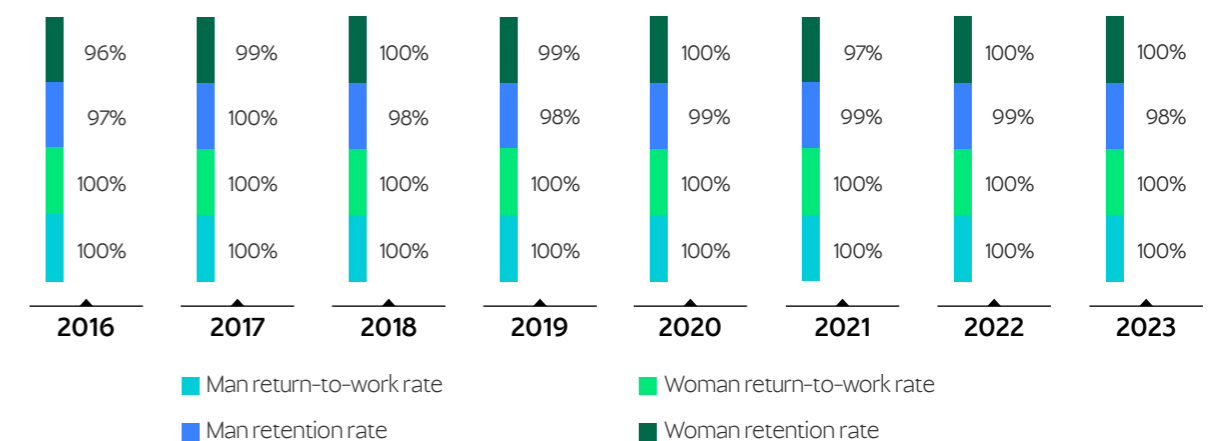


Figure 8.10.3.
Return-to-work and employee retention rates for those who took parental leave during 2016-2023, by gender



Sustainable Territories

Table 8.11.1.
Amount of voluntary and mandatory social and relationship investment made by Ecopetrol in 2023, by region
(GRI 203-1) (GRI 11.14.4) (WEF 28E) (WEF 32E)

Region	Voluntary social investment (COP)	Mandatory social investment (COP)	Total social investment (COP)
Sur	19,180,464,502	1,864,997,719	21,045,462,221
Piedemonte	66,894,111,376	8,846,969,368	75,741,080,744
Orinoquia	49,691,312,526	10,840,305,030	60,531,617,556
Oriente	19,080,221,986	810,016,374	19,890,238,360
Caribe	15,634,934,281	299,969,579	15,934,903,860
Central	87,922,084,460	12,175,576,901	100,097,661,361
Corporate	67,360,868,208	0	67,360,868,208
Centro Occidente	4,757,387,989	873,380,497	5,630,768,486
Total	330,521,385,328	35,711,215,468	366,232,600,796
Percentage	90.25%	9.75%	100%

Table 8.11.2.
Percentage of production assets with community participation and consultation programs
(GRI 413-1) (GRI 11.15.2) (DJSI 3.6.1)

2021	2022	2023
42.2%	50.5%	85.3%

Table 8.11.3.
Percentage of development projects with community consultation processes
(GRI 413-1) (GRI 11.15.2) (DJSI 3.6.1)

2021	2022	2023
49.4%	58.7%	91.2%

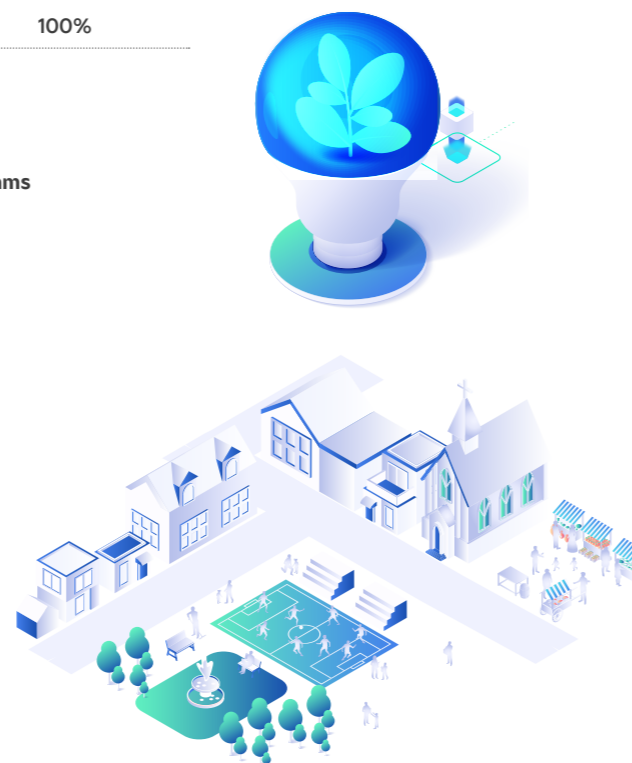


Table 8.11.4.
Prior consultation processes in progress, monitoring, and closure during 2023

Project	Communities consulted / Location	Progress	Phase reached in 2023
Orca Chuchupa B Gas Flowline	72 indigenous communities in La Guajira.	Pre-consultation and opening were conducted with 66 communities, with six (6) communities being approached.	Pre-consultation and opening.
Modification of the global environmental license for the Rubiales Field	One (1) Buenos Aires community belonging to the Alto Unuma Indigenous Reserve.	Prior consultation with formalized agreements in 2023.	Formalized.
Samichay 2D Seismic.	Four (4) indigenous communities: Buenavista Indigenous Community, Coropoya Indigenous Reserve, Jerico Consaya Indigenous Reserve, and La Teofila Indigenous Reserve.	Formalized consultation in 2013. The project will not be carried out, so a request was made to the authority to close the prior consultation.	Monitoring.
Nafta Exploratory Drilling Area	One (1) Embera Chami Council of Dachidrua / Puerto Parra (Santander).	Formalized consultation in 2014 and under monitoring. Exploratory project executed. Consultation agreements fulfilled. Waiting for the formal closure of the project to conclude the prior consultation.	Monitoring.
Polygon within the Rubiales Field: Consultation carried out in compliance with the Council of State's order.	One (1) Sikuani Alto Unuma Meta Reserve / Puerto Gaitán (Meta).	Consultation formalized in 2019 and in the monitoring stage. Consultation agreements in execution. Follow-up meeting held in 2022.	Monitoring.
Berilo Exploratory Drilling Area: Consultation carried out in compliance with a writ of protection.	Two (2) community councils: La Palma Black Community and Cocosar Black Community / Saravena (Arauca).	Protocolized prior consultation in 2019 and under monitoring. This project will be operated by Parex Company, so a prior consultation transfer meeting was held.	Monitoring.
Development of the Occidente Norte Area	Two (2) indigenous communities: Camentsá Biya Council and Pasto Orito Siberia Council / Orito (Putumayo).	Prior consultation with formalized agreements in 2022. Environmental authorization is required to start the project.	Monitoring.
Modification of the South PMA - Churuyaco Polygon	Seven (7) Reserves: Cofán Ukumari Kanhke and Santa Rosa; Pasto Rumiayaco; Awá Ishu and Nasa Uh. Liberación y Futuro Community Council / Ipiales (Nariño).	Seven (7) prior consultation processes closed due to project withdrawal.	Closed.

Table 8.11.5.
Ecopetrol's assets and projects that required resettlements in 2023

Region	Asset and/or project	Type of resettlement			Total
		Temporary	Final	Phase	
Andina Sur Pacifico	ANH Agreement Orito area	4	2	Evaluation and Closure	6
Central	Sardinata Field well SN-28	6	0	Monitoring	6
Central	La Cira Infantas Field	443	86	Monitoring	529
Central	Llanito Field	23	0	Monitoring	23
Central	Casabe Field	25	0	Evaluation and Closure	25
Central	Casabe Field	2	1	Monitoring	3
Central	Nafta Project	6	6	Evaluation and Closure	12
Total		509	95		604



Table 8.11.6.
Operations with significant (real or potential) negative impacts on local communities.
(GRI 413-1) (GRI 413-2)

Region	Operations	Identified impact	Management measures
Orinoquía (East Territory)	Production in the Rubiales and Caño Sur fields in the municipality of Puerto Gaitán, Department of Meta.	<ol style="list-style-type: none"> Modification of accessibility, mobility, and local connectivity: impact on shared roads, especially during the rainy season (Caño Sur – Rubiales and Alto Neblinas-Rubiales). Generation of social conflicts: <ul style="list-style-type: none"> Direct actions mainly related to the hiring of goods, services, and personnel (both proprietary and non-proprietary activities). Difficulties in the interaction between ethnic communities, outsiders, and institutions, with high expectations of investment with a differential focus. Modification of economic activities in the area: changes in the productive and commercial structure of the local population and businesses. Change in demographic variables: increase in population density due to migratory dynamics attributable to the industry and cumulative impacts related to staff accommodation. Change in social land use. 	<ol style="list-style-type: none"> Timely and transparent information and communication with authorities and communities pertaining to road use and maintenance. Joint working groups in strategic and tactical coordination with operators for the comprehensive management of the territory: <ul style="list-style-type: none"> Multi-actor, systematic, and anticipatory social dialogue for the participatory construction of shared territorial visions and due diligence in the face of direct actions. Management with contractors to address impacts. Timely and concerted execution of programs for the benefit of communities in accordance with obligations to the National Hydrocarbons Agency (ANH) and strategic investment. Economic diversification through the strengthening of productive vocations for non-oil income generation. and 5. Strengthening of Community Action Boards in the development of their community management capabilities and tools for dialogue, citizen participation, and transparency.
Orinoquía (Orinoquía Territory)	Meta (Villavicencio, Acacias, Guamal, Castilla la Nueva, Cumaral, Restrepo, San Martín, Cubarral, El Dorado, San Carlos de Guaroa)	<ol style="list-style-type: none"> Generation of social conflicts: emergence of new local actors (associations, unions, environmental groups) seeking social and political support under environmental premises. <ul style="list-style-type: none"> Conflicts over labor participation, creating gaps and differences within the local population. Invisible borders between municipalities in Meta, coupled with a high presence of contractors working simultaneously. Conflict over new projects in the low-emission line: dissatisfaction with salary differences and the volume of labor recruitment in low-emission projects compared to activities inherent to the hydrocarbon industry. Modification of economic activities in the area: deficiencies in employment conditions and non-compliance with labor obligations by contractor companies. 	<ol style="list-style-type: none"> Program for timely and transparent information and communication with institutional support, multi-actor social dialogue, and systematic anticipation. Participatory construction of shared territorial visions and due diligence in the face of direct actions. <ul style="list-style-type: none"> Joint working groups in strategic and tactical coordination with operators for the comprehensive management of the territory, as well as management with contractors to address impacts. Strengthening Community Action Boards in the development of their community management capabilities and tools for dialogue, citizen participation, and transparency. Timely and concerted execution of programs for the benefit of communities, fulfilling obligations established by the ANH. Strengthening of productive skills to create jobs outside the industry to boost economic diversification.

Continued...

Region	Operations	Identified impact	Management measures
Andina Sur Pacífico (Central West Territory)	<p>Cundinamarca (Ubalá, Medina, Paratebuena, Guaduas, Yacopí, Puerto Salgar)</p> <p>Tolima (Carmen de Apicalá, Ortega, Espinal, and Melgar)</p> <p>Boyacá (Santa María)</p>	<p>Cundinamarca</p> <p>1. Generation and/or alteration of social conflicts.</p> <ul style="list-style-type: none"> • Change in the interrelationships between citizens and their institutions. • Generation of expectations as a consequence of the project. <p>2. Modification of accessibility, mobility, and local connectivity: shared use of the road, which modifies its usual use during mobilizations.</p> <p>Tolima</p> <p>3. Generation and/or alteration of social conflicts (presumed impact on a property adjacent to the Aralia property location).</p>	<p>1. Definition of strategies to bring institutions closer to the population.</p> <ul style="list-style-type: none"> • Strengthening mechanisms for citizen participation and the formulation and management of projects as a tool for self-management in the community. • Information and communication programs focused on social dialogue spaces as a tool for common understanding, with a focus on environmental issues, employability, and goods and services. <p>2. Change in access, use, and distribution of natural resources.</p> <p>3. Addressing complaints related to a hydrogeological study to assess and delimit the case.</p> <ul style="list-style-type: none"> • Development of relationship initiatives underway with authorities and the community to build trust and pedagogical programs, and social dialogue. • Permanent and effective channels for PQRS (Inquiries, Complaints, Claims, Suggestions) to prevent and address possible conflicts.
Andina Sur Pacífico (South Andean Territory)	<p>Huila (Aipe, Neiva, Palermo, Tello, Yaguará, and Villavieja)</p> <p>Putumayo (Orito, Puerto Caicedo, Valle del Guamez, San Miguel, Ipiales)</p>	<p>Putumayo</p> <p>1. Modification of economic activities in the area: non-standardized practices outside the legal framework of contractor companies.</p> <p>2. Modification of accessibility, mobility, and local connectivity: shared use and deterioration of roads and public infrastructure (during the rainy season).</p> <p>3. Generation and/or alteration of conflicts:</p> <ul style="list-style-type: none"> • Ethnic issues: expectations of differential inclusion and labor participation. Cumulative impacts generated by the industry. • Social conflicts due to expectations of social investment. <p>Huila</p> <p>4. Modification of economic activities in the area: job creation in Transition Energy projects with different labor conditions (non-oil salaries and fewer labor requirements).</p> <p>Huila and Putumayo</p> <p>5. Generation and/or alteration of social conflicts:</p> <ul style="list-style-type: none"> • New local actors seeking social and political support. • Population (youth, professionals, guilds) seeking opportunities 	<p>1. Information and communication programs focused on social dialogue spaces as a tool for common understanding, with a focus on employability and goods and services.</p> <p>2. Relationship mechanisms with communities and internal articulation within the Company for the comprehensive management of the territory.</p> <p>3. Diverse and inclusive social dialogue scenarios for the construction of a joint territorial vision. Strengthening of Community Action Boards.</p> <ul style="list-style-type: none"> • Renewal and communication of the social investment portfolio. <p>4. Promotion of active population participation in the Public Employment System to learn about the available offer.</p> <p>5. Information mechanisms to lower expectations in Stakeholder Groups.</p>
Piedemonte	<p>Casanare (Yopal – Floreña and Pauto, Aguazul, – Cupiagua, Tauramena – Cusiana, Hato Corozal, LI121 Paz de Ariporo).</p>	<p>1. Modification of accessibility, mobility, and local connectivity: shared use of access roads and increased deterioration (during the rainy season).</p> <p>2. Change in demographic variables:</p> <ul style="list-style-type: none"> • Arrival of population from other areas of the country seeking job opportunities in the industry. 	<p>1. Synergy with regional transit authorities to learn and share the most recurrent problems on the roads.</p> <p>2. Information strategies with municipal authorities and communities, with the purpose of reducing expectations regarding the scope of the project.</p> <ul style="list-style-type: none"> • Recognition of artistic expressions as a meeting point for intercultural relations.

Region	Operations	Identified impact	Management measures
	<p>Arauca – Sarare (Saravena, Tame, Cubará, and Toledo)</p>	<ul style="list-style-type: none"> • Sudden change in the number of inhabitants in the area due to factors related to the transformation of opportunities derived from the project. <p>3. Modification of economic activities in the area: change in land use and transformation of productive practices.</p> <p>4. Generation and/or alteration of social conflicts:</p> <ul style="list-style-type: none"> • High expectations in the quantity and coverage of job opportunities based on the project's job offer. 	<p>3. Prioritization of local economic development through strategies for the organic and supportive strengthening of Community Action Boards, in terms of their responsibilities, values, rights, and duties as community intermediaries.</p> <p>4. Information and communication programs focused on social dialogue spaces as a tool for common understanding, with a focus on employability and goods and services.</p>
Caribe	<p>La Guajira (Uribia, Manaure, Maicao, Dibulla, Riohacha)</p> <p>Bolívar (Cartagena)</p> <p>Cesar (El Copey)</p>	<p>1. Generation and/or alteration of social conflicts:</p> <ul style="list-style-type: none"> • Development of offshore projects, associated with prior consultations and the non-definition of the 'offshore' black line, as well as the lack of awareness among Stakeholder Groups about labor hiring regulations. • Generation of expectations in the population due to the Transition Energy roadmap: expectations of employment and salary differences in activities not inherent to the sector. • Generation and alteration of social conflicts due to differences in performance criteria between Ecopetrol Group companies in 'offshore' and 'onshore' projects. <p>2. Modification of economic activities in the area: population with training in the hydrocarbon sector and demand for Transition Energy activities (wind and solar energy).</p>	<p>1. Information and communication program focused on social dialogue spaces as a tool for common understanding, with a focus on employability and goods and services.</p> <ul style="list-style-type: none"> • Strengthening relationships based on trust, especially with ethnic groups and women, under a differential approach, implementing dialogue spaces and improving their capacities. • Contribution to local development through the consolidation of a portfolio with investments in water, gas, education, circular economy, and green businesses. • Permanent, inclusive, timely, and transparent dialogue with Community Action Boards, ethnic groups in La Guajira and Cartagena (Bolívar), and regional contractors. <p>2. Strategic alliances for the qualification of the occupational profile in alternative energies (SENA, Corpoeducación, and the Department of Education).</p> <ul style="list-style-type: none"> • Generation of synergies to comply with hiring regulations set forth in the Public Employment System.
Central	<p>Santander (Barrancabermeja, Puerto Wilches, Sabana de Torres, San Vicente de Chucurí, Rionegro)</p> <p>Cesar (San Martín)</p> <p>Antioquia (Puerto Nare, Puerto Triunfo, Yondó)</p> <p>Bolívar (Cantagallo)</p> <p>Boyacá (Puerto Boyacá)</p> <p>Norte de Santander (Tibú)</p>	<p>1. Modification of economic activities in the area: non-standardized practices outside the legal framework of contractor companies.</p> <p>2. Generation and/or alteration of social conflicts due to changes in employment dynamics, goods, and services: young populations, women, professionals, and guilds seeking employment opportunities.</p> <p>3. Change in social land use due to the transformation of productive practices.</p> <p>4. Change in demographic variables: foreign migrants seeking job opportunities in the industry.</p> <p>5. Modification of accessibility, mobility, and local connectivity: shared use of access roads, near residences, and increased deterioration, especially during the rainy season.</p> <p>6. Alteration in the visual perception of the landscape: impacts due to noise, light, and particulate matter, conflict over damages to third parties.</p> <p>7. Involuntary relocation of the population: temporary and permanent resettlements.</p>	<p>1. Spaces for social dialogue to foster mutual understanding, with a focus on enhancing employability and facilitating access to goods and services.</p> <p>2. Rolling out a strategic framework to coordinate segment clusters in the Magdalena Medio region, with a particular emphasis on employment, workforce development, and the provision of goods and services.</p> <p>3. Strategic partnerships to bolster productive sectors and stimulate job creation beyond traditional industry boundaries, thereby promoting economic diversification.</p> <p>4. Collaborating with partners and institutions to prioritize the recruitment of local workforce, procurement of goods, and services, while also establishing informative channels for job opportunities.</p> <p>5. Developing strategies for the maintenance and use of transportation routes, alongside information dissemination mechanisms to facilitate equipment mobilization.</p> <p>6. Conducting ongoing monitoring of potential impacts in collaboration with environmental experts and devising actionable plans accordingly.</p> <p>7. Embracing the complexity of dynamics with an ethnic focus, and adhering to relocation protocols to ensure equitable outcomes.</p>



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Contents



Abbreviations

- Alexander Von Humboldt Institute (IAVH)*
- Announced Pledges Scenario (APS)
- Areas Most Affected by Conflict (ZOMAC)*
- Artificial Intelligence (AI)
- Asset Back Trading (ABT)
- Average daily crude oil production (KBPD)
- Average Exchange Rate (TRM)*
- Balanced Scorecard (TBG)*
- Barrel (bl)
- Barrels (Bbls)
- Barrels of oil equivalent (BOE)
- Barrels per day (BPD)
- Basic Comprehensive Operator Training Program (FIBO)
- Billion (mM)
- Billions of colombian pesos (BCOP)
- Billions of US dollars (BUSD)
- Brigh Water (BW)
- Carbon Capture, Utilization, and Storage (CCUS)
- Carbon dioxide (CO₂)
- Carbon Disclosure Project (CDP)
- Carbon Monoxide (CO)
- Circular Economy (CE)
- Citizen Participation Office (OPC)
- Collective Labor Agreement (CLA)
- Colombian Carbon Market Actors Association (Asocarbono)*
- Colombian Natural Gas Association (Naturgas)
- Colombian Stock Exchange (BVC)*
- Commercial and Marketing Vice Presidency (VCM)*
- Committee of Sponsoring Organizations of the Treadway Commission (COSO)
- Comparative Toxic Units (CTUe)
- Construction and demolition waste (RCD)*
- Control Objectives for Information and related Technology (COBIT)
- Cooperative Association for International Development (SOCODEVI)
- Corporate Compliance Vice Presidency (VCU)*
- Corporate Integrated Risk Management (GIR)*
- Corporate Management of Internal Control Assurance (GCI)*
- Corporate Sustainability Reporting Directive (CSRD)
- Develop Natural Climate Solution (SNC)*
- Dióxido de Nitrógeno (N₂O)
- Directorate of the National Authority for Prior Consultation (DANCP)
- Diversity, Equity, and Inclusion (DEI)
- Dolars (USD)
- Dow Jones Sustainability Index (DJSI)
- Earnings before interest, taxes, depreciation and amortization (EBITDA)
- Economic Commission for Latin America and the Caribbean (ECLAC)
- Ecopetrol Group (EG)*
- Ecopetrol Trading Asia (ECPTA)
- Ecopetrol US Trading (USTC)
- Emotional Emergency Response Brigades (BAEE)
- Environmental Compliance Reports (ECR)
- Environmental, Social, and Governance (ESG)
- Ernst & Young (EY)
- Executive Committee (ExCo)
- Food and Agriculture Organization (FAO)
- Foreign Corrupt and Practices Act (FCPA)
- Free Cash Flow (FCF)
- French Institute of Petroleum (IFP)
- Fuel Price Stabilization Fund (FEPC)
- General Management Barrancabermeja Refinery (GRB)*
- General Management Cartagena Refinery (GRC)*
- Gigawatt hours (GWh)
- Global Biodiversity Framework (GBF).
- Global Reporting Initiative (GRI)
- Gram per liter (g/L)
- Greenhouse Gas Emissions (GHG)
- Gross Domestic Product (GDP)
- Hazardous Air Pollutants (HAP)
- Health and Safety Committees (COPASOS)*
- Health Risk Assessment (HRA)
- Health, Safety, and Environment (HSE)
- Hectares (ha)

- High Sulfur Content Fuel Oil (HSFO)
- Human Rights (HR)
- Hydrocarbon concentration (HTP)
- Hydrogen (H2)
- Information and Communication Technologies (ICT)
- Innovation and Technology Center (ICP)*
- Institute of Hydrology, Meteorology, and Environmental Studies (IDEAM)*
- Integrated environmental management plan (PMAI)*
- Integrated Management Report (IIG)
- Integrated Risk Management (IRS)
- Intergovernmental Panel on Climate Change (IPCC)
- International Association of Oil & Gas Producers (IOGP)
- International Energy Agency (IEA)
- International Finance Corporation's (IFC)
- International Labour Organization (ILO)
- International Sustainability Standards Board (ISSB)
- International Union for Conservation of Nature (IUCN)
- Investor Relations (IR)
- Key Risk Indicators (KRI's)
- Kilograms of carbon dioxide equivalent (KgCO2e)
- Kilometers (Km)
- Kilopounds (Klb)
- Kilowatt hour (kWh)
- Leak Detection and Repair (LDAR)
- Learning Experience Platform (LXP)
- Learning Management System' (LMS)
- Life Cycle Analysis (LCA)
- Liquefied Petroleum Gas (LPG)
- Local Occupational Health Committees (COLOSOS)*
- Long-Term Incentives (LTI)
- Loss of Primary Containment (LOPC)
- Low Emissions Vice Presidency (VSE)*
- Major Accident Prevention Program (MAPP)
- Megavoltamper (MVA)
- Megawatt (MW)
- Megawatt (MWh)
- Methane (CH4)

- Metric ton (TonM)
- Metric ton of carbon dioxide equivalent (MtCO2)
- Milligrams per liter (mg/L)
- Millions of US dollars (MUSD)
- Mining and Energy Planning Unit (UPME)*
- Ministry of Environment and Sustainable Development (MADS)*
- Ministry of Mines and Energy (MME)*
- Money laundering, terrorism financing, and the proliferation of weapons of mass destruction (AML/CFT/WMD).
- Nano Relative Permeability Modifier (NanoRPM)
- Nano Whater Wheter (NWW)
- National Business Association of Colombia (ANDI)*
- National Environmental Licensing Authority (ANLA)*
- National Environmental System (SINA)
- National Hydrocarbons Agency (ANH)
- National Interconnected System (NIS)
- National Roads Institute (INVIAS)*
- Nationally Determined Contribution (NDC)
- Nature-based solutions (SBN)*
- Net Zero Deforestation (NZD)
- Net Zero Emissions (NZE)
- New York Stock Exchange (NYSE)
- Nitrogen oxides (Nox)
- Occupational Epidemiological Surveillance System (SIVEO)
- Oil & Gas (O&G)
- Oil and Gas Climate Initiative (OGCI)
- Oil and Gas Methane Partnership (OGMP)
- Operating Cash Flow (OCF)
- Operational Technology and Information Technology (OT & IT)
- Organic Rankine Cycle (ORC)
- Organization for Economic Cooperation and Development (OECD)
- Organization of the Petroleum Exporting Countries (OPEC)
- Ozone Depleting Substances (ODS)
- Particulate Matter (PM)
- Parts per million (ppm)
- petajoule (PJ)
- Planning and Promotion of Energy Solutions (IPSE)*
- Process Safety (PS)

- Process Safety Events (PSE)
- Process Safety Frequency Index (PSFI)
- Public Company Accounting Oversight Board (PCAOB)
- Refinery Grade Propylene (PGR)
- Refining and Industrial Processes Vice Presidency (VRP)*
- Regional Andean East Vice Presidency (VAO)*
- Regional Autonomous Corporations (CAR)*
- Regional Central Vice Presidency (VRC)*
- Regional Orinoquía Vice Presidency (VRO)*
- Regional Piedemonte Vice Presidency (VPI)*
- Representative Concentration Pathways (RCPs)
- Return on Average Capital Employed (ROACE)
- Sarbanes Oxley Act (SOX)
- Science Based Targets Initiative (SBTI)
- Science, Technology, and Innovation (ST+i)
- Science, Technology, and Innovation Vice Presidency (VTI)*
- Securities and Exchange Commission (SEC)
- Shared Socio Economic Pathways (SSPs)
- Small Hydroelectric Power Plants (SHP)
- Society of Environmental Toxicology and Chemistry (SETAC)
- Special Jurisdiction for Peace (JEP)
- Specialized Technical Assistance (STAs)
- Stakeholder Capitalism Metrics (SCM)
- Stakeholder Groups (SG)
- Stated Policies Scenario (STEPS)
- Sulfur oxides (Sox)
- Superintendence of Industry and Commerce (SIC)
- Sustainability Accounting Standards Board (SASB)
- Sustainable Development Goals (SDG)
- Task Force on Climate-Related Financial Disclosures (TCFD)
- Taskforce on Nature-related Financial Disclosures (TNFD)
- Technical Competency Strengthening Program (PROCER)*
- Technology, Environmental, Social and Governance (TESG)
- Territorial Development Programs (PDET)*
- The Nature Conservancy (TNC)
- Thousand barrels of oil equivalent per day (Kbped)
- Thousand barrels of water per day (KBWPD)

- Thousands of barrels (Mbls)
- Thousands of incremental barrels (KBOI)
- Tier 1 Process Safety Incident Frequency Index (IFSP N1)
- Tier 2 Process Safety Incident Frequency Index (IFSP N2)
- Tons of carbon dioxide equivalents (TCO2e)
- Treatment Actions (TAs)
- Union of Oil Industry Workers (USO)*
- United Nations Environment Programme (UNEP)
- United Nations Office on Drugs and Crime (UNODC)
- Upstream Vice Presidency (VPU)*
- Value Added Tax (VAT)
- Volatile Organic Compounds (VOCs)
- Water Information System (SIGAR)*

*As per its spanish acronym

Associated standards

Global Reporting Initiative (GRI)

GRI Standard	Oil & Gas sector-specific	Indicator	Location / Response	Page	Omissions	Observations	(V) External verification
GRI 2 General Information							
GRI 2-1		Organizational details	About the organization	16, 17			
GRI 2-2		Entities included in the organization's sustainability reporting	About this Report	10			
GRI 2-3		Reporting period, frequency, and contact point	About this Report	10, 13			
GRI 2-4		Restatements of information	For the 2023 reporting period, no corrections, restatements or updates were made to the information presented in the 2022 Integrated Management Report, in addition to the environmental indicators and the SASB EM-EP-210a.2 indicator.				
GRI 2-5		External assurance	About this Report	13			
GRI 2-6		Activities, value chain, and other business relationships	Ecopetrol's GeoFigureic Presence Map Growing with the Energy Transition Responsible Supply Chain	17, 20, 21, 115, 116, 117, 273, 278			
GRI 2-7		Employees	Human Talent About this Report Annexes	16, 331, 538,			
GRI 2-8		Workers who are not employees	Responsible Supply Chain	16, 275			
GRI 2-9		Governance structure and composition	Company's Governance Structure	26, 28, 29, 30, 31, 32, 37, 40, 41, 44			
GRI 2-10		Nomination and selection of the highest governance body	Company's Governance Structure	29, 30, 32			
GRI 2-11		Chair of the highest governance body	Company's Governance Structure	30			
GRI 2-12		Role of the highest governance body in overseeing the management of impacts	Company's Governance Structure	26, 39, 40, 41, 42, 44, 47, 48			
GRI 2-13		Delegation of responsibility for managing impacts	Company's Governance Structure	39, 278, 279			
GRI 2-14		Role of the highest governance body in sustainability reporting	Company's Governance Structure	39			
GRI 2-15		Conflicts of interest	Ethics and Transparency	419			
GRI 2-16		Communication of critical concerns	Company's Governance Structure	43			
GRI 2-17		Collective knowledge of the highest governance body	Company's Governance Structure	38,86			
GRI 2-18		Evaluation of the performance of the highest governance body	Company's Governance Structure	46			
GRI 2-19		Remuneration policies	Company's Governance Structure	47, 49			
GRI 2-20		Process to determine remuneration	Company's Governance Structure	49			
GRI 2-21		Annual total compensation ratio	Company's Governance Structure	51			
GRI 2-22		Statement on sustainable development strategy	2040 Strategy	54			

GRI Standard	Oil & Gas sector-specific	Indicator	Location / Response	Page	Omissions	Observations	(V) External verification
GRI 2-23		Policy commitments	Ethics and Transparency Human Rights	165, 166, 167, 180, 411, 412, 414.			
GRI 2-24		Embedding policy commitments	Ethics and Transparency Human Rights	168, 170, 412, 414,			
GRI 2-25		Processes to remediate negative impacts	Ethics and Transparency Human Rights	174, 416			
GRI 2-26		Mechanisms for seeking advice and raising concerns	Ethics and Transparency	417, 418			
GRI 2-27		Compliance with laws and regulations	Materials and Waste Climate Change	266, 418			
GRI 2-28		Membership associations	Annexes	506			
GRI 2-29		Approach to stakeholder engagement	Stakeholder Groups Growing with the Energy Transition Stakeholder Groups Materiality Climate Change Water Biodiversity and Ecosystem Services	120, 154, 203, 234, 248, 250, 257, 270, 309, 368, 512			
GRI 2-30		Collective bargaining agreements	Human Talent	357			
 GRI 3 Material Topics							
GRI 3-1		Process to determine material topics	Materiality Analysis	156, 157			
GRI 3-1-a		Process to determine materials topics – positive and negative impacts	Materiality Analysis	158			
GRI 3-1-b		Stakeholder Groups involved in the materiality determination process	Materiality Analysis	157			
GRI 3-2		List of material topics	Materiality Analysis	158, 159			
GRI 3-3		Management of material topics	All chapters under the Generate value through T ESG section	196, 197, 198, 199, 203, 204, 205, 215, 216, 220, 221, 223, 228, 229, 234, 235, 244, 245, 247, 248, 250, 255, 256, 257, 268, 270, 286, 296, 298, 316, 317, 326, 328, 364, 365, 394, 395, 400, 402, 408, 409			
 GRI 201 Economic Performance 2016							
GRI 201-1	11.2.2 11.14.2	Direct economic value generated and distributed	Competitive Returns Financial Sustainability	92			
GRI 201-2	11.2.2	Financial implications and other risks and opportunities due to climate change	Climate Change	200			
GRI 201-3	11.11.2 11.14.3	Defined benefit plan obligations and other retirement plans	Human Talent	359			
GRI 201-4	11.21.3	Financial assistance received from government	Competitive Returns	91			

GRI Standard	Oil & Gas sector-specific	Indicator	Location / Response	Page	Omissions	Observations	(V) External verification
 GRI 202 Market Presence 2016							
GRI 202-1		Ratios of standard entry level wage by gender compared to local minimum wage	Human Talent	349			
 GRI 203 Indirect Economic Impacts 2016							
GRI 203-1	11.14.4	Infrastructure investments and services supported	Sustainable Territories Annexes	374, 544			
GRI 203-2	11.14.5	Significant indirect economic impacts	Competitive Returns	392			
 GRI 204 Procurement Practices 2016							
GRI 204-1	11.14.6	Proportion of spending on local suppliers	Responsible Supply Chain	276			X
 GRI 205 Anti-corruption 2016							
GRI 205-1	11.20.2	Operations assessed for risks related to corruption	Ethics and Transparency	415			
GRI 205-2	11.20.3	Communication and training about anti-corruption policies and procedures	Ethics and Transparency	414, 418, 421			
GRI 205-3	11.20.4	Confirmed incidents of corruption and actions taken	Ethics and Transparency	418			
 GRI 206 Anti-competitive Behavior 2016							
GRI 206-1	11.19.2	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Ethics and Transparency	418			
 GRI 207 Tax 2019							
GRI 207-1	11.21.4	Approach to tax	Financial Sustainability	292			
 GRI 302 Energy 2016							
GRI 302-1	11.1.2	Energy consumption within the organization	Climate Change	217, 218, 219, 220		The reported electricity consumption reflects the aggregate consumption of the Business Group, inclusive of its subsidiaries. As per regulatory directives, Ecopetrol does not engage in energy sales to third parties, thus all energy consumption remains internal.	X
GRI 302-2	11.1.3	Energy consumption outside the organization	Climate Change	219			
GRI 302-3	11.1.4	Energy intensity	Climate Change	219			X
GRI 302-4		Reduction of energy consumption	Climate Change	216, 220, 517,		It's important to understand that 1Petajoule (PJ) equates to 1,000,000,000,000,000 Joules. In the year 2023, a notable reduction of 3.88 PJ was recorded.	X
 GRI 303 Water and Effluents 2018							
GRI 303-1	11.6.2	Interaction with water as a shared resource	Water	228, 229, 230, 234,			
GRI 303-2	11.6.3	Management of water discharge-related impacts	Water Annexes	230			
GRI 303-3	11.6.4	Water withdrawal	Water	236, 237, 238			X
GRI 303-4	11.6.5	Water discharge	Water	230, 239, 241			X

GRI Standard	Oil & Gas sector-specific	Indicator	Location / Response	Page	Omissions	Observations	(V) External verification
GRI 303-5	11.6.6	Water consumption	Water	243		Omission Item c: It's pertinent to mention that alterations in stored volume are deemed insignificant when compared to the vast quantities of water managed in Upstream and Downstream operations. Moreover, given the considerable volumes of water, particularly production water, storage doesn't serve as a means of managing the water effluents produced by Ecopetrol.	X
 GRI 304 Biodiversity 2016							
GRI 304-1	11.4.2	Operational sites owned, leased, or managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Biodiversity and Ecosystem Services	246, 247			X
GRI 304-2	11.4.3	Significant impacts of activities, products, and services on biodiversity	Biodiversity and Ecosystem Services	246, 249			
GRI 304-3	11.4.4	Habitats protected or restored	Biodiversity and Ecosystem Services Annexes	248, 252, 253, 254, 522, 523		Protected or restored areas have undergone approval by independent external professionals. Any activities related to compliance with environmental obligations, involving hectares in conservation, restoration, or reforestation, are transferred to the competent environmental authority (ANLA or Regional Autonomous Corporations).	X
GRI 304-4	11.4.5	IUCN Red List species and national conservation list species with habitats in areas affected by operations	Biodiversity and Ecosystem Services	246, 254			X
 GRI 305 Emissions 2016							
GRI 305-1	11.1.5	Direct (Scope 1) GHG emissions	Climate Change				X
GRI 305-2	11.1.6	Energy indirect (Scope 2) GHG emissions	Climate Change	206, 207		Scope 2 emissions within Ecopetrol are reported utilizing the market-based method, encompassing emissions generated from energy procurement from the National Interconnected System (SIN) (estimated with emission factors stipulated by UPME Resolution 320 of 2022 - 126 Kg/Mwh) and emissions originating from local generation centers (estimated emission factors based on energy generated and fuel consumption). Despite Ecopetrol's calculations of Scope 2 emissions through the location-based method, utilizing SIN's emission factor for all procured energy, the Company decided to report via the market-based method. This choice is driven by the Colombian energy mix, predominantly comprised of hydroelectric energy, resulting in lower emissions compared to local providers. Consequently, the market-based approach yields a more comprehensive and accurate depiction of operational reality. Notably, the procurement of electricity from local suppliers is favored due to factors such as facility location in areas with inadequate national electrification, low system reliability, or, in some instances, gas utilization within the decarbonization strategy.	X
GRI 305-3	11.1.7	Other indirect (Scope 3) GHG emissions	Climate Change	206, 207			
GRI 305-4	11.1.8	GHG emissions intensity	Climate Change	211			
GRI 305-5	11.2.3	Reduction of GHG emissions	Climate Change	213			X

GRI Standard	Oil & Gas sector-specific	Indicator	Location / Response	Page	Omissions	Observations	(V) External verification
GRI 305-6		emissions of ozone-depleting substances (ODS)	Air Quality	225, 226			
GRI 305-7	11.3.2	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Air Quality	224, 226			X
 GRI 306 Waste 2020							
GRI 306-1	11.5.2	Waste generation and significant waste-related impacts	Materials and Waste	259, 261			
GRI 306-2	11.5.3	Management of significant waste-related impacts	Materials and Waste	259, 260, 261			X
GRI 306-3	11.5.4	Generated waste	Materials and Waste	261			X
GRI 306-4	11.5.5	Waste diverted from disposal	Materials and Waste Annex	263, 265, 524			
GRI 306-5	11.5.6	Waste directed to disposal	Materials and Waste	265, 525			
 GRI 308 Supplier Environmental Assessment 2016							
GRI 308-1		New suppliers that were screened using environmental criteria	Responsible Supply Chain	281			
 GRI 401 Employment 2016							
GRI 401-1	11.10.2	New employee hires and employee turnover	Human Talent Annexes	334, 339, 340, 541		The hiring rate at Ecopetrol stands at 7%, derived from the total number of hires (692) divided by the total number of employees (9,850).	X
GRI 401-2	11.10.3	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Human Talent	340, 359			
GRI 401-3	11.10.4 11.11.3	Parental leave	Human Talent Annexes	348, 541			
 GRI 402 Labor/Management Relations 2016							
GRI 402-1	11.7.2	Minimum notice periods regarding operational changes	There is no set minimum timeframe for reporting changes within the Company. However, in the case of significant operational changes that could impact workers, these are communicated well in advance as part of our communication strategy, facilitated by their respective area managers. Furthermore, continuous dialogue spaces are established with the most prominent trade unions, ensuring that changes and the Company's strategic direction are effectively communicated.				
 GRI 403 Occupational Health and Safety 2018							
GRI	11.8.3	Total number of Level 1 and Level 2 process safety incidents and a breakdown by activity	Industrial and Process Safety	323			X
GRI 403-1	11.9.2	Occupational health and safety management system	Occupational Health	299			
GRI 403-2	11.9.3	Hazard identification, risk assessment, and incident investigation	Occupational Health	299			
GRI 403-3	11.9.4	Occupational health services	Occupational Health	310			
GRI 403-4	11.9.5	Worker participation, consultation, and communication on occupational health and safety	Occupational Health	299			
GRI 403-5	11.9.6	Worker training on occupational health and safety	Occupational Health	312, 313			

GRI Standard	Oil & Gas sector-specific	Indicator	Location / Response	Page	Omissions	Observations	(V) External verification
GRI 403-6	11.9.7	Promotion of worker health	Occupational Health	309			
GRI 403-7	11.9.8	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Occupational Health	300, 309			
GRI 403-8	11.9.9	Workers covered by an occupational health and safety management system	Occupational Health	299			
GRI 403-9	11.9.10	Work-related injuries	Occupational Health Annexes	299, 301, 302		<p>* Rates of workplace injury-related fatalities: 0.86 [Employees]; 0 [Contractors].</p> <p>* Rates of workplace injuries with significant consequences (excluding fatalities): 0.043 [Employees]; 0 [Contractors].</p> <p>* Rates of recordable workplace injuries: 0.47 [Employees]; 0.22 [Contractors].</p> <p>* Total number of hours worked: 1,168,148.39 [Employees]; 6,922,002.06 [Contractors].</p> <p>These rates have been calculated per 1,000,000 hours worked.</p>	X
GRI 403-10	11.9.11	Work-related ill health	Occupational Health Annexes	302	<p>Item b is excluded based on legal restrictions outlined in the Colombian legal framework, where such information is considered sensitive. This particular section necessitates the following details:</p> <p>For all non-employee workers whose work or workplaces are under the organization's control:</p> <p>i. The count of fatalities attributed to occupational diseases or illnesses;</p> <p>ii. The tally of reportable cases concerning occupational diseases and illnesses;</p> <p>iii. The primary categories of occupational diseases and illnesses;</p>		X
 GRI 404 Training and Education 2016							
GRI 404-1	11.10.6 11.11.4	Average hours of training per year per employee	Human Talent	350, 351			X
GRI 404-2	11.7.3 11.10.7	Programs for upgrading employee skills and transition to assistance programs	Human Talent	350, 354			
GRI 404-3		Percentage of employees receiving regular performance and career development reviews	Human Talent	356			X
 GRI 405 Diversity and Equal Opportunity 2016							

GRI Standard	Oil & Gas sector-specific	Indicator	Location / Response	Page	Omissions	Observations	(V) External verification
GRI 405-1	11.11.5	Diversity of governance bodies and employees	Company's Governance Structure Human Talent Annual Corporate Governance Report Annexes	36, 331, 435, 538, 539, 540		Diversity within governance bodies: By gender: * Women: 33.33% * Men: 66.66% By age group: * Under 30 years: 0% * Between 30 and 50 years: 0% * Over 50 years: 100% No other diversity indicators for members of governance bodies are reported. The rates calculated in the annex - table 8.10.7 are determined from the total population with any diversity category.	X
GRI 405-2	11.11.6	Ratio of basic salary and remuneration of women to men	Human Talent	349			X
 GRI 406 Non-discrimination 2016							
GRI 406-1	11.11.7	Incidents of discrimination and corrective actions taken	Human Rights Human Talent	170, 171, 332			X
 GRI 409 Forced or Compulsory Labor 2016							
GRI 409-1	11.12.2	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Human Rights	173			
 GRI 410 Security Practices 2016							
GRI 410-1	11.18.2	Security personnel trained in human rights policies or procedures	Human Rights Responsible Supply Chain Sustainable Territories	180, 270, 383		Literal b. The 3,041 workers and/or security personnel who have received formal training in specific human rights policies or procedures, includes personnel from external organizations that provide security to Ecopetrol; Therefore, these external personnel are also among the 95.93%	X
 GRI 411 Rights of Indigenous Peoples 2016							
GRI 411-1	11.17.2	Incidents of violations involving rights of indigenous peoples	Human Rights Sustainable Territories	172, 174, 175, 389			
 GRI 413 Local Communities 2016							
GRI 413-1	11.15.2	Operations with local community engagement, impact assessments, and development programs	Responsible Supply Chain Sustainable Territories Annexes	368, 544, 547		At Ecopetrol, 91.2% of projects and 85.3% of assets are equipped with programs for local community involvement, impact assessments, and development.	X
GRI 413-2	11.15.3	Operations with significant actual and potential negative impacts on local communities	Sustainable Territories Annexes	389, 547, 548, 549			
 GRI 414 Supplier Social Assessment 2016							
GRI 414-1	11.10.8 11.12.3	New suppliers that were screened using social criteria	Responsible Supply Chain	281			
 GRI 415 Public Policy 2016							
GRI 415-1	11.22.2	Political contributions	Ethics and Transparency	411			

Dow Jones Sustainability Index by S&P Global (DJSI)

DJSI	Question	Location / Response	Page	Observations	(V) External verification
Governance & Economic Dimension					
1.1.1	Sustainability Reporting Boundaries	About this Report	10		
1.2.1	Board Independence	Company's Governance Structure	28, 29, 30, 32		
1.2.2	Board Type	Company's Governance Structure	28, 30, 32,		
1.2.3	Non-Executive Chairperson/ Lead Director	Company's Governance Structure	28, 29, 30, 32		
1.2.4	Board Diversity Policy	Company's Governance Structure	29, 31, 37,		
1.2.5	Board Gender Diversity	Company's Governance Structure	30, 32, 36		
1.2.6	Board Effectiveness	Company's Governance Structure	28, 29, 30, 33, 34, 35, 40, 46		
1.2.7	Board Average Tenure	Company's Governance Structure	32		
1.2.8	Board Industry Experience	Company's Governance Structure	37		
1.2.9	CEO Compensation - Success Metrics	Company's Governance Structure	50		
1.2.10	CEO Compensation - Long-Term Performance Alignment	Company's Governance Structure	50		
1.2.11	Management Ownership	Competitive Returns	66		
1.2.13	Government Ownership	Competitive Returns	65		
1.2.15	CEO-to-Employee Pay Ratio	"Company's Governance Structure Annexes"	51, 508		
1.3.1	Materiality Analysis	Materiality Analysis	156, 157		X
1.3.2	Material Issues for Enterprise Value Creation	Materiality Analysis	158, 159		
1.4.1	Number of non-executive members of board of directors/supervisory board with expertise in (enterprise) risk management.	Competitive Returns	86		
1.5.1	UN Global Compact Membership	"Contribution to Sustainable Development Goals Annexes"	162, 506		
1.5.2	Codes of Conduct	Ethics and Transparency	408, 409, 411, 415, 419		
1.5.3	Corruption & Bribery	Ethics and Transparency	411, 415		
1.5.5	Reporting on breaches	"Human Talent Ethics and Transparency"	332, 411		
1.6.1	Contributions & Other Spending	Ethics and Transparency	411	According to the Code of Ethics and Conduct, in Ecopetrol it is absolutely forbidden to make facilitation payments, contributions and political donations or sponsorships to political activities or those unrelated to the purposes established by the Company.	
1.6.2	Largest Contributions & Expenditures	Ethics and Transparency	411		
1.6.3	Lobbying and Trade Associations -Climate Alignment	NA		In compliance with its Corporate Bylaws, Ecopetrol does not engage in lobbying activities.	
1.7.3	Supplier Screening	Responsible Supply Chain	281, 283		
1.7.4	Supplier Assessment and Development	Responsible Supply Chain	281		
1.7.5	KPIs for Supplier Screening	Responsible Supply Chain	283, 529		X
1.7.6	KPIs for Supplier Assessment and Development	"Responsible Supply Chain Annexes"	282, 528		X
1.8.1	Tax Strategy and Governance	Financial Sustainability	295		
1.8.2	Tax Reporting	Financial Sustainability	295		

DJSI	Question	Location / Response	Page	Observations	(V) External verification
1.9.1	IT Security/Cybersecurity Governance	Cybersecurity and Information Security	33, 34, 35, 42, 396		
1.9.3	IT Security/ Cybersecurity Process & Infrastructure	Cybersecurity and Information Security	398		
Environmental Dimension					
2.1.1	Environmental Policy & Commitments	Climate Change	197, 198		
2.1.2	Coverage of Environmental Management Policy	Climate Change	198		
2.1.3	EMS: Certification/Audit/Verification	Occupational Health	185, 299		
2.1.5	Environmental violations	Climate Change	266		
2.2.1	Direct Greenhouse Gas Emissions (Scope 1)	Climate Change	207		
2.2.2	Indirect Greenhouse Gas Emissions (Scope 2)	Climate Change	207		
2.2.3	Indirect Greenhouse Gas Emissions (Scope 3)	Climate Change	207, 208		X
2.2.4	NOx Emissions	Air Quality	224		
2.2.5	SOx Emissions	Air Quality	224		
2.2.6	Methane Emissions	Air Quality	224		
2.2.7	Volatile Organic Compounds Emissions	Air Quality	224		
2.3.1	Energy Consumption	Climate Change	219		
2.4.1	Waste Disposal	"Materials and Waste Annexes"	241, 263, 265, 266		X
2.4.2	Hazardous Waste	"Materials and Waste Annexes"	262, 263, 265, 525, 527	For this indicator, the total amount of waste deposited in the secure landfill is equivalent to the amount of discharges, i.e., 4,884 metric tons.	X
2.4.3	Hydrocarbon spills	Industrial and Process Safety	321		
2.5.1	Water Consumption	Water	238, 243, 521		
2.5.2	Water consumption in Water-Stressed Areas	Annexes - Water	243, 521		
2.6.1	Climate governance	"Company's Governance Structure Climate Change"	39, 42, 197		
2.6.3	Climate Related Management Incentives	"Company's Governance Structure Climate Change"	49, 199		
2.6.4	Climate Risk Management	Climate Change	200		
2.6.7	Climate Related Scenario Analysis	Climate Change	200		
2.6.8	Physical Climate Risk Adaptation	Climate change	200		
2.6.9	Emissions Reduction Targets	"Growing with the Energy Transition Climate Change"	205		
2.6.10	Low-Carbon Products	Climate Change	114, 196		
2.6.12	Net Zero Commitment	"Growing with the Energy Transition Climate Change"	96, 196, 204		
2.7.1	Biodiversity Risk Assessment	"Environmental Strategy Biodiversity and Ecosystem Services"	185, 245, 246, 247		
2.7.2	Biodiversity Commitment	Biodiversity and Ecosystem Services	246, 247, 248		
2.7.3	No Deforestation Commitment	Biodiversity and Ecosystem Services	246, 247, 248,		
2.7.4	Biodiversity Exposure & Assessment	Biodiversity and Ecosystem Services	245, 246		
2.7.5	Biodiversity Mitigating Actions	"Biodiversity and Ecosystem Services Annex"	248, 253, 522, 523		
2.8.1	Oil & Gas Production	Growing with the Energy Transition	101		

DJSI	Question	Location / Response	Page	Observations	(V) External verification
2.8.2	Oil & Gas Reserves	Growing with the Energy Transition	101		
2.8.5	Renewable Energy Production	Climate Change	219		
Social Dimension					
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3.1.2	Workforce Breakdown: Gender	Human Talent	331, 538		
3.1.3	Workforce Breakdown: Race/Ethnicity & Nationality	Human Talent	333		
3.1.4	Gender Pay Indicators	Human Talent	349		
3.1.5	Freedom of Association	Human Talent	357		
3.2.1	Human Rights Commitment	"Contribution to Sustainable Development Goals Human Rights"	162, 165, 166, 167		
3.2.2	Human Rights Due Diligence Process	Human Rights	170, 171		
3.2.3	Human Rights Assessment	Human Rights	172		
3.2.4	Human Rights Mitigation & Remediation	Human Rights	174, 175, 179		
3.3.1	Training & Development Inputs	Human Talent	351, 352		
3.3.2	Employee Development Programs	Human Talent	353		
3.4.1	Hiring	Human Talent	335		
3.4.2	Type of Performance Appraisal	Human Talent	355		
3.4.3	Long-Term Incentives for Employees	Company's Governance Structure	49		
3.4.4	Employee Support Programs	Human Talent	309, 311, 340, 344, 346, 347		
3.4.5	Employee Turnover Rate	Human Talent	339, 340		
3.4.6	Trend of Employee Wellbeing	Human Talent	333		
3.5.1	OHS Policy	Occupational Health	298, 308		
3.5.2	OHS Programs	Occupational Health	299, 313		
3.5.3	Fatalities	Occupational Health	301		
3.5.4	Lost-Time Injury Frequency Rate (LTIFR) -Employees	Occupational Health	302		
3.5.5	Lost-Time Injury Frequency Rate (LTIFR) -Contractors	Occupational Health	302		
3.5.6	Total Recordable Injury Frequency Rate (TRIFR) -Employees	Occupational Health	302		
3.5.7	Total Recordable Injury Frequency Rate (TRIFR) -Contractors	Occupational Health	302		
3.5.8	Process Safety Events -Tier1	Industrial and Process Safety	323		
3.6.1	Active Community Engagement	"Sustainable Territories Annexes"	368, 544		
3.6.2	Community Consultation Framework & Implementation	Sustainable Territories	387		
3.6.3	Relocation Programs	Sustainable Territories	389		
3.6.4	Indigenous Peoples & Cultural Preservation	Sustainable Territories	387		
3.6.5	Security Forces	Sustainable Territories	383		

Sustainability Accounting Standards Board (SASB) – (Exploration and Production)

"SASB Standard Oil & Gas Sector-specific - Exploration and Production"	Indicator	Location / Response	Page	Omissions	(V) External verification
"Greenhouse gas emissions"					
SASB EM-EP-110a.1	Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations	Climate Change	207		
SASB EM-EP-110a.2	Amount of gross global Scope 1 emissions from: (1) flared hydrocarbons, (2) other combustion, (3) process emissions, (4) other vented emissions, and (5) fugitive emissions	Climate Change	207		
SASB EM-EP-110a.3	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Climate Change	196, 198, 205, 215,		
Air Quality					
SASB EM-EP-120a.1	Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) volatile organic compounds (VOCs), and (4) particulate matter (PM10)	Climate Change	224		
Water Management					
SASB EM-EP-140a.1	(1) Total fresh water withdrawn, (2) total fresh water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Water	237	For item 3, Ecopetrol does not classify initial water stress levels as high or extremely high based on the classification provided by the Aqueduct tool of the World Resources Institute's (WRI) Water Risk Atlas. Instead, this classification is determined according to the ENA study.	X
SASB EM-EP-140a.2	Volume of produced water and flowback generated; percentage (1) discharged, (2) injected, (3) recycled; hydrocarbon content in discharged water	Annexes	518		X
SASB EM-EP-140a.4	Percentage of hydraulically fractured wells for which there is public disclosure of all fracturing fluid chemicals used	Water	519		
Biodiversity Impacts					
SASB EM-EP-160a.1	Description of environmental management policies and practices for active sites	Environmental Strategy	185		
SASB EM-EP-160a.2	Number and aggregate volume of hydrocarbon spills, volume in Arctic, volume impacting shorelines with ESI rankings 8-10, and volume recovered	Water	230		
SASB EM-EP-160a.3	Percentage of (1) proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat	Biodiversity and Ecosystem Services	103, 246		
Security, Human Rights, and Rights of Indigenous Peoples					
SASB EM-EP-210a.1	Percentage of (1) proved and (2) probable reserves in or near areas of conflict	Growing with the Energy Transition	102		
SASB EM-EP-210a.2	Percentage of (1) proved and (2) probable reserves in or near Indigenous land	Growing with the Energy Transition	103		
SASB EM-EP-210a.3	Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict	Sustainable Territories	387		
Community Relations					

"SASB Standard Oil & Gas Sector-specific - Exploration and Production"	Indicator	Location / Response	Page	Omissions	(V) External verification
SASB EM-EP-210b.1	Discussion of process to manage risks and opportunities associated with community rights and interests	Sustainable Territories	387		
SASB EM-EP-210b.2	Number and duration of non-technical delays	Sustainable Territories	383		
"Workforce Health and Safety"					
SASB EM-EP-320a.1	(1) Total recordable incident rate (TRIR), (2) fatality rate, (3) near miss frequency rate (NMFR), and (4) average hours of health, safety, and emergency response training for (a) full-time employees, (b) contract employees, and (c) short-service employees	"Occupational Health Annexes"	301, 313, 535, 536		
SASB EM-EP-320a.2	Discussion of management systems used to integrate a culture of safety throughout the exploration and production lifecycle	Occupational Health	299		
Reserves Valuation and Capital Expenditures					
(SASB EM-EP-420a.1)	Sensitivity of hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions	Growing with the Energy Transition	102		
Business Ethics and Transparency					
SASB EM-EP-510a.1	Percentage of (1) proved and (2) probable reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Growing with the Energy Transition	101		
SASB EM-EP-510a.2	Description of the management system for prevention of corruption and bribery throughout the value chain	Ethics and Transparency	411, 412		
"Management of the Legal and Regulatory Environment"					
SASB EM-EP-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	"Climate Change Water Sustainable Territories"	197, 200, 205, 220, 229, 230, 232, 381, 391		
"Critical Incident Risk Management"					
SASB EM-EP-540a.1	Process Safety Event (PSE) rates for Loss of Primary Containment (LOPC) of greater consequence (Tier 1)	Industrial and Process Safety	323		X
SASB EM-EP-540a.2	Description of management systems used to identify and mitigate catastrophic and tail-end risks	Industrial and Process Safety	317, 318, 319		X

Ecopetrol S.A. Indicators

Own	Indicator	Location / Response	Page	Observations	(V) External verification
ECP002	Lost Time Injury Frequency Rate (LTIFR)	Occupational Health	302		X
ECP003	Total Recordable Injury Frequency Rate (TRIFR)	Occupational Health	302		X
ECP005	Volume of oil spills	Industrial and Process Safety	321		X
ECP006	Incident Frequency Rate N1 (IFSP N1)	Industrial and Process Safety	323		X
ECP007	Participation in national Climate Change policies	Climate Change	197		
ECP008	Investment in employee training by the company	Human Talent	345, 352		
ECP009	Employee performance evaluation process	Human Talent	355, 356		
ECP010	Succession planning and talent development for young employees	Human Talent	335, 338, 354		
ECP011	Negotiated collective bargaining agreements	Occupational Health Human Talent	309, 357		
ECP012	Recruitment and hiring practices	Responsible Supply Chain	273		
ECP013	Ethics, transparency, and compliance in the supply chain	Responsible Supply Chain	284		
ECP014	Ecopetrol's hiring values and principles	Responsible Supply Chain	277		
ECP015	Supply chain risk management strategy	Responsible Supply Chain	268		
ECP016	Supply chain risk management process	Responsible Supply Chain	268, 016		
ECP017	Supplier segmentation criteria	Responsible Supply Chain	271		
ECP018	Asset divestment strategy	Growing with the Energy Transition	109		
ECP019	Ethics and compliance strategy	Ethics and Transparency	408		
ECP020	Ecopetrol's compliance program effectiveness	Ethics and Transparency	412, 421		
ECP021	Quality assessment of produced fuels	Air Quality	227		
ECP022	Total Petitions, Complaints, Claims, and Requests (PQRS)	Ethics and Transparency	417		
ECP023	Strategy for Comprehensive Territory Management	Sustainable Territories	366		
ECP024	Social investment projects undertaken	Sustainable Territories	370		
ECP025	Procedure for Population Resettlement in Development Operations and Projects	Sustainable Territories	389		
ECP026	Average salary disparity between men and women	Human Talent	349		

Own	Indicator	Location / Response	Page	Observations	(V) External verification
ECP027	Variable compensation schemes	Human Talent	49, 349		
ECP028	Physical security approach with a focus on human rights	Sustainable Territories	382		
ECP029	Volume indicator of biofuels produced and procured	Growing with the Energy Transition	114		X
ECP030	Significant investment agreements and contracts with human rights clauses or subjected to human rights assessment	Human Rights	184	<p>In 2023, the Vice-Presidency of Sustainable Territorial Development (VDS) conducted a comprehensive analysis of the provisions outlined in the GRI 412-3 standard, which had been adopted by the Company under the ECP 030 indicator. Following this analysis, it was determined that significant investment agreements should include clauses pertaining to human rights, and an evaluation of human rights compliance should be based on their importance, strategic relevance, and relevance to the Company's operations. Consequently, significant investment agreements were defined as those agreements or their derivative cooperation agreements, which are signed with the objective of protecting critical infrastructure, as well as being representative of risks or impacts associated with human rights.</p> <p>This approach involved excluding the significant investment agreements entered into by the VDS related to social investment and those contributing to the protection of Human Rights of the populations in the Company's areas of influence, which had been reported in 2022. As a result, the number of agreements decreased from 170 to 7.</p> <p>By 2023, a total of 912 significant investment contracts or agreements were signed, with 905 originating from the VAB and 7 from the VDS, all of which include a human rights clause.</p>	X
ECP031	Employee training on human rights policies and procedures	Human Rights Human Talent	183, 353		

Stakeholder Capitalism Metrics (SCM) by World Economic Forum (WEF)

WEF	Indicator	Location / Response	Page
WEF 2	Governance body composition	Company's Governance Structure	31, 32
WEF 3	Material issues impacting stakeholders	Materiality Analysis	158, 159
WEF 3E	Remuneration	Company's Governance Structure	47, 49
WEF 4	Anti-corruption	Ethics and Transparency	414, 421
WEF 4E	Alignment of strategy and policies to lobbying	In compliance with its Corporate Bylaws, Ecopetrol does not engage in lobbying activities.	
WEF 5	Protected ethics advice and reporting mechanisms	Ethics and Transparency	417
WEF 5E	Monetary losses from unethical behavior	Materials and Waste Ethics and Transparency	418, 266
WEF 6	Integrating risk and opportunity into business process	Competitive Returns	75
WEF 7	Greenhouse gas (GHG) emissions	Climate Change Air Quality	196, 207, 215, 220, 221, 223
WEF 7E	Paris-aligned GHG emissions targets	Climate Change Air Quality	196, 207, 221, 223
WEF 8	TCFD implementation	Climate Change	198, 205
WEF 9	Land use and ecological sensitivity	Biodiversity and Ecosystem Services	246, 249
WEF 10	Water consumption and withdrawal in water-stressed areas	Water	237, 238, 239, 242, 243
WEF 11	Diversity and inclusion (%)	Company's Governance Structure Human Talent Annexes	31, 32, 37, 331, 538
WEF 11E	Impact of freshwater consumption and withdrawal	Climate Change Air Quality Water	196, 215, 220, 221, 223,
WEF 12	Pay equality (%)	Human Talent	349
WEF 12E	Air pollution	Air Quality	224
WEF 13	Wage level (%)	Human Talent	349
WEF 13E	Impact of air pollution	Climate Change	196, 215, 220, 223
WEF 14	Risk for incidents of child, forced or compulsory labor	Human Rights	173
WEF 15	Health and safety (%)	Occupational Health Annexes	301
WEF 16	Training provided (#, \$)	Human Talent	350
WEF 17	Absolute number and rate of employment	Human Talent Annexes	273, 278, 279, 334, 239, 340, 541

WEF	Indicator	Location / Response	Page
WEF 17E	Impact of solid waste disposal	Materials and Waste Annexes	261, 263, 265
WEF 18	Economic contribution	Financial Sustainability Responsible Supply Chain	91, 92, 276, 278,
WEF 19E	Pay gap (%, #)	Company's Governance Structure	51
WEF 20	Total R&D expenses (\$)	Science, Technology, and Innovation	404
WEF 20E	Discrimination and harassment incidents (#) and the total amount of monetary losses (\$)	Human Rights Human Talent	171, 332
WEF 21	Total tax paid	Financial Sustainability	92
WEF 21E	Freedom of association and collective bargaining at risk (%)	Human Talent	357
WEF 22E	Human rights review, grievance impact & modern slavery (#, %)	Human Rights	172, 173, 174, 175, 184
WEF 25E	Employee well-being (#, %)	Occupational Health Annexes	302
WEF 28E	Infrastructure investments and services supported	Sustainable Territories Annexes	374, 544
WEF 29E	Significant indirect economic impacts	Sustainable Territories	392
WEF 32E	Total Social Investment (\$)	Financial Sustainability Sustainable Territories Annexes	92, 374, 544

Task Force on Climate-Related Financial Disclosures (TCFD)

TCFD	Indicator	Location / Response	Page	(V) External verification
Governance				
TCFD G-1.1	Role of the Board of Directors in managing the risks and opportunities associated with climate change	Climate Change Company's Governance Structure	39, 199	
TCFD G-1.2	Experience and profile of Board members on climate change	Company's Governance Structure	33, 34, 35	
TCFD G-1.3	Role of Board committees in managing risks and opportunities related to climate change and energy transition	Company's Governance Structure	39	
TCFD G-2.1	Management's role in assessing and managing climate-related risks and opportunities	Climate Change Annex	197, 516	
TCFD G-2.2	Organizational structure associated with climate change and energy transition issues	Climate Change Annex	197, 516	
TCFD G-2.3	Variable compensation and incentive structure responsive to climate-related objectives	Climate Change	199	
TCFD G-3	Training on climate change issues	Human Talent	352	
Strategy				
TCFD E-1.2	Climate-related risks identified by the organization in the short-, medium-, and long-term	Climate Change	200	

TCFD	Indicator	Location / Response	Page	(V) External verification
TCFD E-1.3	Impact of climate-related risks on the organization's business, strategy, and financial planning	Climate Change	200	
Risk Management				
TCFD GR-1.1	Organization's processes for identifying and assessing climate-related risks	Climate Change	200	
TCFD GR-1.2	Organizational processes for managing climate-related risks	Climate Change	214	
TCFD GR-1.3	How are the processes to identify, assess, and manage climate-related risks integrated into the overall organizational risk management	Climate Change Environmental Strategy	185, 200	
TCFD GR-1.4	Alignment of business risks with ESG issues	Materiality Analysis	156	
Metrics and Goals				
TCFD M-1.1	Metrics used by the organization to assess climate-related risks and opportunities	Climate Change Annexes	240, 241, 517, 518, 520	
TCFD M-1.2	Scope 1, Scope 2 and, if applicable, Scope 3 greenhouse gas (GHG) emissions and related risks	Climate Change	207, 208, 209, 213, 218, 219, 237, 238, 239, 261, 263, 265, 524, 525	

Financial Superintendence of Colombia

SFC	Indicator	Location / Response	Page
SFC 7.1i	End of Year Periodic Report clearly emphasized.	About this Report	10
SFC 7.1ii	Basic information of the issuer: a) name or business name, b) main city of domicile, c) main registered address	Ecopetrol's Geographic Presence Map	16, 17
SFC 7.1iii	Brief description of outstanding securities issuances, including: a) class of security, b) trading system, c) stock exchanges listings, if applicable, d) issuance amount, e) placed amount, f) remaining amount to be placed, if applicable	Ecopetrol's Geographic Presence Map	16, 17
SFC 7.2	End-of-year periodic reports must feature a comprehensive table of contents aligned with the thematic index, incorporating page numbers for referenced information.	Table of Contents	560 - 596
SFC 7.3	End-of-year periodic reports must include a glossary containing specialized terms that require a definition.	List of Acronyms Glossary	554, 555, 556, 557, 558, 559
SFC 7.4.1.1.i	This section must include a description of the issuer's main economic activity and operating segments, as applicable. In the event that the issuer is a parent company, the main economic activity of each of its subsidiaries must be reported. The issuer may make express reference to the notes to its financial statements for the disclosure of information pertaining to its subsidiaries, provided that all the information required through this subparagraph is incorporated.	Value Chain	20
SFC 7.4.1.1.i.i	The evolution of the business plan in the short, medium, and long term.	2040 Strategy	53, 58
SFC 7.4.1.1.i.ii	Activities, products, or services generating revenue.	Value Chain	20, 115
SFC 7.4.1.1.i.iii	Competitive commercial conditions, such as: domestic and international market share, demand conditions, among others.	Competitive Returns Financial Sustainability	286
SFC 7.4.1.1.i.iv	Development of new products or services, improvements, demand conditions, and competitive conditions.	Growing with the Energy Transition	96
SFC 7.4.1.1.i.v	List of patents, trademarks, licenses, franchises, and other copyrights owned by the entity and that are material for the development of its economic activity, identifying associated risks and their corresponding controls.	Cutting-Edge Knowledge	136

SFC	Indicator	Location / Response	Page
SFC 7.4.1.1.vii	Total number of workers, as well as the variation in number and percentage compared to the previous year.	Human Talent	331
SFC 7.4.1.1.2.	Litigation, judicial, and administrative proceedings involving the issuer, and that have the potential to materially affect its operation, financial situation, and/or changes to its financial situation.	Annual Corporate Governance Report	445
SFC 7.4.1.1.3.	Relevant risks faced by the issuer and the corresponding mitigation mechanisms implemented.	Competitive Returns	71, 76
SFC 7.4.1.2.1.	Behavior and performance of securities in the trading systems in which they are listed.	Competitive Returns	93
SFC 7.4.1.2.2.	Information on the issuer's equity share and other material matters relating to its equity ownership structure.	Competitive Returns	64, 65, 66, 67, 93
SFC 7.4.1.2.3.	Financial information for the reported period compared to the immediately preceding period.	Competitive Returns	93
SFC 7.4.1.2.4.	Management's comments and analysis on the results of the issuer's operations and financial situation on an individual, separate, and/or consolidated basis, as applicable, regarding the periods covered by the financial information reported in the preceding subparagraph, including the main financial indicators and their respective analysis, on:	Competitive Returns	93
SFC 7.4.1.2.4.1.	Material variations in operating results: This section must present material variations in operating results that affect the financial situation, strategy, investment plans, issuer performance, income generation, cash flow, and results of the period.	Competitive Returns	93
SFC 7.4.1.2.4.2.	Material changes in the issuer's liquidity and solvency situation: Present situations or events that materially affected liquidity and solvency during the period. Also include a brief description of the plans and actions implemented for remediation.	Competitive Returns	93

SFC	Indicator	Location / Response	Page
SFC 7.4.1.2.4.3.	Trends, events, or uncertainties that have the potential to materially impact the issuer's operations, financial situation, or that may change its financial situation; as well as the assumptions used to prepare these analyses: include a description of trends, events, or uncertainties that have the potential to materially impact the issuer's operations, financial situation, or that may change its financial situation, as well as the assumptions used to prepare such description. In cases where the issuer is involved in a situation that may affect the continuity of its business, it must expressly indicate such situation, as well as the plans and actions implemented for recovery.	Competitive Returns Financial Sustainability Climate Change	200, 289
SFC 7.4.1.2.5.	Quantitative and qualitative analysis of the market risk to which the issuer is exposed as a result of its investments and activities sensitive to market variations.	Competitive Returns Financial Sustainability	289
SFC 7.4.1.2.7.	Description and evaluation of the controls and procedures used by the issuer for the registration, processing, and analysis of the information required to comply timely with the obligation to report the end-of-year report referred to in this Annex to the RNVE.	Competitive Returns Financial Sustainability	12
SFC 7.4.1.3.VII	Market risks and procedures for assessing and measuring the issuer's degree of exposure to the most relevant risks and the corresponding mitigation mechanisms implemented.	Competitive Returns	76
SFC 7.4.1.3.1.	A chapter on Corporate Governance analysis.	Company's Governance Structure	26
SFC 7.4.1.3.1.i	A general description of remuneration schemes and incentives given to the members of the board of directors or an equivalent body, and senior management, along with the governance structure used to determine said benefits.	Company's Governance Structure	47, 49
SFC 7.4.1.3.1.ii	Composition and functioning of the board of directors and its support bodies. The independent or non-independent status of each board member must be indicated, along with their term of office. Additionally, it must include: a) a brief description of the main functions performed by the board of directors, and b) the website where the updated version of the internal regulations of the board of directors is available. The description of the main functions of board members cannot correspond to a transcription of the content provided in the issuer's articles of association.	Company's Governance Structure	28, 29, 30, 31, 32, 41, 47

SFC	Indicator	Location / Response	Page
SFC 7.4.1.3.1.xiii	The issuer must indicate the support bodies and describe the main functions they perform. Support bodies are understood to be those committees created by the board of directors to act as study and support bodies on specific matters.	Company's Governance Structure	39, 44
SFC 7.4.1.3.1.iii	Composition and functioning of the issuer's senior management. Senior management members must be identified by name and position, in addition to the main functions performed within the issuing company.	Company's Governance Structure	47
SFC 7.4.1.3.1.iv	Information about the professional profiles and experience of the issuer's directors and senior management. Directors are understood to be members of the issuer's board of directors. Their academic background and professional experience must be indicated, as well as their participation in management or control bodies of companies other than the issuer, when applicable.	Company's Governance Structure Annual Corporate Governance Report	32, 33, 34, 35, 37, 38, 434
SFC 7.4.1.3.1.v	Information on the independence criteria adopted by the issuer for the appointment of directors and members of support committees that it may have.	Company's Governance Structure	32
SFC 7.4.1.3.1.vi	Quorum and attendance information for meetings of the board of directors and its support bodies for the reported period. In this regard, the issuer must indicate the attendance of each of its board members at the meetings held during the corresponding period of the report.	Company's Governance Structure	31, 32, 40, 42
SFC 7.4.1.3.1.vii	Description of the evaluation processes of the board of directors, its support bodies, and senior management. In the event that the issuer does not have evaluation processes, it must indicate this in the end-of-year periodic report.	Company's Governance Structure	46
SFC 7.4.1.3.1.viii	Description of the mechanisms implemented by the issuer for the management, identification, and administration of conflicts of interest.	Ethics and Transparency	419
SFC 7.4.1.3.1.ix	Description of the mechanisms implemented by the issuer for conducting transactions with related parties.	Company's Governance Structure	45
SFC 7.4.1.3.1.x	Fees agreed with the statutory auditor or external auditor for statutory auditing, audit, and other services contracted for the corresponding period, and approved by the general shareholders' meeting.	Competitive Returns	69
SFC 7.4.1.3.1.xi	Operation of the issuer's internal control system, including a description of the mechanisms and committees that handle internal audit processes.	Competitive Returns	69

SFC	Indicator	Location / Response	Page
SFC 7.4.1.3.1.xii	Description of the governance structure adopted by the issuer to achieve equitable treatment of investors and promote their participation. To this end, the policies, mechanisms, and procedures implemented to provide equitable treatment among investors and to promote their participation must be included, in accordance with the provisions of the Good Corporate Governance Code and other internal corporate documents of the respective issuer. For this purpose, the issuer may disclose, for example: a) channels available to access the information and b) mechanisms for the resolution of requests for information and communication between investors, the issuer, its board of directors, and other administrators, among others.	Competitive Returns Annual Corporate Governance Report	67, 446
SFC 7.4.1.3.1	This section must include information on social and environmental issues, including climate issues, as provided in Annex 2 of this Chapter.	Generate value through TESG	156
SFC 7.4.1.4.i	The issuer must attach the following documents to the end-of-year periodic report: The individual or separate and consolidated year-end financial statements, as applicable, in accordance with the provisions set forth in subparagraph 7.4.1 of this Chapter.	Financial Statements	464, 465, 466, 467, 468, 469, 470, 471, 472, 473

Independent Limited Assurance Report Ernst & Young Audit S.A.S.





Sirs.
Ecopetrol S.A.
Bogotá, D.C.

AS-5863-24
May 23, 2024

Independent Limited Assurance Report

To the Management of Ecopetrol S.A.

1. Scope

We have been engaged by Ecopetrol S.A. (hereinafter "the Company" or "Ecopetrol"), to perform a 'limited assurance engagement,' as defined by International Standards on Assurance Engagements, here after referred to as the engagement, to report on the identified sustainability information (the "Subject Matter") that is detailed in Annex 1 contained in the "Integrated Management Report 2023 of Ecopetrol S.A." for the period from January 1 to December 31, 2023 (the "Report").

2. Criteria Applied by Ecopetrol S.A.

In preparing the Subject Matter as detailed in Annex 1, Ecopetrol applied the GRI Global Reporting Initiative Standards in accordance with the declared "in accordance" option and company-specific criteria that are listed in Annex 2 (Criteria). The company-specific criteria were designed to complement the report with respect to the material issues identified by Ecopetrol; as a result, information about the Subject Matter may not be suitable for another purpose.

3. Company Responsibilities by Ecopetrol S.A.

Ecopetrol's management is responsible for selecting the Criteria, and for presenting the Subject Matter in accordance with that Criteria, in all material respects. This responsibility includes establishing and maintaining internal controls, maintaining adequate records, and making estimates that are relevant to the preparation of the subject matter, such that it is free from material misstatement, whether due to fraud or error.

4. EY's Responsibilities

Our responsibility is to express a conclusion on the presentation of the Subject Matter based on the evidence we have obtained.

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Sirs. Ecopetrol S.A.

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We conducted our engagement in accordance with the International Standard for Assurance Engagements Other Than Audits or Reviews of Historical Financial Information ('ISAE 3000 (Revised)'), and the terms of reference for this engagement as agreed with Ecopetrol on December 18th, 2023. Those standards require that we plan and perform our engagement to express a conclusion on whether we are aware of any material modifications that need to be made to the Subject Matter in order for it to be in accordance with the Criteria, and to issue a report. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risk of material misstatement, whether due to fraud or error.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusions.

5. Our Independence and Quality Management

We have maintained our independence and confirm that we have met the requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, and have the required competencies and experience to conduct this assurance engagement.

EY also applies International Standard on Quality Management 1, Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services engagements, which requires that we design, implement, and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

6. Description of Procedures Performed

Procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Our procedures were designed to obtain a limited level of assurance on which to base our conclusion and do not provide all the evidence that would be required to provide a reasonable level of assurance.

Although we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within IT systems.

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A limited assurance engagement consists of making enquiries, primarily of persons responsible for preparing the Subject matter detailed in Annex 1 and related information and applying analytical and other appropriate procedures.

Our procedures included:

- a. Conduct interviews with Company personnel to understand the business and the Report preparation process.
- b. Conduct interviews with those responsible for the Report to understand the process of gathering, consolidating and presenting the information on the Subject Matter.
- c. Verify that the calculation criteria have been correctly applied in accordance with the methodologies described in the criteria.
- d. Carry out analytical review procedures to support the data.
- e. Identify and verify assumptions supporting the calculations.
- f. Test, on a sample basis, source information to verify the accuracy of data.
- g. Reading the contents on the material topics (GRI 3-1, 3-2, 3-3) associated with the Subject Matter to verify that they have been correctly applied in accordance with the Criteria.
- h. Comparing the contents presented in the Report with what is established in the Company's self-declared compliance in accordance with the compliance requirements of GRI Standard

We also performed such other procedures as we considered necessary in the circumstances.

Limitations of Our Assurance Engagement

Our assurance engagement was limited to the Subject Matter included in Annex 1 contained in the Report for the period between January 1 and December 31, 2023, it does not include information from previous years included in the Report, nor related to projections or goals future.

Nor did it attempt to determine whether the technological tools used to develop the Report are the most appropriate and/or efficient.



Sirs. Ecopetrol S.A.

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7. Conclusion

Based on our procedures and the evidence obtained, we are not aware of any material modifications that should be made to the information reported in the Integrated Management Report for the period from January 1 to December 31, 2023, detailed in Annex 1, in order for it to be in accordance with the Criteria detailed in Annex 2.

8. Use of this Assurance Report

This report is intended solely for the information and use of Ecopetrol S.A. and is not intended to be and should not be used by anyone other than those specified parties.

Our responsibility, when carrying out verification activities, is solely with the Company's Management, therefore, we do not accept or assume any responsibility for any other purpose or towards any other person or organization.

Other Information

The notification to the Global Reporting Initiative (GRI) about the publication of The Report, following the guidelines of the GRI 1 standard: Foundations, In accordance requirement 9: Notify GRI (the organization must notify GRI of the use of the GRI standards and its declaration of use, by sending an email to reportregistration@globalreporting.org, is responsibility of the Company and we have been informed that it will be done within 5 business days following the issuance of this conclusion.

Cordially

EDWIN RENÉ VARGAS SALGADO
Digitally signed by EDWIN RENÉ VARGAS SALGADO
Date: 2024.05.23 16:36:43 -05'00'
Edwin R. Vargas S.
Audit Partner
Ernst & Young Audit S.A.S.



ANNEX 1

Subject matter

The sustainability information identified in the indicators included in the Report printed and included by Ecopetrol S.A. on its website¹ it is presented in the following table:

Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
Climate Change	GRI	305-1 Direct (Scope 1) GHG emissions	<ul style="list-style-type: none"> Direct (Scope 1) GHG emissions: 12,458,520 TonCO2e Direct biogenic GHG emissions: 900 TonCO2e
Climate Change	GRI	305-2 Energy indirect (Scope 2) GHG emissions	468,921 TonsCO2e
Climate Change	GRI	305-5 Reduction of GHG emissions	581,532 TonsCO2e
Water	GRI	303-3 Water withdrawal	<ul style="list-style-type: none"> Total water withdrawal from all areas: 503,206 ML Total water withdrawal from all areas with water stress: 26,530 ML Total water withdrawal from all areas - freshwater: 395,604 ML Total water withdrawal from all areas - other water: 107,602 ML Total water withdrawal from all areas with water stress - freshwater: 11,893 ML Total water withdrawal from all areas with water stress - other water: 14,637 ML
Water	GRI	303-5 Water consumption	<ul style="list-style-type: none"> Total water consumption from all areas: 19,481 ML Total water consumption from all areas with water stress: 8,791 ML
Water	GRI	303-4 Water discharge	<p>Total water discharge to all areas: 85,130 ML</p> <p>Breakdown of total water discharge to all areas:</p> <ul style="list-style-type: none"> Freshwater (total dissolved solids ≤ 1000 mg/l): 77,025 ML

¹ The maintenance and integrity of the Company's website (<https://www.ecopetrol.com.co/wps/portal/Home/es/ResponsabilidadEtiqueta/InformesGestionSostenibilidad/Informesdegestion>) repository of the Report, is the responsibility of the Management of Ecopetrol S.A. The work carried out by EY does not include consideration of these activities and, therefore, EY accepts no responsibility for any differences between the information presented on such website and the Subject Matter contained in the Report on which the Engagement was made, and conclusion issued.



Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
			<ul style="list-style-type: none"> Other water (total dissolved solids ≤ 1000 mg/l): 8,105 ML <p>Breakdown of total water discharge in all water stressed areas:</p> <ul style="list-style-type: none"> Freshwater (total dissolved solids ≤ 1000 mg/l): 115 ML Other water (total dissolved solids ≤ 1000 mg/l): 3,039ML
Chain of supply Responsible	GRI	204-1 Proportion of spending on local suppliers	Percentage of spending on local suppliers: 53%
Sustainable Territories	GRI	413-1 Operations with local Community engagement, impact assessments, and development programs	<ul style="list-style-type: none"> Active: 85.3% (151 active) Projects: 91.2% (93 projects)
Industrial and process safety	SECTOR GRI	OG-11.8.3 Incidents occurred in the period	<p>Number of process safety incidents in 2023 by level:</p> <ul style="list-style-type: none"> Level 1: Total number of incidents occurred: 5 <ul style="list-style-type: none"> ✓ Level 1: Exploration and production: 3 ✓ Level 1: Midstream: 2 ✓ Level 1: Downstream: 0 Level 2: Total number of incidents occurred: 11 <ul style="list-style-type: none"> ✓ Level 2: Exploration and production: 2 ✓ Level 2: Midstream: 4 ✓ Level 2: Downstream: 5
Occupational health	GRI	403-9 Work-related injuries	<ul style="list-style-type: none"> The number of fatalities because of work-related injury: 2 [Direct employees]; 0 [Contractors] Rate of fatalities because of work-related injury: 0.86 [Direct employees]; 0 [Contractors] The number of high-consequence work-related injuries (excluding fatalities): 1 [Direct employees]; 0 [Contractors] Rate of high-consequence work-related injuries (excluding fatalities): 0.04 [Direct employees]; 0 [Contractors] The number of recordable work-related injuries: 11 [Direct employees]; 31 [Contractors]



Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
Occupational health	GRI	403-10 Work-related ill health	<ul style="list-style-type: none"> Rate of recordable work-related injuries: 0.47 [Direct employees]; 0.22 [Contractors] The number of hours worked: 1,168,148.39 [Direct employees]; 6,922,002.6 [Contractors] The number of deaths resulting from an occupational illness or disease: 0 [Direct employees]; information for Contractors is omitted The number of cases of illnesses and occupational diseases that can be recorded: 4 [Direct employees]; information for Contractors is omitted
Biodiversity and Ecosystem Services	GRI	304-3 Habitats protected or restored	<ul style="list-style-type: none"> Planted areas or in restoration processes: 1,505 Hectares in managed conservation agreements: 167,922 Silvopastoral areas: 373.2 Area in agroforestry systems: 215.72 Protected hectares declared under any conservation category: 8,236 Hectares within the Ecoreserve Network: 15,583
Biodiversity and Ecosystem Services	GRI	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	For the year 2023, Ecopetrol does not report operations in protected areas of categories I to IV of the IUCN
Biodiversity and Ecosystem Services	GRI	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	<ul style="list-style-type: none"> Critically endangered: 0 species Endangered: 0 species Vulnerable: 2 species Near threatened: 1 species Least concern: 36 species
Human Talent	GRI	404-3 Percentage of employees receiving regular performance and career development reviews	<p>Women</p> <ul style="list-style-type: none"> Senior Management: 0.02% Management: 0.38% Middle management: 2.27% Supervision: 0.06% Professional Technician: 21.16% Operating: 1.71% Total: 100%



Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
Human Talent	GRI	405-1 Diversity of governance bodies and employees	<p>Men</p> <ul style="list-style-type: none"> Senior Management: 0.14% Management: 0.88% Middle management: 5% Supervision: 3.53% Professional technician: 45.63% Operating Date: 19.22% Total: 100% <p>Government bodies:</p> <p>Gender:</p> <ul style="list-style-type: none"> Women: 33.33% Men: 66.66% <p>Age group:</p> <ul style="list-style-type: none"> Under 30 years old: 0% Between 30 and 50 years old: 0% Over 50 years old: 100% <p>Employees:</p> <p>Gender:</p> <ul style="list-style-type: none"> Senior Management: ✓ Women: 22.22% ✓ Men: 77.77% Management: ✓ Women: 32.30% ✓ Men: 67.69% Middle Management: ✓ Women: 31.30% ✓ Men: 68.69% Supervision: ✓ Women: 1.73% ✓ Men: 98.26%



Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
		<ul style="list-style-type: none"> Professional Technician: <ul style="list-style-type: none"> ✓ Women: 32% ✓ Men: 67.99% Operational: <ul style="list-style-type: none"> ✓ Women: 8.30% ✓ Men: 91.69% 	
		Age group:	
		<ul style="list-style-type: none"> Senior Management: <ul style="list-style-type: none"> ✓ Under 30 years old: 0% ✓ Between 30 and 50 years old: 22.22% ✓ Over 50 years old: 77.77% Management: <ul style="list-style-type: none"> ✓ Under 30 years old: 0% ✓ Between 30 and 50 years old: 57.69% ✓ Over 50 years old: 42.30% Middle management: <ul style="list-style-type: none"> ✓ Under 30 years old: 0% ✓ Between 30 and 50 years old: 68.27% ✓ Over 50 years old: 31.72% Supervision: <ul style="list-style-type: none"> ✓ Under 30 years old: 0% ✓ Between 30 and 50 years old: 54.91% ✓ Over 50 years old: 45.08% Professional technician: <ul style="list-style-type: none"> ✓ Under 30 years old: 5.89% ✓ Between 30 and 50 years old: 72.94% ✓ Over 50 years old: 21.16% Operational: <ul style="list-style-type: none"> ✓ Under 30 years old: 9.96% ✓ Between 30 and 50 years old: 60.84% ✓ Over 50 years old: 29.19% 	



Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
		Other diversity indicators ² :	
		<ul style="list-style-type: none"> Senior Management: <ul style="list-style-type: none"> ✓ Ethnic minority: 0% ✓ People with disabilities: 0% ✓ LGBTQI+: 0% Management: <ul style="list-style-type: none"> ✓ Ethnic minority: 60% ✓ People with disabilities: 40% ✓ LGBTQI+: 0% Middle Management: <ul style="list-style-type: none"> ✓ Ethnic minority: 48.64% ✓ People with disabilities: 43.24% ✓ LGBTQI+: 8.10% Supervision: <ul style="list-style-type: none"> ✓ Ethnic minority: 36.20% ✓ People with disabilities: 56.89% ✓ LGBTQI+: 6.89% Professional Technician: <ul style="list-style-type: none"> ✓ Ethnic minority: 38.09% ✓ People with disabilities: 55.55% ✓ LGBTQI+: 6.34% Operative: <ul style="list-style-type: none"> ✓ Ethnic minority: 45.99% ✓ People with disabilities: 53.07% ✓ LGBTQI+: 0.93 	
Human Talent	GRI	405-2 Ratio of basic salary and remuneration of women to men	<ul style="list-style-type: none"> Executive level (base salary only): 0.86 Executive level (base salary + other cash incentives): 0.82 Management level (base salary only): 0.94 Management level (base salary + other incentives in Cash): 0.95 Non-administrative level (base salary only): 1.07

² These rates are calculated based on the total number of employees in these diversity categories and not on the total number of employees in the organization.



Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
Human Talent	GRI	404-1 Average hours of training per year per employee	<p>Gender:</p> <ul style="list-style-type: none"> Women: 69 hours Men: 114 hours <p>By job category:</p> <ul style="list-style-type: none"> Senior Management: 8 hours Management: 41 hours Middle Management: 58 hours Supervision: 118 hours Professional technician: 90 hours Operative: 159
Materials and waste	GRI	306-3 Waste generated	<ul style="list-style-type: none"> Hazardous waste: 114,990 TonM Non-hazardous waste: 454,029 TonM Total waste generated: 569,019 TonM
Materials and waste	GRI	306-2 Management of significant waste-related impacts	<p>Qualitative indicator.</p> <p>The drafting of this indicator can be found on pages 261-263 of the Integrated Management Report</p>
Air quality	GRI	305-7 Nitrogen oxides (NOx), sulfur oxides (Sox), and other significant air emissions	<ul style="list-style-type: none"> Nitrogen Oxides - Nox: 29.78 kT Sulfur Oxides - Sox: 15.80 kT Volatile organic compounds (VOCs): 123.33 kT Particulate Matter (PM): 1.82 kT Other categories of air emissions identified in relevant regulations (carbon monoxide - CO): 10.82 Kt
Climate Change	GRI	302-3 Energy intensity	1.67 KWh/bbl
Climate Change	GRI	302-4 Reduction of energy consumption	3.88 PJ
Climate Change	GRI	302-1 Energy consumption within the organization	7,929 GWh
Human rights	GRI	406-1/3.3.2 DJSI Incidents of discrimination and corrective actions taken	During 2023, no cases of discrimination were reported



Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
Human rights	OWN	ECP 030 Significant investment agreements and contracts related to human rights or subject to human rights assessment	<ul style="list-style-type: none"> Number of investment agreements and contracts 2023: 912 Percentage of investment agreements and contracts: 100%
Human rights	GRI	410-1 Security personnel trained in human rights policies or procedures	<ul style="list-style-type: none"> Number of security personnel who has received formal training in policy, or Specific Human Rights Procedures: 3,041 Total number of staff Security: 3,170 Percentage of security personnel received Formal training in policies or procedures specific human rights: 95.93%
Human Talent	GRI	401-1 New employee hires and employee turnover	<p>The total number of new employee hires:</p> <p>Gender:</p> <ul style="list-style-type: none"> Women: 222 Men: 470 <p>Age group:</p> <ul style="list-style-type: none"> Under 30 years old: 182 Between 30 and 50 years old: 478 Over 50 years old: 32 <p>Region:</p> <ul style="list-style-type: none"> Andina Oriente: 92 Bogotá: 256 Central: 169 Orinoquía: 121 Piedemonte: 19 Caribe: 35 <p>The hiring rate for new employees: 7%</p> <p>Gender:</p> <ul style="list-style-type: none"> Women: 32.08 Men: 67.92



Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
		Age group:	
		<ul style="list-style-type: none"> Under 30 years old: 26.30 Between 30 and 50 years old: 69.08 Over 50 years old: 4.62 	
		Region:	
		<ul style="list-style-type: none"> Andina Oriente: 13.29 Bogotá: 36.99 Central: 24.42 Orinoquía: 17.48 Piedemonte: 2.74 Caribe: 5.05 	
		The total number of dissociations:	
		Gender:	
		<ul style="list-style-type: none"> Women: 115 Men: 267 	
		Age group:	
		<ul style="list-style-type: none"> Under 30 years old: 32 Between 30 and 50 years old: 149 Over 50 years old: 201 	
		Region:	
		<ul style="list-style-type: none"> Andina Oriente: 18 Bogotá: 211 Central: 116 Orinoquía: 15 Piedemonte: 0 Caribe: 22 	
		Staff turnover rate:	
		Gender:	
		<ul style="list-style-type: none"> Women: 1.17 Men: 2.71 	
		Age group:	
		<ul style="list-style-type: none"> Under 30 years: 0.32 Between 30 and 50 years: 1.51 	



Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
			<ul style="list-style-type: none"> Over 50 years: 2.04
		Region:	
		<ul style="list-style-type: none"> Andina Oriente: 0.18 Bogotá: 2.14 Central: 1.18 Orinoquía: 0.15 Piedmont: 0.0 Caribe: 0.22 	
Water	SASB	EM-EP-140a.1 (1) Total fresh water extracted, (2) total fresh water consumed, percentage of each in regions with high or extremely high initial water stress	<ul style="list-style-type: none"> Total freshwater withdrawn: 10,292 Thousand meters Cubic Total freshwater consumed: 9,578 Thousand meters Cubic Percentage of regions with initial water stress High or extremely high: 1,013%
Water	SASB	EM-EP-140a.2 The volume of water extracted and the return liquid generated; percentage (1) discharged, (2) injected, (3) recycled; hydrocarbon content in the discharged water	<ul style="list-style-type: none"> Volume of water extracted: 461,942 ML Volume of return fluid generated: Does not apply to The company Percentage of discharge: 15.4% Injection Percentage: 54.6% Recycling rate: 30% Amount of hydrocarbon-contaminated water discharged into the environment: 124.3 Ton
Industrial and process safety	SASB	EM-EP-540a.1 Process Safety Event (PSE) indices for the most severe primary containment loss (LOPC) consequences (level 1)	<ul style="list-style-type: none"> Number of Process Safety Events (PSE) for Primary Containment Loss (LOPC) of greater consequence (Level 1): 3 Process Safety Event Rate (PSE) Primary Containment Loss (LOPC) of greater consequence (Level 1): 0.007



Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
Industrial and process safety	SASB	EM-EP-540a.2 Description of the management systems used to identify and mitigate catastrophic and final risks	Qualitative indicator. The drafting of this indicator is found on pages 320-321 of the Integrated Management Report
Climate Change	OWN	2.2.3 DJSI Indirect Greenhouse Gas Emissions (Scope 3)	<ul style="list-style-type: none"> Category 1: 6,422,421 TonsCO2e Category 11: 145,419,271 TonsCO2e
Industrial and process safety	OWN	ECP006 Frequency incident index N1 (FII N1)	IFSP N1: 0.02
Industrial and process safety	OWN	ECP002 Lost time injury frequency rate (LTIFR)	<ul style="list-style-type: none"> LTIFR Employees: 0.3 LTIFR Contractors: 0.17
Occupational Health	OWN	ECP003 Total recordable injury frequency rate (TRIFR)	<ul style="list-style-type: none"> TRIFR Employees: 0.471 TRIFR contractors: 0.224
Chain of supply Responsible	OWN	1.7.6 DJSI for Supplier Assessment and Development	<ul style="list-style-type: none"> Significant suppliers assessed through desk assessments: 132 Significant suppliers assessed with actual or potential substantial negative impacts: 12 Significant suppliers that have received support in the implementation of corrective action plans: 12 Significant suppliers in capacity building programs: 128 Percentage of significant suppliers evaluated: 100% Percentage of suppliers with actual or potential substantial negative impacts with an agreed improvement plan or corrective action: 100% Percentage of significant suppliers assessed with actual or potential substantial negative impacts, who have received support in the implementation of corrective action plans: 100% Percentage of significant suppliers in capacity building programs: 97%



Relevant Subject (Material)	Criteria	Indicator / Content	Insured Value
Climate Change	OWN	ECP029 Volumen of biofuels produced and purchased meeting sustainability criteria	<ul style="list-style-type: none"> B2 Volume Sold (MBBLS): 46,406 Volume of biofuel purchaser: 969.2
Industrial and process safety	OWN	ECP005 Volume of hydrocarbon spill	Volume of spilled hydrocarbons (bbbls): 15.29
Chain of supply Responsible	OWN	1.7.5 DJSI KPIs for Supplier Screening	<ul style="list-style-type: none"> Total number of Tier-1 suppliers: 3,458 Total number of significant suppliers in Tier-1: 132 Total number of Non-Tier-1 suppliers: 0 Total significant suppliers (Tier-1 and NON-Tier1): 132 Percentage of total spend on significant suppliers in Tier-1: 71%
N/A	OWN	1.3.1 DJSI Materiality Analysis	Qualitative indicator The drafting of this indicator is found on pages 158-163 of the Integrated Management Report
Materials and waste	OWN	2.4.1 DJSI Waste Disposal	<ul style="list-style-type: none"> ∑ Total waste recycled or reused: 180,935 TonsM ∑ Waste Eliminated: 273,094 TonsM ∑ Waste Landfilled: 220,749 TonsM ∑ Incinerated waste with energy recovery: 0 TonsM ∑ Incinerated Waste without energy recovery: 26 TonsM ∑ Other types of disposal: 52,319 TonsM
Materials and waste	OWN	2.4.2 DJSI Hazardous Waste	<ul style="list-style-type: none"> ∑ Total hazardous waste recycled or reused: 10,358 TonsM ∑ Total hazardous waste disposed of: 104,632 TonsM ∑ Total waste deposited in security cells: 4,884 TonsM ∑ Hazardous waste incinerated with energy recovery: 0 TonsM ∑ Hazardous waste Incinerated without energy recovery: 349 TonsM ∑ Hazardous waste otherwise disposed of: 98,926 TonsM



ANNEX 2

GRI Content Criteria

The assurance criteria that are applicable to the Subject Matter and the presentation statement in accordance, are defined based on what is established in the GRI 1 Fundamentals 2021 document, its thematic contents on the page <https://www.globalreporting.org/standards/gri-standards-translations/gri-standards-spanish-translations-download-center/>

SASB Content Criteria

The assurance criteria applicable to the Subject Matter are defined based on the provisions of the document Sectorial Oil & Gas - Exploration and Production Sustainability Accounting Standard, available on page [SASB-PDF - Issued IFRS Standards \(d3flraxduht3qu.cloudfront.net\)](#)

Criteria for own Indicators

The following are the assurance criteria that are applicable to own indicators, objects of limited assurance, which are listed in the GRI content index of the Ecopetrol S.A. report and this Report in order to make them available to stakeholders.

These evaluation criteria are an integral part of our independent accountant's limited assurance report.

Indicator	Criteria
ECP002 Lost time injury frequency rate (LTIFR)	<p>This indicator aims to measure the frequency of work-related injuries resulting in lost time for employees and contractors per million hours worked for the most recent reporting year.</p> <p>Any work-related injury that results in a next-workday absence by the employer or contractors, per million hours worked in the period.</p> <p>Equation: $LTIFR = \frac{\text{Number of injuries causing absences}}{\text{Total number of hours worked in the period}} \times 1000000$</p>
ECP003 Total recordable injury frequency rate (TRIFR)	<p>This indicator measures the number of recordable injuries caused by or in connection with the work of direct personnel, contractors and subcontractors and trainees, including:</p> <ul style="list-style-type: none"> • Fatality • Medical incapacity • Restricted work • Medical treatment <p>That's for every million hours worked.</p>



Indicator	Criteria
	<p>Definition of variables:</p> <p>Number of Injuries: Measures the number of fatalities, disabling injuries, restricted work, or medical treatment.</p> <p>Number of hours worked: this is the sum of the hours worked for the Ecopetrol Group by type of worker (Direct, Contractor, Subcontractor and Apprentice) supplied by each of the companies.</p> <p>Disabling Injury: These are injuries that render the injured worker unable to work for at least one day after the date the accident occurred. Such disability is issued by the treating physician or by the corresponding ARL.</p> <p>Restricted Work: is any injury associated with a work accident that is not a disabling event, where the injured person, due to being in treatment or rehabilitation, cannot perform all his or her work.</p> <p>Medical Treatment: It is an injury that requires treatment provided by a doctor that goes beyond first aid that can be provided on the job site.</p> <p>Disability day or days away from work: This is any day on which the worker, because of an injury, is unable to work; for a full shift.</p> <p>Equation: $TRIFR = \frac{\text{Number of incidents in the reporting period}}{\text{Total hours worked in the period}} \times 1000000$</p>
ECP005 Volume of hydrocarbon spill	<p>This indicator aims to measure volumes of spills greater than one barrel (bbl) that reach the environment.</p> <p>Disclosure should include:</p> <ul style="list-style-type: none"> • Discharges from underground and surface operations, as well as transportation operations under the company's control. • Events beyond the company's control, such as sabotage, earthquakes, or weather events. • Underground and surface leaks and these must be counted once at the time they are identified. <p>Hydrocarbons present in water discharges and/or permitted discharges must be excluded.</p> <p>Equation: $ECP005 = \sum \text{Sum of hydrocarbon spill volumes.}$</p>
ECP006 Incident Frequency Index N1 (IFSP N1)	<p>Measures the number of incidents involving an unplanned or uncontrolled containment loss of any material (involving non-toxic or non-flammable</p>



Indicator	Criteria
	<p>substances such as hot condensed vapor, nitrogen, compressed CO2, and compressed air) that result in one or more of the following consequences:</p> <ol style="list-style-type: none"> 1. Days of absence of employees, contractors or subcontractors. 2. Death of employees, contractors, or subcontractors. 3. Death of a third party. 4. The officially declared evacuation of a community, including precautionary evacuations. 5. Damages equal to or greater than \$100,000 in direct costs. 6. A manually initiated pressure discharge into or downstream of an amount greater than or equal to the amounts defined in Table 1 of the American Petroleum Institute Guide to Reporting Process Safety Events Version 3.0 in a one-hour period. 7. Emissions from permitted or regulated sources in amounts equal to or greater than the thresholds defined in Table 1 of the American Petroleum Institute Guide to Reporting Process Safety Events Version. 8. Discharge of material equal to or greater than the thresholds set forth in Table 1 of the American Petroleum Institute Guide to Reporting Process Safety Events Version in a one-hour period. <p>Equation:</p> $IFSP N1 = \sum (API -754 \text{ Level 1 Process Safety Incidents} + \text{Pipeline Process Safety Incidents (Level 1 Pipelines and Flow Lines)}) \times 10^6 / \sum (\text{total man hours worked})$
ECPO29 Volume of biofuels produced and purchased meeting sustainability criteria	<p>This indicator measures the total annual volume of Diesel B2 sold from Ecopetrol Refineries, additionally it measures the total volume of purchases of Biodiesel B100 that are made annually in Ecopetrol refineries.</p> <p>Equations:</p> <ul style="list-style-type: none"> • Volume of B2 Sold = Volume (Bls/year) of B2 of Cartagena Refinery + Volume (Bls/year) of B2 of Barrancabermeja Refinery. • Volume of Biofuel Purchased = Volume (Bls/year) of B100 from Cartagena Refinery + Volume (Bls/year) of B100 from Barrancabermeja Refinery
1.3.1 Materiality Analysis	<p>Materiality analysis is an exercise to identify and prioritize those environmental, social, and governance (ESG) issues that are critical to an organization and, therefore, on which it should focus its management and reporting.</p> <p>At the same time, according to the principle of double materiality, a sustainability issue is considered material for the organization when (i) through it, the</p>



Indicator	Criteria
	<p>organization generates or could generate a significant impact on society or the environment (impact materiality) and/or (ii) the environment generates or could generate risks or opportunities on the ability to create economic value, the fulfillment of the strategic objectives and/or the reputation of the organization (financial materiality)</p> <p>In this sense, the definition of materiality, under the double materiality approach, must consist of the following steps:</p> <ol style="list-style-type: none"> 1. Identification of impacts, risks and opportunities: the organization must identify those ESG impacts, risks and opportunities related to the organization, based on information from internal information sources (e.g. sustainability reports from previous periods, corporate strategy, risk matrices) as well as external (e.g. sustainability reports of companies in the sector, international ESG frameworks and standards, national regulations). The result of this step is a list of ESG impacts, risks, and opportunities related to the organization. 2. Definition of potential ESG issues: the organization must analyze the different impacts, risks and opportunities identified in the previous step, to group those related to or belonging to the same theme, thus determining the ESG issues that are potential for the organization. From this analysis, the company must define each resulting issue, as well as the subtopics associated with each. The result of this step is the identification of ESG issues that are potentially material to the organization, with their respective definitions and sub-topics. 3. Assessment of potential ESG issues: The assessment of each ESG issue should be made from two (2) perspectives: (i) impact materiality and (ii) financial materiality: <ol style="list-style-type: none"> i. For the materiality of impact, the previously identified impacts must be qualified, for which it is necessary to relate the organization with the stakeholders that are prioritized for this exercise. This involvement can be done through different mechanisms, such as: individual interviews, group meetings, sending online surveys, among others. These engagements can take place both face-to-face and virtually. The purpose of these engagements is for stakeholder representatives to rate the magnitude and likelihood of each ESG issue defined in the previous step. ii. For financial materiality, previously identified ESG risks and opportunities must be qualified. In the case of risks, the rating of each one established in the organization's internal risk matrices must be taken. The qualification of opportunities can be made based on the understanding of the effect of their magnitude on the financial variables of the organization and their probability of occurrence. <p>The result of this step is the evaluation of each ESG issue from the perspectives of impact materiality and financial materiality.</p> 4. Definition of material ESG issues: based on the consolidation and analysis of the results obtained in the previous step, the organization must establish a



Indicator	Criteria
	<p>threshold that, when exceeded, implies that the issue is material for the organization. It should be remembered that a matter is material if it is material from the perspectives of impact materiality, financial materiality, or both. The final materiality can be presented under a matrix, a list, or any form of presentation that the organization deems appropriate.</p> <p>The result of this step is the ultimate materiality of the organization.</p>
ECPO30 Significant investment agreements and contracts with human rights clauses or subject to human rights assessment	<p>This indicator measures the total number and percentage of significant investment agreements and contracts with human rights clauses or subject to human rights assessment of the organization during the reporting period.</p> <p>Definition:</p> <p>Significant investment: At Ecopetrol, all those cooperation agreements or agreements derived from and managed by the Vice Presidency of Sustainable Development, signed with the aim of protecting the Company's critical infrastructure, which are also representative in possible risks, or positive or negative impacts associated with human rights and security from which to make each agreement or agreement that is signed between Ecopetrol and the supplier.</p> <p>Disclosure must include:</p> <p>The total number and percentage of significant investment agreements and contracts with human rights clauses or subject to human rights assessment.</p> <p>Equations:</p> <ul style="list-style-type: none"> ECPO30 = \sum Total significant investment agreements and contracts with human rights clauses or subject to human rights assessment. ECPO30 = $\frac{\sum \text{Total Significant Investment Agreements and Contracts with Human Rights Clauses or Subject to Human Rights Assessment}}{\sum \text{Total Significant Investment Agreements and Contracts}}$
2.2.3 DJSI Indirect Greenhouse Gas Emissions (Scope 3)	<p>The indicator measures indirect emissions from the value chain (Scope 3 emissions) and assesses the overall trend. Scope 3 emissions refer to indirect emissions that are the result of the company's activities but are produced from sources that are not owned or controlled by the company.</p> <p>Greenhouse gas emissions must be reported as metric tons of CO2 equivalent. Data on greenhouse gas emissions should include CO2 and all other greenhouse gas emissions weighted according to greenhouse gas potential.</p> <p>According to the GHG Protocol, emissions can be classified into 15 categories, of which Ecopetrol S.A. considers 2 (1 and 11), each of which includes:</p> <p>1. Acquisition of goods and services: extraction, production and transport of goods and services purchased or acquired by the reporting company in the reference year, not included in categories 2 to 8.</p>



Indicator	Criteria
	<p>11. Use of Products Sold: End Use of Goods and Services Sold by the Reporting Company in the Report Year.</p> <p>According to the CDP Technical Note on the Relevance of Scope 3 Categories by Sector3, for the hydrocarbons sector there are two categories in which more than 95% of Scope 3 emissions are concentrated: i) Category 11 - Use of products sold, which corresponds to 91% of Scope 3 emissions and 81% of total emissions (Scope 1, 2 and 3) of the sector; and (ii) Category 1 - Procurement of goods and services, which corresponds to 4% of both scope 3 emissions and total emissions from the sector.</p> <p>Since 2021, Ecopetrol has estimated its Scope 3 emissions inventory for each of its categories recommended by the GHG Protocol; in the four estimated years, categories 11 and 1 accounted for more than 94% and 4%, respectively, of total Scope 3 emissions.</p> <p>It is worth mentioning:</p> <ul style="list-style-type: none"> The base year is 2019, aligned with the base year established for scopes 1 and 2. Based on the calculation methodology and the available emission factors, the included GHGs are established. When using the FECOC "average" methodology and emission factors, the three relevant GHGs are included: CO2, CH4 and N2O. For the other methodologies and other sources of information, the available emission factors are in terms of CO2e. Ecopetrol groups all purchases of goods and services (category 1) and capital goods (category 2) in a single quantification under category 1 because the complexity of the contracted contracting base does not allow the information to be disaggregated by the type of good. A single contract may include activities related to the provision of a service and the provision of a capital asset. In the methodology applied by Ecopetrol for the estimation of emissions of category 11 (Use of products sold), emissions from the direct use of intermediate products sold are accounted for. For the estimation of category 10 (processing of sold goods), the processing of intermediate products is considered. Therefore, the emissions calculated in Category 11 are higher than in Category 10 and the latter is considered double counting. Ecopetrol does not quantify Category 14 (Franchises) because it does not have this type of business. In transport activities (categories 4, 6, 7 and 9) there may be a risk of double counting with Category 11 - Use of products sold when it is identified that domestic transport suppliers use the fuel sold by Ecopetrol or Reficar. Therefore, the total for scope 3 emissions is only emissions associated with transport that does not use domestic fuel.



Indicator

Criteria

Therefore, the information that will be available for verification, covering more than 98% of scope 3 emissions, corresponds to:

Category	Subcategory
Category 11 - Use of Products Sold	Domestic Sales
	Exports
	Internments
	Petrochemicals and others
Category 1 - Acquisition of goods and services	Purchase of domestic crude oil
	Crude oil imports
	Import of refined products

It is important to clarify that Ecopetrol will disclose scope 3 emissions only of categories 1 and 11 for the reporting period.

Additionally, it is important to mention that, for the reporting of information, in accordance with the provisions of the GHG Protocol, two types of data are used to calculate scope 3 emissions:

- Primary data:** includes data provided by suppliers or others that are directly related to specific activities in the reporting company's value chain. Primary activity data can be obtained through meter readings, purchase records, utility bills, among others.
- Secondary data:** This includes average industry data (e.g., from published databases, government statistics, literature reviews, and industry associations), financial data, indirect data, and other generic data. In specific cases, companies can use data specific to one activity in the value chain to estimate emissions from another activity in the value chain.

Equations:

To find out more about the Equation: for categories 1 and 11 indicated by the GHG Protocol, go to the following (Appendix D- page 162): https://ghgprotocol.org/sites/default/files/2023-03/Scope3_Calculation_Guidance_0%5B1%5D.pdf



Indicator

Criteria

The following table sets out the calculation methodologies and the source of emission factors for categories 11 and 1.

Category	Subcategory	Calculation Methodology	Source of Emission Factor
Category 11 - Use of Products Sold	Domestic Sales	Average data	FECOC, 2016
	Exports	Average data	FECOC, 2016
	Internments	Average data	FECOC, 2016
	Petrochemicals and others	Measured / Average Data	IPCC, 2006
Category 1 - Acquisition of goods and services	Purchase of domestic crude oil	Average data	Defra, 2021
	Crude oil imports	Average data	Average CI
	Import of refined products	Average Data / Specific Supplier	Operator, 2022 Ecopetrol, 2022 Defra, 2021
	Chemical, Catalysts and Tubing	Specific Supplier	Supplier, 2022
	Goods and supply Services	Expense-based	US EEIO

1.7.5 DJSI KPIs for Supplier Screening

The indicator reveals the number of suppliers that were selected and subsequently classified as significant suppliers, and whether the ESG risks of new suppliers are examined.

It is important to mention that suppliers are only counted once in the fiscal year reporting count.

Data to be reported:

- Total number of level 1 suppliers.
- Total number of significant level 1 suppliers.
- Percentage of total expenditure on significant level 1 suppliers
- Total number of significant suppliers not belonging to level 1
- Total number of significant level 1 suppliers, and not belonging to level 1



Indicator	Criteria
	<p>Definition of variables:</p> <ol style="list-style-type: none"> Supplier selection: A systematic desk investigation of suppliers' risk of negative ESG impacts and their business relevance, considering available data sources such as ESG risks by country, sector or commodity, spend, business relevance, etc. The development of the methodology and the selection process are developed by Ecopetrol. Significant Suppliers: Suppliers that are identified as having substantial risks of negative ESG impacts or significant business relevance to the business or a combination of both. The sustainability-first supplier portfolio should be the key audience for a company's supplier monitoring and ESG development program. (The segmentation is carried out at the end of the year and the results are used in the following year, i.e., for the 2023 supplier management, the results of the December 2022 segmentation are used). Level 1 suppliers: Refers to suppliers who directly provide goods, materials, or services (including intellectual property (IP)/patents) to the company. If the company does not specify, we will assume it is a level 1 supplier. Suppliers who are not level 1: This refers to suppliers who supply their products and services through level 1 suppliers who are not level 1 are found beyond level 1 suppliers, for example, at levels 2, 3, or n in a company's supply chain. <p>Equations:</p> <p>Figures [#]:</p> <ul style="list-style-type: none"> Σ total level 1 suppliers Σ Total significant level 1 suppliers Σ total non-significant non-EU suppliers Level 1. Σ total of significant level 1 and non-significant suppliers Belonging to Level 1 <p>Percentage [%]:</p> <ul style="list-style-type: none"> % Total level 1 Significant Supplier Spend = $\frac{\Sigma \text{Total Significant Supplier Spend N1}}{\Sigma \text{Total Supplier Spend in the Organization}}$ <p>1.7.6 DJSI KPIs for Supplier Assessment and Development</p> <p>The indicator reveals the results of the supplier selection process and the subsequent evaluation and development processes.</p> <p>Data to be reported:</p> <ul style="list-style-type: none"> Total number of significant suppliers evaluated through desk evaluations: significant suppliers with performance evaluation. Percentage of significant suppliers evaluated.



Indicator	Criteria
	<ul style="list-style-type: none"> Number of significant suppliers assessed with actual/potential substantial negative impacts: Significant suppliers with gaps in performance evaluation (score less than 80pts or 85 on HSE criteria). Percentage of significant suppliers with substantial actual/potential negative impacts, with an agreed improvement/corrective action plan: Significant suppliers that present gaps in the performance evaluation and that once analyzed, jointly between Ecopetrol and the Supplier, it is identified that they require the generation of an improvement plan. Total number of significant suppliers requiring the implementation of corrective action plans and who have received support in the implementation of corrective action plans. Percentage of significant suppliers with actual/potential substantial negative impacts to whom an improvement plan applies and have received support in the implementation of the improvement plan versus the number of actual/potential substantial significant suppliers to whom an improvement plan applies. Total number of significant suppliers that have participated in capacity building programs: workshops and trainings provided by Ecopetrol on environmental, technology, social management and business capacity building issues, as well as those that have implemented critical aspects in the execution of contracts such as hiring local labor, Inclusive Labor Linkage, contracting of local goods and services, Contracting of Diverse Productive Enterprises. Percentage of significant suppliers in the capacity building programs mentioned in the bullet above. <p>Definition of variables:</p> <ul style="list-style-type: none"> Supplier Selection: A systematic desk investigation of suppliers' risk of negative ESG impacts and their business relevance, taking into account available data sources such as ESG risks by country, sector or commodity, spend, business relevance, etc. Significant Suppliers: Suppliers that are identified as having substantial risks of negative ESG impacts or significant business relevance to the business or a combination of both. The sustainability-first supplier portfolio should be the key audience for a company's supplier monitoring and ESG development program. (The segmentation is carried out at the end of the year and the results are used in the following year, i.e. for the 2023 supplier management, the results of the December 2022 segmentation are used). Desk evaluations: This type of supplier evaluation is performed by or on behalf of the purchasing company. This typically consists of a questionnaire asking suppliers to provide information and supporting evidence on their ESG policies, practices, results and public statements. Ecopetrol evaluates



Indicator	Criteria
	<p>suppliers according to the level of compliance with the contractual commitments made by the supplier.</p> <ul style="list-style-type: none"> • Actual/potential substantial negative impacts: refers to the effect an organization has on the economy, environment, and/or society, which in turn can indicate its contribution (positive or negative) to sustainable development. Negative impacts include those that are caused by or to which an organization contributes, or that are directly linked to its activities, products, or services by its relationship with a supplier. Ecopetrol identifies substantial/potential negative impacts according to the result obtained by suppliers in their performance evaluation (score less than 80pts or 85 in HSE criteria). • Supplier Corrective Action Plan: A PAC is a method for documenting non-compliance issues, identifying their root causes, and establishing quantifiable and achievable solutions as well as realistic timelines. Note: Ecopetrol will analyze the need for the generation of a Corrective Action Plan, according to the type, term and status of the contract. Therefore, there will be cases in which, despite presenting gaps in the Performance Evaluation, the Corrective Action Plan will not be required. <p>Equations:</p> <p>Figures [#]:</p> <ul style="list-style-type: none"> • Σ of significant suppliers assessed through desk assessments • Σ total of significant suppliers assessed with actual or potential substantial negative impacts. • Σ total of significant suppliers that have received support in the implementation of corrective action plans. • Σ Total significant suppliers in capacity building programs <p>Percentage [%]:</p> <ul style="list-style-type: none"> • Σ total significant suppliers assessed / Σ total significant suppliers in the organization. • Σ total of significant suppliers assessed with actual or potential substantial negative impacts, with an agreed improvement or corrective action plan / Σ total of significant suppliers assessed with actual or potential substantial negative impacts. • Σ total of significant suppliers assessed with actual or potential substantial negative impacts, who have been supported in the implementation of corrective action plans / Σ total of significant suppliers assessed with actual or potential substantial negative impacts. • Σ total of significant suppliers in capacity building programs / Σ total of significant suppliers.
2.4.1 Waste Disposal	<p>This indicator reports the total waste generated according to its type of disposal, for which each of the types of disposals in which the company will report information is described below:</p>



Indicator	Criteria
	<p>Key Definitions:</p> <p>Total waste recycled or reused:</p> <p>It includes the portion of waste generated as a result of a company's operations (e.g., during the extraction and processing of raw materials, manufacturing, consumption of final products, or any other human activity), which has been diverted from disposal through preparation for reuse, recycling, composting, or other recovery operations (i.e., processing of waste products, components, or materials to be reused in place of new products, components, or materials that should otherwise have been used for that purpose). This does not include waste incinerated with energy recovery, or waste handled by third parties (e.g., municipal waste management companies), unless the waste is recycled by a third party, prepared for reuse or composted.</p> <p>Total, waste disposed of:</p> <p>The total of all waste destined for disposal, including waste landfilled, incinerated with energy recovery, incinerated without energy recovery, or otherwise disposed of (e.g., injection into deep wells). It also collects waste with "unknown disposal methods", such as waste handled by municipal waste management companies without any information available on the disposal methods used. For each layout method, the value includes both on-site and off-site layout.</p> <p>Waste deposited in landfills:</p> <p>It is the total amount of solid waste disposed of, below or above ground level, at disposal points designed for this purpose. Note 1: In the context of waste reporting, landfilling refers to the disposal of solid waste in sanitary landfills and excludes uncontrolled disposal of waste, such as open burning or dumping. Note 2: This definition is taken from the United Nations Glossary of Environment Statistics: Methods Studies, F Series, No. 67, 1997.</p> <p>Incinerated waste without energy recovery:</p> <p>It is the total of all waste destined for disposal, by incineration, a technique that makes it possible to reduce its volume, weight and modify its composition. It consists of subjecting the waste to a high-temperature oxidation process, through controlled combustion, and no energy recovery is carried out in the process.</p> <p>Incinerated waste with energy recovery:</p> <p>It is the total waste destined for disposal by incineration, where the energy value present in it is used, carried out only in waste incinerators. Excluded from this category are wastes that comply with the Technical Guidelines on the Environmentally Sound Co-Processing of Hazardous Wastes in Cement Kilns. Issued since the Basel Convention.</p>



Indicator	Criteria
2.4.2 Hazardous Waste	<p>Other Types of Disposition:</p> <p>This is the total amount of waste destined for disposal by treatment and disposal operations other than incineration and landfills. These operations include Bioremediation; landfarming; phytoremediation; flocculation and coagulation; other treatments and other final disposition.</p> <p>Data Requirements:</p> <p>Environmental performance data covers company-wide activities with the same consolidation used in financial reporting and should reference the financial year (e.g., 01/01 to 31/12 for financial and environmental data) and be aligned with the figures reported in the question in the Company Information section.</p> <p>Equations:</p> <ul style="list-style-type: none"> • \sum Total waste recycled or reused • \sum Waste Removed • \sum Waste Landfilled • \sum Incinerated waste with energy recovery • \sum Incinerated Waste without energy recovery • \sum Other Types of Disposition <p>This indicator reports the total hazardous waste generated according to its type of disposal, for which each of the types of disposals in which the company will report information is described below:</p> <p>Key Definitions:</p> <p>Hazardous waste:</p> <p>Waste classification that recognizes the chemical composition or other properties that make it capable of causing disease, death, or some other harm to humans and other life forms when mishandled or released into the environment. We also include in this definition the management of "regulated non-hazardous wastes". Examples include corrosive and toxic metals, asbestos, and grinding dusts.</p> <p>Total hazardous waste recycled or reused:</p> <p>It includes the portion of hazardous waste generated as a result of a company's operations (e.g., during the extraction and processing of raw materials, during the manufacture of products, during the consumption of final products, and during any other human activity), which has been prepared for reuse, recycling, or other recovery operations (excluding incineration with energy recovery) in a way that is safe and protective of human health and the environment. Hazardous waste management handled by third parties (companies specializing in hazardous waste management) can be compared to recycled/reused hazardous waste if the third</p>



Indicator	Criteria
	<p>party recycles, prepares for reuse, or reuses the hazardous waste (see further clarification under 'Special Data Requirements for Waste').</p> <p>Total hazardous waste disposed of:</p> <p>It is the sum of hazardous waste destined for disposal, including biomedical waste that goes through autoclave treatment, waste deposited in landfill or security cell, incinerated with energy recovery, incinerated without energy recovery or otherwise disposed of. It also captured hazardous waste with "unknown disposal methods", for example, if a member firm of Ernst & Young Global Limited 16 a third party handles the hazardous waste, but without information on the final disposal method used. For each layout method, the value includes both on-site and off-site layout.</p> <p>Waste deposited in a security cell:</p> <p>It is the total amount of solid waste disposed of, below or above ground level at disposal points designed for this purpose, including waste that is treated by autoclave and subsequently disposed of in a safety cell. Note 1: In the context of waste reporting, landfill refers to the deposit of solid waste in security cells. Note 2: This definition is taken from the United Nations Glossary of Environment Statistics: Methods Studies, F Series, No. 67, 1997.</p> <p>Incinerated waste without energy recovery:</p> <p>It is the total of all waste destined for disposal, by incineration, a technique that makes it possible to reduce its volume, weight and modify its composition. It consists of subjecting the waste to a high-temperature oxidation process, through controlled combustion, and no energy recovery is carried out in the process.</p> <p>Incinerated waste with energy recovery:</p> <p>It is the total of hazardous waste destined for disposal by incineration, where the energy value present in it is used, carried out only in hazardous waste incinerators. Hazardous wastes that comply with the Technical Guidelines on the Environmentally Sound Co-Processing of Hazardous Wastes in Cement Kilns are excluded from this category. Issued since the Basel Convention.</p> <p>Hazardous waste otherwise disposed of:</p> <p>This is the total hazardous waste destined for disposal by treatment and disposal operations other than incineration, autoclave and security cell. These operations include Bioremediation; centrifugation; thermal desorption; stabilization, solidification and encapsulation; flocculation and coagulation; landfarming; other treatments and other final disposition.</p> <p>Data requirements:</p> <p>Hazardous waste is declared in metric tons of dry waste, broken down by the amount recycled/reused and the specific disposal method (landfilled waste,</p>



Indicator

Criteria

incinerated waste, otherwise disposed of waste, or waste with unknown disposal method), respectively.

Equations:

- Σ Total hazardous waste recycled or reused
- Σ Total hazardous waste disposed of
- Σ Total waste deposited in a security cell
- Σ Incinerated hazardous waste with energy recovery
- Σ Incinerated hazardous waste without energy recovery
- Σ Hazardous waste disposed of in other ways

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