ecopetrol

Integrated Sustainable Management Report

2021

01 ABOUT THIS REPORT

As part of its commitment to transparency and accountability with its stakeholders, Ecopetrol S.A. publishes its Integrated Sustainable Management Report annually, including the Annual Management Report and the Corporate Responsibility and TESG Report. In this document, the Company reports on its performance and the main achievements and challenges associated with social, environmental, and governance issues, which are part of Ecopetrol's material issues, as described below.

Materiality
(102-46) (WEF 3)

In 2020, Ecopetrol updated its materiality assessment by means of an exhaustive internal review and consultation process with its stakeholders. This analysis included aspects such as the risks and impacts associated with each material element, sustainability-related regional and global trends, and the input of the Company's seven stakeholder groups. The objective was to define a list of elements or issues that Ecopetrol should focus on to ensure value generation for its stakeholders and the company's sustainability over time.

This exercise led to the identification of **28 prioritized material elements,** classified in four categories: exceptional, outstanding, differentiated, and compliance (see page 124).

This report pertains to Ecopetrol S.A. and includes details about the management, impact, and results of the Exceptional and Outstanding material elements. These are considered priorities by the Company and its stakeholders, which are also the focus of the TESG pillar under the corporate strategy.

The details of the materiality assessment update process, stakeholder involvement, and the final results can be found in the Materiality and Stakeholder Groups chapter.

Reporting Methodology
(102-48) (102-54) (102-55)

This report has been prepared in accordance with *Global Reporting Initiative* (GRI) standards, in its essential option.

Also, the Report adheres to following reporting frameworks:

Sustainability Accounting Standards Board (SASB)

Task Force on Climate-related Financial Disclosures (TCFD)

The United Nations Sustainable Development Goals - SDGs

Global Compact Principles

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

This information will be reflected in the report and will be identified by the corresponding codes of each reporting framework. The foregoing allows the Company to be aligned with best practices and international standards regarding the disclosure of sustainability-related information. The GRI Index, which refers to the numerical codes included throughout the Report, can be found in the Annexes section.

No relevant information has been restated with respect to previous reports. Had the calculation methodology been updated for any indicator, this will be specified in the relevant section.

Limits and Scope of the reported data
(102-45)

The Exceptional and Outstanding material elements are included in the Company's Integrated Sustainable Management Report, and its scope for 2021 is Ecopetrol S.A. Information pertaining to the companies under the Ecopetrol Group is also included, where relevant, with the respective clarification.

Significant changes in the preparation of the report
(102-49) (WEF 3)

The 2021 Integrated Sustainable Management Report, divided into the management/annual report, ESG and Corporate Responsibility issues, delves into Ecopetrol's Exceptional and Outstanding material elements arising from the materiality update of 2020. Its structure and content will therefore be different from the 2020 report, which was more comprehensive and only mentioned Ecopetrol's material elements in a broader sense.

Frequency
(102-32) (102-50) (102-51) (102-52)

This report was submitted to and approved by the General Shareholders' Meeting, and it elaborates on Ecopetrol S.A.'s performance between January 1st and December 31st, 2021. The last Integrated Sustainable Management Report was published and approved by the General Shareholders' Meeting on March 26th, 2021.

External verification
(102-56)

Senior management reviewed and approved the 2021 Integrated Sustainable Management Report and entrusted EY with the limited assurance of the social, environmental, and economic indicators. See page 378.

Inquiries
(102-53)

Please send your concerns, queries, or requests for additional information about this report to the following email address

responsabilidadcorporativaecp@ecopetrol.com.co.

Message from the Chairman of the Board of Directors

Ecopetrol began 2021 with the challenge of continuing to be a catalyst for the Colombian economy amid a global pandemic. The Company's higher purpose of being "Energy that Transforms" has been the driving force behind each of our decisions and has strengthened our work based on the creation of value for Ecopetrol and its Group, for the country, and for Latin America.

The new social and economic reality, in addition to the challenges imposed by climate change, anchored our commitment to the country and to the energy transition.

In 2021, as Board of Directors, we concluded our two-year long backing to the evaluation of acquiring Interconexión Eléctrica S.A. ESO (ISA), which was a historical milestone for Ecopetrol and for the country. It is Ecopetrol Group's most relevant inorganic acquisition in its 70-year history (COP 14.2 trillion, equivalent to 51.41% stake), providing resilience to Ecopetrol by incorporating material returns (between 15% and 20% of the Group's ebitda) with a low-carbon-emission business. This ensures greater energy security for all Colombians and contributes to the Group's decarbonization process, by assuming the responsibility of 'Growing with the Energy Transition'.

The efforts exerted in 2021 were also aimed at updating Ecopetrol Group's Strategy, by establishing, for the first time, a corporate strategy spanning longer than 10 years. By working arduously and in close collaboration with the Company's executive management, Ecopetrol designed a 2040 strategy based on four drivers:

(i) **Growing with the Energy Transition;**

(ii) **Generating value with TESG;**

(iii) **Cutting edge knowledge; and**

(iv) **Competitive returns.**

For Ecopetrol, our most valuable asset is our people and our first principle in the Cultural Statement is "Life First." For this reason, our corporate efforts will always be focused on the well-being of our workers, contractors, the community, partners, suppliers, investors, the State, and society.

The Board of Directors stresses its resounding commitment to the strategic management and assessment of matters pertaining to the short, medium, and long-term strategy. This year, our stewardship included the following areas:

- Updating of the 2022-2024 business plan, focusing on the profitable growth of production under the 2040 Strategy and the continuity of ISA's 2030 Strategic Plan. **Ecopetrol's plan contemplates organic investments in 2022 ranging between USD 4.8 billion and USD 5.8 billion. Of the investments, 70% will be allocated to projects in Colombia and the remaining 30% to projects in the US (14%), Brazil (8%), Peru (5%), and Chile (3%).**
- Financing for the 2022-2024 strategy towards energy transition, with a total investment between USD 17 trillion and USD 20 trillion.
- Monitoring of the measures adopted at Ecopetrol and other companies under the Ecopetrol Group, in terms of their internal control, risk management, and ethics, corruption, and fraud reporting systems.
- Approval and adoption of the Diversity and Inclusion Policy of the Board of Directors.
- Updating of the Human Rights Guide and follow-up on the Human Rights strategy as well as related trends, as part of the Company's highest-level commitment.

The 2021 Integrated Report reflects the work and passion of each of the members of the Board of Directors, the CEO, the Vice Presidents, and all Ecopetrol employees. Each person has shown their dedication and devotion to achieving the best results, thus guiding Ecopetrol towards becoming a leading energy group in the American continent. These actions deserve my total admiration and gratitude. Each of our decisions continues to position Ecopetrol as a global player and a leader in the energy transition, committed to TESG and decarbonization, and meeting the highest ethics, transparency, and corporate governance standards.

It is precisely the dedicated and persistent work of the people who make up Ecopetrol that allows us today to show exceptional financial results for 2021.

We managed to close the year with a net profit of

COP 16.7 trillion,

a consolidated income of

COP 91.7 trillion

and an ebitda of

COP 42 trillion
(45.7% ebitda margin).

These figures, beyond conveying that we exceeded our expectations and goals, allow us to generate well-being for all Colombians with a 2.5% contribution to the country's Gross Domestic Product (GDP).

Furthermore, we closed 2021 with a 200% reserve replacement rate, the highest in the last 12 years. This means that, for each barrel produced in the year, two barrels were added to the reserves, thereby increasing the average life of Ecopetrol's reserves to 8.7 years. This is yet another sign of the strength of Ecopetrol Group's hydrocarbon portfolio, backing the Company's sustainable growth within the framework of the energy transition.

The Board of Directors reaffirms its value proposition to guide the Company in the determination of strategic issues in order to create long-term value. Our commitment to the company of all Colombians motivates us to continue evolving and positioning Ecopetrol as **Energy that Transforms.**

Luis Guillermo Echeverri Vélez
Chairman
Board of Directors of Ecopetrol

Company profile

(102-4) (102-6) (102-7)(102-8)(102-9)

GRUPO ECOPETROL BEFORE THE ACQUISITION OF ISA

+ 250
Production fields in 4 countries

≈9,000 Km
Of oil pipelines and multi-product pipelines

2
Refineries with a capacity of **400 kbd**

1
Biodiesel plant wiith a capacity of – **120 kton/year****

1
Petrochemical plant with a capacity of – **500 kton/year****

+ 18,000
Employess***

53
Electricity self-generation centers with a capacity of **1,300mw******

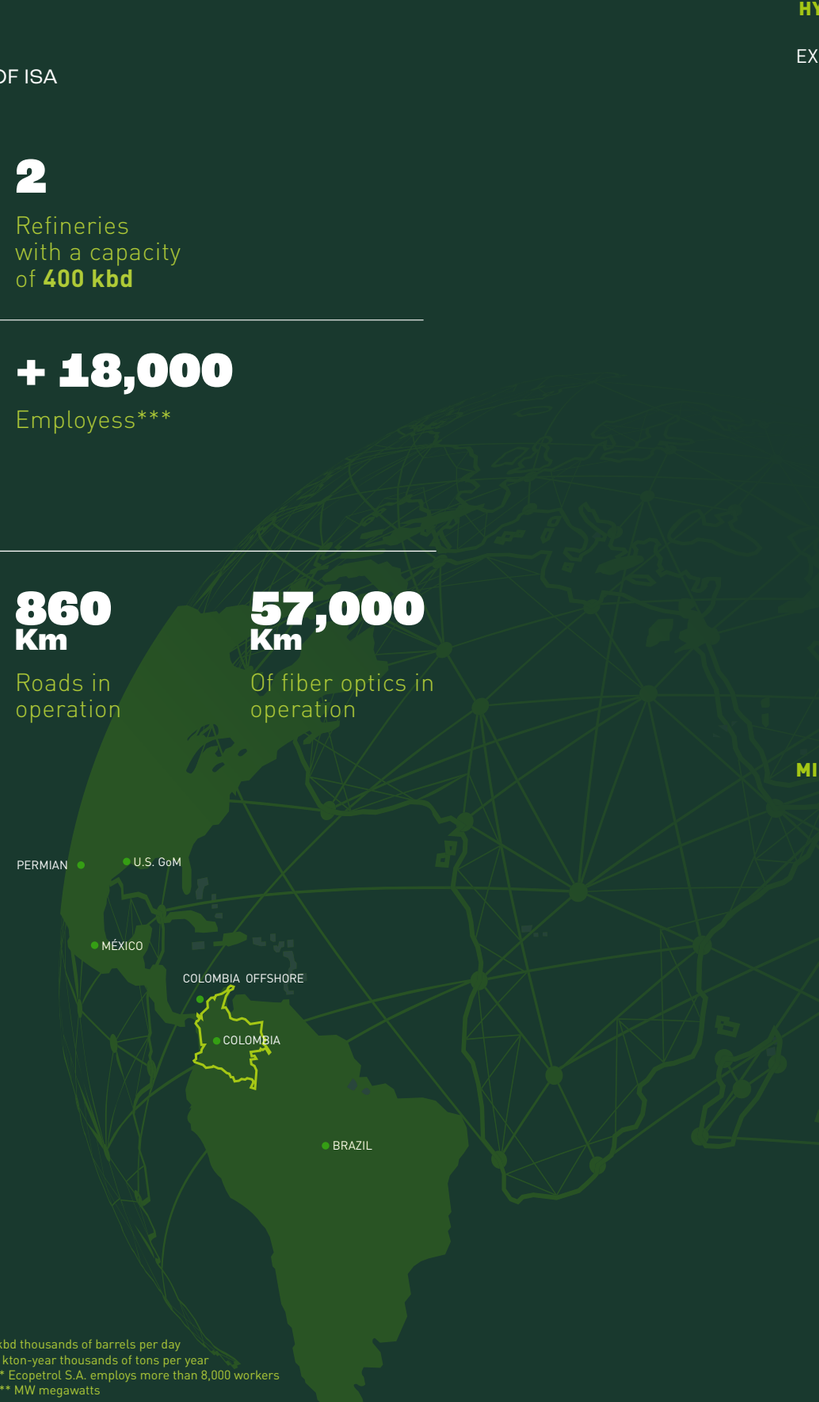
48,330 Km and **104,138 Mva**
Of transmission infrastructure in operation

860 Km
Roads in operation

57,000 Km
Of fiber optics in operation

PRODUCTS

- CRUDE OIL
- FUELS
- PETROCHEMICALS
- NATURAL GAS
- ELECTRIC POWER



* kbd thousands of barrels per day
** kton-year thousands of tons per year
*** Ecopetrol S.A. employs more than 8,000 workers
**** MW megawatts

HYDROCARBONS CHAIN, AND NOW, THE ENERGY CHAIN

EXPLORATION AND PRODUCTION

ecopetrol · ecopetrol costa afuera colombia · ecopetrol PERMIAN · ecopetrol AMERICA · ecopetrol Brasil · ecopetrol méxico · hocol

TRANSPORT AND STORAGE

cenit · ODL · bicentenario · OCENSA · Oleoducto de Colombia

REFINING AND PETROCHEMICALS

ecopetrol · Refinería de Cartagena · esenttia · ecodiesel colombia s.a.

MARKETING AND DISTRIBUTION

ecopetrol · ecopetrol SINGAPORE · Invercolsa

TRANSMISSION AND INFRAESTRUCTURA

isa INTERCOLOMBIA

MILESTONES AND RECOGNITIONS

- **Acquisition of 51.4%** of the shares of interconexión Eléctrica S.A. ESP (ISA).
- **Incorporation of Ecopetrol Singapore Pte. Ltd.**
- **First in Latin America** to offset carbon in the marketing of crude oil.
- **Exceeded the GHG,** emission goal by 25%.
- **Inauguration of the San Fernando Solar Ecopark,** with an installed capacity of 61 MWp available capacity.
- **Ecopetrol adhered to the 1t.org initiative** of the World Economic Forum.
- **Ecopetrol completed 11 projects under the Works for Taxes Initiative,** benefitting nine (9) departments.
- **Ecopetrol was granted the Equipares Silver Seal** and was awarded the Inclusive Company Seal.
- **Included in the 2022 S&P Global Sustainability Yearbook** for the second consecutive year.

Message to our Stakeholders
(102-14)

I am pleased to present our 2021 Integrated Report, after a year of great achievements for Ecopetrol and its Group of Companies. It has been seven decades of great challenges to which we have responded with commitment, achieving historical records, with the firm purpose of generating value for all our stakeholders.

In 2021, we continue addressing unprecedented challenges. Ecopetrol has responded by prioritizing life and maintaining resilient operations that grow considering the challenges and opportunities of the energy transition, and that seek to be increasingly sustainable supported on solid corporate governance and the highest ethics and transparency standards.

Our lessons learnt in this trajectory have made us accelerate our path towards a more flexible, agile, and dynamic Ecopetrol that can quickly adapt to the constant changes faced by society and the industry.

We have embodied this purpose in our new 2040 Strategy **'Energy that Transforms'** approved in 2021 by the Board of Directors of Ecopetrol and presented to the market at the beginning of February 2022. The new strategy integrates the fundamental pillars of the 2020 strategy and implements the energy transition roadmap, as well as the six principles of the Cultural Statement, our higher purpose, and the long-term portfolio expected for the Company.

The strategy consists of four drivers that will further our vision in the next two decades:

- Growing **WITH THE ENERGY TRANSITION**
- Generating value **WITH TESG**
- Cutting-edge **KNOWLEDGE**
- Competitive **RETURNS**

This strategy is intended for Ecopetrol Group to continue growing and generating value in its businesses, in a competitive manner and considering the demands and opportunities of the context and the energy transition. This will be achieved by maximizing the value and competitiveness of our oil businesses, as well as ensuring the diversification of our portfolio and maintaining our commitment to sustainability and decarbonization.

Our operational, financial, and industrial safety results were exceptional in 2021. We stayed on the reactivation path thanks to our ability to generate sustainable value and respond quickly and timely to the conditions of the environment, which continues to be challenging after two particularly cumbersome years for the world.

It was precisely the committed and persistent work of the people who make up Ecopetrol that allows us today to generate exceptional financial results for 2021. **We managed to close the year with a net profit of COP 16.7 trillion, a consolidated income of COP 91.7 trillion, and an ebitda of COP 42 trillion (45.7% ebitda margin).** These figures, beyond conveying that we exceeded our expectations and goals, allow us to create well-being for all Colombians with a 2.5% contribution to the country's Gross Domestic Product (GDP).

Furthermore, this year we successfully conducted our first foreign public debt operation in the amount of USD 2 billion. This operation portrays the international markets' confidence in Ecopetrol's financial strength and in its prospects for the future.

We successfully conducted exploration activities such as Flamencos-2, Lorito A-1, and El Niño-1, as well as the discovery of a new field in Casanare, Liria YW12, which produces gas and light oil and is currently undergoing extensive testing, connected to production facilities. We also declared the marketability of the Boranda, Flamencos-1, and Tobo fields. The cumulative production of the exploration assets amounted to more than 1.2 million boe at the end of 2021 (4,517 boed on average), with 67% of the production corresponding to oil and 33% to gas.

At the international level, and in line with Ecopetrol Group's growth and geographic diversification strategy, our subsidiary, Ecopetrol Óleo e Gás do Brasil, acquired a 30% stake in block S-M1709 in the Santos basin in Brazil. The acquisition of this block, which will be operated by our partner Shell, is part of our interest in partaking in the highest-potential basins in the continent.

The Group's production was

679 thousand

barrels of oil equivalent per day (kboed).

Although we continue on the path towards recovery, we experienced a decrease compared to 2020 due to public order issues in Colombia, the hurricane season in the Gulf of Mexico, and restrictions associated with water management in the department of Meta.

Despite the above, I would like to highlight the normalization of the production impacted by the public order situation; the approval of the assignment of cross-shareholding interests with ExxonMobil in the Integral Research Pilot Projects in the Kalé and Platero Unconventional Oil Deposits in the municipality of Puerto Wilches (Santander); total record production of 50 thousand barrels of oil equivalent per day gross[1] in the Permian basin (USA) with our partner Oxy; and solid financial results in the gas and LPG strategy, with an ebitda close to USD 790 million.

In addition, we achieved the highest reserve replacement rate in the last 12 years, amounting to 2,002 billion barrels of oil equivalent (mboe) at the end of 2021.

In the transportation segment, we mobilized 1,010.61 kbod through our subsidiary Cenit and our transportation subsidiaries. The volume of crude oil mobilized using our transportation systems decreased by 10% compared to the previous year.

However, this situation was offset by the volume of refined products, which increased by 19.9% compared to 2020, mainly due to the economic recovery of the country.

Our refineries showed an outstanding performance, with a consolidated load of 353.6 kbd and an integrated gross margin of 10.24 USD/Bl, thanks to the stabilization of fuel demand. Esenttia, an Ecopetrol subsidiary, increased its petrochemical production to 500 thousand tons/year and was favored by the high demand for polyethylene in the Americas in 2021, allowing the company to grow its market share margin.

1. This refers to 100% of the production of the *joint venture*.

In terms of industrial safety, we had a record-high year with the lowest TRIF[2] in Ecopetrol's history. A recordable injury frequency rate of 0.44 was recorded this year across the Group, demonstrating our commitment to the lives and safety of our workers.

In 2021, we took on the challenge of being a leading company in the energy sector in the American continent, by consolidating our traditional business and being at the forefront of the energy transition to address climate change.

By acquiring 51.4% of the shares of Interconexión Eléctrica S.A. ESP (ISA) for COP 14.2 trillion, we concluded Ecopetrol Group's most relevant inorganic acquisition in its 70-year history. This transaction represents the meeting point of two successful paths traveled by ISA and Ecopetrol to strengthen both companies, to grow and be protagonists in the energy market, not only in Colombia but in the region, thereby solifidying the path towards electrification with low emission activities and with significant contributions to the decarbonization route.

This process was also strengthened by our actions aimed at incorporating more and more renewable energies into our self-generation capacity. The San Fernando Solar Ecopark came into operation providing 61 MWp of available capacity, and it is considered the largest renewable energy self-generator in the country. This will prevent the emission of approximately 508 thousand tons of CO_2 equivalent in the next 15 years. In addition, six new solar plants came into operation with an installed capacity of 0.46 MWp that began to supply energy to the same number of pumping stations of the Cenit pipeline transportation system.

This adds up to

112 MWp

of renewable energy capacity,

representing 8% of our energy matrix and making us the largest renewable energy self-generator in Colombia. Our goal by 2023 is to achieve at least 400 MWp renewable energy self-generation capacity.

Our subsidiary Cenit, and our subsidiaries Oleoducto de los Llanos (ODL) and Oleoducto Bicentenario (BIC), made steady progress in this regard by obtaining the "carbon neutral" certification from ICONTEC, thus adding to the efforts already advanced by ISA, whose Scope 1 and 2 operations are carbon neutral in all its businesses.

With these measures, we want to continue growing as a comprehensive energy group recognized for its sustainable growth and its commitment to environmental, social, and governance (ESG) issues, leveraged on technology and innovation (TESG). For this reason, within the framework of our commitment to TESG, we push forward decisively on different fronts:

We announced our commitment to achieve net zero carbon emissions by 2050 (Scopes 1 and 2). In this sense, Ecopetrol became the first company in the oil and gas sector in Latin America to set this ambitious goal. As an intermediate goal, by 2030, Ecopetrol Group will seek to reduce its CO_2e emissions by 25% (Scopes 1 and 2) compared to the baseline established in 2019.

We made progress in studies on other renewable energies such as wind and geothermal energy, as well as in the design of the Strategic Plan for the development of low-carbon hydrogen, for which we will conduct a pilot with a 50-kilowatt electrolyser in 2022 at the Cartagena refinery.

2. *Total Recordable Incident Frequency Rate*

With the purpose of achieving net zero carbon emissions by 2050, we ratified our commitment to the 2030 Agenda for Sustainable Development of the United Nations, including the Sustainable Development Goals (SDG) and the Paris Climate Accord. Our active participation in COP 26 in Glasgow allowed us to continue positioning Ecopetrol's efforts and learn first-hand about global expectations, in order to anchor these objectives in our strategy and increasingly in our daily work.

Our vision does not stop there. In view of our commitment to local development, through our lines of investment, **we benefited more than 100,000 students in different school programs,** we continued our support in the COVID-19 health emergency, **and we deployed initiatives to expand access to household public services for more Colombians, such as drinking water and gas.**

On this front, for example, we are advancing in projects to provide water access in the municipalities of Cúcuta, Barrancabermeja, Villavicencio, Guamal, and surrounding villages, and we completed projects in Puerto Gaitán, San Martín, Cantagallo, and Riohacha, benefiting more than 21,000 people in Colombia. Regarding social gas, we completed eight projects to facilitate access to residential gas by building grids, expanding coverage, establishing distribution and marketing lines, and developing plans for the mass use of this service, providing access to more of

6,100

GAS USERS.

Our commitment to social and economic inclusion continues to grow.

Our corporate culture became stronger as well. We strengthened our commitment to human rights and extended it to all our business relationships. In terms of diversity and inclusion, we obtained the Equipares Silver Seal certification, ANDI's inclusive companies' certification, and came in 4th in the National Ranking of Inclusive Companies of the Chamber of LGBT Merchants of Colombia (CCLGBT) and the Centro Nacional de Consultoría. These efforts, and many others in TESG, added Ecopetrol, for the second consecutive year, to the S&P Global Sustainability Yearbook 2022, differentiating us from our peers for our commitment to spearheading ESG. This recognition inspires us to continue working along this path to meet the expectations of our stakeholders and continue to position Ecopetrol Group as an energy group that transforms.

In 2022 we will continue consolidating our participation in the gas market. We will also seek to grow in diversified low carbon emission businesses, where ISA will play a fundamental role within Ecopetrol Group, as well as hydrogen, the incorporation of CCUS technology[3], and natural climate solutions.

Our involvement in drafting the recommendations of the Taskforce on *Nature-related Financial Disclosures* (TNFD) to manage natural capital related risks and opportunities will be of great relevance, as it portrays our commitment beyond Ecopetrol to issues such as biodiversity.

In addition to the foregoing, our challenge is also to consolidate our internationalization in Asia and the US, with the expansion of our crude oil and product marketing operations in these regions. Setting up our office in Singapore is part of the plan to meet this goal.

Ecopetrol's management efforts, challenges, and achievements of the year are collected in this 2021 Integrated Report, which would not have been possible without our Board of Directors, their strategic guidance for our sustainable growth, and the commitment of our employees to the principle of our Cultural Statement **"We Make the Impossible Possible".**

To them, my sincere gratitude and my appreciation for their dedication and commitment.

Felipe Bayón
CEO
Ecopetrol Group

3. Carbon Capture, Utilisation, and Storage

02
MANAGEMENT REPORT **2021**

About Ecopetrol S.A.

(102-5)

Ecopetrol S.A. (Ecopetrol, the Company) is a mixed economy company, with the Colombian State holding an 88.45% share. It is the head of Ecopetrol Group, made up of multiple companies in which it holds stakes directly or indirectly.

Three (3) types of companies can be identified within Ecopetrol Group:

Those in which Ecopetrol is the
MAJORITY SHAREHOLDER
and exerts direct or indirect control.

Those in which Ecopetrol engages in the
PURPOSE AND DIRECTION,
in addition to having control thereof; that is, those that make up the Ecopetrol Business Group.

Those in which Ecopetrol
HOLDS A SHARE.

Ecopetrol S.A. is currently listed on the Colombian Stock Exchange (BVC) and the New York Stock Exchange (NYSE).

Strategy

As of the approval of the 2020+ strategy in February 2019, Ecopetrol Group has made satisfactory progress in its implementation. In the last three (3) years, the 2020+ strategy fulfilled its purpose of generating adaptive growth based on competitiveness and sustainability, **focusing on three (3) fundamental pillars:**

- **Reserves and production growth**
- **Cash protection and cost efficiency**
- **Strict capital discipline**

Ecopetrol updated its strategy in a timely manner, thereby accelerating its pace towards a more flexible, resilient, agile, and dynamic Company, which adapts to the changes and expectations of the market and its stakeholders.

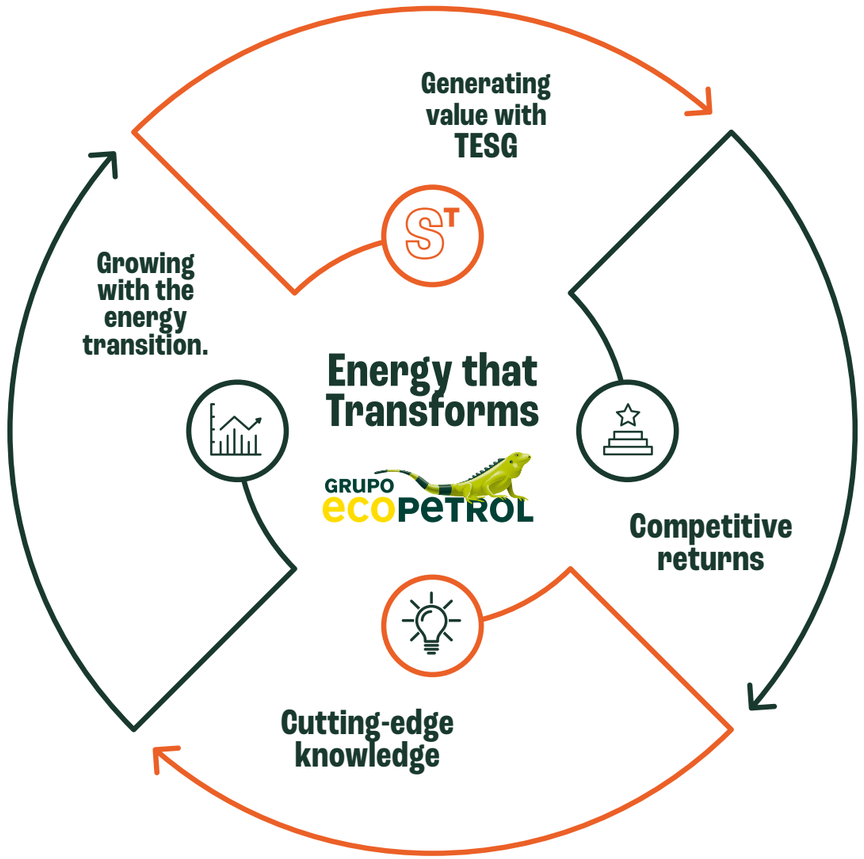
In December 2021, the Board of Directors approved **Ecopetrol Group's 2040 Strategy "Energy that Transforms,"** the first time the Company defined a strategy spanning longer than 10 years. This new strategy seeks to generate growth in the energy transition by maximizing the value and competitiveness of the oil business and accelerating the diversification of the portfolio. This while generating value with TESG, ensuring operation decarbonization, and leveraging on technology, innovation, and human talent to uphold competitive returns.

The 2040 Corporate Strategy is based on the three (3) pillars of the 2020+ Strategy, the four pillars of the Roadmap towards the Energy Transition[4], and the identity of the Company as an integrated energy group that participates in all segments of the hydrocarbon chain (exploration, production, transportation, refining, and marketing), and has linear infrastructure business unit, including energy transportation, roads, and telecommunications. Thus, the Company continues to embark on its diversification towards businesses associated with the decarbonization needs and with new opportunities arising from the energy transition related to the energy and infrastructure businesses.

4. 1) Continue strengthening the competitiveness of the oil and gas business; 2) Diversify the portfolio; 3) Accelerate and prioritize decarbonisation and, 4) Strengthen the TESG agenda.

The 2040 Strategy **"Energy that Transforms"** is a turbine made up of four (4) engines:

Graph 01.
2040 Strategy "Energy that Transforms"



Source: Vice presidency of Strategy and New Ventures

Growing with the energy transition.
This sets the stage for growth and value generation in the businesses of Ecopetrol Group, competitively, and in line with the new demands of the energy transition and of the environment. The two (2) purposes of this pillar are: Maximize reserves and the production value and diversify the Group's portfolio in energy and low-emission businesses.

Cutting-edge knowledge.
This includes all efforts to attract, develop, and retain talent, as well as the development of a comprehensive science, technology, and innovation (CT+I) strategy. In a cross-cutting way, it also adapts the organization of Ecopetrol Group by implementing digitization processes and adopting agility and innovation.

Generating value with TESG.
This responds to socio-environmental challenges and the need to achieve sustainable operations while recognizing and working hand in hand with stakeholders.

Competitive returns. This ensures the growth and value generation of Ecopetrol Group, even in low price environments, by focusing on the hydrocarbons´ core business and sustainable businesses.

The new 2040 Strategy of Ecopetrol Group seeks to meet four (4) financial objectives:

(i) **Ebitda growth.**

(ii) **Profitability and value generation maintaining a ROACE[5]** above the cost of capital.

(iii) **Sustainability** by maintaining a debt/ebitda ratio consistent with the investment grade.

(iv) ***Dividend payout between***

40 % and 60 %

(minimum 40%) in line with operating results, in three (3) planning scenarios: Stress test, Reference, and High Prices.

5. *Return on Average Capital Employed*

Towards an integrated energy Group with regional presence

(102-10)

ISA: New Ecopetrol Group subsidiary

For more than two (2) years, Ecopetrol evaluated, structured, and executed the acquisition of Interconexión Eléctrica S.A. ESP (ISA), the leading energy transmission group in the Western Hemisphere.

It is Ecopetrol Group's most relevant inorganic acquisition in its 70-year history, providing resilience to Ecopetrol by incorporating material, stable, and regulated returns (between 15% and 20% of the Group's ebitda) not associated with hydrocarbons. Furthermore, it offers scale and growth prospects in low-emission activities, thereby contributing to Ecopetrol's decarbonization.

On August 20th, 2021, the closing conditions were fully met for the Inter-administrative Contract entered into on August 11th of the same year with the Ministry of Finance and Public Credit (MHCP) for the acquisition of

569,472,561
SHARES OF ISA,

equivalent to

51.4%
of the outstanding shares of the company
(the "shares") and representing 100% ownership by the MHCP.

The transaction was closed with:

(i) Ecopetrol's payment to the MHCP of the agreed price of **COP 14,236,814,025,000** for all shares, at a rate of **COP 25,000** per share, and

(ii) the transfer of the shares to Ecopetrol S.A. as its new owner, with the respective entry in ISA's shareholder ledger by Depósito Centralizado de Valores de Colombia S.A.

CLOSING THE STAKE ACQUISITION IN ISA MARKED A MILESTONE IN THE DEPLOYMENT OF THE ECOPETROL GROUP'S STRATEGY, TURNING IT INTO A LEADING ENERGY TRANSITION CONGLOMERATE IN THE WESTERN HEMISPHERE.

ISA, a new Ecopetrol subsidiary, was founded as a corporation (or PLC) in Bogotá, Colombia, in 1967. Since then, it has become a multi-Latin company in Colombia, Brazil, Peru, Chile, Bolivia, Argentina, and Central America. ISA and its 46 companies operate and maintain electricity transmission networks, including the largest high-voltage transmission network in Latin America, and also engage in toll road concessions, telecommunications, and information and communications technology (ICT) businesses.

ISA is structured as a Colombian corporation and as a mixed public services company. As of December 31, 2021, Ecopetrol owns a

51.41%
stake, while other shareholders (including Colombian pension funds, international and local institutional investors, and retail shareholders) own the remaining

48.59%
of ISA's capital stock.

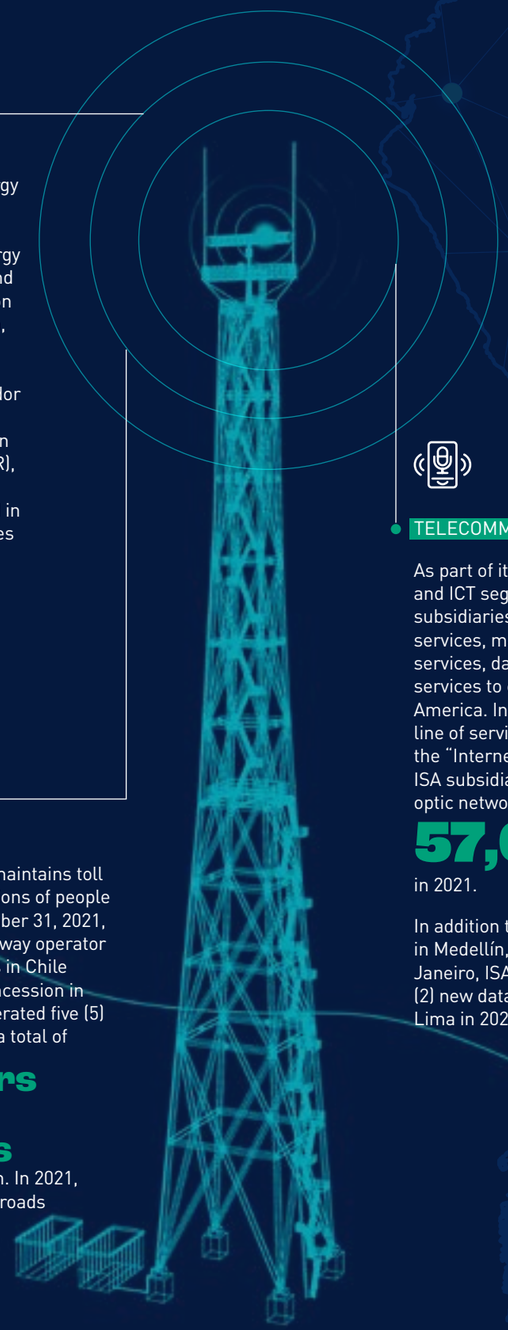
Most of its consolidated income derives from client contracts:

- from the regulated payments received by ISA and its consolidated subsidiaries operating in the Electricity Transmission Segment for making their electricity transmission assets available to the national interconnected systems in their countries of operation;
- from the income related to interconnection, dispatch, and coordination charges by the National Dispatch Center (CND) in Colombia and the administration services of the Wholesale Energy Market (MEM) in Colombia; and
- from the income recognized according to the degree of completion of the contractual activity in the electricity transmission business.

ISA's main activity is distributed as follows:

ELECTRICITY TRANSMISSION

ISA is the largest international energy transmission company in Latin America in terms of kilometers of power grids in operation. ISA's energy transmission companies operate and maintain a high voltage transmission network in Colombia, Brazil, Bolivia, Peru, and Chile, as well as some international interconnections operating between Colombia-Ecuador and Ecuador-Peru. In Central America, the company has a stake in Empresa Propietaria de la Red (EPR), a company incorporated under the laws of Panama and headquartered in San José, Costa Rica, which operates the Central American Electrical Interconnection System (SIEPAC).



HIGHWAY CONCESSIONS

ISA designs, builds, operates, and maintains toll road infrastructure connecting millions of people in Chile and Colombia. As of December 31, 2021, ISA was the largest interurban highway operator responsible for four (4) concessions in Chile and operating the Ruta Costera Concession in Colombia. In total, the company operated five (5) toll highway concessions, covering a total of

860 kilometers

in these two (2) countries, also with

137 kilometers

of new highways under construction. In 2021, 129.2 million vehicles transited the roads operated by ISA.

TELECOMMUNICATIONS AND ICT

As part of its telecommunications and ICT segment, InterNexa and its subsidiaries provide connectivity services, managed services, cloud services, data center and security services to clients throughout Latin America. In 2020, they added a new line of services based on analytics and the "Internet of Things" (IoT). These ISA subsidiaries also maintain a fiber optic network that totaled more than

57,000 Km

in 2021.

In addition to the existing data centers in Medellín, Bogotá, and Rio de Janeiro, ISA also incorporated two (2) new data centers in Santiago and Lima in 2020.

ISA in financial figures

*Expressed in trillions of Colombian pesos

Table 01.
Consolidated figures ISA

Consolidated financial figures	2021	Variation %	2020
Operating income	11.2	9.8	10.2
Net profit	1.7	-19.1	2.1
EBITDA	7.1	8.4	6.6
EBITDA margin	63.8%	-1.2	64.6%
Assets	61.7	13.8	54.2
Liabilities	39.6	16.2	34

Source: ISA

Table 02.
Individual financial figures

Individual financial figures	NET PROFIT
2021	1.7
Variation %	-19.6
2020	2.1

Source: ISA

Table 03.
Per Business figures

Per business figures	Income	% share	ebitda	% share	Assets	% share
Electric power*	8.7	77.6	5.8	81.8	48.2	78.2
Roads	2.1	18.7	1.1	15.5	12.1	19.5
Telecommunications and ICT	0.4	3.7	0.2	2.7	1.4	2.3
Total	**11.2**	**100**	**7.1**	**100**	**61.7**	**100**

*** Includes XM**

Source: ISA

Conexión Jaguar Program

Conexión Jaguar is the sustainability program developed by ISA and its companies together with its technical partners, South Pole and Panthera, to contribute to biodiversity conservation, climate change mitigation, the development of rural communities, and the connectivity of the jaguar's natural habitat (*Panthera onca*) in Latin America. The Program provides technical and economic support for the best forestry initiatives, in the hands of rural communities, to issue and market certified carbon credits under the highest international standards to finance conservation.

First results in Latin America:

Nine (9)
ongoing projects

Conservation or restoration actions deployed in more than
800 thousand hectares

Potential to reduce emissions in more than
Six (6) million
tCO_2e

Improvement of soil and water conditions

Support in various activities conducted with approximately
320 families
in Colombia, Peru, and Brazil

THE PROGRAM SEEKS TO CONTRIBUTE TO THE GLOBAL GOALS OF THE 2030 AGENDA, SUCH AS THE PARIS CLIMATE ACCORD, THE BIODIVERSITY CONVENTION, AND THE SDGS.

CONEXIÓN JAGUAR | isa

IN ITS FIVE (5) YEARS OF OPERATION, CONEXIÓN JAGUAR HAS ACHIEVED IMPORTANT NATIONAL AND INTERNATIONAL RECOGNITION AS AN INNOVATIVE PROGRAM AND THE BEST CORPORATE EMISSIONS COMPENSATION PROGRAM.

To extend the actions and benefits of the Program, ISA invites new partners interested in multiplying the benefits and positive impacts in Latin America to participate. The organizations that are committed to these objectives and that are willing to contribute with economic or technical resources for the expansion and strengthening of the Program are invited as Cooperators. **The terms of cooperation in Conexión Jaguar were defined for the Ecopetrol Group in 2021,** with the Group starting to support conservation initiatives in 2022 and this formal relationship ending in 10 years.

Thanks to its outstanding sustainability performance, ISA has been a member of the **Dow Jones Sustainability Index (DJSI)** for seven (7) consecutive years, a member of the Dow Jones Sustainability Index MILA Pacific Alliance for four (4) consecutive years, and it was included in **S&P Global's 2021 Sustainability Yearbook** for the fifth year in a row with the bronze medal.

03

RESULTS FOR FINANCIAL YEAR 2021

International market environment for crude oil and petroleum products in 2021

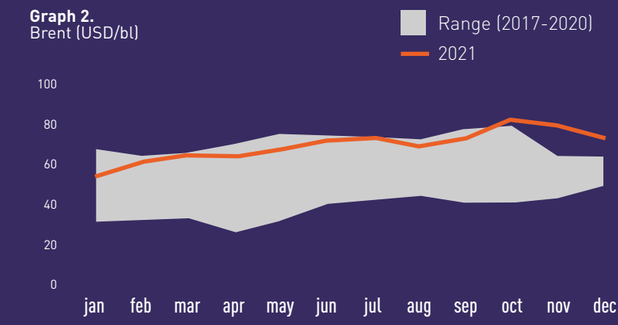
The Brent price trended upwards for much of 2021. Oil demand recorded a significant recovery, with about 4.9 million barrels per day (mmbd) more than in 2020.

Crude oil consumption benefited from the progress in coronavirus vaccinations, where the global population percentage with at least one dose grew from less than **1% to 58%.** Demand was also favored by ample global liquidity (most central banks kept their interest rates to a minimum) and the strong fiscal stimulus implemented in some economies (in the US, the fiscal stimulus in 2021 was at 10% of GDP and in the Euro Zone at 6% of GDP).

Despite the rapid recovery in demand and favorable crude oil prices (the Brent price has remained above 60 USD/barrel since February), **supply only grew by 1.6 mmbd between 2020 and 2021.** The Organization of Petroleum Exporting Countries (OPEC) and its partners kept their production under control, favoring a continuous reduction of the inventories accumulated in 2020. **OPEC only returned to the market in 2021 with 0.7 mmbd of the 4.2 mmbd it withdrew from the market in 2020.** Outside OPEC, output growth was exceptionally low (strict capital discipline). Supply from the US, the world's largest producer, remained practically stable at around 11.2 mmbd in 2021, as most companies prioritized the payment of debt and dividends over the CAPEX.

This low growth in supply allowed the crude oil market to reduce inventories globally at a rate of 2.4 mmbd (the crude oil market was in deficit throughout 2021). This reduction was very rapid, allowing companies to not only drain the inventories accumulated in 2020 (which grew at a rate of 1.8 mmbd), but also to bring the inventories of OECD (Organization for Economic Cooperation and Development) countries to levels unseen since 2014. **In this context, Brent showed a rapid recovery, reaching an average of 71 USD/barrel in 2021, far exceeding the 2020 average of 43 USD/barrel.**

Graph 2.
Brent (USD/bl)



Source: Bloomberg

Refineries also saw recovery in their margins. The normalization of land mobility and the favorable flow of freight transport, which continued to benefit from expenditures on goods, pushed up gasoline and diesel differentials (cracks) for gasoline and diesel (jet fuel remained somewhat weak as demand has been slow). **The gasoline differential vs. Brent in the Gulf Coast stood at 15.6 USD/bbl in 2021, exceeding the 4.1 USD/bbl in 2020, while the diesel crack stood at 13.7 USD/bbl in 2021, above the 7.0 USD/bl averaged in 2020.** It is worth mentioning that these cracks referenced to the American market were also supported by the higher cost of renewable fuel blends given that the regulator took longer to determine the blend percentages for 2020 and 2021, thereby **increasing market uncertainty (the RVO price - renewable volume obligation- went from 2.5 to 6.8 USD/bl in these two (2) years).** Refineries also benefited from a less expensive diet, given the increased supply of heavy and intermediate crudes (OPEC increasing its supply and Canada's production reaching a record high by the end of 2021).

The global refining margin calculated by Wood Mackenzie, which is the average margin of typical refineries in the United States, Europe, and Asia, stood at **3.1 USD/bbl** for all of 2021, exceeding the low margin of **1.0 USD/bbl in 2020, although still below the 2019 record of 3.2 USD/bbl** (these margins discount the RVO price of the American market.

Gas and LNG market environment in 2021

Gas experienced a significant increase, comparing the average prices of December 2020 to December 2021.

The JKM indicators for Spot LNG governing prices in Asia and the TTF in Europe grew by more than

590%.

In Asia, demand increased due to the accelerated recovery of natural gas end users and an LNG supply limited by plant maintenance activities. On the other hand, Europe experienced a strong winter and low inventories in natural gas reserves, which led to price levels close to

USD38/Mbtu,

in relation to the Henry Hub, a benchmark for the Americas, which grew by 70%, amounting to a price of

USD 3.86/Mbtu.

By observing gas supply behavior, many challenges became evident. First, the aftermath of a 2020 affected by the pandemic and low prices, delayed several liquefaction plant projects, thus preventing them from coming into operation. Low temperatures in southern US in February led to a significant decrease in supply, as gas pipelines and valves became frozen. In addition to maintenance and unexpected interruptions in Australia, Norway, Malaysia, and Algeria, which contributed to a limited LNG supply.

Given the demand for natural gas, Europe began to implement stringent requirements to replenish its low levels of natural gas inventories as of April, after a winter season with colder and longer frosts in 2020-2021, which represented higher electrical energy demands for heating, a deficit that could have been covered with imports from Russia. However, this country faced difficulties in supplying natural gas due to infrastructure improvement works and prioritization in meeting domestic demand, thereby contributing to the strengthening of natural gas prices in 2021. Moreover, China was the country that grew the most in its requirements, leveraged by its manufacturing industry.

THE HIGH LNG PRICE TREND ALSO HAD AN IMPACT ON CONSUMPTION SECTORS, WHICH TRIGGERED THE SEARCH FOR OTHER FUEL ALTERNATIVES.

Colombian economic environment in 2021

According to the National Administrative Department of Statistics (DANE), **the Colombian economy grew**

10.6% in 2021,

one of the highest in the region (in 2020, the economy contracted by 7.0%).

This growth was mainly driven by a

14.6%

increase in private consumption (in 2021, more than 1.3 million jobs were recovered). Public consumption also contributed favorably to GDP, growing at a rate of

12.1%.

For its part, the external sector contributed negatively to GDP growth, with imports growing much faster than exports (27.5% vs. 14.42% in 2021), thereby expanding the current account deficit and pushing up the exchange rate. The external sector was affected by an oil and gas production that fell by 5.7% in 2021.

This strong recovery in consumption has deteriorated the external accounts of the economy (the current account deficit for 2021 exceeds 5% of GDP) and has pushed up inflation (5.6% in 2021, the highest rate since 2016). This, together with the high fiscal deficit of 2020 and 2021, escalated the financing needs of the Colombian economy, leading to higher indebtedness and greater vulnerability (Colombia lost its investment grade in 2021). *Banco de la República*, Colombia's Central Bank, in response to this situation, began to raise interest rates at the end of 2021 so as to moderate consumption (the main reason for the increase in the external deficit) and inflation.

Contribution of the oil sector to the Gross Domestic Product (GDP) of Colombia

The behavior of GDP in the mining sector in 2021 showed a slight increase

0.4%

compared to the previous year, due to a

-5.6%

contraction of oil and gas extraction activities and a growth in the extraction of bituminous coal and lignite (+12.1%) and metal ores (+10%), and the exploitation of other mines and quarries (+5.5%).

The contraction in oil and gas extraction is mainly due to low crude oil production, which stood at 736 kbd in 2021 compared to the 781 kbd the previous year. For its part, the gas production marketed in 2021 recorded an increase of more than

4%

compared to the previous year.

Ecopetrol's growth and contribution to the national GDP

Ecopetrol's contribution to the national GDP accounted for

2.5%.

This lower participation compared to the previous year derives mainly from the impact on production due to the national strike and the delays in the issuance of environmental permits and licenses, which reduced crude oil and gas production to an average of 679 kbed per year compared to the 697 kbed in 2020. (See Table 04).

Table 04.
Contribution of the oil sector to GDP
(billions of constant Colombian pesos in 2015)

National GDP	**Oil extraction GDP**
905,639 2021	**24,909** 2021
819,114 2020	**26,390** 2020
Oil contribution to GDP	**Ecopetrol´s contribution to GDP**
2.8 % 2021	**2.5 %** 2021
3.2 % 2020	**2.9 %** 2020

Source: DANE, Ministry of Mines and Energy and Ecopetrol

Financial strategy and results
(201-1) (201-4)

ECOPETROL S.A. OBTAINED RECORD RESULTS IN 2021, WITH A CONSOLIDATED INCOME OF COP 91.7 TRILLION, A NET PROFIT OF COP 16.7 TRILLION, AND AN EBITDA OF COP 42 TRILLION (45.7% EBITDA MARGIN)

Ecopetrol Group obtained outstanding financial results in 2021, reflected in a net profit of COP 16.7 trillion, 10 times higher than in 2020, and an Ebitda of COP 42 trillion, both record-high indicators. This performance was leveraged by:

(i) A favorable price environment and outstanding commercial management efforts to materialize better spreads for crude oil, related products, and petrochemicals.

(ii) Higher product and gas sales volumes associated with the a higher demand thanks to the country's economic reactivation.

(iii) A solid operating performance in all its business segments despite the public and social circumstances in the country.

(iv) Permian's contribution to production.

(v) The acquisition of ISA.

Accumulated revenues at the end of 2021 recorded an increase compared to 2020, as a result of a higher weighted average sales price of crude oil, gas and products, higher sales volume, higher transportation revenues, and increased revenues thanks to the consolidation of ISA after its acquisition.

Cost of sales in 2021, including variable and fixed costs, also increased compared to 2020, as a result of higher purchases of crude oil, gas, and products, higher procured services, maintenance activities, operating supplies, and other operational activity costs due to the execution of more activities associated with the economic reactivation and the consolidation of ISA's results. The foregoing was partially offset by a higher valuation and an increase in the Group's crude oil and product inventories.

Operating expenses increased due to:

Higher provisions associated mainly with environmental aspects and the public works contribution process.

More exploration activities associated mainly with seismic in Brazil, updated costs for abandoning dry wells, and the recognition of exploration activities in unsuccessful wells.

The consolidation of ISA.

More social investment projects, especially the one undertaken for the International Mission of Wise Men for the advancement of science, technology, and innovation, convened by the National Government and the communities, among others.

Financial expenses increased mainly due to:

- HIGHER FINANCIAL COSTS
  arising from the new debt acquired to finance the purchase of ISA,
- LOWER FINANCIAL INCOME
  due to the valuation and returns on the securities portfolio, and
- HIGHER FINANCIAL EXPENSES
  due to the incorporation of ISA's net financial results, including interest, exchange differences, financial returns, and others.

Investment Analysis

In 2021, Ecopetrol Group executed capital investments for a total of

USD 8.024 billion.

Including organic investments for

USD 4.351 billion

and inorganic investments (purchase of ISA) for an equivalent of

COP 14.2 trillion
(USD 3.673 billion).

THIS IS THE GROUP'S HIGHEST LEVEL OF INVESTMENT IN THE LAST SIX (6) YEARS.

Of the total organic investments in the oil and gas business,

78%
were allocated to Colombia, and the remaining

22%
to the United States, Brazil, and Mexico.

The factors that explain why Ecopetrol Group's execution of organic investments is lower than initially expected include:

Efficiencies in the maturation and project execution phases, mainly in development and production projects.

Restrictions related to public order situations and the impact of COVID-19 on global supply chains, thus affecting the normal evolution of the project supply process.

Longer administrative procedures, which mainly affected the activities in Piedemonte.

Blockades in the Rubiales, Caño Sur, La Cira, and Llanito fields.

The investments focused on expanding the gas chain represented 7% of the investments made throughout the year and were mainly impacted by the delay of activities in Piedemonte due to administrative procedures.

For its part, ISA's investments amounted to:

USD 1.108 billion,
in 2021, mainly concentrated in the energy transmission business with

86%
(USD 955 million), while roads and telecommunications represented

12%
(USD 126 million)

And

2%
(USD 27 million), respectively. Brazil and Colombia accounted for

49% and 18%
of total investments, respectively, and the remaining

35%
corresponded to investments in Chile and Peru, mainly.

Table 05.
Investments by Segment

Million (USD)	Ecopetrol S.A	Affilates and Subsidiaries	Total 12M 2021	% Share
Production	1,474	735	2,209	68.1%
Downstream	228	198	426	131%
Exploration	86	122	208	6.4%
Midstream*	0	306	306	9.4%
Corporate**	94	0	94	2.9%
Total excluding ISA	**1,882**	**1,361**	**3,243**	**100.0%**
Energy Transmission	0	955	955	86.2%
Toll Roads	0	126	126	11.4%
Telecommunications	0	27	27	2.4%
Total ISA	0	**1,108**	**1,108**	**100.0%**
Total	**1,882**	**2,469**	**4,351**	**-**

* Includes total amount of investments in each of the subsidiaries and affiliates of Ecopetrol Group (both controlling and non controlling interests)
** Includes investments in energy transition projects.

Source: Corporate Vice Presidency of Finance

Update of the 2022-2024 Business Plan

The Ecopetrol Group updated its 2022-2024 business plan, which focuses on profitable production growth under the framework of the energy transition and ISA's (Interconexión Eléctrica S.A.) 2030 Strategic Plan.

The plan contemplates organic investments for 2022 in the amount of

USD 4.8 to USD 5.8 billion.

OF THE TOTAL INVESTMENT,

70%
% will go to projects in Colombia and the remaining

30%
to projects in :

14 %
US

Peru
5 %

8 %
Brazil

3 %
Chile

The goal of the plan is to continue growing the exploration and production business (E&P), to which

63%
of the investments will be allocated, with a focus on projects with greater contributions to production and reserves and improved recovery technologies. The economic evaluation of these projects includes the cost of greenhouse gas (GHG) emissions, calculated using the CO_2 shadow pricing methodology.

20% of the plan's investments will be allocated to the execution of ISA projects, both in Colombia and abroad, in the energy transmission, road, and telecommunications businesses.

In terms of Unconventional Oil and Gas Reservoirs, more than

USD 700 million

in investments are expected to continue expanding production activities in the Permian Basin in Texas, USA. In addition,

USD 20 million

investments will be made in the Kalé and Platero PPII Comprehensive Research Pilot Projects in Valle Medio del Magdalena in Colombia.

In line with the Group's energy transition and TESG objectives, nearly

USD 50 million

will be invested in the decarbonization agenda in 2022, including the new competitive renewable energy and gas utilization projects that are part of the **Roadmap to advance towards compliance with the goal of reducing 25% of CO_2e emissions generated by the operations by 2030** and becoming a net-zero emissions company by 2050 for Scopes 1 and 2.

Furthermore, the plan includes investments of more than

USD 200 million

million in water management projects, nearly

USD 30 million

million in fuel quality improvement projects, and

USD 6 million

in the development of pilot projects and green and blue hydrogen studies for refinery and mobility applications, among others.

The plan contemplates funds for the social investment program close to COP 1.5 trillion between 2022 and 2024, in order to close social gaps and boost the economic reactivation, development, and wellbeing of the communities, with strategic infrastructure, public services, education, sports and health, rural development, entrepreneurship, and business development projects. **Furthermore, the Company will continue providing resources to address COVID-19-related needs in its areas of operation and in the communities in the areas of influence.**

The organic investment plan will be financed with own resources and will not require marginal leverage under a Brent scenario of USD 63 per average barrel for the year.

THE GROUP EXPECTS TO MAINTAIN A GROSS DEBT/EBITDA RATIO OF LESS THAN 2.5 TIMES BY 2022 AND LESS THAN 2.2 TIMES BY 2024.

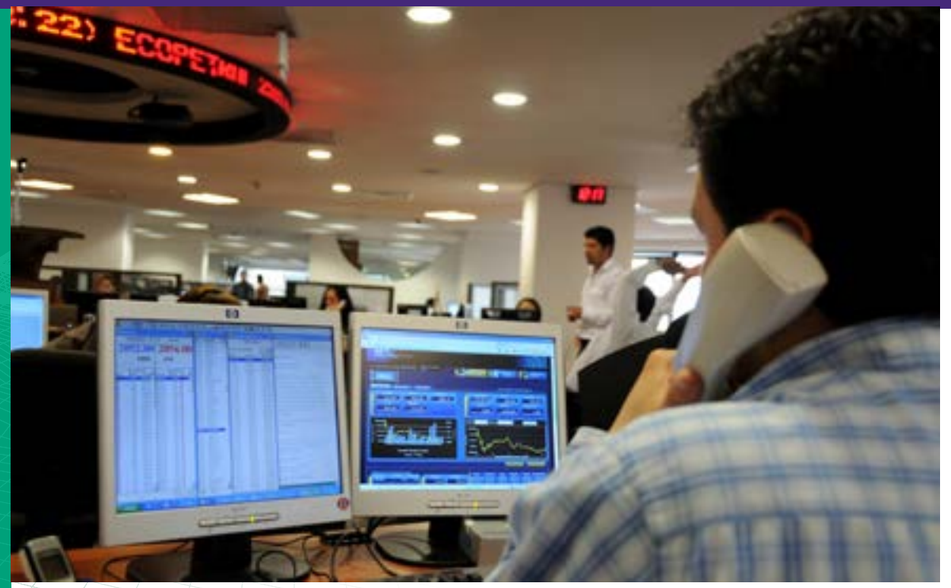
Some of the most relevant operational and financial goals of the 2022-2024 plan are:

Production levels between 700 and 705 thousand barrels of hydrocarbons per day in 2022 (81% oil and 19% gas), with a growth potential to reach production levels close to 733 thousand barrels of hydrocarbons per day by 2024.

Joint load of the Barrancabermeja and Cartagena refineries between 340 and 360 kbpd, amounting to 427 kbpd by 2024, in an expected scenario of recovery in demand and refining margins.

Volumes transported in excess of one million barrels per day, in line with the country's production expectations and the demand for refined products.

Goal of incorporating renewable energies for own consumption between 400 – 450 MVp by 2024.



04 FINANCIAL RESULTS

(201-1) (201-4)

Balance sheet

The Group's assets amounted to

COP 244.2 trillion

with an increase of

COP 104.8 trillion

compared to 2020, mainly due to;

The consolidation of 100% of ISA's assets and the recognition of the difference between the fair value and the book value of its net assets, in compliance with IFRS;

The increase in Capex and translation effect of subsidiaries using currencies other than the Colombian peso, offset by depreciation for the year;

Increased accounts receivable in the Fuel Price Stabilization Fund – FEPC;

Higher inventory stock due to sales of crude oil in transit, restrictions in TLU2, and higher prices; and

Higher current and deferred taxes thanks to better results.

THE GROUP'S LIABILITIES STOOD AT

COP 150.5 trillion,

WITH AN INCREASE OF

COP 66.9 trillion.

Mainly due to:

The consolidation of 100% of ISA's liabilities;

The financing for USD 3.7 trillion for the acquisition of ISA;

Increased accounts payable and other liabilities associated with more activities being deployed and increases in oil prices; and

Higher provisions associated with the update of Abandonment Costs and environmental provisions.

EQUITY AMOUNTED TO COP 93.7 TRILLION, OF WHICH 71.7 TRILLION CORRESPONDS TO EQUITY ATTRIBUTABLE TO ECOPETROL SHAREHOLDERS AND COP 22.0 TRILLION TO NON-CONTROLLING SHAREHOLDERS.

Detailed information on Ecopetrol's financial statements (consolidated and non-consolidated) can be found on the following link.

Financial indicators

The results of the financial indicators in 2021 were as follows:

Liquidity Indicators. These correspond to the resources required by Ecopetrol Group to operate in the short term, maintaining a margin to cover cash fluctuations as a result of current asset and liability operations.

At the end of 2021, current assets increased by

126%

compared to the previous year, mainly due to:

(i) **The increased balance of cash and cash equivalents;**

(ii) **Increased accounts receivable, mainly with the Fuel Price Stabilization Fund – FEPC; and**

(iii) **Higher level of inventories. The foregoing, given the higher operational activity throughout the year and higher market prices, which translate into better results for the Group.**

In addition, current liabilities grew by

65%,

arising mainly from higher financial obligations, commercial accounts, other accounts payable, and current taxes.

Indebtedness indicators. This represents the proportion of the company's investment financed with debt, that is, with third-party resources.

Total backed liabilities with third parties with respect to **the level of assets represented 62% in 2021 and 60% in 2020.** Similarly, the concentration of short-term indebtedness was 20% and long-term indebtedness 80%.

Profitability indicators. The Ebitda margin for 2021 stood at 45.7% compared to 33.7% in 2020. The Ecopetrol Group's return on assets in 2021 was

9.9%,

recording an increase compared to 2020. These increased indicators are mainly due to higher results in all operating segments in 2021 compared to a 2020 impacted by the pandemic.

Activity indicator. As a result of the above, the company's activity index stood at 0.38 in 2021 (compared to 0.36 in 2020).

Economic value generated and distributed

(201-1) (WEF 18) (WEF 21) (WEF 32E)

The economic value generated and distributed illustrates the basic way in which an organization generates wealth for stakeholders. The economic value generated corresponds to the company's income.

For its part, the economic value distributed includes operating costs, employee salaries and benefits, payments to capital providers, payments to the government, and social investment (see table 06).

Table 06.
Economic value generated and distributed – Ecopetrol Group (COP pesos)

Economic value generated

2020	Income	2021
50,026,561		**92,147,671**

Economic value distributed

Economic value	2020	2021
Operating costs (Cost of sales and Operating expenses)	**43,014,343**	**62,183,496**
Employee salaries and (expense)	**1,968,585**	**1,577,109**
Payments to capital providers	**2,828,361**	**6,104,841**
Payments to the Government	**19,389,423**	**16,771,372**
Investments in the community	**226,295**	**199,056***
Economic value distributed	**67,427,007**	**86,835,877**

Source: Corporate Vice Presidency of Finance.

* The figure was adjusted to millions of pesos.

Financial assistance received from the government
(201-4)

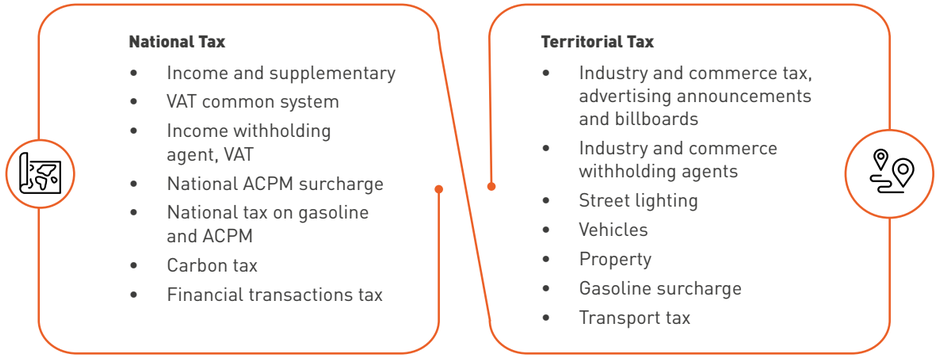
Current tax regulations do not contemplate tax breaks applicable to the Company. On the other hand, tax regulations contemplate tax credits that can be used by the Company to determine income tax. As of December 31, 2020, Ecopetrol has accrued **COP 668 billion in tax credits,** which will be used to determine income tax payable in 2021.

On the other hand, no financial assistance was received in 2021 from Export Credit Agencies (ECAs).

Transfers to the Nation

Ecopetrol is one of the largest national and territorial taxpayers in Colombia. Its tax policy is designed to comply with its legal obligations under current regulations and obtain the highest tax benefits for the Company. The taxes payable by Ecopetrol are summarized in Table 07.

Table 07.
Taxes payable by Ecopetrol



Source: Corporate Vice Presidency of Finance

The value paid by Ecopetrol includes the taxes payable by the Company and the tax withholdings or collections applied to third parties and turned over to the different tax authorities in its capacity as withholding agent.

THE INDIVIDUAL AND CONSOLIDATED EFFECTIVE TAX RATE FOR ECOPETROL IN 2021 WAS 28.8% AND 38.5%, RESPECTIVELY.

Table 08.
National and territorial taxes and transfers paid (in COP millions) by Ecopetrol S.A.

TAX TYPE	2017	2018	2019	2020	2021	Purpose
OWN TAXES						
Income tax	372,438	272,763	-	446,316	-	Nation
Self-withholding for equity - CREE	75,130	-	-	-	-	Nation
Income self-withholding tax	1,407,033	5,094,734	2,172,632	1,728,724	2,795,957	Nation
Equity/wealth tax (in force until 2017)	147.168	-	-	-	-	Nation
Gasoline and ACPM national tax	2,706	45	45	31	30	Nation
Carbon tax (in force as of 2017)	556	619	1,128	446	800	Nation
National ACPM surcharge	40	29	26	18	16	Nation
Sales tax	865,288	765,949	756,350	-	-	Nation
Industry and commerce tax	136,819	136,012	167,124	165,289	149,353	Municipalities
Property tax	22,801	22,641	22,439	20,763	21,184	Municipalities
Transport tax	113,412	73,786	77,267	163,553	166,936	Municipalities
Financial transactions tax	95,579	137,975	142,312	128,230	135,793	Nation
Vehicle tax	182	239	173	92	95	Municipalities
Lighting tax	13,775	10,590	11,646	19,374	40,534	Municipalities
Gasoline surcharge	5	6	5	2	2	Departments/ Municipalities
SUBTOTAL OWN TAXES	**3,252,932**	**6,515,388**	**3,351,147**	**2,672,838**	**3,310,699**	

TAX TYPE	2017	2018	2019	2020	2021	Purpose
THIRD PARTY COLLECTIONS						
Gasoline and ACPM national tax	1,181,870	983,425	1,188,018	954,854	1,303,416	Nation
Income/VAT/stamp withholding tax	639,167	985,174	1,060,373	1,175,564	1,328,934	Nation
National pro-university stamp	-	-	3,132	675	2,063	Ministry Of Education - Nation
Construction contribution (in force as of 2020)	-	-	-	688	14,942	Ministry Of Interior
COVID-19 Solidarity tax withholdings	-	-	-	45,216	-	Nation
National ACPM surcharge	44,278	49,658	50,870	31,594	26,690	Nation
Carbon tax (in force as of 2017)	345,762	224,730	363,930	235,123	264,210	Nation
Industry and commerce withholding tax	35,495	46,791	68,940	77,870	230,873	Municipalities
SUBTOTAL TAXES COLLECTED FROM THIRD PARTIES	2,246,572	2,289,778	2,735,263	2,521,583	3,171,128	
TOTAL	5,499,504	8,805,166	6,086,410	5,194,421	6,481,827	

Source: Corporate Vice Presidency of Finance

Ecopetrol Group's contribution to the Nation in 2021 represented transfers effectively paid in the amount of

COP 16.8 trillion,

as follows:

DIVIDENDS
COP 0.6 trillion,

TOTAL TAXES
COP 10.6 trillion

(includes taxes born by the company and tax withholdings or collections applied to third parties and turned over to the different tax authorities in its capacity as withholding agent), and crude oil and gas royalties and purchases from the ANH

COP 5.6 trillion.

Evolution of company shares

In Colombia

The Colombian Stock Exchange (BVC) experienced an appreciation during 2021, in line with the improved performance of crude oil prices. The Brent increased

50%
last year, growing from

USD 52/bl
at the beginning of 2021 to

USD 78/bl
at the end of the year; however, the COLCAP index, the main reference of the Colombian Stock Exchange, had a negative appreciation of 2% during 2021.

Ecopetrol's share price closed the year at

COP 2,690,

with a 20% appreciation.

The stock hit a 2021 high of

COP 2,960

on Oct. 15th, and a low of

COP 2,030

on January 29th.

Click on the following link to see the detailed behavior of the stock in the BVC.

Evolution of the ADR on the New York Stock Exchange

Ecopetrol's ADR (*American Depository Receipts*) closed at

USD 12.89.

Although oil and gas companies showed positive performance in 2021, the ADR recorded a negative valuation of -0.15%. The ADR reached a maximum of

USD 15.69

on October 15th and a minimum of

USD 11.38

on January 29th.

Ecopetrol's ADR behavior is shown in the following link.

Total Capitalization

Table 09 shows Ecopetrol's market capitalization as of December 31, 2021.

Table 09.
Total Capitalization

41,116,694,690
NUMBER OF SHARES

COP 2,690
SHARE PRICE (December 31, 2021)

COP 110,603,908,716,100
MARKET CAPITALIZATION (COP pesos)

Source: Corporate Finance Vice Presidency

Tax issues

Ecopetrol Group's Tax Policy is published at the company´s website and can be found in the following link.

The main aspects that it contains are the following:

- Commitment to complying with all national and international tax obligations in a timely manner and pursuant to current legislation.
- Ecopetrol's strategy is not to make aggressive or risky fiscal decisions that could question its tax returns.
- The Board of Directors of Ecopetrol S.A. and of the different Group companies will be informed about the main tax implications of their operations or matters subject to their approval, particularly when they constitute a relevant factor for decision-making.
- In order to optimize the tax treatment for the different operations, the rules set forth in the different agreements shall apply to avoid double taxation, if any.

Relevant information

ALL RELEVANT INFORMATION DISCLOSURE OBLIGATIONS IN COLOMBIA AND ABROAD WERE MET.

For more information, go to Chapter 10 of the Corporate Governance Report: Information transparency, fluency, and quality.

Good Tax Practices

Documentation and standardization of the Group's tax planning.

Ecopetrol employs a transfer pricing guide that ensures that the operations, agreements, and/or contracts entered into between the affiliates and subsidiaries of the Group take place under market conditions, avoiding tax base erosion.

The Company does not use structures or the interposition of instrumental companies through tax havens or territories that do not cooperate with tax authorities without a real or valid business reason.

Monitoring and Control

Update, publish, and socialize the tax planning memorandum with all Group companies every time the National Government enacts a regulation that affects its guidelines.

Hold quarterly committees with the Group companies to review the application of benefits and update tax issues.

Report relevant aspects such as the behavior of the effective tax rate, the relevant transactions that affected it, a comparative table with the immediately preceding period, the effect of the last tax reform on the Group's rate, among others.

Main aspects of Ecopetrol's tax planning

1 Use of tax benefits contemplated in current regulations:

- Reduction of the presumptive income tax rate
- VAT discount on the acquisition, construction, etc., of real productive fixed assets
- 50% discount of the industry and commerce tax (ICA) actually paid in the year
- Tax benefits for the use of alternative energies
- Optimize the benefit of carbon credits
- Other

2 Active participation in structuring the tax definitions for the Group's new businesses.

3 Notification of changes in the tax legislation to the different company areas and subsidiaries.

4 Work hand in hand with the MHCP, the Ministry of Mines and Energy (MME), and the National Tax and Customs Administration (DIAN).

5 Hold Ecopetrol Group's Tax Committee.

Tax risks

Ecopetrol has identified some tax risks that could lead to business losses, if materialized, as well as the payment of penalties and default interest to tax authorities.

The main risks are:

1 Changes in the tax legislation in the countries of operation of the Company.

2 Adopt aggressive tax positions that may trigger disputes with the tax authority.

3 Changes in the existing tax doctrine that create disputes with tax authorities.

The Company risks map and the procedure to assess the economic impact associated with the risks can be consulted on the following link.

05
ECOPETROL'S OPERATION

New businesses

The New Business process establishes a general framework to manage new investment and divestment opportunities of Ecopetrol Group. The Corporate Strategy and New Ventures Vice Presidency leads and works hand in hand with the different business units to ensure the processing of new business opportunities and their alignment with the Company's Business Plan. This is achieved by completing quality transfers to materialize the value proposition of each opportunity, rotating Ecopetrol's portfolio, as well as that of its affiliates and subsidiaries.

New Businesses are operations aimed at creating value and aligned with Ecopetrol Group's Strategic Plan in accordance with the parameters for new corporate businesses and new upstream businesses.

Ecopetrol – Parex agreement under the Arauca Production Agreement and the E&P Llanos 38 contract

Agreements were signed with Parex Resources in July 2021 for this Canadian company to take over operations in the Arauca and Llanos 38 blocks. These consisted of **50%** shares in production and reserves for **Ecopetrol** and **50%** for **Parex**. The process of transferring Ecopetrol's stake in the Llanos 38 block is in its final phase. On the other hand, reactivation activities in the area have been advancing since July. Initial activities in the Llanos 38 block will focus on the Califa 1 exploration prospect, which is expected to be drilled in 2022. Additional 3D seismic surveys will also be acquired to further evaluate the potential of the area.

Meanwhile, drilling activities will continue in **two (2) additional development wells** in the Arauca block, as well as the reactivation of production.

Round 17 Brazil

Ecopetrol S.A., through its subsidiary, Ecopetrol Óleo e Gás do Brasil, agreed to a **30%** stake, together with operator Shell, which will have a **70%** stake, in the SM-1709 block, spanning across a surface area of 685 Km^2 in the Santos basin in Brazil. This allocation occurred during Round 17 conducted by the ANP (Agência Nacional do Petróleo, Gás Natural e Biocombustíveis) on October 7th, 2021, with a **bonus proposal of BRL 6,560,000** (equivalent to about **USD 1.26 million**) and a Minimum Exploration Program of **107 units.**

The allocation of this block in the Brazilian offshore, together with a world-class company such as Shell, is aligned with Ecopetrol's growth strategy focused on high-potential basins such as Santos in Brazil.

2021 ANH Round

Ecopetrol submitted offers for five (5) blocks during the 2021 Colombia Round organized by the National Hydrocarbons Agency (ANH), which included blocks proposed by the entity and other areas nominated by industry companies. Of the five (5) offers submitted, four (4) correspond to Ecopetrol S.A. and one (1) to its fully owned subsidiary, Hocol. The five (5) blocks offered were:

Table 10.
Bloques ofertados

Company	Block	Agreement modality offered
Ecopetrol	LLA 141	E&P
	VMM 14 - 1	TEA
	VMM 4-1	TEA
	VMM 65	TEA
Hocol	SSJS 1-1	E&P

Source: Strategy and New Ventures Vice Presidency

ECOPETROL AND ITS SUBSIDIARY HOCOL WERE ALLOCATED THE FIVE (5) BLOCKS OFFERED ON DECEMBER 16TH, 2021, IN THE HEARING MINUTES.

With this award, Ecopetrol will work to quickly execute the exploratory activity included in the offers submitted to the ANH.

Exploration and Production (Upstream)

Exploration

This is the first link in Ecopetrol's value chain. Its purpose is to discover and delimit commercially viable hydrocarbon accumulations to ensure the necessary replacement of reserves for the sustainability of the Group.

To achieve this, the exploratory strategy and process were updated in 2021 to ensure the competitiveness of Ecopetrol in light of the challenges posed by the social and macroeconomic environment.

In line with global trends and expectations, the exploration business has agreed to coexist with the challenges of the energy transition. For this reason, CO_2 emissions are incorporated in business case valuations, as well the required plans to mitigate the impact of such emissions on exploration opportunities.

Ecopetrol Group's exploratory process

In order to manage its exploration opportunities, the Exploration Process provides a framework for action to leverage the progression of opportunities, from the identification or confirmation of areas of exploratory interest to the materialization thereof into reserves.

The process constitutes the main support for effective and efficient decision-making on exploration assets. It focuses on maintaining high technical assurance standards, optimizing the management of the prospect and discovery portfolio, guiding efforts towards compliance with the exploration strategy, and speeding up the maturation process of opportunities and their conversion into discovered, contingent resources and reserves.

This process applies to all exploratory assets in which Ecopetrol S.A., or its subsidiaries (under the full control of the company), must reach a decision, regardless of the stake interest or the role exercised (operator or non-operator).

Exploratory Strategy

The new exploratory taxonomy focuses preferentially on the areas and opportunities of highest potential (materiality, efficiency, and profitability), lower risk (executability and shared activity with partners), fast marketing (short cycle), and with hydrocarbons that are favorable to the energy transition (low emissions).

To this end, **four (4) strategic criteria** have been established to prioritize opportunities:

(i) **High competitiveness and resilience:** focus on material opportunities with competitive break- even prices. The surrendering of non-profitable opportunities of difficult optimizations is also proposed as a complementary option.

(ii) **Fast time-to-market:** focus efforts on short cycle opportunities with an optimal incorporation start of reserves and production.

(iii) **Hydrocarbons favorable to the Energy Transition:** the exploration strategy prioritizes light crude oil and gas projects to ensure reduced emissions from new opportunities.

(iv) **Low Execution Risk:** focus on opportunities with a high probability of being executed, as well as ensure risk mitigation actions in opportunities with high strategic value but low executability.

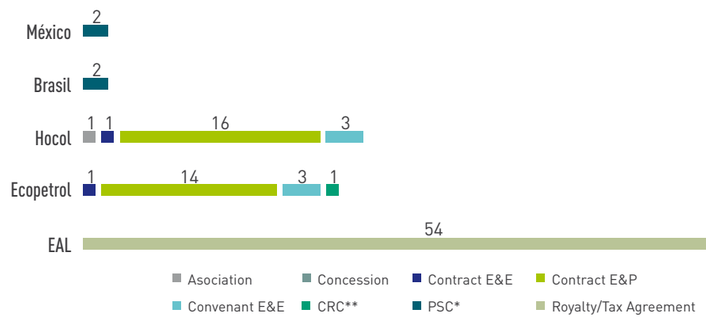
Contracts and Exploratory Areas

By the end of 2021, Ecopetrol had **98 exploration assets** distributed as follows:

Exploration and Production Contracts: Ecopetrol S.A.,19; Hocol S.A., 21; Ecopetrol América, 54; Ecopetrol Brasil, 2; and Ecopetrol Hidrocarburos México,2. Also, exploratory opportunities that are part of the maturation project portfolio (Ecopetrol S.A. 21, Brazil 2, and Hocol 4) have been identified in 27 assets in production areas.

The types of contracts can be identified in Graph 03.

Graph 03.
Exploratory assets by type of contract



Source: Exploration Vice Presidency
*PSC: Production Sharing Contract**CRC: Shared Risk Agreement EAL: Ecopetrol America (Gulf of Mexico)

The **98 exploration** assets amount to a total of **4,777 billion hectares** distributed in the different subsidiaries and areas of exploratory interest: Colombia, Brazil, USA, and Mexico.

Graph 04.
Distribution of Ecopetrol and Subsidiary exploratory areas (millions of ha)

EAL: Ecopetrol América (Gulf of Mexico)

Exploratory activity

During the development of the exploration strategy in 2021, the exploratory activity focused on areas of high value generation and with high potential for incorporating resources.

Piedemonte

The discovery of the Liria YW12 well in the new Recetor West field in 2021 confirms the enormous potential of Piedemonte Llanero as a reservoir of gas and light crude oil. **This success represents the resumption of 100% Ecopetrol exploration operations in this area in Colombia.** Preparation is currently underway to move the drilling equipment to the well. Similarly, the Environmental Impact Assessment (EIA, by its Spanish acronym) for the Farallones opportunity in the former Cóndor block was also filed with the National Environmental Licensing Authority (ANLA, by its Spanish acronym).

Llanos

Progress has been made on two (2) forefronts in the **Eastern Plains (Llanos Orientales)**:

(i) Maturation and the establishment of operating partnerships to continue drilling exploratory opportunities in the northern area of Arauca, in search for light crude oil and associated gas in high-productivity fields.

ii) Exploration and delineation of heavy crude opportunities in the vicinity of the Castilla and Chichimene- Akacías production trains, by leveraging on the existing infrastructure and Ecopetrol's experience in this type of field.

The operations conducted in 2021 correspond to the completion of the Lorito Este-1 exploratory well and the Lorito A1 well, which is the delineation well of the Lorito discovery in the CPO-09 block (Ecopetrol 55% - operator, Repsol 45%), south of the Llanos basin on the Chichimene-Akacías train. In 2022, extensive production tests will be conducted on the Lorito A1 delineation well and the Lorito Este-1 exploratory well will be definitively abandoned.

Middle and Upper Magdalena Valley

In 2021, Ecopetrol focused on the evolution of three **(3) types of projects** in these areas.

Migration of discoveries to commercial fields.

Three (3) commercial units were managed, two (2) of them in the basin of the Middle Magdalena Valley and one (1) in the basin of the Upper Magdalena Valley. In the Middle Valley, the Flamencos-1 commercial unit in the La Paz formation was established under the Middle Magdalena contract, and the Boranda commercial unit in the Esmeraldas formation under the Boranda contract. In the Upper Valley, the Tobo commercial unit was established under the Matambo contract. All these commercial units are part of the exploration strategy close to fields in order to accelerate the incorporation of reserves and production.

Migration of prospective to uncovered resources

Where the exploration campaign was primarily executed in the basin of the Middle Magdalena Valley, and where exploratory wells and delineation wells associated with the Flamencos campaigns under the Middle Magdalena contract, Boranda under the Boranda contract, Chimuelo under the Tisquirama contract, Cira 3540 under the La Cira Infantas contract, and Los Niños under the Boquerón contract have been drilled and tested.

Planning and growth execution

Planning was conducted for the execution of several 3D seismic projects in Middle Magdalena. These projects will begin execution in 2022, and they mark a new seismic acquisition milestone for Ecopetrol in onshore basins. In addition, Ecopetrol S.A. placed bids and was awarded three new contracts by the ANH in Middle Magdalena: VMM-14-1, VMM-4-1, and VMM-65.

Finally, Ecopetrol S.A. submitted the winning bid for block LLA-141, under the Exploration and Production contractual modality.

Hocol

Hocol's exploration strategy is focused on the basins of the Eastern Plans (Llanos Orientales) - Central Sector, the Upper Magdalena Valley, and to the north of Colombia in the Lower Magdalena Valley, Sinú- San Jacinto, and La Guajira.

In the northern region of Colombia, drilling operations were conducted in the Basari-1 well (RC-7 block) and the Carnaval-1 well (Perdices block), both of which are under evaluation.

The drilling of the Est- 1_SN-15 (block SN-15) stratigraphic well was also conducted, which will provide technical information to mature additional gas opportunities. The maturation and pre-drilling activities for the wells of the 2022 campaign also continued: Chinchorro (GUA-2), Pilonera (SSJN-1), Coralino and Arrecife-2 (VIM-8), Sinuano (SN-8), and Yoda A and B (YDSN-1). On the other hand, Hocol actively participated in the evaluation of more than 10 blocks in the basins to the north of Colombia, under the framework of the ANH 2021 PPAA round, with the best offer in block SSJS-1-1.

In the areas of Llanos and the Upper Magdalena Valley, the Ibamaca-1 well (Tolima Agreement) was drilled, determining the presence of oil in the Monserrate formation. The prior consultation process was also advanced with six (6) ethnic communities in block COR-9 to facilitate the acquisition of a 144 Km^2 3D seismic program, which is expected to start in the last quarter of 2022, thereby guaranteeing the right to participation of the communities. In the Central Plains (Llanos Central) area, feasibility activities for the drilling of **four (4) exploratory wells** in the Llanos-87 block (Tororoi-1, Picabuey-1, Koala-1, and Banasta-1 wells) were conducted with Operating Partner Geopark.

On the other hand, the environmental management measures (MMA, by its Spanish acronym) were filed in mid-2021 for the acquisition of 68 Km^2 of 3D seismic in Block LLA-100, which is expected to be acquired in the first quarter of 2022.

Offshore Colombia

In 2021, the company continued to mature the projects that leverage **Ecopetrol's gas strategy to incorporate gas** into the Colombian market as of 2025-2026. To achieve this goal, a work plan was defined to speed up projects by optimizing internal processes for faster licensing, permitting, and evaluation of the subsoil.

In the Tayrona block, the Uchuva opportunity was matured together with Petrobras (operator) for drilling in 2022. Similarly, the evaluation of the different development options for the Orca discovery continued, as well as the assessment of the remaining exploratory potential.

The technical evaluation and maturation of the identified opportunities continue in the Gua Off-1 and Gua Off-10 blocks, where Ecopetrol has a 100% stake. The last block has the added value of being close to the production facilities of the Chuchupa-Ballena field, with the possibility of reducing the times for incorporating reserves and producing potentially new discoveries.

In 2021, Shell took over the operation of the Fuerte Sur, Purple Angel, and COL-5 blocks, thus consolidating the strategic partnership between the two companies to delineate the Kronos and Gorgon discoveries. In this sense, progress was made in the maturation of the Gorgon-2 delineation well, which is planned to be drilled in the first half of 2022. This well is key to defining a possible development of this discovery and enabling other exploratory opportunities identified in the area.

International Portfolio

UNITED STATES

The deep-water exploration strategy in the US Gulf of Mexico (USGOM) is mainly focused on the search and development of opportunities in the Miocene and Jurassic plays, prioritizing low exploratory risk opportunities close to the existing infrastructure.

In 2021, Ecopetrol América LLC (EAL) began to execute the strategic partnership entered into in 2020 with Chevron USA Inc (CVX). The commitment of the partnership was the drilling of the Silverback well, which was successfully executed in 2021. Although technically it was a "dry well", there are positive results that will be studied throughout 2022; it is also worth mentioning that Shell and Murphy & Petronas joined Chevron and Ecopetrol America in the Silverback well.

Within the framework of the strategic partnership mentioned above, progress was also made in the maturation of exploration opportunities in the areas of interest together with the well-reputed strategic partner. In the evolution of these opportunities, prospective resources have been incorporated into the portfolio, in addition to maturing opportunities that are strong candidates for drilling in 2022. Similarly, the latest technologies have been applied to mitigate exploration risks, such as those associated with the source rock and seal integrity analysis.

Additionally, a state-of-the-art seismic was acquired on the prospects of the Jurassic area, which will allow technical maturation to continue throughout 2022 in the context of the Chevron-Ecopetrol strategic partnership, for a probable first drilling in this area in 2023.

MEXICO

The Regional Study of the Salinas Basin was completed in 2021, which allowed the company to prioritize the areas of technical interest.

Drilling was completed in the Moyote Well in block 6, operated by Petronas. The area is currently being reassessed by integrating the results of the well, and the evaluation of other potential prospects in the block is expected to be completed in the first quarter of 2022.

The evaluation of the potential of the prospects in block 8 showed, from a technical and economic standpoint, that the opportunities are not competitive in the Group's portfolio.

BRAZIL

For Ecopetrol Óleo e Gás do Brasil Ltda, 2021 represented one more year (1) of consolidation of the strategy focused on the Pre-salt and Post-salt plays of the Santos and Campos basins. This subsidiary has two (2) exploration assets in the Santos pre-salt, represented by the Pau-Brasil and Saturno blocks, and one (1) asset in the Ceará Basin, for which the decision to exit the area has already been made since the exploration potential was not verified, and the process to return it to the Brazilian National Petroleum Agency (ANP) will take place in 2022.

The Gato do Mato discovery located in blocks BM-S-54 and Sul de Gato do Mato, which was part of the exploration portfolio, was transferred to the subsidiary's Development and Production Management with the expectation of securing the first production of this project between the fourth quarter of 2025 and the first quarter of 2026.

In Pau-Brazil, considerable progress was made in the execution of the exploration program, with the efforts of the BP (operator, 50%), CNOOC (30%), and Ecopetrol (20%) consortium, to define the location of the Pau Brasil-1 obligatory well, which is estimated for drilling in the second half of 2023. Efforts in Saturno were concentrated on evaluating the remaining prospectivity of the block, with the purpose of redefining the exploration strategy after the drilling of the Saturno-1 well.

As part of round 17 offered by the ANP (Agência Nacional do Petróleo, Gás Natural e Biocombustíveis), Ecopetrol agreed to a 30% stake in block SM-1709, in Brazil's Santos basin, in consortium with operator Shell, as mentioned above.

Exploration Partners

As part of the implementation of the exploration strategy, Ecopetrol Group has been developing strategic partnerships to jointly contribute to the sustainability of the business and the proper management of the environment.

By the end of 2021, Ecopetrol S.A. had 11 exploration assets in Colombia standing under partnerships, of which three (3) are operated by Ecopetrol and the other eight (8) are operated by the following partners: Parex, Shell, SierraCol, Petrobras, and Repsol.

Partner relationships are governed by Joint Operating Agreements (JOA) and Partnership Contracts, which focus on the execution of profitable and sustainable operations for the company and its partners.

Hocol has eight (8) active exploration blocks with a partner, of which it operates two (2) and the other six (6) are operated by Geopark and Lewis Energy. In addition, Total and Repsol are also the company's non-operating partners.

Internationally, Ecopetrol Brasil has two (2) exploration assets with partners in the Santos Basin, in association with Shell, Chevron, CNOOC, and BP.

For its part, Ecopetrol America has a stake in 54 blocks under exploration with the following partners: Chevron, Shell, Repsol, Murphy, Hess, Oxy, Talos, Progress Res, Fieldwood, Ridgewood, Venari, Marubeni, W&T, and BHP.

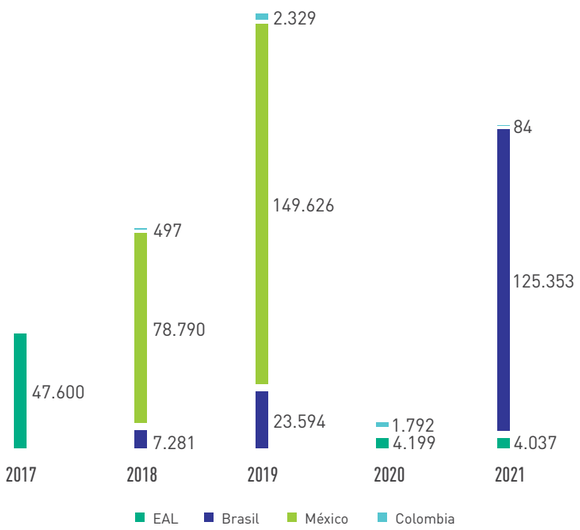
Ecopetrol hydrocarbons Mexico has two (2) standing exploration blocks operated by Petronas and Pemex.

Seismic Business Results

IN 2021, ECOPETROL GROUP ACQUIRED 128,835.437 EQUIVALENT KM OF SEISMIC TO EVALUATE THE PROSPECTIVITY OF THE AREAS IN COLOMBIA AND BRAZIL.

At the national level, Ecopetrol Group acquired 83,98 equivalent Km of 2D seismic in block SN18 and the viability of several seismic programs was assessed in the basins of the Middle Magdalena Valley, the North of Colombia, and the Central Plains (Llanos Central). In the international arena, Ecopetrol Óleo e Gás do Brasil Ltda purchased 124,730 equivalent Km of seismic, which corresponds to 73,371 Km² of 3D seismic (Nébula 870 Km² + Picanha 53,102 Km² + Santos 19,399 Km²) to assess the prospectivity of the Campos and Santos basins. Furthermore, Ecopetrol-America LLC purchased 4,020 equivalent Km of seismic corresponding to 2,365 Km² of seismic data in the Gulf of Mexico to enhance the maturation efforts of eight (8) prospects under Chevron's Strategic partnership. (See Graph 05).

Graph 05.
Ecopetrol Group Seismic (equivalent Km)



Source: Vice Presidency of Exploration

Exploratory Drilling

The Ecopetrol Group and its partners completed the drilling of

13 WELLS,

of which

11 were in Colombia,
1 in the United States,
1 in Mexico.

Additionally, in the activity operated at the sole risk of the partner, four (4) more wells were drilled in Colombia.

At the end of the year,

3 were declared successful,
1 was a study well,
5 were declared dry, and
4 are under evaluation.

It is worth noting that at the end of the term, four (4) wells were being drilled (El Niño-2, Estratigráfico SN-15, Boranda Sur-3, and Bololó-1), which will reach their final goal in 2022.

Of the wells drilled in 2020 and under evaluation in 2021, the following results are obtained: three (3) were declared successful (Flamencos-2, Lorito A-1, and El Niño-1), two (2) continue under evaluation (Chacha-3 and Arrecife-3), and five (5) were declared dry (Chacha-2, Aguas Blancas 24, Santa Bárbara- 1 ST2, Antillas 1ST1, and Lorito Este-1).

Table 11.
2021 Exploratory wells

Well	Lahee Classification	Operator/partner	Contract/ Block	Status
Boranda Sur-2	A1	Parex 50% (Operator) ECP 50%	Boranda	Successful
Liria YW-12	A2	ECP 100%	Recetor A	Successful
Flamencos-3	A1	ECP 100%	Magdalena medio	Successful
Est SN-8	Est	Hocol 100%	SN8	Under study
Basari-1	A3	Hocol 100%	RC7	Under evaluation
Carnaval-1	A3	Lewys Energy 50% (Operator) Hocol 50%	Perdices	Under evaluation
Prof Cira 3540	A2b	Sierracol 52% (Operator) ECP 48%	La Cira Infantas	Under evaluation
Ibamaca-1	A3	Hocol 100%	Tolima	Under evaluation
Boranda Sur-1	A1	PAREX 50% (Operator) ECP 50%	Boranda	Dry
Boranda Centro-1	A1	PAREX 50% (Operator) ECP 50%	Boranda	Dry
Chimuelo-1	A2	ECP 100%	Tisquirama	Dry
Moyote-1	A3	Petronas 50% (Operator) ECP 50%	Block 6	Dry
Silverback-2	A3	CVX 90% (Operator) EAI 10%	Silverback	Dry
Wells drilled in activity at the sole risk of the partner				
Perla Negra-1	A3	Parex 95% (Operator) ECP 5% Sólo Riesgo	Fortuna	Dry
Perla Negra-1 ML1	A3	Parex 95% (Operator) ECP 5% Risk Only	Fortuna	Under evaluation
Cayena 1 ST1 ML1	A1	Parex 95% (Operator) ECP 5% Risk Only	Fortuna	Under evaluation
Cayena 1 ST 1 ML2	A1	Parex 95% (Operator) ECP 5% Risk Only	Fortuna	Under evaluation

Source: Vice Presidency of Exploration

Exploratory Investments

Exploratory investments in 2021 were mainly concentrated in the Colombian Onshore, most of them focused on drilling activities. A significant part was targeted to the execution of exploratory activities in Brazil, the US, and Mexico.

Graph 06.
Exploratory Investments made by the Ecopetrol Group (USD millions)

Source: Vice Presidency of Exploration

THE EXPLORATION INVESTMENTS MADE BY ECOPETROL GROUP AMOUNTED TO USD 208 MILLIONS IN 2021. OF THE INVESTMENTS, 33% CORRESPONDED TO PARTNER ACTIVITIES. THE LARGEST INVESTMENTS WERE MADE IN THE SILVERBACK, RECETOR, VMM, RC7, AND BORANDA BLOCKS, AMONG OTHERS.

The largest drilling investments in 2021 were mainly associated with the execution of the Liria YW-12, Basari, Flamencos-3, and Silverback wells in the United States. Seismic and feasibility investments were also executed, as well as significant subsidiary investments, such as the Picanha seismic in Brazil and activities in block 6 in Mexico.

Development and Production

The second link in the value chain is the production of crude oil and gas, which takes place directly or in association with other companies.

Development and Production Strategy

The Development and Production strategy is to grow with the energy transition, decarbonizing our operations, and diversifying towards low emission businesses, focused on TESG value creation for stakeholders, while preserving competitive returns for the company.

For the materialization of the new strategy, which seeks to maintain **production** between **700-800 kboed until 2040,** with a peak between 800-850 kboed in 2030, there are several work fronts that include activities in existing conventional and non-conventional assets in Colombia and other geographies, exploration in the Caribbean Offshore and Colombian Onshore, and international and new business opportunities.

The 2022-2024 plan is the short-term plan that drives the materialization of the new strategy, which is why the company will invest between **10 and 11 USD trillion,** drill more than **1,800 development wells,** and keep the objective of maintaining **100% reserve** replacement, thereby strengthening the following work fronts:

- Development of the Green Field, Caño Sur, and Akacías fields.
- Protection of the basic curve by improving the natural decline of the fields and continuing with primary recovery, mainly in Rubiales.
- Value maximization of the recovery program mainly in Heavy Crudes and in Middle Magdalena.
- Facilitating current opportunities and capturing new ones.
- Increase market share in gas and in the commodities basket, with the exploration and development of Piedemonte as a lever.

In 2021, Ecopetrol was able to consolidate its portfolio by increasing the viable volume by

12 %

to **50 USD /bl**, the Original Oil in Place by **3 trillion barrels** (BBLS), for an HCIIP of **72 BBLS** as a Group.

In 2021, the Ecopetrol Group's output was

679
thousand barrels

of oil equivalent per day (kboed), of which Ecopetrol S.A. contributed **611.1 kboed** and the subsidiaries **67.9 kboed.**

The contribution of Natural Gas **(Gas + White Products)** was

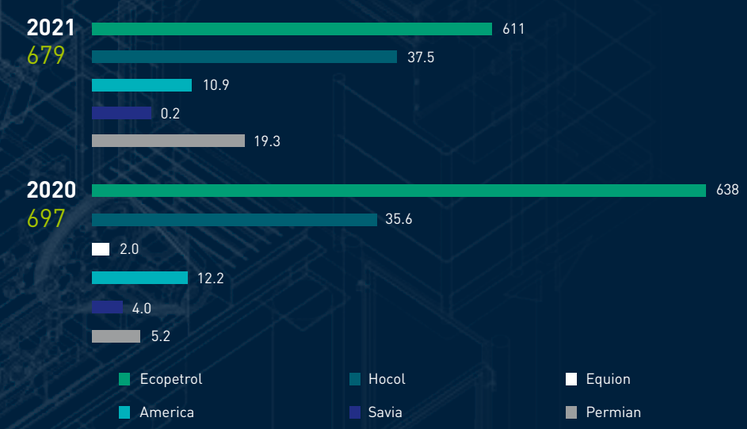
22.4 %

(151.9 kboed), growing **6.8%** compared to 2020.

IN THE LAST QUARTER OF THE YEAR, ECOPETROL S.A. RECEIVED THE OPERATION OF THE SIX (6) FIELDS OF THE NARE ASSET, UPON TERMINATION OF THE PARTNERSHIP CONTRACT WITH MANSAROVAR ENERGY COLOMBIA LTDA.

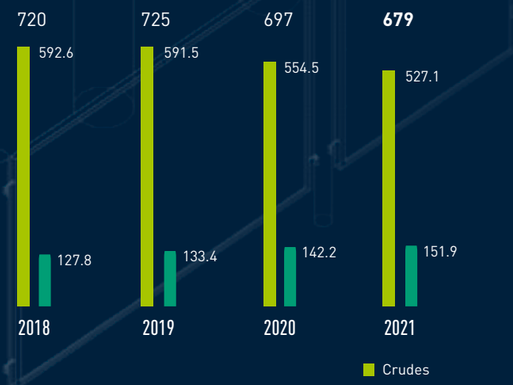
There was a reduction compared to the 2020 validity period, mainly due to risks arising from public order issues, the strong winter wave in Colombia, the hurricane season in the Gulf of Mexico, and the temporary production restrictions due to water management issues in the Castilla field.

Graph 07.
2021 Production by company in the Ecopetrol Group (kboep)

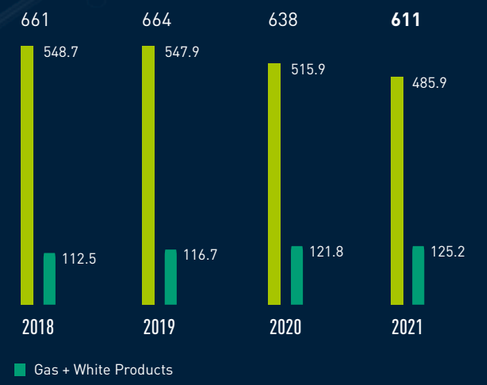


Source: Vice Presidency of Development and Production

Graph 08.
2021 equivalent crude oil and gas production in the Ecopetrol Group



Graph 09.
Ecopetrol S.A.'s 2021 equivalent crude oil and gas production



Source: Vice Presidency of Development and Production

Geographic diversification is part of the Company's strategy, as well as risk management. However, to be consistent with its commitment to TESG, Ecopetrol does not have, nor does it contemplate exploration and exploitation operations in the Arctic region.

The Ecopetrol Group reaffirms its commitment to its operations in the Gulf of Mexico and the comprehensive development of unconventionals in the United States.

Well drilling

In 2021, **395 development wells** were drilled and completed. Of the total number of wells drilled and completed,

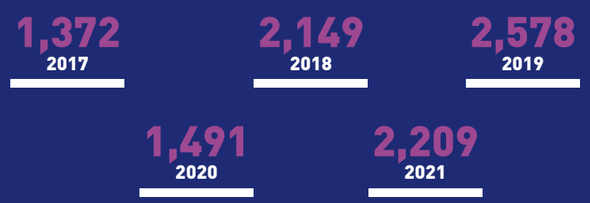
193 are **100% operated by Ecopetrol,**
95 were executed together with partners,
22 by Hocol, and
85 by Permian.

Table 12.
Development wells drilled and completed

Company	2020	2021
Ecopetrol S.A. Direct Operation	157	193
Ecopetrol S.A. Operation with partners	45	95
Hocol	24	22
Permian	18	85
Total development wells Ecopetrol Group	244	395

Source: Vice Presidency of Development and Production

Graph 10.
Ecopetrol Development Investments (USD millions)



Source: Vice Presidency of Development and Production

Production partners

The current production partners are legal entities involved in businesses and/or joint projects with Ecopetrol in businesses in the exploitation phase (development and production), in order to generate value to achieve common objectives. This relationship is regulated by formal agreements and the stakes are represented by the contributions of the parties. The Vice Presidency of Assets with Partners, which is part of the Vice Presidency of Development and Production, is the area responsible for the comprehensive management of said assets, from the role of the partner.

Relationship management between Ecopetrol and its partners is a key element of the corporate strategy, which seeks to ensure sustainable joint ventures under a framework of transparent, reliable, efficient, and mutually beneficial relations.

BY THE END OF 2021, ECOPETROL MANAGED 48 COLLABORATION CONTRACTS IN THE EXPLOITATION PHASE WITH THE FOLLOWING 22 PARTNER COMPANIES:

Table 13.
Partner companies

Sierracol Energy	Petróleos Colombianos S.A. (PETROLCO)
Frontera Energy	Texican Oil & Gas Ltda.
Hocol S.A.	Nexen Petroleum Colombia Ltda.
Unión Temporal Ismocol - Joshi - Parko (UT IJP)	Lewis Energy
Parex Resources	Lagosur Petroleum Colombia Inc. Colombia Branch
Repsol	Petrosouth Energy Corporation
Perenco Oil & Gas y	Saint Aubin International
Perenco Colombia Limited	Nikoil Energy Corp.
Emerald Energy PLC Sucursal Colombia	Valle Energy (Las Quinchas Resources Corp.)
Petrosantander Colombia Inc.	Colombia Energy Development Co. (CEDCO)
Cepsa Colombia S.A.	Cinco Ranch Petroleum Colombia Inc. Colombia Branch
Gran Tierra Energy Colombia Ltda.	

Source: Vice Presidency of Development and Production

Table 14.
Production Contracts in force as of December 31, 2021

Type of contract	Total
Partnership Contract (risk only and ORRI)	37*
Incremental Production Contract (Palagua, Suroriente, Neiva, and Orito)	4
JOA (CPO-09, Capachos, Aguas Blancas)	3
Business Collaboration Contract (La Cira Infantas and Teca)	2
Shared Risk Agreement (CRC 2004)	1
Business Collaboration Agreement (Arauca)	1

Source: Vice Presidency of Development and Production
* Includes five (5) Partnership Contracts transferred to Hocol as of July 1, 2018, where Ecopetrol has been assigned the area.

In 2021, through its Vice Presidency of Assets with Partners, Ecopetrol continued with the strategy of strengthening its principles in matters of ethics and compliance, sharing reflections and ethical information with its partners. Similarly, spaces for strategic alignment and strengthening of skills were created between the teams, in order to implement joint initiatives that benefit the companies and their areas of influence.

An annual survey on the perception and expectations of associates or partners is conducted during the last quarter of every year, regarding a set of key attributes in the comprehensive management of Ecopetrol's relationship with its employees. The main aspects consulted were:

- **Corporate Responsibility - material issues related to Social, Environmental, and/or Governance components;**
- **Ethics and Transparency;**
- **Fulfillment of the value proposition;**
- **Focal points, and opportunities for improvement.**

According to the results of the survey, and in compliance with the planning, doing, verifying, and acting (PHVA, for its Spanish acronym) cycle, these strengths and opportunities for improvement are taken into consideration by Ecopetrol in the process of defining the partner relationship management strategy for the following year.

IN 2021, THE INVESTMENT EXECUTED UNDER THE PARTNERSHIP CONTRACTS IN COLOMBIA AMOUNTED TO USD 103.2 MILLION.

Table 15.
2017- 2021 Investments with Partners

CAPEX executed (MUSD)	2021	103.2
	2020	79.3
	2019	430.96
	2018	409.5
	2017	252.6

Source: Vice Presidency of Assets with Partners

Unconventional Reservoirs (YNC, by its Spanish acronym)

The assignment of cross-shareholding stakes with ExxonMobil was approved in 2021 in the PPIIs[6] in the unconventional Reservoirs of Kalé and Platero in the municipality of Puerto Wilches (Santander), **leaving Ecopetrol as operator, with a**

62.5 %
stake in Kalé and
37.5 %
in Platero.

The Kalé and Platero projects are in the previous activities stage. Progress was made in 2021 in the preparation of the EIAs, as well as in the licensing process, by strengthening participation mechanisms and establishing participation and dialogue programs. Throughout the year, Ecopetrol has promoted the right to participation, implementing different spaces to establish relationships with communities and stakeholders by means of:

- **(i)** EIA participation guidelines and meetings defined for such purpose;
- **(ii)** Mechanisms established in the social regulations of the pilots (Territorial Dialogues);
- **(iii)** Set up and commissioning of the Citizen Participation Office in Puerto Wilches;
- **(iv)** Permanent spaces for dialogue and pedagogy with the inhabitants of the municipality and their area of influence.

In compliance with regulations, the first Territorial Dialogue was conducted for Platero during the first semester of the year, together with the National Government and ExxonMobil, and, towards the second half of the year, PPII Kalé's EIA was filed with the ANLA.

6. According to the Independent Interdisciplinary Commission, the PPIIs are a "scientific and technical experiment subject to the strictest design, surveillance, monitoring, and control conditions, and therefore temporary in nature" built on trust and social legitimization, which includes the drilling, completion, fracturing, stimulation, and production testing operations conducted in the YNC using the hydraulic fracturing technique in horizontal drilling - FH-PH in source rock. The objective of the pilots is to estimate the eventual operational, environmental, and social risks inherent to the activity, in addition to determining the petrophysical characteristics and the possible completions and stimulation technologies in the wells of unconventional Reservoirs. With the information generated and by conducting a cost- benefit evaluation, the company expects to determine the viability of continuing to the commercial exploration and production phase of the YNCs.

Reserves Balance

OG-1

At the end of 2021, Ecopetrol's net proven reserves were

2,002 mbpe

representing an increase of

13 %

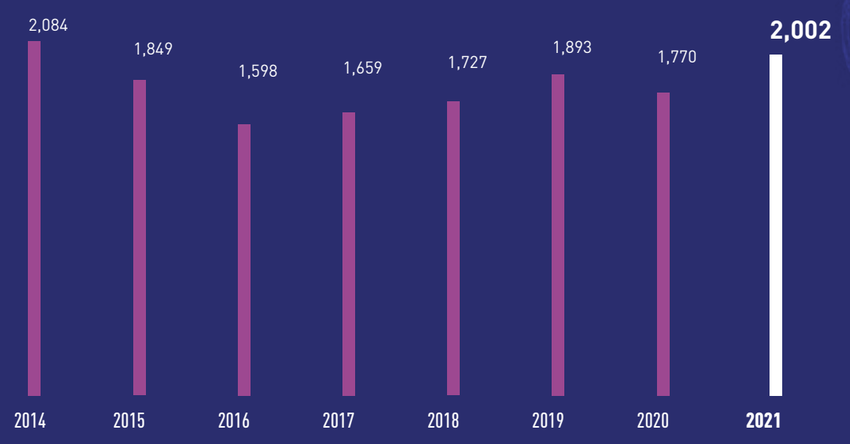
compared to 2020 (1,770 MBPE).

Of the proven reserves,

89 %

correspond to fields in Colombia and the remaining 11% corresponds to the operation of Ecopetrol Permian and America in the United States. The graphs show the evolution and average lifespan of the proven reserves in recent years.

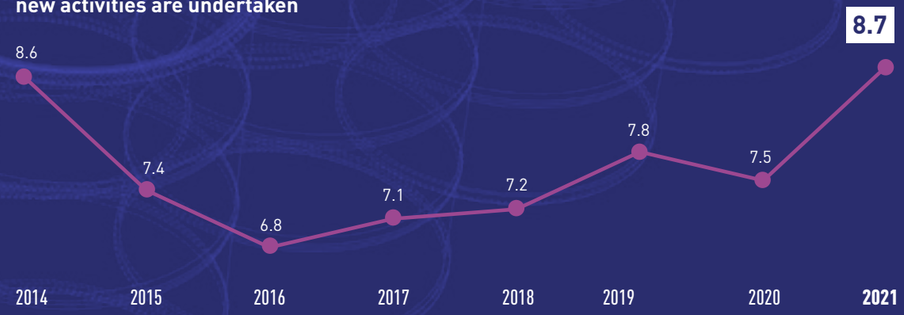
Graph 11.
Proven reserves Ecopetrol Group (mpbe)



Source: Vice Presidency of Development and Production

Graph 12.
Average lifespan of the reserves

Average lifespan of the reserves (years)
Time covered by the reserves under the current production rate if no new activities are undertaken



Source: Vice Presidency of Development and Production

Reserves were estimated based on the standards and methodology of the United States Securities and Exchange Commission (SEC), with **99.5%** certified by **four renowned independent specialized firms** (Ryder Scott Company, DeGolyer and MacNaughton, Gaffney, Cline & Associates, and Sproule International Limited).

The **Reserve Replenishment Index (IRR, by its Spanish acronym) was 200%,** which means that, for each barrel produced in the year, two (2) barrels were added to the reserves.

The average lifespan of the reserves increased to **8.7 years,** exceeding that reached in 2014, when the average Brent was at USD 102 per barrel (compared to USD 69.2 per barrel in 2021). Of the total balance, **72% are liquid,** with an average lifespan of 8.2 years, while the remaining 28% correspond to gas, with an average lifespan of **10.4 years.**

The proven reserves incorporated were **462 MBPE,** of which 282 MBPE were enabled due to:

- The outstanding management in the development fields in Colombia,
- The operation of Ecopetrol Permian and America in the United States,
- The maturation of new projects, and
- The implementation of expansion projects for improved recovery in fields such as Chichimene, Castilla, and Akacías mainly. The remaining volumes correspond to the favorable effect of the recovery of international oil prices in 2021.

In terms of Company sales, Savia's reserves in Peru were divested in the amount of 3.5 MBPE, whose effective sale took place in January 2021.

Gas and LPG

The Ecopetrol Group's Gas and LPG Strategy is part of the Pillar of Growing with the Energy Transition defined in the 2040 strategy. This ensures the consolidation of a comprehensive business for the Group, based on low-emission energy solutions and flexible models that integrate with other alternatives, such as hydrogen, biogas, and renewable energies, to maximize value, which is also self-financing and creates sustainable growth.

To this end, the following value levers have been defined:

Diversify the Group's production so that Gas and LPG attain up to 30% of the share in production between 2030 and 2035.

Develop commercial schemes to encourage new demand to accomplish additional sales levels with industrial and thermal consumption, as well as vehicular natural gas (VNG) and comprehensive solutions.

Achieve ebitda growth by strengthening and accelerating the organic portfolio (resources and reserves).

Contribute to the decarbonization goals of the Group and the country by eliminating routine burning, leaks, and venting in the operation, which affect scope 1 and 2 greenhouse gas (GHG) emissions, and by selling lower emission products, thereby reducing scope 3 emissions.

Grow by diversifying the value chain with inorganic opportunities and international business expansion.

Hydrogen

In 2021, Ecopetrol designed the low-carbon hydrogen strategic plan aligned with the Hydrogen Roadmap of the National Government of Colombia. This contributes to the Group's vision by promoting growth towards the energy transition, enabling the TESG and the decarbonization plan, with a contribution of

9-11 %

% to the Group's scope 1, 2, and 3 emission reduction goals by 2050.

The plan is focused on the development of four (4) applications:

1. Sustainable growth and decarbonization of own operations
2. Sustainable mobility
3. Mixture of hydrogen with gas for thermal applications
4. Development of new low emission products.

The execution is planned in **three (3) time horizons** for the consolidation of a robust hydrogen portfolio over the next few years, with actions focused on the creation of ecosystems for the development of the hydrogen industry intended for domestic use and for export purposes. Ecopetrol Group's 2022 investment plan includes investments in the amount of

USD 6
MILLION

to start-up industrial-scale projects and advance green and blue hydrogen studies.

INDUSTRIAL-SCALE PROJECTS WILL ENABLE INCREASED OUTPUT OF VALUABLE PRODUCTS AT THE CARTAGENA AND BARRANCABERMEJA REFINERIES, WITH A LOW-CARBON HYDROGEN YIELD OF 8,700 KT/YEAR.

The following will also be conducted:

- A proof of concept for the production of electrolytic hydrogen with a capacity of 50 kW, which will be executed in the first half of 2022 at the Cartagena refinery;
- The design of the proof of concept for hydrogen production from biogas;
- The execution of land mobility pilots with a Hydrogen fuel cell; and
- The White Hydrogen availability study[7] in Colombia and start of the study of mixing Hydrogen with natural gas.

7. Hydrogen of geological origin.

Gas and LPG business performance

In 2021, the gas and LPG business delivered solid financial results with an ebitda close to **USD 790 million.**

These represent an approximate growth of

18 %

compared to 2020 and an ebitda margin of over

50 %,

resulting from the increased production of both products and the execution of commercial gas strategies focused on protecting the customer base and expanding to new markets in Colombia.

In 2021, the gas portfolio was strengthened with the discovery of a new field in the department of Casanare. This arose from the drilling of the LRYW12 well, the successful delineation of the Arrecife discovery in the department of Córdoba, and the volumes proven by the reconditioning works executed in the Guajira and Gibraltar fields.

In volumetric terms, gas sales grew by close to

3 %,

and LPG sales by

~8%

compared to 2020. From the gas market supply standpoint:

- The supply to the Colombian market has strengthened with an additional potential of ~84 Giga BTU per unit day - Gbtud (9% of demand) thanks to the following main events: the exploratory success of the Liria YW12 well in Piedemonte (9 Gbtud), the success of the delineation and development wells in the northern Caribbean region (22 Gbtud), the execution of Workovers in Chuchupa (26 Gbtud) and Gibraltar (19 Gbtud), as well as the gas release due to the optimization of own consumption in 2021 (6 Gbtud) and the new supply of the Floreña field (2 Gbtud).
- The Operating Agreements with the ANH were approved for Piedemonte. This allowed the start of activities with three (3) drills in the area and a fourth one starting February 2022, which initiate the drilling campaign of 22 exploration and development wells between 2022- 2024.
- Release of up to 61 Gbtud to the long-term market reserved for the Teca Field.
- Consolidation of a portfolio of 17 initiatives that reduce internal gas consumption by ~14.2 Gbtud to be released to the market, in alignment with refining decarbonization plans.
- By updating the long-term portfolio projections, volumes increased in all the scenarios of the Strategic Plan defined in 2020 (between 25% and 40%).
- 50% reduction of routine burning in flare stacks compared to 2017, and in terms of fugitive emissions, 760 have been closed since 2019 with a GHG reduction of 60 Kton CO_2 equivalent.
- The volume from Guajira, thanks to Hocol's acquisition of Chevron's stakes and the maximization of volumes in Piedemonte, allowed an approximate increase of 15% in revenue vs. 2019.

With regard to the demand served by Ecopetrol, an increase of **40 Gbtud was achieved (10% of the goal by 2030)**. Similarly, market share grew from 74% to **79%**. Natural gas has been promoted as a low-emission fuel for the heavy load and passenger transport segment, today with **640,000 vehicles converted** and approximately **3,500 vehicles dedicated to natural gas from the factory, and an 80%** particulate matter and soot reduction thanks to the renewal of 741 buses in the Transmilenio fleet, the public transport system of Bogotá.

Furthermore, under CREG Resolution 108 2021, Ecopetrol offered the market an alternative to mitigate LPF price increases known as Tariff Option, which seeks to finance a portion of the regulated price, thus transferring this benefit to the end user.

In addition, Ecopetrol Group

APPROVED A 30%
LPG PRICE REDUCTION

in December 2021, applicable as of January 1st, 2022, for a period of six (6) months, whose benefits are expected to be transferred to

3.3 MILLION
HOUSEHOLDS

using this fuel throughout Colombia.

Total investments in 2021 compared to the last four (4) years

In previous years, real Gas and LPG investments were included as part of the Production and Exploration investment data. Detailed monitoring of these investments began in 2021, which closed the year with a value of **USD 250 million,** corresponding to about **7% of the Ecopetrol Group's investments** in 2021, of which 63% corresponds to growth projects, with activities in the development and exploration wells in Piedemonte and subsidiaries such as Hocol and Permian.

LNG liquefaction capacity

Ecopetrol Group has no stake in liquefaction terminals.

Transport (midstream)

This link, the third in the value chain of Ecopetrol's activity, includes the transportation of crude oil, fuels, and other refined products such as diesel and biofuels. These activities are covered by Cenit and its subsidiary companies.

The volume of crude oil transported through Cenit's systems, and its subsidiaries decreased by 10% compared to the previous year, as a result of reduced production, mainly in the Eastern Plains. Of the total volume of crude oil transported through the pipelines, **approximately 85.3% was owned by Ecopetrol Group.**

The volume of refined products transported by Cenit increased by 19.9% compared to the previous year, mainly due to the recovery of economic activities. **Of the total volume of refined products transported through multipurpose pipelines, 29.5% was owned by Ecopetrol.**

Table 16.
Total crude and refined oil transported

Evacuation	Total
Transportation of crude oil (GSV)	733.42 kbpd
Transportation of refined oil (NSV)	277.19 kbpd
Total	1,010.61 kbpd

Source: Cenit
Figures in kbbd and NSV.
* The volumes of crude oil transported correspond to the following systems (country evacuation): Ocensa Segment 3, ODC, Vasconia-Galán, Ayacucho-Galán, Ayacucho-Coveñas, and the Trasandino Pipeline.
** Crude oil evacuation by Cenit: 268.19 KBDP in GSV and 267.49 KBDP in NSV.
*** The volumes of refined products transported correspond to the following systems (refinery evacuation + other entry points): Galán - Salgar 16", Galán - Salgar 12", Galán - Bucaramanga, Buenaventura - Yumbo, and Cartagena - Baranoa.

CONSOLIDATED INCOME OF THE SEGMENT IN EXCESS OF USD 3.279 BILLION, AND AN EBITDA GENERATION EXCEEDING USD 2.691 BILLION.

Cenit Recognitions and achievements in 2021

Carbon Neutrality Certification granted by ICONTEC. First company in Colombia's Oil and Gas sector with this certification.

Equipares Silver Seal awarded by the Ministry of Labor of Colombia and the UNDP.

Inauguration of the San Fernando Solar Park in the department of Meta, which is expected to help **reduce CO_2 emissions by roughly 508,000 tons** in the next **15 years**, together with AES Colombia.

Women in Energy Awards (WIN) from the Society of Petroleum Engineers (SPE) in two (2) categories: i) Energy Transition and i) Sustainability

Inauguration of six (6) smaller solar plants in Baranoa, Miraflores, Mansilla, Yumbo, Tocancipá, and Pereira, which are expected to help **reduce CO_2** equivalent emissions by around **7,695 tons** in the next 15 years.

PAR Ranking (2020 and 2021) as the company with greatest gender equality in the energy mining sector in Colombia and Latin America.

- Position number 10 in the 2021 Ranking of Inclusive Companies from the LGBT Chamber of Commerce and the National Consulting Center.
- Top 10 Companies Committed to Youth from the International Organization of Human Capital Managers.
- Fourth place in the Merco ranking of companies with best Social Responsibility and Corporate Governance in the category of oil and hydrocarbon distribution companies.

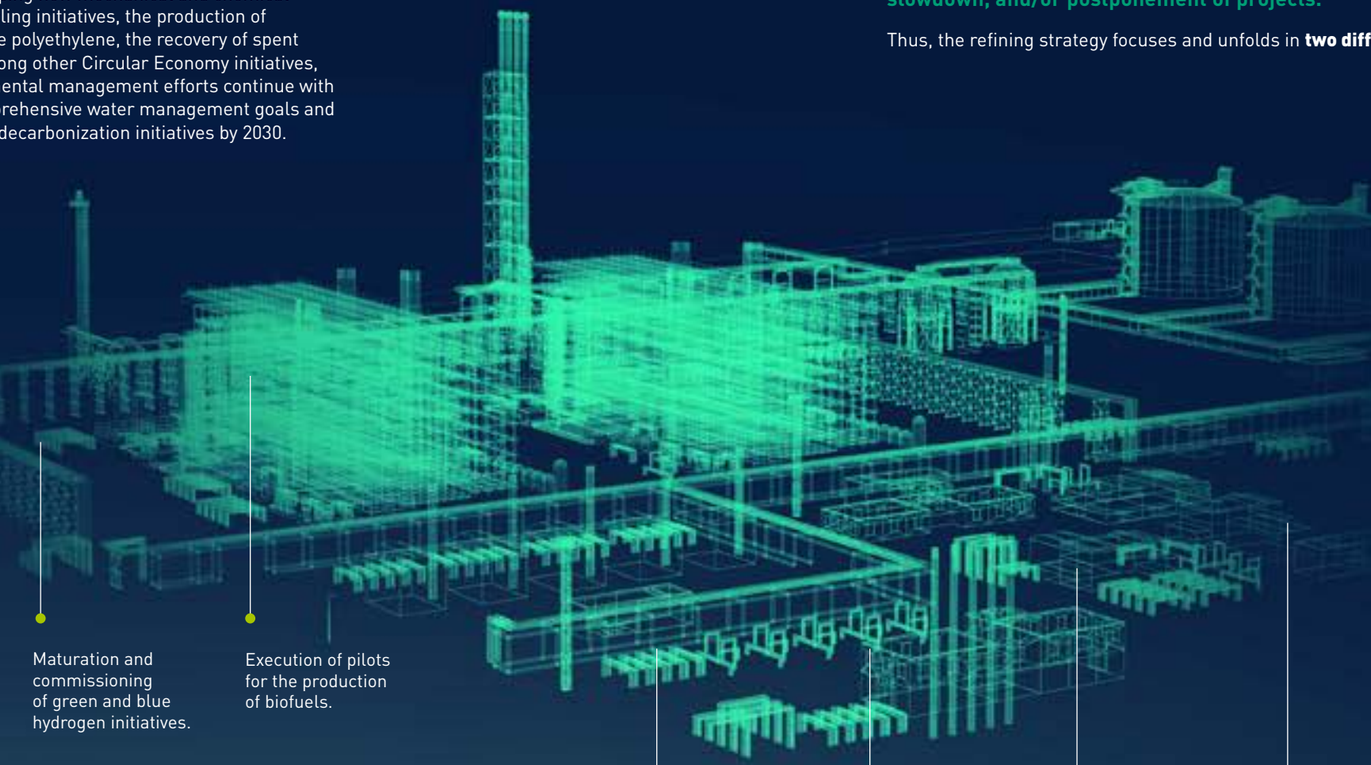
Refining and Petrochemical Activities (Downstream)

The fourth link in the value chain is the refining and petrochemical activity, which includes the Barrancabermeja and Cartagena refineries, as well as Esenttia. This is where the crude oils coming in from the fields are transformed into value-added products.

Refining and Petrochemical Strategy

In 2021, as part of the Group's updated strategy, Ecopetrol's downstream strategy was also updated for the 2022-2040 period. As a result, new strategic lines were generated to complement, refocus, and prioritize aspects of the 2017 strategy update (which included the 2020-2030 period), and to add new and diverse options that generate business from the challenges in the industry.

To contribute to Ecopetrol's diversification in low-emission businesses, the configuration of the assets will be transformed to meet the demand for emerging products in the medium and long term. This includes green and blue hydrogen, reconverting part of the refineries to produce biofuels, and increasing the sale of lubricant bases. Similarly, the segment has begun developing new mechanical and chemical plastics recycling initiatives, the production of biodegradable polyethylene, the recovery of spent catalysts, among other Circular Economy initiatives, and environmental management efforts continue with specific comprehensive water management goals and a portfolio of decarbonization initiatives by 2030.



01

Adapting the facilities to the new fuel quality challenges and expanding the petrochemical and other new businesses (2022-2030)

- Commissioning of the original crude oil unit with the new refinery in Cartagena. With this project, the Cartagena refinery will reach a crude oil loading capacity of 200 KBD.
- Implementation of decarbonization portfolio initiatives with a potential reduction of up to 0.57 Mt CO_2e by 2030.
- Implementation of circular economy initiatives with benefits of up to COP 11,000 million by 2023.
- Execution of the internal fuel quality path and the first phases long-term adjustment projects according to Conpes 3943 guidelines[8] and Resolution 40103 of 2021[9] at both refineries.
- Maturation and commissioning of green and blue hydrogen initiatives.
- Execution of pilots for the production of biofuels.
- Development of infrastructure and personnel skills for the loading and processing of crude oil from unconventional Reservoirs.
- Maturation of the revamp project in the Coker unit in Cartagena and the fuel oil reduction project in the Barrancabermeja refinery.
- 50% reduction of the fresh water purchased for the Cartagena refinery and 50% reduction of the water used/charged ratio for the Barrancabermeja refinery.
- Improvement of diesel and gasoline fuels and inclusion of renewable fuels (Diesel and Renewable Jet).

8 National Council for Economic and Social Policy, Policy to improve air quality (2018).
9 Resolution of the MME and the Ministry of the Environment and Sustainable Development establishing quality parameters and requirements for diesel fuel, biofuels, and gasoline.

Refining

New demands for quality fuel have been identified, as well as greater restrictions on emissions and environmental regulations, which lead to significant changes in the supply and demand for fuels, in addition to the effects of the COVID-19 pandemic, with a sharp decrease in demand, drop in margins, reduction of loads in processing units, and the cancellation, slowdown, and/or postponement of projects.

Thus, the refining strategy focuses and unfolds in **two different stages:**

02

Development of new businesses and consolidation to respond to the strategy, including Growing with the Energy Transition and Generating Value with TESG. (2030-2040).

- Development of synthetic fuels.
- Development of the hydrogen for transportation business.
- Transformation of current gray hydrogen plants into blue or green hydrogen plants.
- Elimination of fuel oil as a significant product of the segment.
- Continuous production of biofuels (biocetane, biojet, among others) with co-processing or with dedicated plants.
- Wide diversification of the refined product portfolio.
- Diversification of refinery loads towards lower emission loads.
- Biodiesel production with second/third generation loads.
- Suspension of sensitive water sources for the two (2) refineries.

Performance

Excellent results were obtained in 2021, accomplishing a consolidated load of

353.6 kbd

and an integrated gross margin of

10.24 USD/bl,

compared to a load of 319.8 kbd and an integrated gross margin of 8.0 USD /Bl in 2020. This mainly arises from:

- The good operating performance of the Barrancabermeja refinery with operational availability above planned levels,
- The strengthening of product prices, offsetting higher crude oil prices, in line with the general increase in demand thanks to the reactivation of the productive sector (COVID-19 vaccination progress around the around) and supply restriction (cold wave in the US in the first quarter, cyberattack on the US Colonial Pipeline in the second quarter, Hurricane Ida in the third quarter, inventories at a minimum in five (5) years, and high gas costs for refineries in the fourth quarter),
- Higher load volumes compared to 2020, realization of inventories thanks to a favorable price environment,
- The adoption of commercial strategies in Esenttia to mitigate the high price volatility of raw materials, and
- Stability in Invercolsa as a result of higher natural gas sales and installations.

These results were achieved in an environment of operational challenges related to:

- Scheduled shutdowns at the Refineries,
- Corrective maintenance at the Cartagena refinery,
- A market with challenging international prices for the Cartagena refinery (RVO),
- Restrictions that affected the Caño Limón – Coveñas oil pipeline, and
- Public order situations in the country.

Investments in 2021

The Barrancabermeja refinery

Investments at the Barrancabermeja refinery in 2021 amounted to

USD 220 million,

related to: reliability initiatives and projects **(USD 150 million)**, environmental legal compliance **(USD 58 million)**, HSE (USD 7 million) and fuel quality **(USD 5 million).**

The main projects below executed throughout the year guarantee the following:

- **Reliability:** major maintenance works in Orthoflow, industrial services, Etileno II, Topping U200, paraffin, alkylation, tanks, Turboexpander SG2961. FGC System projects and UOPI funds circuit, sour water, Module 2 tank car filler, B-2880 system and R2702 internal replacements, 35 kV ring cables, Orthoflow converter, lighting systems, U200 static equipment, stage I rotating equipment, Etileno II pressurized containers, paraffins, DAP, Turboexpander.
- **Legal compliance:** new Wastewater Treatment Plant (WWTP), rehabilitation and renovation of refinery collector systems, control of SOX emissions from sulphur plants, and Domestic Wastewater (ARD, by its Spanish acronym).
- **Health, safety, and environment (HSE):** fire-fighting system, riverbank containment, and new Refinery laboratory.
- **Fuel quality:** first analyzes to ensure regulatory compliance with fuel quality, diesel and regular 10 ppm sulphur motor gasoline, expansion of processing capacity of the HCM U2650 Moderate Hydrocracking Unit, purchase of laboratory equipment, technological improvement of the HCM- Phase I plant, and regular 50 ppm motor gasoline.

The Cartagena refinery

The Cartagena refinery invested around

USD 164 million,

in 2021 in reliability initiatives (USD 87 million), regulatory legal compliance (USD 2 million), HSE (USD 17 million) and growth and profitability projects (USD 58 million).

The project for the Interconnection of the Cartagena Crude Oil Plants (IPCC, by its Spanish acronym) remains one of the most relevant investments in the segment and is underway with a scheduled start- up date in the second quarter of 2022.

The main projects below executed throughout 2021 guarantee the following:

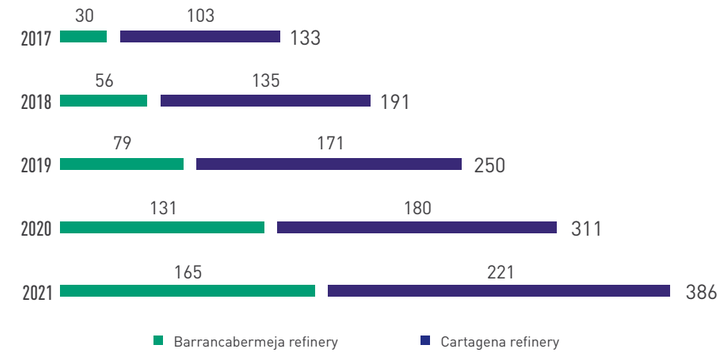
Reliability: major Maintenance (MM) of the U-002 Cracking, MM alkylation U-044, MM hydrogen U-115, MM HDT U-108, MM Coker U-111, cargo lifting facilities, MM of compressors, Cartagena terminal integrity plan, MM HDT U-109, MM of boilers, MM of civil works, MM of turbines, and MM of tanks.

Legal compliance: PRTLGV (Plan for reconversion to clean technologies and discharge management) Cartagena refinery, U-108/U-109 rich amine interconnection, and removal of amine from streams to slop.

Health, safety, and environment (HSE): boiler feed water system, comprehensive LPG management, Cartagena terminal SCI, FL-T-602 tower replacement, and U-044 liquid KOH storage system.

Growth and profitability: interconnection of crude oil plants, integration of U-101 and U-110, and delivery of HCO to U-110.

Graph 13.
Investment's refineries Barrancabermeja and Cartagena (USD millions)



Source: Vice Presidency of Refining and Petrochemicals

In decarbonization, Downstream contributed

88 % OF THE GROUP'S VERIFIED GHG EMISSION REDUCTIONS[10]

between 2010 and 2019.

The decarbonization portfolio was updated in 2021, with **28 high and medium execution probability initiatives with a reduction** potential of **0.57 Mt CO_2e** and with investments amounting to **USD 389 million.** The accumulated reduction of GHG emissions in 2021 was **106,163 tons of CO_2e,** with the execution of **10 initiatives.**

10. 1,498,070 tons of CO_2e verified by Ruby Canyon Environmental, Inc as of May 6, 2020.

Petrochemical activities

As part of the definition of the Ecopetrol Group's Corporate Strategy, the Group's petrochemical strategy was also reviewed and updated. Relevant topics were included, such as the potential integration between refining and petrochemicals given the energy transition scenarios that affect the demand for gasoline and growth opportunities on a regional and global scale, among others.

Esenttia continues contributing to the corporate strategy with the development of circular economy businesses, by promoting success stories related to circularity in plastics. The current petrochemical company in the Group is a profitable business leveraged on access to raw material at competitive costs from Ecopetrol's refineries.

The petrochemical business contemplates developments in the following areas:

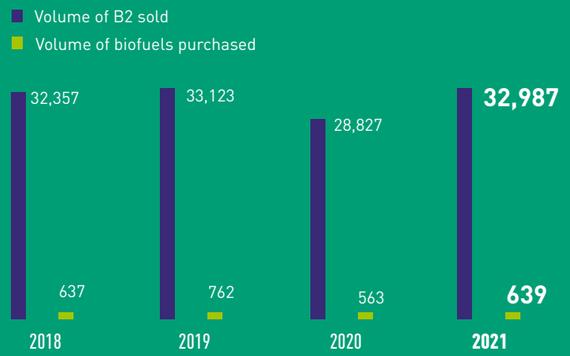
- Petrochemicals at scale to grow according to the expected growth in the sector at a regional and global level.
- Expanded marketing of solvents, lubricant bases, paraffins, and asphalt.
- Assessment of options associated with the real potential of unconventional Reservoirs (YNC, by its Spanish acronym) as raw materials suppliers for petrochemicals.
- Implementation of mechanical and chemical recycling projects for petrochemical production.
- Development of specific petrochemicals derived from the current ones.
- Capacity increase in Esenttia to an additional 70,000 tons per year, scheduled for 2022.
- Start-up of the Recircular project to produce resin from recycled plastic (Circular Economy).

Biofuels
(OG-14)

Volume of biofuels produced and purchased

Includes diesel purchases and production in its blends with biodiesel (B100 – 100% biodiesel blend). The blends are delivered with a 2% volume (B2 – 2% biodiesel blend). Below is a representation of biodiesel (B100) purchases and B2 diesel sales:

Graph 14.
Volume of biofuels[11]



Source: Commercial and Marketing Vice Presidency

11. This information was updated with information as of December 31st, 2021, regarding the document published for the right of inspection.

Technical Abandonment of Wells
(OG-11)

402

wells were technically abandoned in 2021

362

facilities associated with wells were dismantled, and

206

environmental recoveries were conducted.

The activity of technical abandonment or plugging of wells corresponds to the final phase of their life cycle and it consists of establishing permanent barriers so as to preserve their integrity. This is conducted due to low productivity or due to mechanical integrity problems in the wells, in accordance with current applicable standards, under the Ecopetrol Well Integrity Management Guide (WIMS), which is part of the Interventions and Divestiture of Production Assets.

It consists of ensuring the final closure of the well by definitively plugging the formations or producing zones once the productive stage has finished. This is addressed in order to:

(i) Prevent the flow of possible fluids to the surface, cross flow between formations, and contamination of surface aquifers;

ii) Isolate radioactive or other hazardous materials left in the well at the time of abandonment, and

iii) Comply with regulations.

As complementary activities, the abandonment of the well includes the dismantling of facilities and environmental recovery.

Dismantling of facilities:

this consists of dismantling or removing the facilities and equipment that are part of the asset, such as flow lines, electrical systems, electromechanical equipment, and civil works associated with the production wells to be abandoned. This activity is the last intervention of an asset in its operational life, and it is conducted in accordance with applicable regulations.

Environmental recovery

Environmental recovery: these are activities that guarantee the protection of the environment in accordance with the environmental guidelines of the areas and with the established legal norms. These activities include :

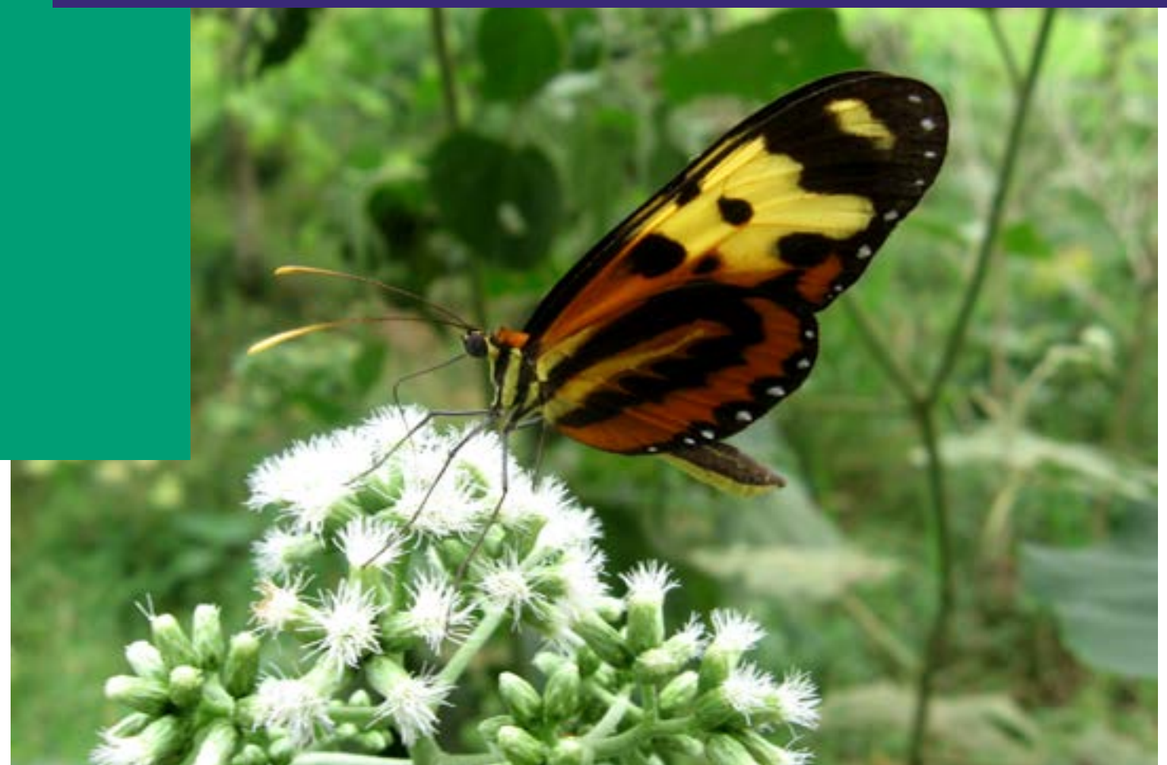
- Erosion control and slope management.
- Maintenance of recovered areas.
- Waste management.
- Land revegetation or reforestation, and
- The management and control of runoff waters.

Asset Divestiture
(OG-11)

Table 17 illustrates the variations in Ecopetrol's asset divestiture in 2021 compared to 2020. This variation is mainly due to the operational dynamics received by the business areas, the sale of functional assets, and the handover of fixed assets to Cenit.

Table 17.
Asset divestiture

Asset divestiture	Unit of measurement	2018	2019	2020	2021
Quantity	#	7,731	5,441	2,672	4,718
Net Book Value	COP	71,857,718,587	24,978,003,206	9,854,979,248	45,276,886,507



Marketing

Marketing is the fifth and last link in the value chain and it connects Ecopetrol with markets in Colombia and the world, while maximizing value generation thanks to its commercial excellence.

Ecopetrol has established the following goals for the company:

Be the best option for its clients in Latin America for crude oil, related products, and petrochemicals.

Offer environmentally friendly fuels and petrochemical products targeted to international markets and that contribute to the development of the country.

Expand the self-generation park and increase energy sales, generating value by optimizing the assets of the Ecopetrol Group in a context of energy transition.

All the above, through

QUALITY RELIABILITY FLEXIBILITY

and focusing asset-based value generation.

Products

Below are the products traded by Ecopetrol:

Crude oil

Fuels derived from crude oil

- ACPM or Diesel
- Fuel oil
- Turbo fuel or jet fuel
- Regular and extra motor gasoline
- Kerosene
- Aviation gasoline or avgas
- Petrochemical and industrial products

In the case of energy sales to maintain the operational continuity of some Ecopetrol Group's companies, Ecopetrol Energía SAS ESP was responsible for this task until December 31, 2021. Upon completing the acquisition of

51.4 %
SHARES IN ISA,

Ecopetrol S.A. (direct and indirect shareholder of 100% of the shares at Ecopetrol Energía), took on the commitment to divest from said company in the shortest time possible in an agile and diligent manner. For this reason, Ecopetrol S.A. formally initiated the selection process for a new marketer.

FIRST IN LATIN AMERICA TO OFFSET CARBON IN CRUDE OIL SALES

In 2021, Ecopetrol sold the first shipment of carbon neutral crude oil to PetroChina, the largest oil and gas producer and distributor in China. **This transaction turned Ecopetrol into the first company in Latin America to incorporate carbon offsetting into its business operations.** The transaction corresponds to a shipment of one **(1) million barrels of Ecopetrol Castilla Blend®** to be delivered to the client in February 2022. The carbon emissions of the cargo, equivalent to 32,000 tons of CO_2, will be offset with carbon credits generated through a renewable energy project in the northwestern region of Colombia. This initiative adheres to the highest international certification standards[12] and seeks to contribute to the country's emission reduction goals.

The offset covers Scope 1 and 2 emissions generated throughout the crude oil value chain, including production, dilution, and transportation up to the Coveñas Terminal in the Colombian Atlantic Coast.

12. Verra international certification standard.

2021 National and international clients

(102-7)

Crude oil

Ecopetrol's international crude oil client portfolio consists of **21 companies.**

65%

ARE REFINERS

that use crude oil as raw material to load their refineries and produce refined products for different uses. The remaining **35% are marketers** who act as commercial intermediaries to access new customers and markets.

Liquid fuels

Ecopetrol has **35 clients**,

28

NATIONAL and SEVEN

(7)

INTERNATIONAL,

who purchase gasoline, diesel, jet fuel, marine diesel, fuel oil, kerosene, and avgas. To purchase products, these clients must have authorization from the MME and/or the Energy and Gas Regulation Commission (CREG, by its Spanish acronym), as established in current regulations governing the agents in the chain.

Petrochemical and industrial clients

Ecopetrol has **140 clients** between

TRANSFORMERS AND MARKETERS.

The products purchased by clients include solvents, lubricant bases, paraffins, polyethylene, asphalt, sulphur, propylene, arotar, and coke, which are used as raw materials to manufacture a large number of products for end consumers, such as: glue, paint, plastics, candles, and car lubricants.

Markets (102-7)

Geographic Locations

Crude oil (kbpd)

Products (kboed)

US WEST COAST

2%	0%
6.1	0.0
2021	2021
Q1 3.8	Q1 0.0
Q2 4.8	Q2 0.0
Q3 7.4	Q3 0.0
Q4 8.4	Q4 0.0

US EAST COAST

0%	2%
0.0	0.5
2021	2021
Q1 0.0	Q1 0.5
Q2 0.0	Q2 0.0
Q3 0.0	Q3 0.7
Q4 0.0	Q4 0.8

US GULF COAST

32%	24%
113.0	7.1
2021	2021
Q1 110.3	Q1 3.7
Q2 102.9	Q2 10.0
Q3 97.7	Q3 5.7
Q4 140.8	Q4 9.1

CENTRAL AMERICA / CARIBBEAN

2%	46%
6,4	13,5
2021	2021
Q1 9,5	Q1 14,0
Q2 10,8	Q2 19,1
Q3 0,0	Q3 15,8
Q4 5,4	Q4 5,4

SOUTH AMERICA

1%	0%
2.6	0.0
2021	2021
Q1 1.3	Q1 0.0
Q2 0.0	Q2 0.0
Q3 1.4	Q3 0.0
Q4 7.7	Q4 0.0

EUROPE

4%	10%
12.7	2.8
2021	2021
Q1 6.6	Q1 8.1
Q2 20.6	Q2 0.0
Q3 6.8	Q3 3.3
Q4 16.7	Q4 0.0

ASIA

60%	14%
213.7	4.0
2021	2021
Q1 213.5	Q1 0.0
Q2 181.7	Q2 5.2
Q3 198.5	Q3 2.3
Q4 260.9	Q4 8.6

OTHER

1%	4%
4.1	1.1
2021	2021
Q1 0.0	Q1 0.0
Q2 1.1	Q2 1.2
Q3 7.9	Q3 0.0
Q4 7.2	Q4 3.3

TOTAL

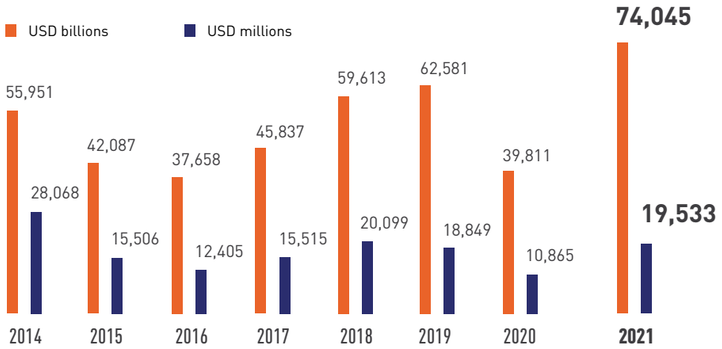
100%	100%
358.7	29.2
2021	2021
Q1 345.0	Q1 26.2
Q2 322.0	Q2 35.5
Q3 319.8	Q3 27.7
Q4 447.2	Q4 27.2

Performance

Sales revenue

Sales revenues in 2021 amounted to COP 77.896 trillion (see Graph 14). This figure represents a growth of 86% compared to 2020, due to the increase of the Brent oil indicator (67% compared to 2020) and also due to commercial activities that improved marketing margins thanks to the diversification strategy towards higher value markets and operations backed by the Ecopetrol Group's assets..

Graph 15,
Sales revenue*



Source: Corporate Financial Vice Presidency
*Income from services or debt coverage operations are not included. Does not include natural gas and LPG as of 2020 (-102kbde), volumes reported by the Vice Presidency of Gas.

Sales volume (kbd)

In volumetric terms, crude oil exports experienced a 10% decrease between 2020 and 2021, down to 474 kbde (54 kbde).

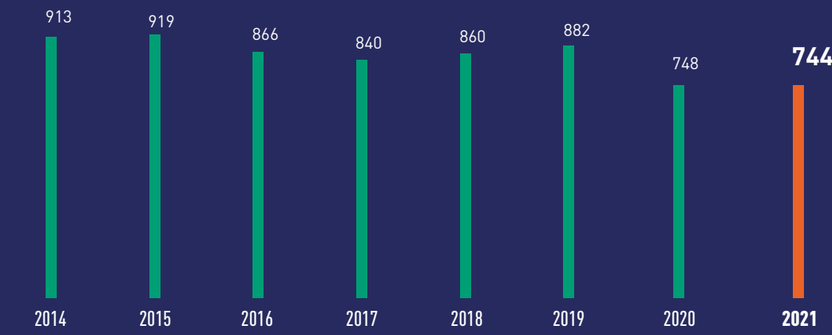
744 KBDE WERE TRADED AS FOLLOWS:

253 kbde of products

17 kbde of petrochemicals

474 kbde of crude oils

Graph 16.
Sales volume (kbde)*



Source: Commercial and Marketing Vice Presidency
*Only considers Ecopetrol sales (does not include Reficar). Does not include natural gas and LPG as of 2020; those volumes are reported by the Vice Presidency of Gas.

Fuels – domestic sales

Ecopetrol's fuel portfolio in the domestic market is mainly made up of gasoline, diesel, jet fuel, and marine fuels.

Gasoline sales volume

The gasoline sales volume marketed by Ecopetrol in 2021 amounted to

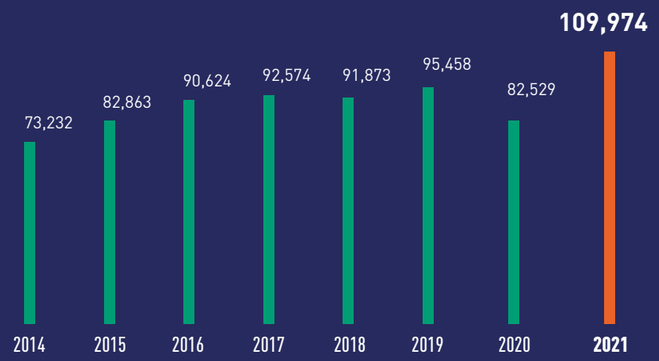
109.7 kbd

reflecting an increase of

33%,

equivalent to 27.2 kbd, compared to 2020, as a result of the recovery in demand, which had decreased due to the preventive isolation measures implemented during the pandemic (see Graph 17).

Graph 17,
Gasoline sales volume (BPD)



Source: Commercial and Marketing Vice Presidency

Diesel sales volume

Sales in 2021 grew

15%

by

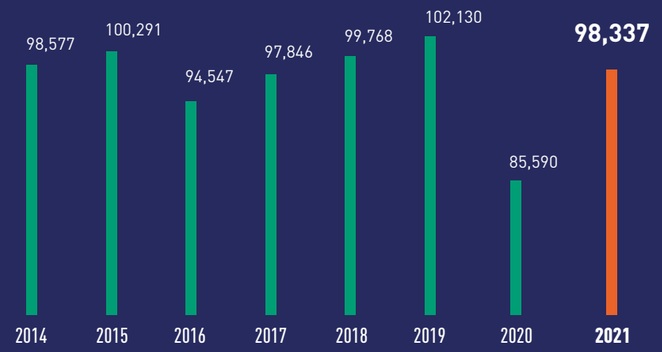
12.7 kbd

from

98.3 kbd

as a result of the recovery in demand after the preventive isolation measures implemented during the pandemic were lifted (see Graph 18).

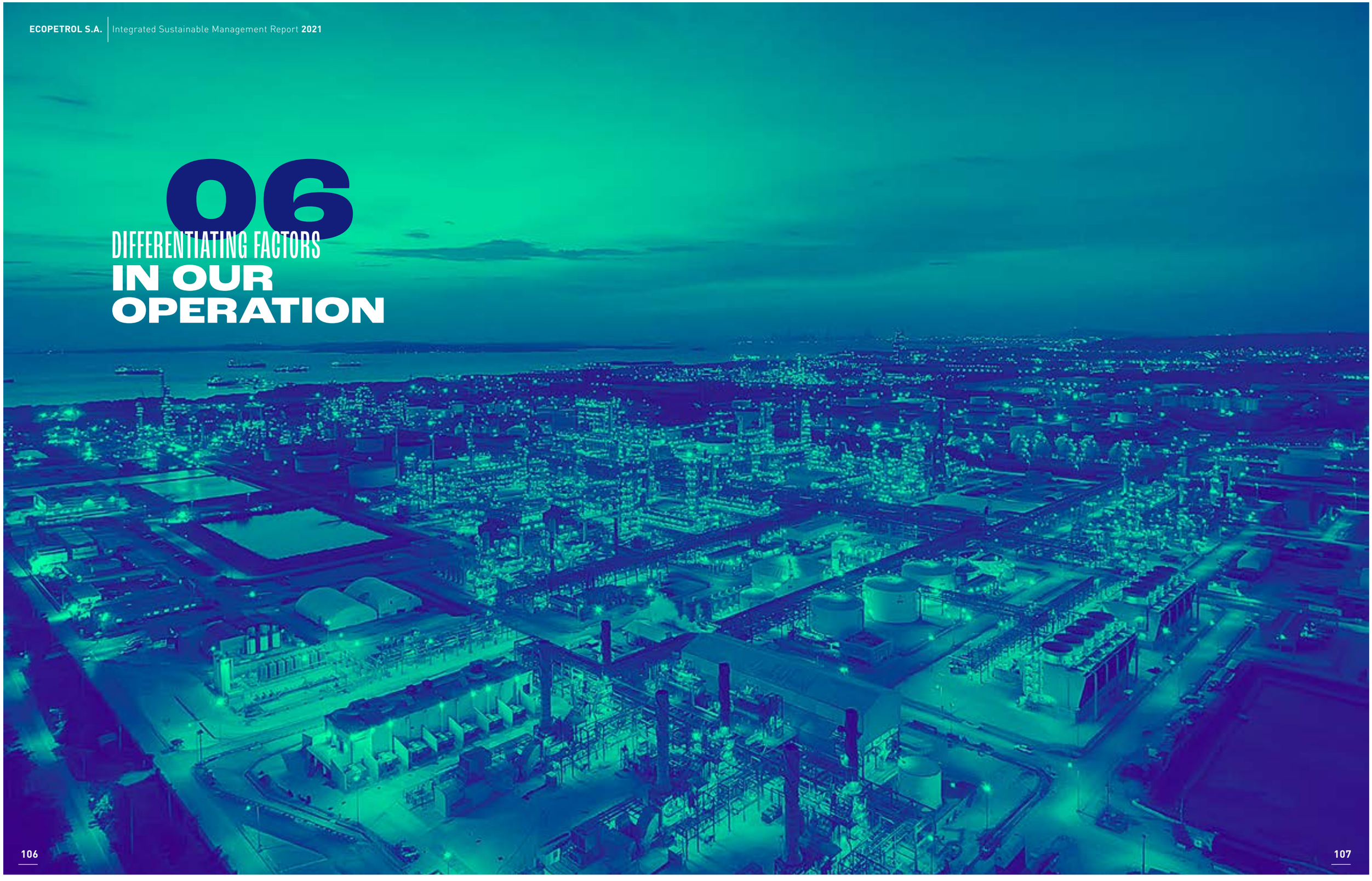
Graph 18.
Diesel sales volume



Source: Commercial and Marketing Vice Presidency

06

DIFFERENTIATING FACTORS IN OUR OPERATION



Science, Innovation, and Technology at Ecopetrol

In 2021, considerable progress was made in the Science, Technology, and Innovation (ST+I) strategy, for which Ecopetrol's Board of Directors approved the integration of the Innovation and Technology Center (ICP, for its Spanish acronym) with the Digital Vice Presidency (VDI) in October 2021. This structural change centralizes the coordination of the strategy, under the leadership of the VDI, and ensures an integrated approach of the Science (research and development), Technology (digital and technological appropriation), and Innovation agenda as a fundamental driver of the 2040 Strategy.

Ecopetrol's 2021-2040 Vision for Science, Technology, and Innovation (STI)

By 2040, **Ecopetrol will be a strategic orchestrator of technological and digital ecosystems** at the national and global level, which will allow the Company to develop and maximize the necessary capacities to accelerate the Energy Transition.

For this, Ecopetrol seeks to generate a cumulative ebidta of

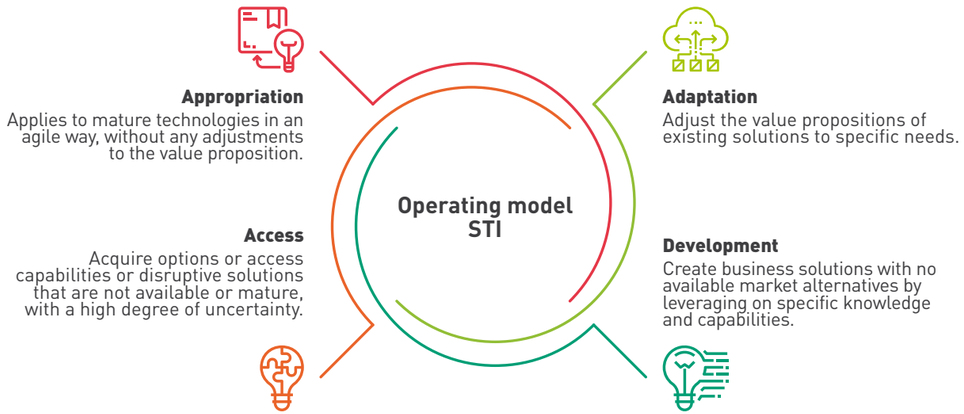
USD 20 to USD 30

trillion by 2040,
enabled by technology and innovation, by implementing an operating model for joint planning with the business and an STI strategic portfolio to prioritize opportunities and capital allocation, generating an optimal balance between the needs and the long-term challenges of the operation.

In 2021, **three (3) major cross-cutting subject areas** were prioritized to strengthen the medium and long- term portfolio

1. Asset optimization (process automation, recovery technologies, and data analytics).
2. Decarbonization (CCUS - Carbon Capture, Use and Storage, and Hydrogen).
3. Circular Economy (Water Management and Waste Management.

The operating model that will materialize the STI aspirations consists of four **(4) systems,** which ensure a timely time-to-market and greater access to new opportunities.



The application of the systems is due to the degree of uncertainty and the maturity of the technologies.

Ecopetrol Group's Digital Strategy

Ecopetrol Group's digital transformation strategy incorporates the necessary digital capabilities and solutions to fulfill the value proposition and the objectives of the Group by means of **four (4) pillars:**

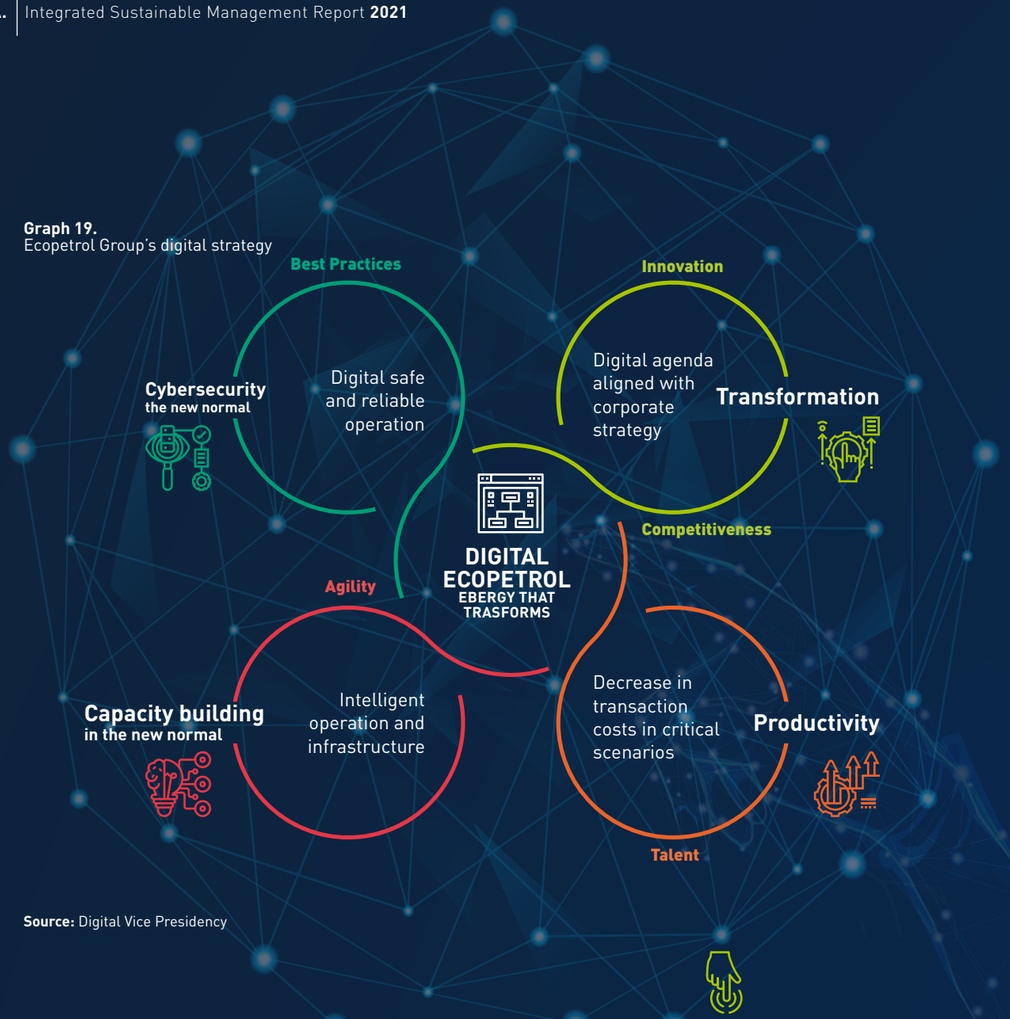
Transformation
Create business value with innovative solutions and an agenda aligned with the corporate strategy.

Productivity
Design and implement agile, simple, complaint, and productive processes to guide people toward activities that generate value.

Extension of capabilities
Promote smart digital operations and infrastructures.

Cybersecurity
Ensure safe and available digital operations.

Graph 19.
Ecopetrol Group's digital strategy



Source: Digital Vice Presidency

The Digital Vice President is responsible for implementing the Digital Transformation Strategy at Ecopetrol, together with its four (4) components.

For Ecopetrol, it is essential to enable innovation and technology capabilities at the service of the corporate strategy. The agile generation of value and the digital mindset acquired by all Group collaborators has allowed us to manage a strategic portfolio that captures value and imprints innovation in each process that we tackle. Hence, the launch of digital vehicles for the creation and management of knowledge: the Digital Agenda and Campo D, with their digital factories and Innovation Study.

The first wave of the **Digital Agenda** set the beginning of the digital transformation, with 10 projects and programs focused on building the foundational digital base throughout the value chain, including the corporate segment, by creating capabilities that ensure access, trust, and the creation of a technological base. The second wave has a more strategic approach that strengthens the capability to generate value by laying proactive, agile, and flexible foundations to respond to the two (2) main challenges of the corporate strategy - core business competitiveness and the energy transition - and to the challenges of the environment.

Campo D is a productivity space that boosts the digital evolution of the Company. Its methodology connects teams and people through agile and flexible digital solutions focused on user experience and co-creation.

2021 Ecopetrol Digital Balance

For the Digital Agenda project portfolio and the products of Campo D, revenues in the amount of

USD 93.3 millones

of the planned USD 68.3 million were certified in 2021, with

136.6 % compliance.

The wave 2 approach was implemented this same year, establishing **13 strategic programs** with revenues estimated at USD 600 million that endorse the Digital Transformation proposition of USD 1 trillion over a period of five (5) years.

The Digital Agenda highlights the implementation of advanced analytics to monitor the gross refining margin and the reduction of payment cycles to oil service contractors from 120 days to 60 days.

+560 digital business products have been developed in Campo D, **212 in 2021,** in the digital factories. These developments include robots, analytical models, and portals.

Digital capabilities

The Group continues to democratize the use of digital capabilities to exchange information between people, businesses, and devices. The digital capabilities implemented in 2021 included:

- Cloud computing (Cloud).
- Advanced analytics.
- big data.
- Robotics.
- IoT.
- Blockchain.
- Machine learning.
- Artificial intelligence.

Click on the following **link** to learn about the most relevant projects.

Graph 20.
Digital investment plan

2021	1.5
2020	51.7
2019	65.1
2018	53.3

Source: Digital Vice presidency

At Ecopetrol, people are both the reason for transformation and the main enabler, which is why we implemented digital capabilities and solutions, including artificial intelligence, to 'de-robotize' human talent by incorporating smart assistants in our business processes to exploit people's knowledge, freeing them from repetitive tasks. For this reason, we implemented initiatives aimed at solving business issues, such cost optimization models, simulation of logistics scenarios, development of predictive models to anticipate the behavior of fundamental variables in the field, among other applications.

Moreover, to expedite the adoption of digital capabilities in the country, Ecopetrol launched 20 challenges, through the **100x100 challenges** program, of which 11 were already executed, also contributing to the generation of employment and growth.

Science and Technology at Ecopetrol

The main research, technological development, and technology demonstration activities at Ecopetrol and the Group are conducted through the ICP, together with the businesses and corporate areas.

In 2021, the ICP focused its efforts on capturing opportunities and mitigating risks in the midst of energy transition. The **research, development, and innovation (R+D+i) initiatives** generated revenues in the order of

USD 254.8 MILLION,A

160%

compliance compared to the annual goal of **USD 158.4 million.**

IN 2021, ECOPETROL INVESTED COP 156.9 BILLION IN THE ICP. THIS REPRESENTS A 94% INCREASE COMPARED TO 2020,

reflecting the lead role of technology and innovation in the 2040 Strategy through **Cutting-Edge Knowledge pillar**, distributed between an investment budget of COP 8.565 billion and a manageable budget of COP 70.336 billion.

To learn about the most relevant initiatives for incorporating of business technology in 2021, visit the following link.

Graph 21.
Investments and expenses on I+D+i[13]

2016	10.1
2017	16.12
2018	25.51
2019	33.36
2020	22.03
2021	41.41

13. Updated chart in MUSD.

In 2021, the projects with the highest execution levels were the Study of Technologies to turn production water into a profitable and sustainable resource at Ecopetrol, the Study of New Technologies to Increase the Recovery Factor, the Study of Advanced Materials deriving from asphaltenes and their potential applications, the Study of Technology Appropriation for Ecopetrol S.A.'s Energy Transition, and the 2021- 2022 Investment for Operational Continuity and Purchase and Replacement of laboratory equipment and the pilot plant.

The technology marketing and transfer strategies focused on monetizing previously licensed technologies and ensuring that the technology and innovation portfolio approved for licensing in 2021 by the Business Opportunities Committee was aimed at reducing risks. In 2021, **eight (8) technologies were approved to be transferred to third parties and four (4) technologies** were licensed after validating risk and opportunity criteria. Businesses were insured in the amount of nearly **USD 4.1 million for royalties and contract value.**

The most relevant technologies licensed in 2021 were:

- Technology to lower costs in the transport of heavy crude oil and valorize LPG-ECO-DILUYE (2).
- Polymer Valve (1): Technology to optimize polymer injection in EOR (Enhanced Oil Recovery).
- Technological solution incorporating artificial intelligence for the early detection of faults in wells using an artificial lift system with electro-submersible pumping -ECOGEO (1).

Key Technological Differentiators and Intellectual Property:

1. **Ecopetrol has +200 researchers, +20,000m² in technological infrastructure, +40 experimental areas, and +2,600 high-tech equipment.**
2. Our research facilities for the molecular characterization of fluids and products, the development of advanced materials, and the improved recovery of hydrocarbons, Non-conventional Reservoirs, and cleaner fuels, are almost unique in Colombia and Latin America.
3. The Intellectual Property inventory, with respect to technological products, registered between 2017 and 2021 is as follows:

Table 20.
Intellectual property

Intellectual Property Registry	2017	2018	2019	2020	2021
Patents Granted	5	15	8	8	8
New Patent Applications Filed	12	17	19	17	24
Copyrights Obtained	39	25	41	46	31

Source: Digital Vice presidency

Innovation Ecosystem

In the Digital Innovation Study, the Company collaborates with stakeholders from the STI ecosystem, promoting innovation through hacking challenges, using design and innovation methodologies to understand the needs, and proposing digital solutions together with the ecosystem, under an Innovation Management System certified with ICONTEC's good practices seal.

The following aspects can be highlighted:

National Ecosystem

- The 100x100 program, which triggered the launch of 20 open innovation challenges to be solved by entrepreneurs, 11 in 2021 alone, has generated +95 jobs in this sector. **This program was granted recognition for Good Sustainable Development Practices under the UN Global Compact's SDG 8,** Colombia chapter.
- A national innovation ecosystem was promoted with Innpulsa Colombia to identify solutions and strengthen national ventures, through open innovation and public-private collaboration.

International Ecosystem

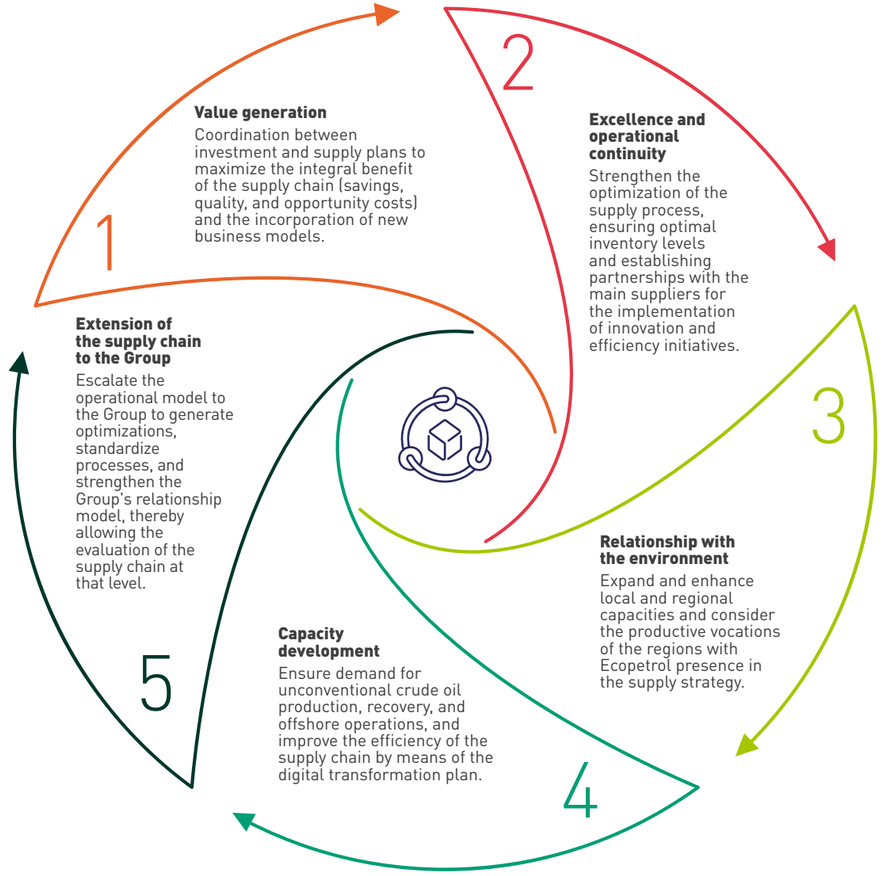
- With Plug-and-Play, a Silicon Valley incubator, construction pilots were undertaken for non- productive times in drilling and for reservoir simulation.
- Ecopetrol participated in the Cleantech program (from Israel) that offers cutting-edge technological solutions for energy storage and implementation of advanced analytics.
- The TESG digital prototype was developed in partnership with IHS Markit and Microsoft for timely and transparent management in the reduction of greenhouse gas and methane emissions.

Through the ICP, Ecopetrol has established a network for co-research and co-development with national and international institutions. Similarly, with more than 30 agreements and seven (7) "Under the Same Roof" research partnerships, the company was able to strengthen the research, technological development, and innovation groups under the National Science, Technology, and Innovation System.

Recruitment and Supplier Management

[102-43] In order to engage in a transparent, timely, and active relationship with suppliers and institutions, **Ecopetrol executed the 2021 Supplier Relationship Plan.**

[308-1] [414-4] The supply process takes place through a model that seeks the effective, responsible, and sustainable supply of products and services. The model is based on the segmentation of operations according to cost, opportunity, quality, and risk level. Along these lines, the Company has defined the following priorities for its **Supply Strategy:**



[308-1] [414-1] Supply management is aligned with the 2040 Corporate Strategy and the "Generating Value with TESG" pillar. The performance evaluation of the Supply Strategy includes indicators focused on measuring the impact of the Company at the local level, as well as its efficiency. The achievements in 2021 are indicated below:

Table 21.
Number of contracts managed per year
[102-9] [WEF 17]

2018	2019	2020	2021
12,213	10,488	8,521	9,887

Source: Vice Presidency of Procurement and Services

Table 22.
Number of contractors at the end of each year
[102-9] [WEF 17]

2018	2019	2020	2021
3,817	3,926	3,480	3,554

Source: Vice Presidency of Procurement and Services

For more information, click on the following link.

Table 23.
Local Hire
[204-1]

Recruitment	Unit of measurement	2018	2019	2020	2021
Total Contract Value	COP	10,102,266,315,612	12,882,710,288,371	12,213,041,342,863	15,823,530,409,025
Local Hire Value	COP	5,106,717,402,056	7,299,754,112,650	6,003,572,900,536	8,413,035,379,158
Proportion of local recruitment	%	51	57	51	53

Source: Vice Presidency of Procurement and Services

Table 24.
Number of Ecopetrol Contractor employees distributed by gender
[102-9] [413-1] [WEF 17]

Gender	Unit of measurement	2018	2019	2020	2021
Male	#	28,203	28,457	27,277	32,793
Female	#	6,602	7,254	6,687	8,116
Total	#	34,805	35,711	33,964	40,909

Source: Vice Presidency of Procurement and Services

2021 Supply Chain Sustainability Assessment

Risk management in the value chain.

(308-2) (407-1) (408-1) (409-1) (414-2)

In order to correctly manage the risks associated with supply actions, Ecopetrol **deploys evaluation procedures** to identify and classify **potentially high-risk suppliers.** These procedures include:

Early warning system to constantly monitor supplier compliance with variables such as claims, incidents reported at the facilities, and overdue payments.

Internal Procurement Risk Management System to manage the risks associated with the procurement of third parties, from the design to the issuance of insurance policies.

Identification of critical contracts to monitor supplier payment defaults to third parties.

Supplier segmentation where Ecopetrol classifies its suppliers by their level of criticality, which, for the Company, are those that provide a critical component for its operations or that are sole suppliers.

In 2021, the Company had

3,554

Tier 1 suppliers (direct suppliers), of which

219

219 were identified as critical.

El 80%

of spending on suppliers corresponds to spending on critical suppliers. Although the Company does not segment suppliers by criticality further up in the supply chain (Tier 2 onwards), the processes allow segmentation according to the strategy, product and service category, and type of supplier. The process takes these factors into account when identifying supply needs and determines which activities, given their criticality, must be procured and executed by Tier 1 suppliers, and which non-critical activities can be subcontracted or assigned to third parties for execution.

For Tier 2 suppliers and onwards (the suppliers of their suppliers), Ecopetrol has implemented internal regulations to guide the subcontracting process and the relationship with this stakeholder subgroup.

To learn more about the Risk Management System and the Company's risk map, go to page 166 of this report.

Table 25.
Supplier Evaluation
(308-2) (407-1) (408-1) (409-1) (414-2) (WEF 14) (WEF 21E) (WEF 22E)

Frequency of supplier evaluation	% evaluated annually	% evaluated at least once every 3 years	Total
Critical suppliers	0	100	100
Suppliers with high sustainability risk	100	0	100

Source: Vice Presidency of Procurement and Services

Table 26.
Supplier performance evaluation results in the following aspects
(308-1) (414-1)

Evaluation aspects	Unit of measurement	2018	2019	2020	2021
HSE aspects[14]	%	98.4	99	99.7	98.3
Management of the context	%	98.3	99.1	99.6	99
Administrative aspects	%	98.3	98.4	99.3	92.9

Source: Vice Presidency of Procurement and Servicesy

When a supplier needs to close a gap identified in the evaluation process, they are asked to create a corrective plan and Ecopetrol periodically monitors these plans. In 2021, the Company approved the corrective plans of 24 critical suppliers.

In 2021, 100% of the suppliers with high sustainability risk, whose gaps were identified in the evaluation process, implemented corrective plans. Similarly, all suppliers for which a corrective plan was activated 12 months ago or more showed improvements in their ESG performance.

To learn more about Human Rights management in the supply chain, go to page 278 of this report.

14. Includes: HSE management systems and technical certifications; the promotion of the national industry; local supply of products and services; environmental criteria; workforce diversity and inclusion and performance evaluations.

On the other hand, as part of its commitment to the well-being of Colombian communities, Ecopetrol deployed a Socioeconomic Recovery Strategy, prioritizing the following aspects:

Generation of diverse and inclusive jobs

This resulted in the hiring of

13,572 women

1,080 people without work experience (first job)

803 people from ethnic minorities

179 victims of armed conflict

115 people with disabilities

for a total of

15,749

diverse and inclusive hires.

Sourcing of local product and service suppliers

El 79%

of the products and services purchased by the Company and its suppliers came from **local sources.**

Participation of ventures in the supply chain

266
VENTURES

were hired in the amount of nearly

COP 17.998 BILLION.

To learn more about diversity and inclusion approach in Ecopetrol, go to page 300 of this report.

Other Company initiatives to contribute to local development can be found on the Ecopetrol´s website www.ecopetrol.com.co.

07
CORPORATE RESPONSIBILITY AND TESG

MATERIALITY AND STAKEHOLDERS

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Materiality

(102-21) (102-29) The Company updated its materiality, including inputs from all stakeholders, and conducted an analysis of the risks, challenges, and goals associated to Company activities and its aspiration and long-term vision.

The exercise was deployed for Ecopetrol Group, resulting in **28 material elements classified into four levels of prioritization:**

Exceptional Elements
are the subject areas in which Ecopetrol S.A. is or aspires to be the leader and contribute to the advancement thereof at a global level.

Outstanding Elements
are the subject areas in which the Company adopts best practices and incorporates the latest trends.

Differentiated Elements
are the subject areas managed by Ecopetrol S.A. in a differentiated manner compared to other state hydrocarbon companies.

Compliance Elements
are the subject areas that respond to regulatory and legal compliance.

The results of the Materiality assessment were reviewed and approved by Ecopetrol's Board of Directors and constitute the foundations of the TESG pillar under the corporate strategy approved by this governing body in December 2021.

(102-47) Below is Ecopetrol S.A.'s prioritization of material elements:

Exceptional Material Elements

- Climate Change
- Integrated Water Management
- Local Development

Differentiated Material Elements

- Corporate Governance
- Diversity and Inclusion
- Business Ethics and Risk Culture
- Operational Continuity System

Featured Material Elements

- Biodiversity and Ecosystem Services
- Circular Economy
- Energy Use and Alternative Sources
- Fuel Quality
- Talent Attraction, Development, and Retention
- Air Quality
- Occupational Health and Industrial Safety
- Process Safety

Compliance Material Elements

- Transparency and Prevention of Compliance Risks
- Publicity of information
- Divestiture of Wells and Facilities
- Supply Chain Management
- Cultural Heritage (Ethnic and Archaeological)
- Labor Standards
- Real Estate Property Rights Management
- Land Use
- Areas of Conservation and Environmental Protection
- Public Policy
- Comprehensive Management System
- Access to Information and Citizen Participation
- Prevention and Management of Incidents caused by Third Parties

Of the 28 prioritized elements, some are material, as they are related to the risks and impacts managed and generated by one or more of the Group's subsidiaries, and others respond specifically to the needs, challenges, and ambitions of Ecopetrol S.A. and its stakeholder groups. **The focus of this report is placed on the exceptional and outstanding elements.**

Click on each of the exceptional and outstanding material elements to learn about Ecopetrol's management, impacts, and achievements.

Stakeholder groups

Identification and Selection of Stakeholders

(102-40) (102-42)

In 2020, an update of stakeholder groups was conducted, incorporating various considerations: the adoption of an inclusive definition, the inclusion of groups whose relationship needs to be managed by the Company by implementing concrete actions, the consideration of the different shared interests between stakeholder groups, and the fact that interests are not only valued in economic terms, but rather involve a multidimensional approach. All of the above was updated under the application methodology of the AA1000 standard.

Graph 22.
Stakeholder Group

- Clients
- Shareholders and Investors
- State
- Society and Community
- Employees, Pensioners, and their Beneficiaries
- Associates and Partners
- Suppliers, Contractors, and their Workers

Click on this link to see the subgroups under the Stakeholder Groups.

Click on this link to learn more about the TESG pillar of the strategy.

Source: Secretary General

In 2021, Ecopetrol had

more than 135,000
STAKEHOLDERS, BETWEEN PEOPLE AND ORGANIZATIONS,

according to the databases and the information provided by the Vice Presidencies responsible for such relationships.

(102-29) (102-43) The Company conducts the identification and prioritization of Stakeholders to define the relationship with each of them for an informed decision-making process. Ecopetrol deploys mechanisms to collect the perceptions and expectations of the stakeholders pertaining to the Company's relationship management, corporate responsibility, and TESG processes. Some of these tools include the following:

- Shareholder and investor satisfaction survey.
- The Citizen Participation Office (**OPC** by its Spanish acronym) creates and facilitates spaces for interaction between stakeholder groups and Ecopetrol, and receives and addresses petitions, complaints, claims, and requests (PQRS, by its Spanish acronym).
- For Employees, the Vice Presidency of Human Talent annually conducts the "Look in the Mirror" survey to assess the degree of approval of the Cultural Statement by the Employee subgroup. (**Link to website with survey results**).
- Suppliers and contractors have a functional mailbox at their disposal: **relacionamiento.proveedores@ecopetrol.com.co** where they can submit inquiries and/or opinions, congratulations, perceptions, or actions for improvement. Also, all calls received through the contact center, (601) 234-5000 option 3, end with a service satisfaction survey.
- The Vice Presidency of Supply conducts semi-annual surveys through the Contact Center Americas to gather the perceptions of suppliers about the relationship channels offered by the Company. Surveys are also conducted at the end of these interaction spaces to collect the perception of suppliers.
- The Commercial and Marketing Vice Presidency conducts an annual evaluation of external clients together with the National Consulting Center (CNC) to gather the opinions and perceptions regarding the service provided by Ecopetrol, measure loyalty, and identify the needs and concerns of this stakeholder group.

Stakeholder Perception and Expectation Survey

(102-21) (102-29) (102-43)

The Corporate Responsibility Management, as the unit responsible for safeguarding Ecopetrol's reputation as a corporate citizen and for providing guidelines to the Company TESG, **conducts the Stakeholder Perception and Expectation** Survey on an annual basis. The purpose of this survey is to evaluate Ecopetrol as a corporate citizen and to learn about the assessments and expectations of the stakeholders regarding the Company's management of the "Generate Value with TESG" pillar under its strategy, represented by the material elements and other corporate responsibility matters. The results of the survey are submitted to the Corporate Governance and Sustainability Committee of the Board of Directors. These are also important inputs to build the annual relationship plans for each Stakeholder, and to conduct materiality assessment that defines the structure and content of this report.

(102-44)

IN RELATION TO THE MATERIAL ELEMENTS, THE COMPANY'S SEVEN (7) STAKEHOLDER GROUPS PRESENTED THE FOLLOWING PRIORITIZATION:

Table 27.
Prioritized Material Elements

Employees, Pensioners, and their Beneficiaries

Prioritized Material Elements

Prioritized Environmental Elements:
1. Climate change
2. Energy Use and Alternative Sources
3. Areas of Conservation and Environmental Protection

Prioritized Social Elements:
1. Local development
2. Human talent attraction, development, and retention
3. Health and safety

Prioritized Governance Elements:
1. Transparency and prevention of compliance risks
2. Corporate continuity system
3. Publicity of information

Clients

Prioritized Material Elements

Prioritized Environmental Elements:
1. Biodiversity and ecosystem services
2. Climate change
3. Energy Use and Alternative Sources

Prioritized Social Elements:
1. Supply quality of communication, information, and participation channels
2. Promotion and support of public policies aimed at ensuring the competitiveness and sustainability of the sector
3. Contribution to local development

Prioritized Governance Elements:
1. Generation and access to clear, truthful, and timely information
2. Initiatives & programs to ensure business continuity
3. Practices aimed at ensuring regulatory compliance and promoting transparency

Investors

Prioritized Material Elements

Prioritized Environmental Elements:
1. Biodiversity and ecosystem services
2. Environmental protection and conservation areas
3. Climate Change[15]

Prioritized Social Elements:
1. Local development
2. Access to information and citizen participation.
3. Public policy

Prioritized Governance Elements:
1. Corporate continuity system
2. Transparency and prevention of compliance risks
3. Business ethics and risk culture

15. The phrase "Biodiversity and services ecosystems" was replaced for "Climate change" compared to the version published for right of inspection.

Society and Community

Prioritized Material Elements

Prioritized Environmental Elements:
1. Biodiversity and ecosystem services
2. Environmental protection and conservation
3. Comprehensive water management

Prioritized Social Elements:
1. Local development
2. Access to information and citizen participation
3. Public policy

Prioritized Governance Elements:
1. Transparency and prevention of compliance risks
2. Corporate continuity system
3. Corporate governance; Publicity of information

Associates and Partners

Prioritized Material Elements

Prioritized Environmental Elements:
1. Air quality
2. Biodiversity and ecosystem services
3. Areas of Conservation and Environmental Protection

Prioritized Social Elements:
1. Public policy
2. Access to information and citizen participation.
3. Local development; Diversity and inclusion; Human talent attraction, development, and retention

Prioritized Governance Elements:
1. Publicity of information
2. Corporate continuity system
2. Comprehensive management system

Suppliers, Contractors, and their Workers

Prioritized Material Elements

Prioritized Environmental Elements:
1. Biodiversity and ecosystem services
2. Areas of Conservation and Environmental Protection
3. Climate change

Prioritized Social Elements:
1. Local development
2. Access to information and citizen participation
3. Public policy

Prioritized Governance Elements:
1. Publicity of information
2. Corporate continuity system
3. Transparency and prevention of compliance risks

State

Prioritized Material Elements

Prioritized Environmental Elements:
1. Areas of Conservation and Environmental Protection
2. Biodiversity and ecosystem services
3. Use of alternative energies and sources

Prioritized Social Elements:
1. Local development
2. Access to information and citizen participation
3. Public policy; Diversity and inclusion

Prioritized Governance Elements:
1. Transparency and prevention of compliance risks
2. Comprehensive management system

Corporate continuity system

Source: Secretary General

The results, the survey methodology, the representative samples, and other technical aspects can be consulted at the following link.

G – GOVERNANCE

Corporate Governance

Ecopetrol Group's Governance Structure
(102-18)

Corporate Governance is the set of rules and practices that oversee the decision-making process and the relationships between the governing bodies of the companies under Ecopetrol Group, with a focus on value generation.

The Corporate Governance Model, for its part, establishes the set of rules and practices that oversee the decision-making process between the governing bodies of the Ecopetrol Group, as well as the relationship between the companies that comprise the Group, to foster balance between the activities undertaken by the companies under Group and monitored by Ecopetrol S.A., to ensure the proper operation of the companies and the Group.

The Corporate Governance System provides a framework for action that facilitates the management and decision-making process of the governing bodies (General Shareholders' Assembly, Board of Directors, and Senior Management[16]) and promotes the materialization of synergies between Ecopetrol and the companies under the Group.

Regardless of Ecopetrol's shareholding level, the following governance instruments help articulate the Group's relationship:

- General Shareholders' Assembly.
- Financial and legal compliance guidelines based on the Group relationship and subordination.
- Business unit guidelines and perspectives, and segments determined by the members of the Board of Directors or equivalent body, in line with Ecopetrol's powers according to the level of shareholding.

On the other hand, for companies whose stakes are shared, the following instruments contribute to articulating Ecopetrol's role:

- **Ecopetrol Senior Management Committees**
- **Objectives, indicators, and goals of the companies within the framework of the Ecopetrol Group's strategy**
- **Code of Good Governance / The Ecopetrol Group's Corporate Governance Guide / Instructions for governing bodies**
- **Group Relationship Model (management, control, and service activities)**
- **Guidelines and guides issued by different Ecopetrol units or areas applicable to the Ecopetrol Group**
- **Decisions and Attributions Matrix (applicable to the Ecopetrol Group / Subordinates)**
- **Service provision framework agreements**

16. People of the highest hierarchical level in the administrative or corporate area of the company. They are responsible for the ordinary course of business of the company and are in charge of devising, executing, and controlling its objectives and strategies. Also included are the corporate or general secretary and the Internal Auditor.

Ecopetrol S.A.'s Governance Structure

(102-18)

Ecopetrol S.A.'s governance structure is aimed at ensuring the implementation of the corporate strategy, monitoring and evaluating risks and opportunities, and making informed decisions consistent with the Company's long-term goals.

Board of Directors

Roles and Responsibilities of the Board of Directors

(102-26)

THE BOARD OF DIRECTORS IS THE HIGHEST GOVERNING BODY AT ECOPETROL.

In accordance with the provisions set forth in its bylaws, the Board establishes and efficiently implements Ecopetrol Group's strategic direction and acts in accordance with the rights of shareholders and the sustainability and growth of the Company. All of the above, pursuant to the provisions established in the Internal Regulations of the Board of Directors, by virtue of which the directors shall perform their duties in good faith, in an independent manner, and with due diligence.

Performance of the Board of Directors, information management, and decision- making process

(102-18)

A total of 30 SESSIONS were held in the respective period, broken down as follows:

Twelve	Fifteen	In three
12	**15**	**3**
ordinary meetings,	extraordinary meetings,	of them, deliberations and decisions were made by votes.

Of the 30 meetings, **27** (90%) were held virtually.

The remaining **10%** were voting sessions.

THE DELIBERATIONS OF THE BOARD OF DIRECTORS TOOK PLACE WITH A NUMBER EQUAL TO OR GREATER THAN FIVE (5) OF ITS MEMBERS, AND THE DECISIONS WERE MADE UNANIMOUSLY.

Ecopetrol has internal mechanisms and deadlines for the prior submission of basic information regarding the matters to be discussed by the Board to allow them to learn and prepare the respective session in advance. The decision-making process within the Board of Directors guarantees informed decision-making in each of the stages, considering the powers of the different instances so that their management efforts can focus on strategic issues.

The Committees of the Board of Directors are bodies that support the discussions conducted by the Board of Directors. The General Counsel organizes the topics according to the corresponding matter and assigns them to the different Support Committees of the Board of Directors according to their competence, in line with the provisions set forth in the corresponding internal regulations. These Committees are created and appointed by the Board itself and at least one of the members of each committee must be independent. The main objective of these Board Committees is to review the issues that the Board of Directors should be aware of in advance and issue recommendations.

Relevant decisions made by the Board of Directors

(102-18) (102-31) (102-33) (102-34)

In 2021, the Board of Directors, through its Committees, continued focusing its management efforts on analyzing matters pertaining to the short, medium, and long-term strategy, in order to ensure Ecopetrol's sustainability as follows:

Audit and Risk Committee (14 sessions)

- Evaluation of the Statutory Auditor, the Internal Auditor, and the Committee
- Approval of the General Internal Audit Plan
- Business Risk Map
- Reserves
- Annual individual and consolidated financial statements and dividend distribution project
- Coverage policy
- 20F
- Financing for the energy transition strategy
- Calculation of the 2020 Variable Compensation
- Monitoring of actions undertaken at Ecopetrol and in the other companies under Ecopetrol Group pertaining to their internal control system, risk management system, and ethics, corruption, and fraud reports
- Follow-up on judicial proceedings
- Issuance and Placement Regulations applicable to the Third Round of the Common Shares Issuance and Placement Program
- Cybersecurity

Business Committee (17 sessions)

- Evaluation and approval for the acquisition of 51.41% stakes in Interconexión Eléctrica S.A. ESP (ISA), owned by the MHCP
- Follow-up on the investment in Permian and release of resources for the 2022 activity plan
- 2022-2024 Financial and Investment Plan
- Incorporation of Ecopetrol Singapore Pte Ltd
- Contribution in kind to Cenit's capital stock by transferring Ecopetrol assets associated with the transportation segment
- Ronda Colombia 2021
- Divestment of strategic assets
- Release of resources for project execution
- Update of the Unconventional Reservoirs Strategy

Compensation, Nomination, and Culture Committee (8 sessions)

- Salary increase
- Collective Labor Convention
- Balanced Management Boards (TBG, by its Spanish acronym)
- President evaluation
- Aid for the new work scheme in the "new normality" (Telework)
- Long-term incentives
- CEO Succession Policy
- Cultural Transformation
- People Retooling
- Diversity and Inclusion
- Succession Program and Talent Maps
- 2022 Variable Compensation Plan
- Analysis of the first level organizational structure (areas that depend directly on the Presidency of Ecopetrol)

Corporate Governance and Sustainability Committee (7 sessions)

- Board of Directors Evaluation
- Integrated Report
- Annual Corporate Governance Report
- Statutory Reform
- Measures to guarantee the protection of the rights of minority shareholders for the 2021 General Assembly
- Candidates to the Board of Directors
- Succession Policy for the members of the Board of Directors
- CEO Succession Policy
- TESG in the industry
- Competencies Matrix and Experience of the Board of Directors
- Board of Directors Diversity and Inclusion Policy
- Human Rights and Business trends and strategy

HSE Committee (3 sessions)

- 2020 Financial Statement and management focus on safety, health, and environment in 2021
- Carbon neutrality Roadmap
- Progress in the vaccination schedule and health management (COVID-19)
- Safety and environmental performance
- Circular economy

Technology and Innovation Committee (3 sessions)

- STI Strategy
- Cybersecurity Strategy
- Follow-up on the Technology and Innovation Plan
- Follow-up on Digital Technology
- Follow-up on the Digital Agenda

Special Committee (8 sessions)

On March 25, 2021, the Board of Directors created the Temporary Special Committee to discuss the assessment of Interconexión Eléctrica S.A. ESP ("ISA").

The Committee met to review the main points of analysis of ISA's assessment. The activities of the Committee, pursuant to its mandate, were conducted under the assessment completed by Ecopetrol's team together with the following external financial advisors hired by the Company for this purpose: Banca de Inversión Bancolombia S.A., Corporación Financiera, and HSBC Securities USA Inc.

Internal controls and risk management

(102-30)

Integrated risk management and internal control at Ecopetrol adheres to the ISO 31000 standard, COSO (Committee of Sponsoring Organizations of the Treadway Commission), COBIT (Control Objectives for Information and related Technology), SOX laws (Sarbanes-Oxley Act), and the Foreign Corrupt Practices Act (FCPA).

Ecopetrol's Internal Control System places self-control as a fundamental pillar, understood as the attitude of undertaking daily tasks with self-criticism and self-management, and promoting transparent and effective performance to achieve the Company's goals. This is an exercise conducted by all people at Ecopetrol and supervised by the Board of Directors through the Audit and Risk Committee of the Board, as the highest control body responsible for overseeing the management and effectiveness of the Internal Control System.

AS PART OF THE SELF-CONTROL AND SUPERVISION EXERCISE, CERTIFICATIONS AND SELF-ASSESSMENTS ARE CONDUCTED PERIODICALLY TO DETERMINE THE EFFECTIVENESS OF THE CONTROLS, THE EXISTENCE OF ADDITIONAL RISKS, RELEVANT RISK ISSUES, MITIGATION MEASURES, AND THE MONITORING OF KEY RISK INDICATORS (KRIS).

Conflicts of Interest

(102-25)

By means of its Bylaws, the Code of Good Governance, 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, Ecopetrol defines the policy and specific internal procedures for knowledge management and the administration and resolution of the situations laid out in the conflicts of interest regime.

The members of the Board of Directors, the CEO, and all Ecopetrol employees have the duty to disclose the conflict situation to which they are exposed. Similarly, they must disclose the direct or indirect relationships amongst them, or with Ecopetrol or other companies under the Group, or with suppliers, clients, or any other stakeholder group, which may give rise to conflicts of interest or affect the decision-making process and the fulfillment of tasks.

Click on this link to learn about the guidelines set forth in the Instructions for the Management and Prevention of Conflicts of Interest and Ethical Conflicts, as well as the criteria for disclosing Company information.

To learn about the number of additional Boards involving the participation of Ecopetrol Board Members, go to chapters 2 and 8 of the Corporate Governance Report.

In 2021, the Company received

176 REPORTS

related to potential conflicts of interest.

For more information go to chapter 8 of the Corporate Governance Report.

Members of the Board of Directors

(102-22) (102-23) (102-24) (102-25)

Ecopetrol's Board of Directors is made up of

9 main members,

without alternates, elected through the electoral quotient system by the General Shareholders' Assembly for periods of two (2) years, who may also be re-elected indefinitely.

The composition of the Board of Directors meets the following legal and statutory criteria, as well as best Corporate Governance practices:

Profile

(i) international knowledge or experience in the activities pertaining to the Company's corporate purpose and/or knowledge and experience in the field of industrial and/or commercial, or financial activities, business risk, stock market, administrative, legal, or related sciences,

(ii) more than 15 years of professional experience;

(iii) good reputation and recognition for their professional competence and integrity, and

(iv) not partake simultaneously in more than five (5) boards of directors of different corporations, including Ecopetrol.

Independent

The majority of the members of the Board of Directors shall be independent.

Experts

At least one (1) of the members must be a financial expert, in accordance with the applicable regulations of the stock market of the United States of America.

Gender, diversity, and inclusion

Gender, diversity, and inclusion criteria will be considered in the composition of the Board of Directors, with at least one (1) of the nine (9) members being a woman. Gender, diversity, and inclusion will, in any case, adhere to the profile requirements of the members of the Board.

Visit this link for more information on the Diversity and Inclusion Policy of the Board of Directors.

For more details on the criteria for the composition of the Board, go to Chapter 4.1 of the Corporate Governance Report.

Nomination and Selection of the Board of Directors

(102-24)

The list of candidates is presented by the Nation (Colombia) through the MHCP, in its capacity as Ecopetrol's majority shareholder. Notwithstanding the foregoing, the other shareholders have the same right to submit alternative options to the proposal presented by the majority shareholder.

However, the members of the Board, once elected, shall equally represent all shareholders, and shall therefore not act in the interest of particular shareholders or shareholder groups. In accordance with their fiduciary duties and obligations, the members of the Board perform their duties in good faith, independently, and with due diligence and caution, always ensuring that their decisions are in the best interest of Ecopetrol.

For more details on the nomination and selection process of Board members, go to go to Chapter 4.1 of the Corporate Governance Report.

Table 28.
Members of the Board of Directors
(102-22) (102-23) (102-25) (405-1)

	Name	Seniority on the Board of Directors	Committees in which he/she participates	Attendance at committee meetings (%)	Attendance at Board of Directors meetings	Does he/she own Ecopetrol S.A.	Other boards that they partake in
	**Carlos Gustavo Cano Sanz** Independent President of the Business Committee	5 years (member since 2017)	1. Business Committee 2. Corporate Governance and Sustainability Committee 3. Technology and Innovation Committee 4. HSE Committee	• Business Committee (100%) • Corporate Governance and Sustainability Committee (100%) • Technology and Innovation Committee (100%) • HSE Committee (100%)	100%	No	Minka S.A.S.
	**Hernando Ramírez Plazas** Independent President of the HSE Committee	4 years (member since 2018)	1. Business Committee 2. Audit and Risk Committee 3. HSE Committee	• Audit and Risk Committee (100%) • Business Committee (94%) • HSE Committee (100%)	96%	No	N/A
	**Cecilia María Vélez White** Independent	1 year (member since 2021)	1. Corporate Governance and Sustainability Committee 2. Technology and Innovation Committee 3. Compensation, Nomination, and Culture Committee	• Corporate Governance and Sustainability Committee (75%) • Technology and Innovation Committee (100%) • Compensation, Nomination, and Culture Committee (100%)	95%	Yes	1. Suramericana de Seguros S.A. 2. United Way 3. Fundación Luker
	**Esteban Piedrahíta Uribe** Independent President of the Corporate Governance and Sustainability Committee	2 years (member since 2019)	1. Business Committee 2. Compensation, Nomination, and Culture Committee 3. Corporate Governance and Sustainability Committee	• Business Committee (94%) • Corporate Governance and Sustainability Committee (100%) • Compensation, Nomination, and Culture Committee (100%)	100%	No	1. Compañía de Seguros Bolívar S.A. 2. Cementos Argos S.A. 3. Fundación Sidoc. Centro de Eventos Valle del PacíficoS.A.

	Name	Seniority on the Board of Directors	Committees in which he/she participates	Attendance at committee meetings (%)	Attendance at Board of Directors meetings	Does he/she own Ecopetrol S.A.	Other boards that they partake in
	**Luis Santiago Perdomo Maldonado** Independent President of the Special Committee	2 years (member since 2019)	1. 1. Audit and Risk Committee 2. Technology and Innovation Committee 3. Compensation, Nomination, and Culture Committee 4. HSE Committee	• Audit and Risk Committee (100%) • Technology and Innovation Committee (100%) • Compensation, Nomination, and Culture Committee (100%) • HSE Committee (100%)	100%	No	1. Mineros S.A.
	**Sergio Restrepo Isaza** Independent President of the Audit and Risk Committee	2 years (member since 2019)	1. Audit and Risk Committee 2. Business Committee 3. Technology and Innovation Committee	• Audit and Risk Committee (100%) • Business Committee (100%) • Technology and Innovation Committee (67%) - 2/3	100%	No	President of the Board of Directors at Grupo BIOS S.A.S. Member of the Board of Directors at: 1. Odinsa S.A. 2. Mineros S.A. 3. Consorcio Financiero S.A. (Chile).
	**Juan Emilio Posada Echeverri** Independent President of the Compensation, Nomination, and Culture Committee	2 years (member since 2019)	1. Audit and Risk Committee 2. Business Committee 3. Corporate Governance and Sustainability Committee 4. Compensation, Nomination, and Culture Committee	• Audit and Risk Committee (100%) • Business Committee (100%) • Corporate Governance and Sustainability Committee (100%) • Compensation, Nomination, and Culture Committee (100%)	100%	No	1. Financiera de Desarrollo Nacional (FDN). 2. Sociedad de Acueducto de Alcantarillado y Aseo de Barranquilla S.A. E.S.P.
	**Germán Eduardo Quintero Rojas**	2 years (member since 2019)	1. Corporate Governance and Sustainability Committee 2. Technology and Innovation Committee 3. HSE Committee	• Corporate Governance and Sustainability Committee (75%) • Technology and Innovation Committee (100%) • HSE Committee (100%)	80%	No	Financiera de Desarrollo Nacional (FDN)
	**Luis Guillermo Echeverri Vélez** Independent President of the Board of Directors President of the Technology and Innovation Committee	2 years (member since 2019)	1. Corporate Governance and Sustainability Committee 2. Technology and Innovation Committee	• Corporate Governance and Sustainability Committee (100%) • Technology and Innovation Committee (100%)	100%	No	1. Chamber of Commerce of Bogotá 2. Telefónica S.A. 3. Pragma S.A. 4. Colmédica 5. Medicina Prepagada S.A.

Source: Secretary General

Table 29.
Age range members Board of Directors
(405-1)

1 (11%)	6 (67%)	1 (11%)	1 (11%)
Older than 70	Between 60 and 70	Between 50 and 60	Between 40 and 50

Source: Secretary General

Collective Knowledge of the Board of Directors

(102 -27)

The members of the Board of Directors have extensive experience and knowledge in a variety of areas, allowing them to make informed decisions and bring different and innovative perspectives to the table.

Table 30.
Experience Board of Directors (102-22) (102-27)

- Energy industry and/or energy transition
- Administration, Senior Management, and/or Leadership
- Government affairs and/or public policy
- Financial and/or Stock Market
- Business risk management
- Human Resources and/or Talent Development
- Legal and/or corporate governance
- Technology and/or Innovation
- Health, Safety, and/or Environment
- Sustainability
- Business strategy and/or project management

Click on the following link for more information about the experience and expertise of the members of the Board of Directors.

Source: Secretary General

Ecopetrol is a Company operating in a changing environment that presents permanent challenges at a strategic and operational level. For this reason, the members of the Board of Directors undergo constant training on emerging trends, soft skills, and issues associated with the Company's management of risk.

In 2021, the Board of Directors participated in the following training sessions:

- Discussion about compliance, free competition, and data protection led by the Superintendent of Industry and Commerce, Andrés Barreto González.
- Participation in the Ecopetrol Virtual Customer Day, together with IHS Markit, where they analyzed the challenges and opportunities faced by Ecopetrol in its efforts toward zero emissions.
- Discussion on the risks identified by Miller & Chavaliers and by Deloitte.
- Virtual courses on cybersecurity and the Code of Ethics and Conduct.

(102-28) The Company implements the following evaluation mechanisms for its Board of Directors:

- Self-assessment (qualitative)
- Quantitative evaluation by management indicators
- Independent evaluation (external)
- Peer evaluation (qualitative)

The 2019 and 2020 results of a structural and formal analysis of the performance and corporate governance policies adopted by the Board of Directors at Ecopetrol as a collegiate body were received in 2021 The evaluator considered the following the best practices for the optimal operation of a board of directors:

- Composition
- Responsibilities of the Board of Directors
- meetings
- Committees
- Internal information management
- External communications
- Interaction
- Agenda
- Discussion and decision making, and
- Strategic goals

The evaluation results were positive and showed that the performance of the Board of Directors is higher than the international standards assessed.

Click on this link to learn more about the evaluation of the Board of Directors.

Remuneration of the members of the Board of Directors

(102-35) (102-36)

THE DIRECTORS ARE NOT ENTITLED TO ANY KIND OF VARIABLE REMUNERATION.

The fees of the Directors for attending the meetings of the Board of Directors and/or the Support Committees are set by the General Shareholders' Meeting, which to date, are equivalent to **six (6) current legal monthly minimum wages**[17], corresponding to COP 5,451,156 in 2021 for each session held by the Board of Directors or the Committees of the Board of Directors. The General Shareholders' Meeting may set the fees in another unit of value, considering the nature of the

The total amount of fees paid to the Board of Directors in 2021 was COP 3,756,689,199.[18]

17. According to the decision recorded in Minutes 026 of 2012 of the General Shareholders' Meeting.
18. Of this amount, COP 117,805,449 correspond to the payment of fees for sessions held in 2020.

Remuneration of the members of Senior Executives

(102-35) (102-36)

The compensation policy is designed to offer competitive compensation, with reference to the mining- energy market, in order to attract and retain the best talent to guarantee the Company's sustainability.

To monitor Ecopetrol S.A.'s position in relation to the reference market, a wage competitiveness study is conducted every year by a firm specializing in a quantitative methodology for assessing positions, best compensation practices, and organizational issues. Based on the conclusions of the study, actions are reviewed and defined to offer competitive compensation to attract and build the loyalty of the required talent according to Ecopetrol's Strategy and needs.

As for the compensation of Senior Executives, the comparison is made against a select market made up of business groups and/or large domestic companies to monitor the level of competitiveness of Senior Executives at Ecopetrol S.A.

(102-36) (102-37) The environmental, social, and governance elements are identified by means of the materiality assessment, which are a priority for the Company and for the stakeholders. They are the underlying factor of the corporate strategy for Value Generation with TESG. The variable remuneration of Senior Executives is subject to their effective management of said strategy, including prioritized TESG elements.

As mentioned in the compensation section, the main components of Total Compensation at Ecopetrol are fixed compensation, variable compensation, and benefits.

(102-35) The CEO's total compensation at Ecopetrol S.A.'s consists of an estimated ratio of

40% fixed compensation and
60% variable compensation.

The CEO's short-term variable compensation is subject to roughly 70% compliance with the annual business results reflected in the balanced management and scorecard (TBG, by its Spanish acronym) of the Group, which includes financial (Operating Cash Flow, Total Unit Cost, execution of the Investment Plan and the optimization thereof, among others) and sustainability metrics. Long-Term Incentives (ILP) consider three-year extraordinary business metrics, where priority is given to the strategic focuses of the Group.

(102-38) (102-39) (WEF 18) In 2021, the fixed compensation of the CEO was

7.99 times

the average fixed compensation of a company worker, and a general salary increase of

3.31%

was allocated to all workers.

Ethics, Compliance, and Transparency

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Ecopetrol and its Group have a Comprehensive Policy that includes ethics and transparency as its fundamental pillars: "We frame our actions around ethics and transparency, hence, we have zero tolerance for acts that constitute fraud, corruption, bribery, money laundering, the financing of terrorism, and violations of the FCPA, in compliance with national and international laws applicable." The same is stated in Article 46 of Ecopetrol S.A.'s bylaws. In addition to the foregoing, the "Always Ethical" principle is included as part of the Declaration on Culture, which implies, among others, acting with integrity at all times and following the guidelines of the Code of Ethics and Conduct.

Ecopetrol's ethics and compliance strategy arises from the Compliance Program, which is designed to ensure the ethical and comprehensive behavior of senior executives, workers, beneficiaries, contractors, suppliers, partners, and other related parties by assuming special accountability for the internal control of the company. The Code of Ethics and Conduct is the pillar of the Compliance Program.

The Code expressly rejects money laundering, the financing of terrorism, fraud, bribery, and corruption in all its formats (violations of the FCPA, transnational bribery, gifts, entertainment and hospitality, conflicts of interest, facilitation payments), as well as lobbying, political contributions, antitrust and anticompetitive practices, among others. Unethical conduct is not tolerated.

The Code of Ethics and Conduct also contains superior guidelines of mandatory application that specifically include the rejection of any form of discrimination, social responsibility, and respect for Human Rights, and the rejection of sexual harassment in the work environment.

In addition, the Compliance Program also adheres to the laws, regulations, guidelines, and best practice manuals for the fight against corruption, fraud, bribery, money laundering, and the financing of terrorism.

To learn about the objectives, focuses, governance, and activities of the Compliance Program, visit the web page on the following link.

To learn about Ecopetrol's guidelines on specific issues that build the parameters of the Code of Ethics[19] and Conduct , visit the Company's website by clicking on the following link

19. Anti-Fraud and Anti-Corruption Manuals, Manual for Managing the Risk of Money Laundering (ML) and the Financing of Terrorism (FT); Internal Control System Manual for the Ecopetrol Group; Manuals for the Management of Contracts and Agreements; Instructions for the management and prevention of conflicts of interest and ethical conflicts; Guide for handling Gifts, Courtesies, and Hospitality; Guide for the Prevention of Corruption in the Negotiation of Lands and Easements; Guide for the prevention of compliance risks in the process of new businesses at Ecopetrol S.A.; Risk Management Guides in the Ecopetrol Group; Guide for the preservation of internal order and decision-making by superiors; Procedure for managing ethics and compliance issues, including applicable actions for violating the Code of Ethics and Conduct; Procedure for Addressing the Congress of the Republic; Procedure for the Planning, Authorization, and Subscription of Sponsorships and the Acquisition of Promotional Materials, among others; Procedure for managing social, environmental, and/or relational investment projects.

Ethics and compliance training and communication

Virtual training for workers

97.5% of Ecopetrol employees took **the course on the new Code of Ethics and Conduct** that was launched in September 2021;

Risk Management and Internal Control Course:

99.7% of employees.

Fiscal Control and Relationship Course:

97% of recipients.

Streaming of Charlas e+ Conocimiento

A total of **5,874 connections** were registered in the talks broadcasted on the following topics:

- Fight against bribery
- Prevention of money laundering and the financing of terrorism
- Free competition
- Risk management and culture
- Fraud prevention
- Corruption
- Domestic violence
- Sexual harassment in the workplace
- Foreign Corrupt Practices Act - FCPA

Ecopetrol also streamed the session known as "Let's explore the Single Evidence Registry (RUE, by its Spanish acronym) together," with **341 connections.**

Specialized training

Employees

In the training courses, **7,220 participants** were registered:

- Update to the Code of Ethics and Conduct and the compliance program;
- Conflicts of interest;
- The Public Officer regime;
- Collective initiatives;
- Anticompetitive and monopolistic practices;
- Sexual harassment[20];
- Due diligence and money laundering;
- Gender equality;
- Risks, opportunities, and controls;
- Stock trading and skills;
- Information ownership, responsibility, and security;
- Facilitation payments;
- Cartagena Refinery Ethics Seminar;
- Information Technology controls;
- Preparation in the processes under the Quality Management System audit conducted by Icontec;
- Training for workers holding critical roles on the general issues of the Integrated Risk Management System (hereinafter SRI, by its Spanish acronym);
- Induction on the Internal Control System (SCI, by its Spanish acronym) to the critical positions of the different areas (HSE, EPP, VGS).

Particularly on the topic of **risk management,**

45 TRAINING COURSES

were taught to 10,197 people,

including the following topics: "How to deal with risk?", "What is the Integrated Risk Management System?", "What is risk analysis for work execution?", "Hazard and risk analysis and evaluation", and "Procurement risks", among others.

20. In partnership with the ICBF (Colombian Family Welfare Institute).

Ethical Mentors

100% (68) **of ethical mentors were trained on the following topics,**

and they replicated that information

2,538 times

in their respective areas:

- Update to the Code of Ethics and Conduct;
- Instructions on conflicts of interest;
- Collective initiatives;
- Facilitation payments;
- Anticompetitive and antitrust practices;
- Integrated risk management system - SRI;
- Information ownership, responsibility, and security;
- Sexual harassment;
- Participation in politics;
- ML/FT;
- Manual for the LA/FT/FPADM (money laundering, the financing of terrorism, and weapons of mass destruction) self-control and risk management system

Board of Directors and Senior Executives

The Board of Directors was trained in:

- Operational risk management with third parties and risks associated with geopolitical changes by expert consultants from Deloitte.
- Risk management at Ecopetrol by the Deloitte & Touche, which also targeted Ecopetrol leaders.
- FCPA Law by Miller and Chavalier
- FCPA Law by VCU at CAJD.
- Online Code of Ethics and Conduct course.
- In terms of risk, course on internal and disciplinary control, ethics, and compliance to the new member of the Board of Directors

The following matters were discussed with Senior Management at the Executive Committee:

- Code of Ethics and Conduct;
- Inappropriate behaviors in work settings during the pandemic;
- Conflicts of interest and ethical conflicts;
- PACI Collective Initiative;
- Facilitation Payments;
- Discrimination;
- Anti-competitive and anti-trust practices, free competition;
- Sexual harassment;
- Information leakage;
- Share trading;
- Inabilities applicable to Public Officers;
- Participation in politics;
- Manual for the LA/FT/FPADM self-control and risk management system;
- CGR Citizen and Environmental Participation; and
- Politically Exposed Persons (PEPs).

Contractors, allies, suppliers, partners

All Ecopetrol contractors, suppliers, allies, and partners are recipients of the Company's Code of Ethics and Conduct.

100% OF THE PARTNERS AND 100% OF THE SUPPLIERS/CONTRACTORS HAVE ACKNOWLEDGED IN WRITING THAT THEY ARE AWARE OF SAID INFORMATION AND THAT THEY ARE IMPLEMENTING SAID CODE.

Training was imparted to

100% of Ecopetrol's contractors, suppliers, allies, and partners

using communication pieces on the following topics:

i) Transparency; **ii)** sexual harassment; **iii)** Ethical behaviors against COVID; **iv)** Integrity APP; **v)** conflicts of interest; **vi)** bribery; **vii)** free competition; **viii)** fraud; **ix)** ethics hotline; **x)** Code of Ethics and Conduct, among others; and they were handed the Ethics and Compliance Kit[21], in order to encourage the creation and strengthening of compliance programs.

21. The Ethics and Compliance Kit contains: the Code of Ethics and Conduct, Guide for handling gifts and courtesies, Instructions on conflicts of interest, inabilities, incompatibilities, and prohibitions, compliance program, Anti-corruption Manual, Anti-Fraud Manual, LA/FT/FDPM Manual

Community

A total of

14 WORKSHOPS

on the Code of Ethics and Conduct were held with Ecopetrol's communities in different regions[22]. They counted with the participation of

358 ATTENDEES,

including children from rural schools, who were taught Ecopetrol's Code of Ethics for children.

Training sessions on the Prevention of Sexual Harassment were offered in collaboration with the ICBF, with **127 participants from the regional units**[23]. Training on human rights and Ecopetrol's Code of Ethics and Conduct was also imparted to the military forces.

With regard to the Code of Ethics and Conduct,

77 COMMUNICATIONS PIECES

were prepared on the following topics and received electronically

1,012,334

times:

- Code of Ethics and Conduct;
- Compliance Program;
- Prevention of LA/FT/FPADM;
- Bribery; v) Facilitation Payments;
- Conflicts of Interest;
- Disciplinary Capsules, among others,

Thus covering

100% of Ecopetrol workers, contractors, customers, suppliers, allies, and partners.

Comunidad en Práctica (Community in Practice) received 1,557 visits throughout the year, for a total accumulated of 7,252. Materials were distributed on the FCPA, compliance risks, LA/FT/FPADM, bribery prevention, conflicts of interest, sexual harassment, internal ethics and compliance regulations, among others.

You can find more information on this section in the Corporate Governance Report, the Ethics and Transparency material element, and on the Company website.

22. Piedemonte, Orinoquía, and Sur regional units.
23. Middle Magdalena, Northern Santander, Arauca, Meta, Putumayo, and Northern Regional Unit

Transparency

Committed to an ethical and transparent behavior, Ecopetrol has established guidelines to steer the expected behavior of its employees and other stakeholders. Ecopetrol strives to stay ahead of global trends and best practices to ensure that its actions in the value chain and in the relationship with its stakeholders are always based on transparency and trust.

(102-16) Below are Ecopetrol's ethical principles:

Integrity, Responsibility, Respect, and Commitment to life

Ecopetrol's Code of Ethics and Conduct includes guidelines on corruption and bribery, confidentiality of information, conflicts of interest, anti-competitive practices, money laundering and discrimination, among others, and it is published in all languages spoken in the countries of operation of the Company. Visit our website for more information.

These principles are enshrined in the Code of Ethics and Conduct, which is approved by the Board of Directors. This includes the behavioral rules and standards expected of the following persons:

- Members of Boards of Directors and workers at Ecopetrol S.A. and its Business Group.
- All natural or legal persons who have a relationship with the Company, including:
  a. Beneficiaries
  b. Shareholders
  c. Contractors
  d. Suppliers
  e. Agents
  f. Partners
  g. Clients
  h. Allies (including Joint Ventures)
  i. Bidders
  j. The personnel and firms hired by the contractors to execute the activities agreed with the Company

THE COMMITMENT TO TRANSPARENCY SURVEY, WHERE PARTIES RATIFY THE CODE OF ETHICS AND CONDUCT AND THEIR COMMITMENT TO IT EVERY YEAR, ACHIEVED HISTORICAL RESULTS WITH A 99.42% PARTICIPATION RATE.

(205-2) (WEF 4) Ecopetrol guarantees the awareness and implementation of the Code by its recipients by asking them to sign the following documents:

- The Statement of Information and Responsibilities of the members of the Board of Directors, where they commit to "learn and apply (.) the Code of Ethics".
- The Commitment to Transparency, whereby workers and senior management annually ratify their awareness of the Code and their commitment to comply with it.
- The ethical clause in the contracts and agreements, whereby contractors, suppliers, allies, and Joint Ventures affirm the following:
  a. Their awareness, commitment, and implementation of the Code of Ethics and Conduct, as well as the ethical and anti-corruption guidelines governing Ecopetrol.
  b. Their commitment to act with transparency and to report any violation of ethical principles via the ethics hotline.
  c. Their obligation to keep records and report them in accordance with accounting standards, with all transaction details.
  d. To no incur in conflicts of interest.
  e. Facilitation payments, gifts, promises, or other advantages, whether directly or through any other person or entity, for the use or benefit of any public officer, are prohibited.
  f. Training of third-party personnel on Ecopetrol's ethical provisions.
  g. Right to audit compliance with anti-corruption regulations by Ecopetrol's counterparties.
  h. Contract termination for breaching the provisions set forth in the ethics and transparency clause.
- Related parties must also sign the following formats: i) prevention of money laundering and the financing of terrorism; ii) commitment to contractual integrity. It is worth mentioning that these clauses and formats are also signed by our security service providers.
- Regular training and instruction on the code for board members, workers, Joint Ventures, contractors, and others.

The Company encourages outstanding ethical behavior by choosing Ethical Mentors in all areas, which is the recognition of workers who closely adhere to the principles set forth in the Code of Ethics and Conduct. Furthermore, Ecopetrol directly and personally acknowledges each of the workers who sign the Commitment to Transparency and grants them an academic certificate from the Ecopetrol University for having successfully completed ethics and transparency related courses.

Similarly, in order to prevent and sanction any acts associated with compliance risks, the Company has established a series of rules and measures that can be found on the following link.

Table 31.
Code of Ethics and Conduct

Stakeholder group	Scope of the Code of Ethics and Conduct (%)	Written/digital acknowledgment of the awareness of the Code of Ethics and Conduct (%)	Training on the Code of Conduct (%)
Employees	100	99	100
Contractors and suppliers	100	100	100
Subsidiaries	100	100	100
Joint ventures[24]	100	100	100

Source: Corporate Vice Presidency of Compliance

24. As of 10% ownership.

Violations of the Code of Ethics and Conduct may lead to the termination of individual employment contracts, labor prevention letters, ethics talks, commitment minutes, termination of contracts and agreements or any business relationship, in accordance with Internal Labor Regulations, the individual employment contract, and others.

(102-17) (WEF 4) Ecopetrol provides an Ethics Hotline on its website - available to workers, contractors, suppliers, clients, allies, business partners, and other third parties, which allows them to establish communication and receive advice by formulating issues (from the recipients about how to act in compliance with the code of ethics) and submitting queries (due diligence procedures), as well as reporting potential violations of the Code of Ethics and Conduct.

The Corporate Vice-Presidency of Compliance is responsible for handling the cases registered in the ethics hotline by using the procedure for the management of ethical issues. This is a corporate channel operated by an independent international company, thereby providing total transparency in the process 24/7, in Spanish, English, and Portuguese all year round.

AT ECOPETROL AND ITS GROUP, THERE IS ZERO TOLERANCE FOR RETALIATION AGAINST THE PERSONS WHO REPORT ACTS CONTRARY TO THE CODE OF ETHICS AND CONDUCT; FOR WHICH, THE COMPANY ENSURES:

- **Anonymity**
- **Confidentiality of information**
- **Data Protection**
- **Possibility for the reporter to follow up on the complaint**
- **Timely response**

The Ethics Hotline is disclosed to **100%** of the workers, **100%** of suppliers and contractors, and to the communities in the areas of operation of the Company, by implementing the above-mentioned mechanisms.

The results of the 2021 Commitment to Transparency Survey show that

99.6% OF WORKERS

are aware of the ethics hotline.

The following channels are available to access the Hotline:

Link
http://lineaetica.ecopetrol.com.co

International Line
(Free International Prefix) 018009121013

National Line in Bogotá
+573103158600 extension 43900

In 2021, 580

580 ISSUES AND
424 QUERIES

were received through the Ethics Hotline, of which,

99% WERE PROCESSED IN 2021 AND
100% WERE HANDLED ON TIME.

The queries addressed were mainly about due diligence by the counterparts, form reviews, and ethics and compliance clauses. The issues were mostly associated with kinship between Ecopetrol workers or applicants with contractor personnel and their relationship with previous jobs.

(205-3) (WEF 4) In 2021, the following reports related to possible violations of the Company's Code of Ethics and Conduct were received:

Table 32.
Report status

Report status	Number
Reports under evaluation	93
Unconfirmed violation reports	69
Confirmed violation reports	30
Total Reports	192

Source: Corporate Vice Presidency of Compliance

Table 33.
Report topics

Report status	Number
Conflicts of interest/bribery/corruption	35
Violation of rules and procedures	80
Disrespect, mistreatment, or hostile environment	9
Discrimination	0
Sexual harassment	4
Other	2
Total	**130**

Source: Corporate Vice Presidency of Compliance

Table 34.
Breaches related to report topics

Violaciones relacionadas con:	Number
Conflicts of interest/bribery/corruption	2
Violation of rules and procedures	24
Disrespect, mistreatment, or hostile environment	0
Discrimination	0
Sexual harassment	2
Other	2
Total	**30**

Source: Corporate Vice Presidency of Compliance

(102-17) (205-3) (WEF 4) As shown in table 34, **30 violations** of the Code of Ethics and Conduct were identified in 2021, which were justified, and for which the following actions were taken:

17 DISMISSALS
within the Company

16 NOTIFICATIONS
to the Disciplinary Control Management

TWO (2) CASES
referred to the Attorney General's Office

THREE (3) REPORTS
to the Financial Information and Analysis Unit (UIAF, by its Spanish acronym)

FOUR (4)
PREVENTIVE ETHICS CONVERSATIONS

(102-17) (205-3) None of the verified issues were related to bribery, facilitation payments, FCPA violations, financial fraud, or events that affect the accounting or reasonableness of the Company's financial statements.

Neither Ecopetrol, nor the natural persons acting on behalf of the Company, were sanctioned or investigated by external authorities in relation to acts of corruption, bribery, fraud, or FCPA violations.

Anti-corruption

(102-16) (205-1) Ecopetrol S.A. approaches ethics and transparency from a zero-tolerance standpoint. For this reason, the Company has an Anti-Corruption Policy applicable to the Ecopetrol Group, which addresses issues such as bribery and provides guidelines on donations, sponsorships, and other contributions. In 2021, **100% of the Company's operations** were evaluated for corruption-related risks.

In the last four (4) years, no investigations or sanctions were filed against the Company for acts of bribery and corruption.

(102-16) (205-3) (206-1) (WEF 4) To ensure complete accountability to its stakeholders, and awareness of the leadership role that the Company plays in the country and in the sector, Ecopetrol S.A. discloses the following information related to acts and behaviors defined in its Code of Ethics and Conduct.

Ecopetrol S.A. has not incurred any sanction or made any agreement with the authority to avoid the imposition of sanctions in the last four (4) years, nor is it currently involved in any process related to anticompetitive practices.

(206-1) An investigation conducted by the Superintendence of Industry and Commerce related to anti-competitive practices concluded in 2021, with the Superintendence determining that neither Ecopetrol nor its workers conducted practices contrary to free competition. However, it ordered Ecopetrol to structure and/or strengthen an alert system to identify possible infractions against the free economic competition regime in its business activities, by means of the various actions deployed in different parts of the national territory. Also, to communicate the decision to their respective contractors in the region to warn them about these situations.

(406-1) (WEF 20E) There were no cases of discrimination in 2021 (race, color, sex, religion, political opinions, nationality, social origin, age, disability, immigration status, HIV condition, gender, sexual orientation, genetic predisposition, lifestyle, among others), therefore, it was not necessary to undertake any repair plans.

Table 35.
Operations assessed for risk of corruption

(205-1)

Operations evaluated in relation to corruption risks	Unit of measurement	2021
Number of operations	#	43
Percentage of operations	%	100

Source: Corporate Vice Presidency of Compliance

Conflicts of interest

At Ecopetrol, the concept of Conflict of Interest goes beyond the definitions in the Law, and also encompasses any action or circumstance that may imply a conflict of interest or that subtracts objectivity, fairness, independence, or impartiality from a situation, due to private interests or decision-making in one's own benefit or that of a third party and/or to the detriment of Company interests.

Ecopetrol defines the specific internal policies and procedures to raise awareness, manage, and solve situations related to the conflict of interest regime by means of its Bylaws, the Code of Good Governance, 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.

The documents that make up Ecopetrol's internal policy and procedures related to Conflicts of Interest can be consulted at the website.

Similarly, Ecopetrol's guidelines on conflicts of interest extend to:

Bidders | **Contractors** | **Suppliers** | **Clients** | **Partners or allies**

By means of the Code of Ethics and Conduct, and clauses and contractual formats applicable to them, these groups commit and agree to act in accordance with Ecopetrol's ethical principles and to not incur in conflict situations.

(102-25) The Corporate Governance Report, which is part of this Report, contains more detailed information regarding conflicts of interest, including publications of the related party and existence of a controlling shareholder. Also, details related to the participation of Board Members in other Boards of Directors can be consulted in the Corporate Governance chapter of this report.

In 2021, 176 possible conflicts of interest were reported.

For details about the most relevant cases, go to the Corporate Governance Report.

Donations, sponsorships, and political contributions

Facilitation payments, involvement in political activities through contributions and donations that do not comply with the budgets of Article 355 of the Political Constitution, activities and payments for lobbying services, and the diversion of money from social investment activities or sponsorships towards political activities or activities outside the purposes established by the Company are strictly prohibited at Ecopetrol and its Group.

In compliance with the provisions of Article 110 of the Political Constitution, and Article 27 of Law 1475 of 2011, the employees of Ecopetrol Group are prohibited, even in their personal capacity, from financing or making contributions or donations to political parties, movements, or campaigns, or from inducing others to do so.

Considering the aforementioned prohibitions, in 2021, the value for facilitation payments, lobbying services, and political contributions or donations was

COP 0.

Donations that comply with the Political Constitution and assignments at no cost

In 2021, the donations made by the Company, in compliance with the budgets of Article 355 of the Political Constitution, amounted to

COP **305,006,504.**

Risk management system
(102-15) (WEF 6)

Integrated risk management at Ecopetrol adheres to ISO 31000, COSO 2013, and COSO ERM 2017 standards, and it is governed by the provisions of the internal regulations incorporated in the Bylaws, the comprehensive policy, the Code of Good Governance, manuals, guides and instructions established for this purpose that set the general guidelines for risk management, allowing the Company to make informed decisions, contemplating possible events that positively or negatively impact the objectives of the Company and its Group.

The Integrated Risk Management System (SRI) is led by the Corporate Vice Presidency of Compliance (VCU), as an independent area, by means of the Corporate Integrated Risk Management Administration (GIR, by its Spanish acronym), which was created to ensure the design, implementation, management, maintenance, and continuous improvement of the SRI, along with its deployment to the companies of the business group. It is supervised by the Board of Directors through the Audit and Risk Committee of the Board of Directors (CAUJD, by its Spanish acronym), which verifies the establishment of the system, analyzes and recommends business risks for the approval of the Board, and follows-up on risk management.

(102-19) (102-20) (102-29) (WEF 2) At Ecopetrol, the Corporate Vice President of Compliance, María Juliana Albán, holds the highest-ranking position after the CEO, that is responsible for risk management at the operational level. Her reporting line on risk management is the Company's CEO and the Audit and Risk Committee of the Board of Directors. For its part, Ecopetrol's CEO, Felipe Bayón, holds the highest- ranking position with risk management and audit responsibilities at an operational level. In this position, his reporting line is directly to the Audit and Risk Committee of the Board of Directors.

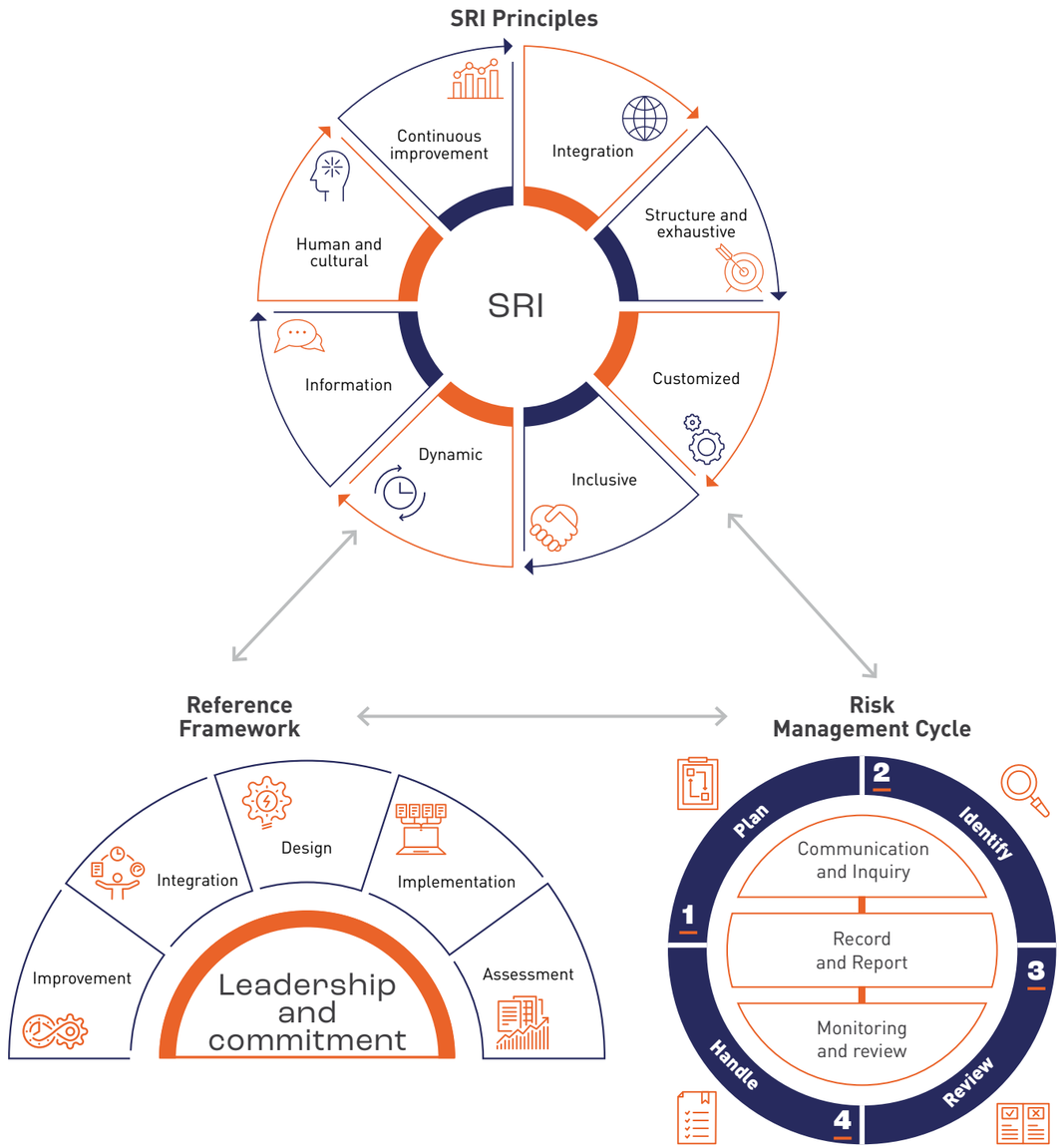
For its part, the Corporate Internal Audit Management is responsible for evaluating and proposing improvement actions on the effectiveness of the Company's Risk Management System.

All Company employees are responsible for understanding and identifying the risks they are exposed to in exercising their duties and within the processes in which they participate, and for properly dealing with manageable risks while exercising their duties, in compliance with the principles, framework, and processes of the SRI and in line with the Code of Ethics and Conduct.

In terms of the companies under Ecopetrol Group, Ecopetrol, through the VCU, exercises governance, guides, issues guidelines, defines practices, and monitors risk management, in order to unify guidelines, favor synergies and interaction, improve and ensure control, and making timely and appropriate decisions. The performance of the subordinates is shown in the periodic compliance reports submitted to Ecopetrol.

THE SRI ESTABLISHES THE SET OF PRINCIPLES, THE REFERENCE FRAMEWORK, AND THE PROCESSES FOR THE COMPANY TO MANAGE THE EFFECTS OF UNCERTAINTY RELATED TO THE FULFILLMENT OF ITS OBJECTIVES, IN ORDER TO MAXIMIZE OPPORTUNITIES, HELP DEFINE STRATEGIES, AND MAKE INFORMED DECISIONS.

Graph 23.
Integrated Risk Management System



Architecture of the Integrated Risk Management Plan

Source: Corporate Vice Presidency of Compliance

The risk levels at Ecopetrol, which are managed under the SRI, are specified as follows:

Graph 24.
Risks levels

Source: Corporate Vice Presidency of Compliance

The SRI works by executing the risk management cycle, which analyzes the objectives to identify the risks and define the adequate controls to mitigate the occurrence or impact thereof. This cycle comprises the following **five (5) stages:**

Graph 25.
Risk Management cycle

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

Identify:
Risk identification based on the perspective of other people involved in the analysis of the information

Assess:
Cause and effect analysis. Assessment according to probability and impact.

Address:
Selecting and implementing options to address the risk.

Communication, follow-up, and registration:
information Exchange, feedback, and continuous monitoring.

Source: Corporate Vice Presidency of Compliance

Risk management monitoring is conducted permanently by Internal Risk Management to identify risk alerts, verify the execution of mitigating factors (controls and treatment actions), and determine actions against any arising materialization, in order to maintain risks within defined tolerance and acceptance levels. These levels are established in the Risk Assessment Matrix (RAM) approved by the Board of Directors, which is used for the inherent and residual assessment of the risks identified by the Company. The relevant results of this follow-up, such as the identification of opportunities for improvement in the design of the indicators related to issues such as the calculation of formulas, the adjustment of alert limits to guarantee their effectiveness and implications, or possible additional impacts identified in the horizontal correlation and vertical risk analyzes, are periodically reported to the Executive Committee (ExCo) and the Audit and Risk Committee of the Board of Directors.

Business Risk Management

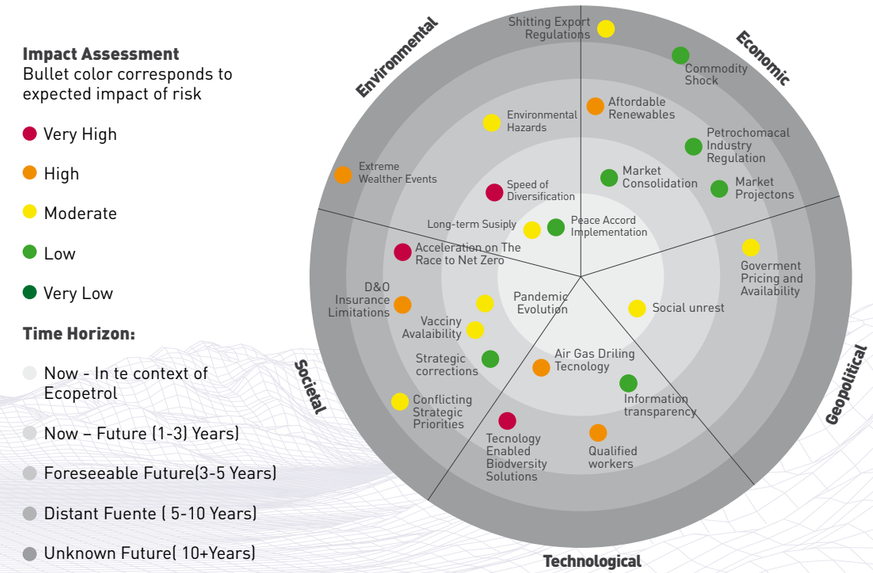
The construction and updating of the business risk map is conducted collectively, based on internal and external environment analyzes, considering market trends, the specific risks for Ecopetrol Group companies, as well as management standards, benchmarks, and industry risks, whose sustainability indices and radars are normally subject to analysis and review.

The monitoring of business and process risks is conducted by the Corporate Risks Management and Internal control Management respectively, to identify alerts, verify the execution of mitigating factors, and ensure actions against materializations reported by the responsible parties, in order to maintain the risks within defined tolerance and acceptance levels. The relevant results of these monitoring efforts are periodically reported to the ExCo and the CAUJD in their management reports, or depending on the occurrence or criticality, during the monthly sessions held.

Emerging Risk Management

In 2021, Ecopetrol identified 13 trends categorized as: social, environmental, economic, technological, and geopolitical. From the analysis of these trends, 24 potential emerging risks were identified, which were evaluated based on their potential impact and the speed in which each of them will emerge. The result of this evaluation is presented below:

Graph 26.
Emerging Risks



Source: Corporate Vice Presidency of Compliance

In accordance with the foregoing, the emerging risks identified are the following:

Table 36.
Emerging risks

Acceleration in the race towards net zero emissions	Technology-enabled natural capital solutions.
The risk that climate change and sustainability initiatives (e.g., Colombian Climate Action Law, COP 26 Glasgow 2021 tax credits, carbon credits) and the acceleration of reliable and profitable green alternatives may affect Ecopetrol's energy diversification portfolio and strategic priorities and lead to increased expenses related to green initiatives and a reduction in demand for Ecopetrol's main products.	The risk that Ecopetrol does not adequately adapt its technological capabilities and strategies (for example, nature-based solutions, Big Data analysis, remote sensing, robotics and drones, artificial intelligence) to effectively enable, evaluate, and report on the reduction of its impact on Colombia's biodiversity (e.g. pollution, habitat loss, deforestation, and GHG emissions), given Colombia's growing sustainable development commitments leading to tighter regulatory scrutiny and impacting Ecopetrol's strategic efforts and operations to minimize the Company's impacts on relevant ecosystems.

Source: Corporate Vice Presidency of Compliance.

Given the emerging risks, the potential impacts for Ecopetrol have been identified and specific mitigation activities have been defined, whose evolution is permanently monitored in order to trigger the corresponding warning signals.

For more details on emerging risks, visit Ecopetrol's website at the following link.

Risk culture

Ecopetrol is aware that culture influences all aspects of risk management and at all levels and instances. To this end, the Company encourages a set of desired behaviors and attitudes related to risk management, in line with the culture statement, which can be viewed by clicking on the following **link.**

To reinforce the risk culture, the Company contemplates indicators that affect variable compensation on an annual basis, as part of the performance evaluation at all hierarchical levels:

HSE: Fatalities or environmental incidents
(5% to 10%)

Internal control faults reported by the external auditor
(2.5% to 100%)

Ethical incidents and disciplinary sanctions
(100%)

If none of these events occurred, all Ecopetrol employees would receive the respective variable compensation without any deductions, that is, **100%.** However, upon the occurrence of any of these events, this bonus will be deducted in the proportions described above, in accordance with the Company's variable compensation guidelines.

A self-assessment exercise and quarterly reporting from the process owners also takes place, as specified in the Internal Control System (SCI) section, to identify and report potential risk events, and others, as part of the first line-of-defense activities. In 2021:

- Employees took SRI perception surveys to establish the level of appropriation of these concepts and define the corresponding strengthening strategies.
- A virtual Risk Management course was imparted to all workers
- Communication pieces were created alluding to integrated risk management in the company.

[102-27] Finally, the nine (9) members of the Board of Directors have received risk management training, specifically in:

- Risk management in operations conducted with third parties and risks associated with geopolitical changes
- Risk Management Podcast
- FCPA Act training by Miller Chavalier and FCPA Law training by the VCU

To learn more about the training imparted to board members, go to page 149 of this report

E – ENVIRONMENT

Ecopetrol's Environmental Strategy was published in 2021[25], with the purpose of devising the guidelines for the Company's environmental management, including the vision, principles, and objectives, as well as the identification of environmental pillars and levers. The Environmental Strategy is developed as part of the HSE Management System: leadership and planning, strategy, HSE programs and plans, in accordance with the guidelines of the ISO 14001 standard.

Below are the objectives of the Environmental Strategy:

- Environmental legal compliance
- Systematic identification and management of the potential environmental impacts and risks associated with Ecopetrol S.A.'s activities, with an emphasis on continuous improvement and applying the mitigation hierarchy
- Continuous improvement via the definition of strategic pillars and levers
- Fostering Culture E in employees, contractors, and the Group.
- Generating long-term environmental value in the context of our operations
- Facilitating compliance with corporate environmental goals on the path towards the energy transition strategy

The Environmental Strategy is also based on the following **eight (8) pillars:**

1. Planning and Environmental Compliance
2. Climate Action
3. Water Neutrality (Net Positive Water)
4. Biodiversity and Ecosystem Services
5. Circular Economy
6. Clean Air for the Environment
7. Comprehensive Waste Management
8. Prevention and Improved Remediation of Effects on the Environment due to Operational and Process Safety Incidents

25. Before, the environmental guidelines were immersed in the Environment Strategy. On its path towards continuous improvement, the Company drafted an independent Environmental Strategy to strengthen environmental management in the organization. This Strategy is applicable to all Ecopetrol S.A. projects and activities, and it may be, in turn, adopted by the companies of the Ecopetrol Group.

(102-11) As part of its environmental management, Ecopetrol applies the precautionary principle. Accordingly, in the absence of awareness of a potential impact or risk, the Company takes measures to study and scientifically understand the risk during the planning stages of the projects, that is, before the potential impacts occur, and adopts preventive actions or mitigation measures that have proven to be effective over time, which are also monitored and evaluated permanently. Hence, operational risks are prevented, even in the absence of scientific certainty.

For more information on Ecopetrol's Environmental Strategy, go to the following link.

Investments and environmental expenses

In 2021, Ecopetrol invested around

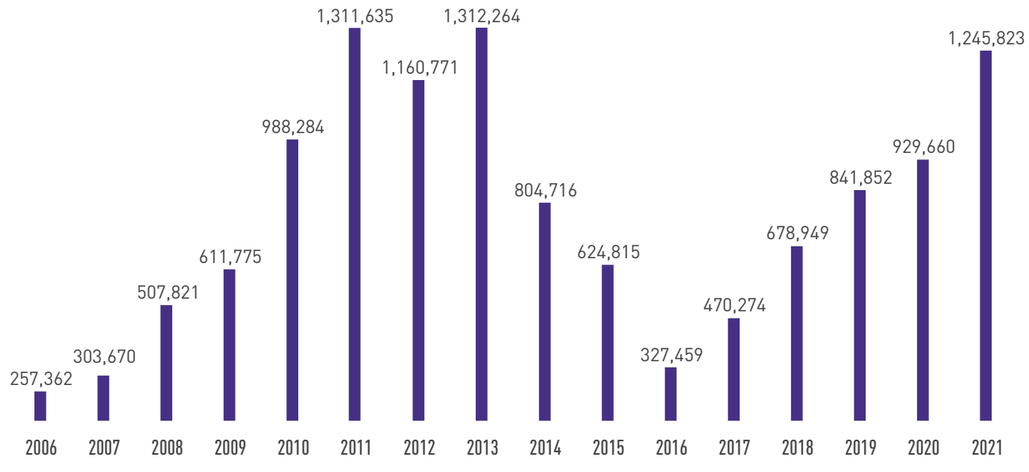
COP 1.2 TRILLION IN ENVIRONMENTAL MANAGEMENT,

as presented in Graph 27 and reported annually to the Office of the Controller General of the Republic of Colombia. This figure represents an

INCREASE OF 25%

compared to 2020, which is mainly explained by: recovery efforts and the protection of water resources, expenses related to environmental events such as Lisama 158 in Middle Magdalena, decarbonization projects and the air quality management at the Barrancabermeja Refinery, projects associated with the conservation and protection of biodiversity, and operational investments to reactivate contracts with the inclusion of biosafety aspects and elements.

Graph 27.
Environmental investments and expenses at Ecopetrol S.A. (Millions of pesos)



Source: HSE Vice Presidency

Investment in environmental management in 2021 was distributed as follows:

COP **116,089** BILLION

mainly allocated to environmental activities, environmental education, the dissemination of environmental activities, the hiring of environmental management personnel, environmental studies, and legal procedures, as well as the operation and maintenance of equipment and monitoring networks.

COP **35,950** BILLION

billion for the management of natural water resources, allocated to related recovery and protection programs, the purchase and assembly of equipment to control and monitor the quantity and quality of surface and/or underground water resources, and the protection of water basins.

COP **21,703** BILLION

for the recovery and protection of forests.

COP **271,473** BILLION

for the recovery and protection of natural air resources, allocated to the acquisition of equipment and the development of productive technologies to reduce atmospheric emissions.

COP **223,582** BILLION

for the recovery and protection of soil natural resources, allocated to the management and physical works for soil protection (geotechnical protection measures).

COP **15,159** BILLION

in biodiversity, allocated to biodiversity preservation and conservation projects.

COP **450,367** BILLION

in drinking water and basic sanitation, allocated to wastewater treatment projects, construction and implementation works for drinking water supply, and the management and disposal of solid and hazardous waste.

COP **111,646** BILLION

in risk management, allocated to disaster prevention management and support in disaster response.

Environmental planning and compliance

Ecopetrol S.A. currently holds

402 **environmental authorizations**

issued by national and regional environmental authorities, distributed as follows:

Table 37.
Environmental authorizations issued

Business segment	Environmental Licenses / Environmental Management Plans / Environmental Management Measures	Permits for the use and exploitation of natural resources
Exploration	53	3
Production	111	219
Refining	3	9
Other	0	4

Source: HSE Vice Presidency

In 2021, Ecopetrol received **3,680** administrative acts issued by the Environmental Authorities, of which **1,548** contained systematic monitoring requirements at the strategic, tactical, and operational levels to ensure timely compliance with the obligations set forth by said authorities.

Prior to managing and obtaining environmental authorizations, Ecopetrol S.A. conducts activities to understand and diagnose environmental aspects and determinants during the project planning stage. Thus, it identifies the potential environmental impacts and the essential opportunities to design and plan the environmental management measures established based on the mitigation hierarchy.

The following environmental authorizations were obtained in 2021

- 18 environmental authorizations from ANLA by means of the legal channel known as minor changes.
- One (1) Environmental License issued by ANLA for "the construction and operation of the Vasconia - Teca gas line".
- One (1) Modification of the Environmental License under Resolution 1257 of 2015 for Exploratory Drilling Area VMM32.
- Two (2) Modifications of Comprehensive Environmental Management Plans (PMAI, by its Spanish acronym) under the projects "Inclusion of gas variant 4", "Sogamoso Yariguí – Cantagallo Bridge," and "Pilot plan for water injection and wastewater disposal at the Palagua field".
- One (1) Subtraction of the Magdalena River Forest Reserve, created by Law 2 of 1959, for the "Yariguí 3D Seismic" project.
- One (1) establishment of environmental management measures for the Apiay – Chichimene transfer line.
- 53 environmental authorizations were obtained from Regional Autonomous Corporations (CAR, by its Spanish acronym) for the use and exploitation of natural resources at Ecopetrol S.A. fields.

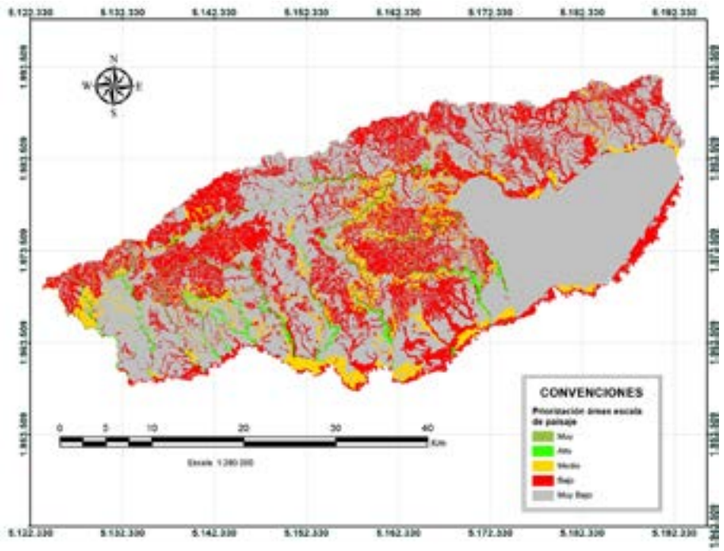
In addition, **132 procedures** were managed and filed with the Regional Environmental Corporations (CAR for its Spanish acronym), the Ministry of Environment and Sustainable Development, and ANLA.

Compensation for the use of natural resources and compulsory investment of not less than 1% in the water basins subject to capture

Compliance with environmental obligations arising from the use and exploitation of natural resources and the collection of water from watersheds is established in control and monitoring instruments (environmental licenses, environmental management plans, and environmental permits).

Ecopetrol S.A. elaborates investment and compensation plans for the conservation of biodiversity and its ecosystem services, in joint efforts with local communities in pre-established biodiversity clusters (Graph 28). These plans are implemented by signing voluntary conservation agreements, with incentives in kind, (Graph 29) to implement actions for the preservation, restoration, and/or sustainable use of biodiversity, in order to reduce conflicts between conservation and human activities.

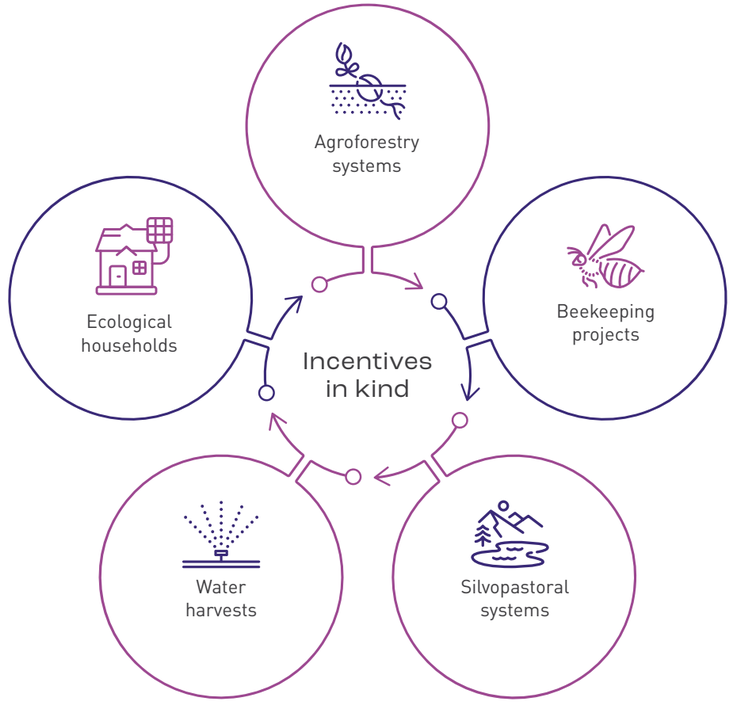
Graph 28.
Biodiversity clusters Eastern Andean Region



Source: HSE Vice Presidency

Graph 28. Biodiversity clusters for the implementation of environmental compensation obligations and compulsory investments of not less than 1%, in the case of the Eastern Andean Regional Environmental Department. Top: Tillavá cluster; bottom: cluster landscapes.

Graph 29.
Incentives in kind from voluntary conservation agreements



Source: HSE Vice Presidency

As of December 31, there

1,430 OBLIGATIONS REPORTED

in Ecopetrol S.A.'s information system, of which **377** correspond to compulsory investment obligations of no less than 1% and **369** to compensation obligations required for forest exploitation permits by the regional environmental authorities.

Click on this link for more information on environmental compensation.

(419-1) (307-1) To learn about the fines and penalties incurred in the period for non-compliance with environmental or socioeconomic regulations, go to the GRI Index.

ROADMAP

Climate Change

(102-12)

Exceptional Material Element

Sustainable Development Goals

(103-1)

Impacted stakeholder groups	Areas that manage the impacts	Ecopetrol segments that generate the greatest impact
Suppliers	VCU	Upstream
Associates and Partners	VAB	Mid-stream
Clients	HSE	Downstream
Employees	VDP	Commercial
Investors	VRP	
State		
Society and Community		

Why is the element material?

(103-1)

THE REALITY OF CLIMATE CHANGE HAS LED ECOPETROL TO RECOGNIZE GROWING WITH THE ENERGY TRANSITION AND GENERATING VALUE WITH TESG AS PILLARS OF THE CORPORATE STRATEGY.

The effects of Climate Change have a direct and significant impact on the Company's operations, infrastructure, and sustainability, and on all stakeholder groups. In accordance with the above, and as a result of the analysis conducted by Ecopetrol, this element was classified as exceptional.

How is the material element managed?

(103-2)

Ecopetrol defined the "**Climate Action**" pillar (link) as part of the environmental strategy, which seeks to maintain low carbon emission operations, reduce the vulnerability of the infrastructure and operations to climate variability and change, as well as adequately manage risks and identify opportunities associated with climate change. This pillar **includes four (4) subject areas:**

1. Mitigation
2. Adaptation and vulnerability
3. Research, development, and innovation
4. Participation in the drafting of public policy documents

How is the material element evaluated?

(103-3)

The development and fulfillment of the actions established in the TESG Roadmap of the Climate Change element are monitored, as well as the corresponding management indicators and milestones included in the Company's TBG.

The physical and transitional risks associated with climate that may affect the operation, the environment, and the facilities through the "Inadequate climate change and water management" business risk are also analyzed and managed.

Short, medium, and long term goals and projects
(103-2)

SHORT TERM (2022-2023

- Keep the GHG inventory updated and verified for Scopes 1, 2, and 3.
- Define the goal for reducing methane emissions and Scope 3 emissions by 2030
- Implement reduction projects (fugitive emissions and venting, flaring, renewable energy, and energy efficiency) and reduce 262,761 tCO_2e in 2022
- Produce 400 MW of renewable energy for self-consumption in 2023
- Increase energy efficiency by 3% in 2023
- Prioritize and develop Natural Climate Solution (SNC, by its Spanish acronym) projects

MEDIUM TERM (2024-2025)

- Verify the GHG inventory in 2025
- Reduce 1,600,000 tCO_2e in the 2020-2024 period*.
- Research emerging technologies and conduct hydrogen and CCUS pilots
- Reduce Scope 3 emissions
- Progress in the SNC portfolio to meet 2030 compensation goals

LONG TERM (>2025)

- Zero net emissions by 2050 and 25% reduction by 2030 (Scopes 1 and 2)
- 50% reduction of Scope 1, 2, and 3 emissions by 2050
- Zero Routine Flaring by 2030
- Increase energy efficiency by 6% between 2023-2028
- Gradual incorporation of projects associated with emerging technologies such as hydrogen and CCUS
- Capture two $MtCO_2e$ through CNS in 2030

*The year was adjusted, with respect to the version published for the right of inspection.

Management Efforts
(103-3)

The following progress was achieved in 2021 towards meeting the goals outlined in the Roadmap:

(305-1) (305-2) (305-3) (WEF 7) The 2017-2020 Emissions Inventory was verified by Ruby Canyon Engineering.

In 2021, the base year of the GHG inventory was updated to 2019. Ecopetrol's GHG emissions inventory is prepared under the ISO 14064-1 methodology, and specifically, following the guidelines of the GHG Protocol Corporate Standard (Scope 1), the GHG Protocol Scope 2 Guidance (Scope 2), the Corporate Value Chain (Scope 3), and the Accounting and Reporting Standard (Scope 3).

The main methodologies used to estimate atmospheric emissions for Ecopetrol's Scope 1 are mass balance and emission factors, although in some specific cases, engineering calculations or computer models are used. For Scopes 2 and 3, emission factors are used.

The information associated with GHG emissions, and their estimation is managed using the SAP-Environmental Compliance - SAPEC software solution.

The global warming potentials used in the inventory are the ones reported in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC-AR5).

The sources most often used in the inventory to obtain emission factors are the following:

- Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Gas Industry
- FECOC
- UPME
- AP-42
- ARPEL
- CORINAIR
- Guideline for fugitive emission calculations, June 2003

Table 38.
Direct and indirect Scope 1, 2, and 3 GHG emissions
(305-1) (305-2) (305-3) (WEF 7)

Emissions	Unit of measurement	2018	2019	2020	2021
Gross value of direct GHG emissions (Scope 1)	tCO_2e	11,193,834	11,141,393	10,238,780	10,296,909
Gross value of indirect GHG emissions when generating energy (Scope 2)	tCO_2e	427,546	602,040	776,125	680,399
Gross value of other indirect GHG emissions (Scope 3)	tCO_2e	NA	120,784,646	116,698,200	112,629,936

Source: HSE Vice Presidency

NOTE 1: i) Data adjusted based on SIGEA 2018, 2019, and 2020 updates, ii) The 2021 data corresponds to information inventoried for the first 10 months of 2021 and averaged for the months of November and December. These data will change once the final information is available.
NOTE 2: The gases included in the table are the following CO_2, CH_4 y N_2O.
NOTE 3: The first estimate of Scope 3 emissions made by the Company was for 2019.

(102-48) With respect to the data presented in Table 38, it is important to note that Ecopetrol's atmospheric emissions inventory is structured under the operational control approach, for upstream, midstream, and downstream activities. For the 2021 term, Cenit, a mid-stream subsidiary, left Ecopetrol's operational control, which is why the historical series corresponding to the 2018-2020 is recalculated for this report.

In relation to the facility operation of Ecopetrol's subsidiary, Oleoducto de Colombia (ODC), operational control was exerted by the Company until January 2021, at which time it was handed over to its subsidiary, Cenit. Consequently, the Ecopetrol inventory for the 2021 term includes the GHG emissions generated at the facilities of this subsidiary during this month.

Additionally, in 2020, Ecopetrol took over the operation of the upstream Pauto - Floreña asset, which is why the emissions of this asset are included in 2021 and the 2018-2020 historical series is recalculated.

In 2022, the GHG emissions of the subsidiaries operating in Colombia will continue being incorporated, which will imply reviewing the current reporting scope of the inventory.

Table 39.
Biogenic emissions
(305-1) (305-2) (305-3) (WEF 7)

Emissions	Unit of measurement	2018	2019	2020	2021
Biogenic CO_2 emissions Scope 1	tCO_2e	981.59	265.68	331.28	478.09
Biogenic CO2 emissions Scope 2	tCO_2e				
Biogenic CO_2 emissions Scope 3	tCO_2e		379,590	331,731	280,169

Source: HSE Vice Presidency

NOTE: i) Data adjusted based on SIGEA 2018, 2019, and 2020 updates, ii) The 2021 data correspond to information inventoried for the first 10 months of 2021 and averaged for the months of November and December. These data will change once the final information is available.

GHG emissions intensity
(305-4)

Upstream intensity is estimated using upstream emissions on the numerator, and the production of crude oil, gas, white products in BOE on the denominator, under the organizational limit of operational control.

The downstream intensity is estimated using Scope 1 and 2 refining and petrochemical emissions on the numerator, and the annual loads to the Barrancabermeja and Cartagena refineries in the BOE on the denominator.

The gases included in the following table are CO_2, CH_4, and N_2O.

Table 40.
GHG emissions intensity

Process	Unit of measurement	2018	2019	2020	2021
Production	$KgCO_2e/BOE$	25.7	26.7	28.8	29.6
Refining and petrochemicals	$KgCO_2e/BOE$	44.2	42.8	42.4	39.9

Source: HSE Vice Presidency

NOTE: i) Data adjusted based on SIGEA 2018, 2019, and 2020 updates, ii) The 2021 data correspond to information inventoried for the first 10 months of 2021 and averaged for the months of November and December. These data will change once the final information is available.

The reduced carbon intensity of the refining segment between 2020 and 2021 is mainly due to the implementation of energy efficiency actions at the refineries and reduced venting emissions at the Cartagena Refinery.

The increase in carbon intensity in the production segment is mainly due to the reversal of assets with a higher level of carbon intensity, previously operated by a third party (Pauto and Floreña), and higher energy consumption associated with the types of crude oil that are part of the company's portfolio.

ECORESERVE LA TRIBUNA, COLOMBIA

Reduction of GHG emissions
(305-5)

293,594 tCO_2e

were reduced in 2021 thanks to the implementation of new projects, far exceeding established goal of 235,262 tCO2e

BY **25%**

The emission reduction projects implemented are quantified using mass balance and emission factors. The emission factors of the instruments below were used for calculation:

- Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Gas Industry
- FECOC
- UPME
- AP-42

Table 41.
Projects implemented to reduce or avoid emissions
(305-5)

Description of the initiative	Gases included in the calculation	Scopes that led to reductions	Standards or methodologies used for calculation	Development stage
Energy efficiency: Includes projects associated with changes in the energy matrix for another of less impact and process optimization. 42 projects were executed in the 2018- 2021 period (1 in 2018, 3 in 2019, 14 in 2020, and 24 in 2021).	CO_2 CH_4 N_2O	Scope 1	Estimated reductions using mass balance and/or emission factors in Ecopetrol's own calculation model.	Implemented
Fugitive emissions and vents: includes projects associated with the elimination of leaks and vents in the processes. 15 projects were executed in the 2018-2021 period (1 in 2018, 6 in 2020, and 8 in2021).	CH_4	Scope 1	Estimated reductions using mass balance and/or emission factors in Ecopetrol's own calculation model.	Implemented
Optimization of flaring: includes projects associated with the optimization of flaring through the sale, self- generation, or optimization of the process. 19 projects were executed in the 2018- 2021 period (2 in 2018, 2 in 2019, 6 in 2020, and 9 in 2021).	CO_2 CH_4	Scope 1	Estimated reductions using mass balance and/or emission factors in Ecopetrol's own calculation model.	Implemented
Renewable energy: includes projects associated with energy generation via renewable sources. Three projects were implemented in the 2018-2021 period (1 in 2019 and 2 in 2021).	CO_2	Scope 2	Estimated reductions using mass balance and/or emission factors in Ecopetrol's own calculation model.	Implemented

Source: HSE Vice Presidency

Table 42.
Tons of GHG emissions reduced or avoided as a direct consequence of reduction initiatives in each of the projects
(305-5)

Emissions	Unit of measurement	2018	2019	2020	2021
Energy efficiency	tCO_2e	35,990	161,473	128,596	186,713
Fugitive emissions and vents	tCO_2e	33,894	0	23,257	59,817
Optimization of flaring	tCO_2e	35,386	210,370	47,994	45,135
Renewable energies	tCO_2e	0	8,760	0	1,929

Source: HSE Vice Presidency

NOTE: i) Data adjusted based on SIGEA 2018, 2019, and 2020 updates, ii) The 2021 data correspond to information inventoried for the first 10 months of 2021 and averaged for the months of November and December. These data may change once the final information is available.

Progress was made in 2021 in the detection and measurement of methane emissions, which reached

95%

at the production facilities of Ecopetrol operated assets, using a bottom-up approach (based on representative samples using infrared cameras and others). By adopting a top-down approach (measurement at a regional scale using satellite images or overflights), Ecopetrol covered 95% of the production facilities, the Barrancabermeja and Cartagena refineries, the Unconventional Reservoirs (YNC) pilot project, and the assets with partners in Middle Magdalena using an aircraft with specific methane sensors and

COVERING A TOTAL OF **1,205** Km^2.

Management strategy for fugitive emissions, venting, and burning

(OG-6)

Ecopetrol has a fugitive emissions and venting management strategy, which seeks the following:

- Achieve compliance with the sectoral goal of reducing methane emissions from member companies of the Climate and Clean Air Coalition (CCAC) by 2025, **in absolute terms of**

  45%

  between

  60% and **75%**

  by 2030, exceeding the levels estimated for 2015. In 2022, Ecopetrol will establish its own methane emission reduction goal.

- Report a maximum of

  100% **of operated assets in 2024 and**

  100% **of non-operated assets in 2026, at the**

  4/5 MEASUREMENT LEVEL

  in accordance with the commitments established for OGMP 2.0 members. (Oil and Gas Methane Partnership).

To this end, progress is being made in the development and implementation of the following lines of action:

(i) Updating and adjusting the methane emissions inventory, construction of own emission factors, and definition of reduction goals.

ii. Incorporation of design criteria and good engineering practices to reduce fugitive emissions and venting.

iii. Implementation of the LDAR - Leak Detection and Repair, a program for the identification, quantification, and repair of methane emission leaks.

With respect to the reduction of flaring, Ecopetrol aims to eliminate its routine burning by 2030, in line with the World Bank's **"Zero Routine Flaring by 2030"** initiative, in order to reduce routine burning in existing fields and avoid routine burning in new oil reservoirs.

A new **campaign to detect methane emissions** was deployed in 2021, with greater coverage than the campaign conducted between 2019 and 2020, identifying

1,085 leaks

that already have an action plan, and of which,

184 (17%)
HAVE ALREADY BEEN CLOSED

In addition,

663 LEAKS WERE CLOSED

in 2021 out of the **774 identified** between 2019 and 2020, thereby achievingl

103%

compliance with the plan.

Finally, by October 2021, a

41.4%

reduction in routine and non-routine burning was achieved in the period between August 2017 and December 2021.

Public Policy efforts related to climate change

Ecopetrol articulates its climate change strategy with the National Government's public policy and contributes to the construction of technical and regulatory guidelines to strengthen the country's institutional capacity in the area of climate change.

In 2021, Ecopetrol participated in working groups to draft the following documents, regulations, and strategies associated with climate change:

(i) Colombia's Long-Term Climate Strategy E2050,

(ii) Update to the Comprehensive Climate Change Management Plan for the Mines and Energy sector,

(iii) The Climate Action Law,

(iv) Conpes "Public policy to reduce disaster risk conditions and adapt to climate variability phenomena",

(v) The Energy Transition Law and the promotion of Non-conventional sources of energy,

(vi) Colombia's The Hydrogen Roadmap, and (vi) The proposed resolution for the regulation of fugitive emissions, vents, and flaring.

Furthermore, the Company joined the Carbon Neutrality Program led by the Ministry of Environment and Sustainable Development of Colombia and signed a Voluntary Agreement with the MME to promote carbon neutrality and climate resilience in the hydrocarbon sector.

In terms of global initiatives, the Company is part of the Climate and Clean Air Coalition (CCAC) led by the United Nations, the International Petroleum Industry Environmental Conservation Association (IPIECA), and Zero Routine Flaring by 2030 led by the World Bank.

ROADMAP

Integrated Water Management

(102-12)

Exceptional material element

Sustainable Development Goals

(103-1)

Impacted stakeholder groups	Areas responsible for managing the impacts	Ecopetrol segments with the greatest impact
Society and Community	VDS	Upstream
Investors and Shareholders	VSHE	Downstream
Local State	VDP	
Employees	VRP	
National State		
Clients		
Suppliers		

Why is the element material?

(103-1)

Integrated Water Management is an Exceptional element of the Generating Value with TESG pillar of the Corporate Strategy. This is due to its significant impact on value generation in the short, medium, and long term, and its relevance for stakeholders.

RESPONSIBLE MANAGEMENT OF WATER RESOURCES IS ESSENTIAL FOR THE OPERATIONAL CONTINUITY OF THE DIFFERENT BUSINESS AREAS, AS WELL AS TO ENSURE THE PROTECTION AND CONSERVATION OF THE ECOSYSTEM SERVICE AND ITS AVAILABILITY FOR COMMUNITIES AND SOCIETY.

How is the material element managed?

(103-2)

The Integrated Water Management strategy and the **Water Neutrality** strategic pillar aim to incorporate efficient water management in Ecopetrol's value chain, since it is a fundamental element for the company's sustainability as project and operations enabler. By implementing actions to reduce the water footprint, potential environmental impacts and water-associated conflicts are also reduced, thus promoting water security in the environment.

The Integrated Water Management Roadmap was defined in 2021, targeting water neutrality by 2045 on the path toward positive net water. This means replacing 100% of the water consumed by the operations, thereby generating a positive impact in the basins used as catchments or discharges. To achieve this goal, Ecopetrol focuses on the following:

Improving operational efficiency in water management (leveraging on the implementation of technology and the generation of knowledge), reducing freshwater catchments and discharges by maximizing internal reutilization and the use of alternative water sources (e.g., municipal wastewater, seawater, brackish water from deep aquifers, etc.), and the reutilization of produced water in other sectors (e.g., agriculture).

Protection of water basins by implementing own and collective actions that compensate the remaining volume of water consumed by the operations.

How is the material element evaluated?
(103-3)

Integrated water management is evaluated using the **three (3) indicators** below, which are monitored on a monthly basis.

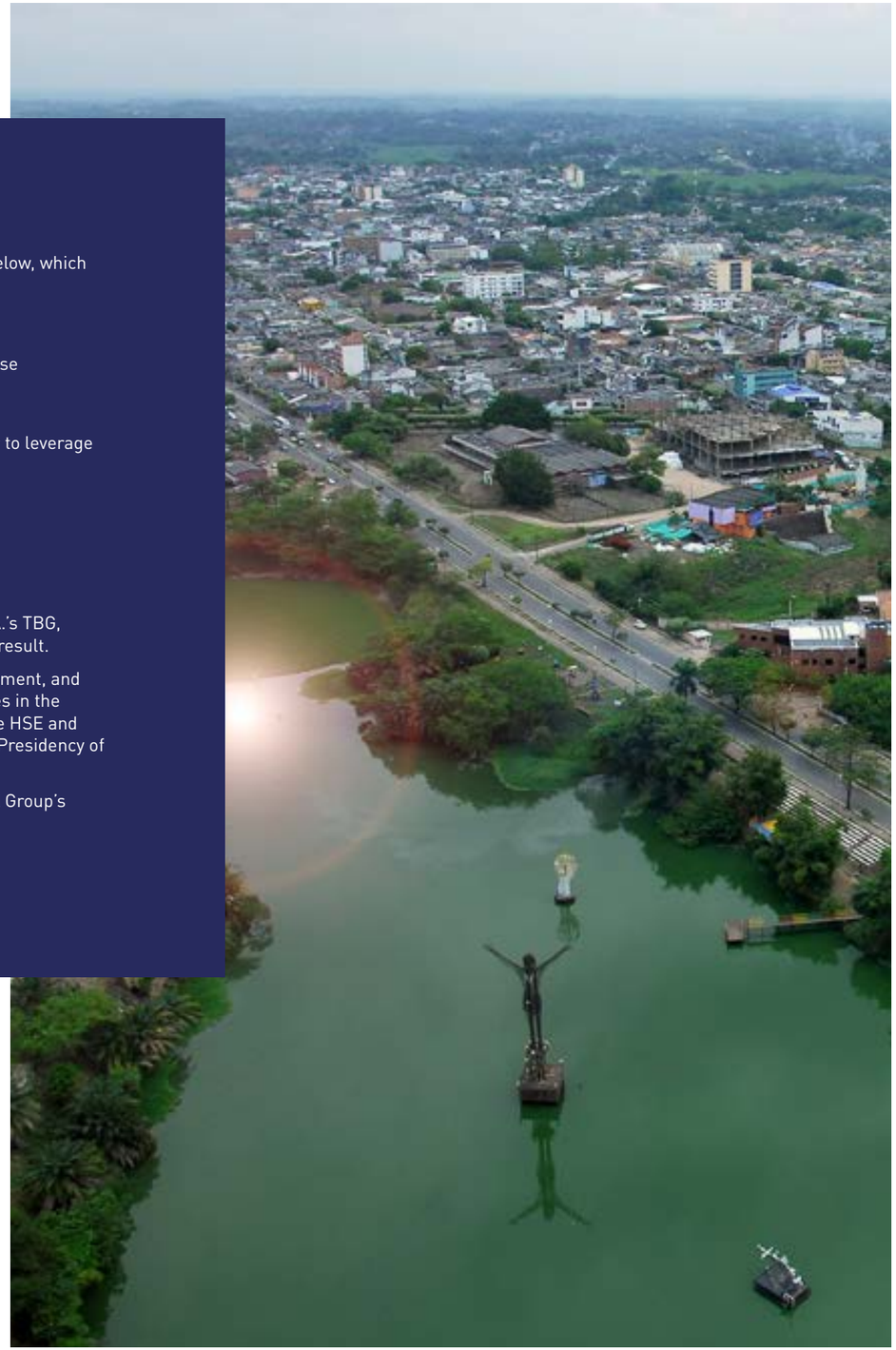
- Reduction of the volume of fresh water withdrawn for industrial use
- Percentage of reutilization of collected water and produced water to leverage the reduction of catchments and discharges
- Volume of water reused in other sectors (e.g., agriculture).

In 2021, the water reutilization indicator was incorporated into Ecopetrol S.A.'s TBG, which is part of the variable remuneration, and this goal was exceeded as a result.

These goals are updated annually under the principle of continuous improvement, and they are monitored based on information uploaded by the Group's businesses in the SIGAR-Aguas tool. The results of the indicators are presented monthly to the HSE and management committees of the Vice Presidency of Production and the Vice Presidency of Refining and Petrochemicals.

In 2021, the water reutilization indicator was incorporated into the Ecopetrol Group's TBG, which is part of the variable remuneration.

Short-term goals are updated annually.



Short, medium, and long-term goals and projects
(103-2)

The Integrated Water Management Roadmap towards Water Neutrality sets goals to optimize water use, maximize reutilization, increase reutilization, and reduce water catchments and discharges.

All the goals presented below were established with respect to 2019 (base year) and are outlined for compliance with the objective of water neutrality:

SHORT TERM (2022)

- Reduce 14% of freshwater catchment
- Increase the reutilization of produced water to 28.8%
- Maintain industrial water reutilization at 41.2%

MEDIUM TERM (2030)

- Reduce 58% of freshwater catchment for industrial use
- Reduce 66% of industrial discharges to surface water bodies

LONG TERM (2045)

- Reduce 66% of freshwater catchment for industrial use
- Reduce 100% of industrial discharges to surface water bodies

2021 Management Efforts[26]
(103-3)

The main achievements of the efforts towards water neutrality with respect to the base year (2019) were:

20%
REDUCTION
in water catchment volume for industrial use due to less catchment for recovery in the La Cira Infantas, Yariguí-Cantagallo, Tibú, San Francisco, and Yaguará fields, and lower consumption in the Barrancabermeja Refinery.

REUTILIZATION OF **111.3**
million cubic meters of water (• 74% of the water required to operate), of which 94.4 million m3 correspond to produced waters and 16.9 million m3 to the reutilization of collected water, leading to a compliance of
106% and 133%
of the goals established for 2021, respectively.

30%
INCREASE
in the volume of produced water reused, especially due to better performance in injection for recovery in the Castilla, Apiay, Suria, and Chichimene fields. Apiay, Suria y Chichimene.

Completion of the Plans for Reconversion to Clean Technologies in the Management of Discharges in Provincia, Tisquirama, Casabe, and Llanito, which imply eliminating the discharge of more than
five (5)
million de m³/year
of treated produced water, previously discharged into surface bodies.

26. Note: All values in this report include the Nare asset that Ecopetrol received in November 2021

Interaction with water as a shared resource
(303-1) (WEF 11E)

In 2021, Ecopetrol captured **40.1 million m³** of water **(4% less than in 2020)** from the following sources:

Superficial (61% of total water catchment): 29% reduction compared to 2020 due to lower water catchment requirements for recovery in the La Cira Infantas (-1.2 million m3) and Yaguará (-31 thousand m3) fields. It is important to note that the volume of drinking water delivered to the community of El Centro (approximately 8.8 million m3) is not included as of 2021.

Underground (21% of total water catchment): 6% reduction compared to 2020, mainly due to lower water requirements for recovery in Tibú (-941 thousand m3 due to public order conditions) and Yariguí-Cantagallo (-331 thousand m3 due to optimizations in the recovery process).

Aqueducts and external suppliers (18% of total water catchment): 4% reduction compared to 2020 due to lower catchments at the Cartagena Refinery.

Marine waters (0.0%): 0.01 million m3 of marine waters to test fire-fighting systems.

THE WATER COLLECTED IS MAINLY USED FOR REFINING PROCESSES (71.0%), FOLLOWED BY PRODUCTION (28.8%), AND THE REMAINING 0.2% WAS USED IN ADMINISTRATIVE AREAS.

Impact identification and management due to catchments
(303-1) (303-5)

Water consumption by Ecopetrol assets ranges between

0 and **2.5%**

of the water supply of the basins where catchment takes place, which is why the potential impact of the activities is not significant.

That said, the impacts that Ecopetrol can generate on water are related to water consumption, which, under natural circumstances of scarcity due to climatic variability and seasonal rainfall, could generate changes in water availability for users in the catchment points downstream. To reduce this potential impact, Ecopetrol, during the environmental planning phase of each project or initiative, and in accordance with the methodology established by the ANLA, identifies the availability dynamics of water resources in the area of influence, and defines catchment limits and management and monitoring measures to be incorporated in the environmental management plans subject to evaluation and approval by the Environmental Authority.

Ecopetrol files a licensing and permitting process with the environmental authorities before using or exploiting the water resources. The licenses and permits granted set the conditions so that catchments and discharges do not generate significant impacts on the availability and quality of water bodies. Once the authorizations have been granted, legal compliance therewith is supervised, and the supply and quality conditions of the water bodies are continuously monitored. The monitoring results are recorded in the SIGAR - Aguas tool to identify potential deviations and generate the corresponding corrective action plans.

At the operational and corporate level, operational efficiency strategies are planned and implemented in water management in order to reduce the Company's freshwater catchment and discharge volumes, accompanied by a technological component and the protection of natural capital in the basins.

Lastly, Ecopetrol uses the water footprint calculation methodology (ISO 14046:2014) to assess the following:

The consumption footprint
Extracted fresh water that evaporates, is incorporated into the product, or that is not returned to the basin

The water scarcity footprint
Impact of water consumption with respect to available fresh water

The degradation footprint
Deterioration of freshwater quality due to the presence of polluting substances

Sustainability and Water Security

For Ecopetrol, it is essential to support and be associated with water security efforts at the international and national levels, which is why it participates in the **CEO Water Mandate** and **Water Coalition for Colombia** initiatives. Currently, the water security initiatives promoted by Ecopetrol are part of the Water Action Hub, the global collaboration and knowledge exchange platform for water sustainability and climate resilience.

At the regional level, and as part of the formulation of a Water Governance Mechanism for the supply basins in the municipalities of Acacías and Villavicencio, the Promoter Group was created in 2021, together with The Nature Conservancy (TNC), with the participation of

16 PUBLIC AND PRIVATE ENTITIES

interested in collective action, to solve the water security challenges of said basins in the department of the Meta. This initiative contributes to the purpose of offsetting the remaining consumption footprint to achieve the goal of water neutrality.

In partnership with IDEAM, Ecopetrol updates and monitors the status of surface water resources and generating hydrometeorological alerts in the VMM. Moreover, to improve knowledge of the basins in the area of influence associated with Ecopetrol operations, a water security situational analysis was conducted in the hydrographic subzones of the Opón and Sogamoso rivers and the middle and lower basins of the Lebrija river in the department of Santander.

Lastly, Ecopetrol continues deploying actions for the conservation of natural capital and biodiversity, through voluntary efforts and by complying with the obligations of environmental compensation and

1%

investment, which contribute to the conservation and monitoring of water resources.

Management of impacts related to water discharges
(303-2) (WEF 11E)

With respect to discharges, a total of **61.6 million m³** were recorded,

41% **less than in 2020,**

mainly due to

(i) The closure of 90,000 barrels of water to the Magdalena River and

(ii) the interruption of the Castilla field discharge in the first half of the year.

94.4% of the total was discharged into surface water bodies, **4.1%** into the sea, **1.2%** into the ground, and **0.2%** into external managers and sewers. Exploration and production activities generated

76.7% OF TOTAL DISCHARGES

(mainly production), Refining 23.2%, and corporate areas 0.1%.

Identification and management of impacts due to discharges

(303-1) (WEF 11E)

The discharges could change the quality of the water bodies. In this case, environmental evaluations are conducted from the planning stage, based on the load and the assimilation and dilution capacity of the receiving body to confirm that no significant impacts are generated on them. **Ecopetrol treats**

100% OF ITS WASTEWATER

before being discharged and ensures compliance with the maximum permissible values established in national and local environmental regulations. In addition, the Company monitors the receiving bodies to confirm that they are not affected by their discharges.

(303-4) Discharge quality criteria are established by competent environmental authorities, who determine the maximum permissible values for discharges to surface water bodies and sewers, seawater, and soil, applicable to each productive sector of the industry. Specifically for the hydrocarbon sector, maximum values are defined depending on the activity within the value chain (Exploration, Production, Refining, and Transportation), and the Company monitors more than 40 quality-related parameters.

To define the quality criteria, in compliance with current regulations, Ecopetrol conducts environmental assessments of the discharges based on the assimilation and dilution capacity of the receiving bodies to minimize impacts on the resource.

Priority Substances

Ecopetrol uses the results of the water footprint evaluation (ISO 14046) to define the priority substances in discharge management. To this end, the following water degradation impact indicators are included in the assessment:

(i) **Human toxicity:** based on the USEtox model, it assesses the danger of wastewater discharges in terms of carcinogenic and non-carcinogenic toxicity for humans (CTUh).

(ii) **Ecotoxicity in fresh water:** based on the USEtox model, it evaluates various toxicological mechanisms caused by the release of substances with a direct effect on the health of the ecosystem in (CTUe).

(iii) **Ecotoxicity of seawater:** based on the Recipe model.

(iv) **Fresh water acidification:** based on the Accumulated Excess EA model, it evaluates the impact on fresh water due to the release of NOx, SOx, and NH3 into the atmosphere, which could cause acid rain. In addition, environmental regulations define the most relevant parameters for each productive sector and establish the corresponding maximum allowable limits.

To learn more about the Company's Comprehensive Water Management efforts, go to the following link.

Table 43.
Water extraction by area
(303-3) (WEF 10)

Water extraction by area	Unit of measurement	2018	2019	2020	2021
Total extraction all areas	**Thousands of m³**	**440,089**	**453,769**	**454,658**	**428,243**
Total surface water	**Thousands of m³**	**38,569**	**38,369**	**34,465**	**24,326**
Surface: Fresh water (total dissolved solids ≤1000mg/l)	Thousands of m³	38,569	38,369	34,465	24,326
Surface: Other waters (total dissolved solids >1000mg/l)	Thousands of m³	-	-	-	-
Total groundwater	**Thousands of m³**	**10,800**	**8,459**	**9,347**	**8,771**
Underground: Fresh water (total dissolved solids ≤1000mg/l)	Thousands of m³	10,800	8,459	9,347	8,771
Underground: Other waters (total dissolved solids >1000mg/l)	Thousands of m³	-	-	-	-
Total sea water	**Thousands of m³**	**-**	**-**	**-**	**10**
Sea: Fresh water (total dissolved solids ≤1000mg/l)	Thousands of m³	-	-	-	-
Sea: Other waters (total dissolved solids >1000mg/l)	Thousands of m³	-	-	-	10
Total aqueducts	**Thousands of m³**	**8,154**	**7,800**	**7,301**	**6,983**
Aqueducts: Fresh water (total dissolved solids ≤1000mg/l)	Thousands of m³	8,154	7,800	7,301	6,983
Aqueducts: Other waters (total dissolved solids >1000mg/l)	Thousands of m³	-	-	-	-
Total produced water	**Thousands of m³**	**382,567**	**399,141**	**403,544**	**388,152**
Total produced water: Fresh water (total dissolved solids ≤1000mg/l)	Thousands of m³	84,574	91,618	100,150	302,003
Total produced water: Other waters (total dissolved solids >1000mg/l)	Thousands of m³	297,993	307,523	303,394	86,149

Source: HSE Vice Presidency

Note: There is a significant difference between "fresh water" and "other waters in the produced water category, given that in 2021, the monitors of the Rubiales field (approximately 220 million m3) showed TDS values less than 1,000 ppm (fresh water), while in 2020, they had been above 1,000 ppm (other waters).

Table 44.
Water extraction by water stressed areas
(303-3) (WEF 10)

Water extraction by water stressed area	Unit of measurement	2018	2019	2020	2021
Total extraction water stressed areas	**Thousands of m³**	**25,877**	**25,202**	**23,456**	**24,647**
Total surface water	**Thousands of m³**	**4,598**	**4,067**	**3,231**	**4,005**
Surface: Fresh water (total dissolved solids ≤1000mg/l)	Thousands of m³	4,598	4,067	3,231	4,005
Surface: Other waters (total dissolved solids >1000mg/l)	Thousands of m³	-	-	-	-
Total groundwater	**Thousands of m³**	**313**	**248**	**69**	**84**
Underground: Fresh water (total dissolved solids ≤1000mg/l)	Thousands of m³	313	248	69	84
Underground: Other waters (total dissolved solids >1000mg/l)	Thousands of m³	-	-	-	-
Total sea water	**Thousands of m³**	**-**	**-**	**-**	**10**
Sea: Fresh water (total dissolved solids ≤1000mg/l)	Thousands of m³	-	-	-	-
Sea: Other waters (total dissolved solids >1000mg/l)	Thousands of m³	-	-	-	10
Total aqueducts	**Thousands m³**	**8,078**	**7,740**	**7,220**	**6,970**
Aqueducts: Fresh water (total dissolved solids ≤1000mg/l)	Thousands of m³	8,078	7,740	7,220	6,970
Aqueducts: Other waters (total dissolved solids >1000mg/l)	Thousands of m³	-	-	-	-
Total produced water	**Thousands of m³**	**12,887**	**13,146**	**12,935**	**13,578**
Total produced water: Fresh water (total dissolved solids ≤1000mg/l)	Thousands of m³	-	-	-	-
Total produced water: Other waters (total dissolved solids >1000mg/l)	Thousands of m³	12,887	13,146	12,935	13,578

Source: HSE Vice Presidency

Notes
- There is evidence of a 20% increase compared to 2020 in the extraction of surface fresh water in water stressed areas (water use index greater than 40%), mainly due to increased catchment by the Barrancabermeja Refinery in the San Silvestre swamp (+822 thousand m³).
- With regard to groundwater, there was a 21% increase due to higher catchments for industrial use in the Dina Cretáceos, Lisama, and San Francisco fields.
- Total water extraction in water stressed areas is equivalent to 6% of Ecopetrol's total extraction.

Table 45.
Amount of water reused by Ecopetrol in 2021
(OG-5) (WEF 10)

Water reutilization	Unit of measurement	2018	2019	2020	2021
Total water reutilization	**Thousands of m³**	**85,015**	**89,396**	**96,524**	**111,262**
Water catchment reutilization	Thousands of m³	17,660	16,971	11,365	16,873
Produced water reutilization	Thousands of m³	67,355	72,424	85,159	94,389

Source: HSE Vice Presidency

Note: There was a 15% increase in the total volume of reused water due to:

- Increased reutilization of water catchment at the Barrancabermeja Refinery (+4.9 million m³) after identifying reutilization currents that had not been reported, as well as increased reutilization at the Cartagena Refinery (+683 thousand m³)
- Increased reutilization of produced water due to better performance in injection for recovery, Castilla +5.4 million m³, Apiay and Suria +343 thousand m³, Chichimene +2.7 million m³.
- A total of 94.4 million m³ of production water were reused, which means a percentage of reuse of 24% with respect to the total water produced, achieving 106% compliance with the goal established for 2021 (22.4 %).
- A total of 16.9 million m³ of effluents from the use of collected water were reused/recirculated, which represents a reuse of 42% with respect to the volume collected, achieving 133% compliance with the goal established for 2021 (34, two%).

Table 46.
Effluent management
(303-4)

Effluent management	Unit of measurement	2018	2019	2020	2021
Reutilization	Thousands of m³	85,015	89,396	96,524	111,262
Reutilization	Thousands of m³	52	1,159	3,134	2,305
Disposal	Thousands of m³	243,975	249,339	245,429	246,940
Discharges	Thousands of m³	100,011	96,686	87,278	61,555
Total effluents	**Thousands of m³**	**429,053**	**436,580**	**432,365**	**422,061**

Source: HSE Vice Presidency

Table 47.
Amount of water discharge in all areas
(303-4)

Water discharge in all areas	Unit of measurement	2018	2019	2020	2021
Surface water	Thousands of m³	97,050	93,035	83,942	58,199
Sea water	Thousands of m³	2,061	2,671	2,360	2,508
Soil water	Thousands of m³	816	850	849	751
Sewage water	Thousands of m³	84	131	128	97
Total discharges by fresh water (total dissolved solids ≤1000mg/l)	**Thousands of m³**	**66,192**	**65,703**	**56,872**	**45,832**
Total discharges by other waters (total dissolved solids >1000mg/l)	**Thousands of m³**	**33,819**	**30,983**	**30,407**	**15,723**

Source: HSE Vice Presidency

Note: There was a 29% reduction of total discharges by the Company, mainly due to the temporary suspension of the discharge from Castilla. With regard to the differentiation of discharges by their TDS content, there was a 19% reduction in the "freshwater line <1000 ppm TDS" due to the suspension of the discharge from Castilla (-23.5 million m³), and the inclusion in 2021 (according to legal monitoring) as fresh water from the discharges of Rubiales (+12.8 million m³).

Table 48.
Amount of water discharge by water stressed areas
(303-4)

Water discharge in water stressed areas	Unit of measurement	2018	2019	2020	2021
Surface water	Thousands of m^3	564	532	480	584
Sea water	Thousands of m^3	2,059	2,669	2,339	2,508
Soil water	Thousands of m^3	213	276	140	107
Sewage water	Thousands of m^3	34	61	19	-
Total discharges by fresh water (total dissolved solids ⩽1000mg/l)	Thousands of m^3	335	464	257	180
Total discharges by other waters (total dissolved solids >1000mg/l)	**Thousands of m^3**	**2,535**	**3,075**	**2,721**	**3,019**

Source: HSE Vice Presidency

Note: The increased volume of discharges in water stressed areas is due to higher discharges in Llanito (+104 thousand m^3) and the Cartagena Refinery (+170 thousand m^3). The discharge from Llanito was definitively eliminated as of November 2021.

Table 49.
Amount of discharge by treatment level
(303-4)

Discharge by treatment level	Unit of measurement	2018	2019	2020	2021
Without treatment	Thousands of m^3	-	-	-	-
Pretreatment	Thousands of m^3	-	-	-	-
Primary treatment	Thousands of m^3	17,091	9,476	3,844	4,302
Secondary treatment	Thousands of m^3	82,835	87,081	83,319	57,197
Tertiary treatment	Thousands of m^3	3	2	0	-
Other treatments	Thousands of m^3	82	127	115	56

Source: HSE Vice Presidency

Note: In primary treatments, discharges with exclusively physical treatments are reported; secondary treatments involve biological treatments; tertiary treatments include advanced treatments like reverse osmosis. The volume reported under "Other treatments" corresponds to wastewater delivered to external managers, who are responsible for the final treatment and disposal. The decrease in water discharged with tertiary treatments is because these streams were 100% reused.

(303-4)

NO EVENTS EXCEEDING MAXIMUM PERMISSIBLE DISCHARGE PARAMETERS WERE RECORDED IN 2021.

Table 50.
Ecopetrol's 2021 water consumption in water stressed areas
(303-5)

Water consumption	Unit of measurement	2018	2019	2020	2021
Inlets	Thousands of m^3	25,877	25,202	23,456	24,647
Fresh water catchments	Thousands of m^3	12,989	12,055	10,520	11,069
Produced water	Thousands of m^3	12,887	13,146	12,935	13,578
Effluents	Thousands of m^3	15,490	16,558	15,486	16,179
Water catchment injected for recovery	Thousands of m^3	250	234	41	0.08
Drinking water supplied to third parties (communities)	Thousands of m^3	71	95	4	-
Produced water reinjected for recovery	Thousands of m^3	12,299	12,691	12,462	-
Produced water reinjected for final disposal	Thousands of m^3	-	-	-	-
Reutilization of produced water for agricultural irrigation	Thousands of m^3	-	-	-	-
Discharges	Thousands of m^3	2,870	3,539	2,978	3,199
Balance (consumption)	**Thousands of m^3**	**10,387**	**8,643**	**7,970**	**8,469**

Source: HSE Vice Presidency

Table 51.
Amount of water produced by produced water management method in 2021
(OG-5) (WEF 10)

Produced water by disposal method	Unit of measurement	2018	2019	2020	2021
Total water produced	**Thousands of m^3**	**383,270**	**399,164**	**405,770**	**389,397**
Discharge	Thousands of m^3	71,888	76,241	72,047	45,763
Reinjected as final disposal	Thousands of m^3	243,975	249,339	245,429	246,940
Reinjected for recovery	Thousands of m^3	67,146	71,685	84,845	94,259
Reused	Thousands of m^3	52	1,159	3,134	2,305
Other reuses	Thousands of m^3	209	739	314	130

Source: HSE Vice Presidency

ROADMAP

Biodiversity

(102-12)

Outstanding Material Element

Sustainable Development Goals

(103-1)

Impacted stakeholder groups	Areas responsible for managing the impacts	Ecopetrol segments with the greatest impact
Suppliers, contractors, and their workers	VHSE	Upstream
Clients		Midstream
Investors and Shareholders		Downstream
National State		
Local State		
Society and Communities		
Associates and Partners		
Employees, Pensioners, and their Beneficiaries		

Why is the element material?

(103-1)

Ecopetrol defined Biodiversity and Ecosystem Services as an outstanding element, considering the risks and opportunities it represents for the Company in a mega-diverse country. This is also in order to properly manage biodiversity and ecosystem services, meeting the expectations of stakeholders and retaining the license to operate.

Ecopetrol recognizes the need to identify and manage the dependencies and potential impacts on biodiversity and ecosystem services, as well as the importance of adopting actions for conservation, in line with the SDGs.

How is the material element managed?

(103-2)

This material element is managed in compliance with four (4) subject areas that are part of the Generating Value with TESG pillar of the 2040 Strategy, which places particular emphasis on generating value in the energy transition and the decarbonization of operations.

The four (4) subject areas are:

Mitigation Hierarchy: its purpose is to prevent, avoid, mitigate, and offset potential residual impacts.

Nature-based solutions: the network of eco-reserves and natural climate solution and tree planting projects seek to respond to challenges associated with climate change, water resource management, biodiversity and ecosystem services, together with local communities.

Knowledge generation: this includes the generation of information on biodiversity and ecosystem services to strengthen decision-making.

Culture of biodiversity: this seeks to strengthen the value of biodiversity and ecosystems in the Company.

The Company's aspirations and goals in terms of biodiversity are reflected in the **Biodiversity Strategy,** which is based on the following guiding principles:

- Prevention
- Caution
- No net loss
- Positive net impact

To implement the Biodiversity Strategy, Ecopetrol established partnerships with national and international environmental entities such as the Ministry of Environment and Sustainable Development of Colombia, the Alexander von Humboldt Institute, Wildlife Conservation Society (WCS), Fondo Acción, TNC, Fundación Natura, South Pole, and ISA (Conexión Jaguar).

To learn more about Ecopetrol's management of this material element, click on the link.

How is the material element evaluated?
(103-3)

Like all the material elements of the Company, Biodiversity and Ecosystem Services has its Roadmap with goals, management indicators, and milestones to be achieved in the short, medium, and long term. Depending on their relevance, some are included in the TBG.

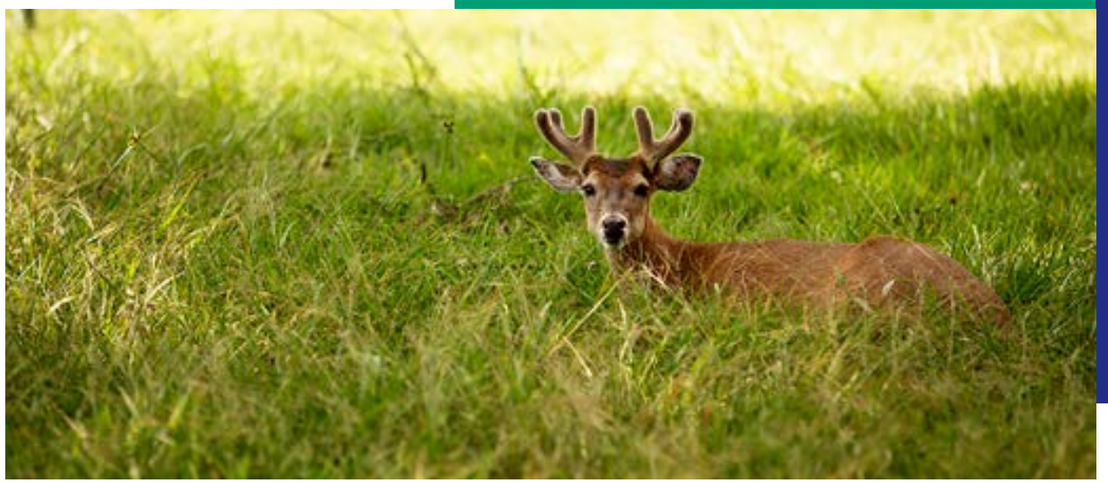
In terms of mandatory investments, specific indicators are defined as part of the compensation plans approved by the respective environmental authority, such as

- Hectares under conservation
- Trees planted
- Connectivity
- Deforestation avoided
- Presence of species

Indicators are also defined for voluntary initiatives, such as hectares under conservation, trees planted, and carbon captured, which are previously agreed on with the different allies undertaking these initiatives (e.g., TNC, WCS, Fundación Natura).

With regard to potential impacts, the main indicators monitored include hectares intervened, volume of forest exploitation, effect on species on the IUCN Red List, and spills affecting flora and fauna.

Ecoreserves are geographically delimited areas on Ecopetrol Group's property that are voluntarily allocated, either partially or completely, to the conservation (preservation, restoration, sustainable use, or knowledge) of biodiversity and the supply of ecosystem services, without limiting their productive and exploratory vocation. They are also part of the set of Nature-Based Solutions (SBN, by its Spanish acronym) and generally offer opportunities with multiple benefits to face challenges related to climate change, risk and disaster reduction, improvements in water security, food security, human health, and socioeconomic development, among others, on the path towards a net positive impact on biodiversity.



Short, medium, and long-term goals and projects
(103-2)

Trees sponsored, planted, and/or handed over:
- 2023: 6 million
- 2030: 12 million

Eco-reserves:
- 2023: 20 eco-reserves defined
- 2030: 50 eco-reserves defined

Cumulative hectares preserved and/or in the process of restoration
- 2023: 20,000 ha
- 2030: 30,000 ha[27]

Preserve 15 wild species in three (3) Colombian landscapes

Accumulated $MtCO_2$ with Natural Climate Solutions projects (capture/reduction):
- 2023: 0.3$MtCO_2$
- 2030: 2.0$MtCO_2$

27. These 30,000 hectares correspond to the effectively restored/conserved area. Considering the area of influence of the different projects with ISA – Conexión Jaguar, WCS, Fondo Acción, Fundación Natura, The nature Conservancy, Cormacarena and Gobernación del Meta, this figure amounts to approximately 1.84 million ha.

ECOPETROL IS COMMITTED TO ACHIEVING NET ZERO DEFORESTATION AND NET POSITIVE IMPACT IN ITS OWN OPERATIONS AND IN THE SUPPLY CHAIN, FOR THIS REASON IT EVALUATES THE COMMITMENTS THAT WILL BE DEFINED IN 2022, ITS SCOPE AND IMPLICATIONS.

(304-2) (WEF 9) Hydrocarbon activity in Colombia takes place under an environmental zoning process that applies the mitigation hierarchy, thus avoiding, minimizing, and correcting impacts on biodiversity and only offsetting residual impacts.

The main impacts on biodiversity derive from the following actions related to Ecopetrol's operations:

- The construction or use of manufacturing plants, mines, and transportation infrastructure
- Pollution (introduction of non-naturally occurring substances into a habitat from both point and non-point sources)
- The transformation of the habitat

The main impacts that the Company's operations may have on biodiversity are:

- Land use change
- Habitat transformation
- Pollution

All impacts on biodiversity are reversible and the Company's guidelines are to intervene in transformed areas.

In 2021, a total of

52.16 ha

were intervened, with

407.08 m^3 of wood

extracted mostly from isolated trees.
The most affected species were flora species and all interventions undertaken are reversible. These are also subject to environmental compensation via the implementation of conservation or restoration projects by deploying the actions, modes, mechanisms, quantities, and formats enabled in each environmental management instrument.

In order to minimize these impacts, the company conducts biodiversity management processes and ecosystem services to generate the least amount and magnitude of residual impacts, based on the implementation of the mitigation hierarchy.

In compliance with the obligations of environmental compensation and investment of no less than 1% for the use of water from natural sources, the conservation of biodiversity and its ecosystem services and natural capital targets the areas prioritized by the company by entering into conservation agreements with local communities, among other actions.

2021 Management Efforts
(103-3)

Given the management efforts undertaken in 2021, Ecopetrol is

61% and **41%** COMPLAINT

with its Biodiversity and Ecosystem Services goals by 2023 and 2030, respectively.

The highlights of the 2021 Management Efforts are:

161
voluntary conservation
agreements were negotiated to fulfill our environmental obligations together with

166 families
in Colombia. In addition to other actions, these agreements led to the conservation of another 111 ha in 2021, and to the Company conserving and restoring

5,549 ha.
The sustainability of these actions will generate positive impacts on local and regional biodiversity and improve the productive practices of the communities involved.

Natural Climate Solutions: partnerships with TNC, WCS, Fundación Natura, South Pole, and ISA (Conexión Jaguar), with a capture potential of more than

1MtCO$_2$/año[28].

ONE (1) DIPLOMA COURSE AND 10 WEBINARS
on Nature-Based Solutions.

28. This million tCO_2 is equivalent to the annual potential of Natural Climate Solutions projects under development to date. The accumulated potential of these projects, taking into account their useful life, is more than 15 million tCO_2.

The Company put together three (3) image and sound catalogs of the first three (3) eco reserves created under the initiative with the Humboldt Institute.

FOUR (4) BOOKS

were published with more than

3,000 **new records containing genetic information**

of tropical dry forest species (metabarcoding -Biomoniores-Humboldt), and another four (4) books on Biodiversity and oil, Monitoring in the Colombian Amazon region, the Tropical dry forest, and the Log of the Wildlife Project.

As part of Phase II of the Wildlife Project that Ecopetrol executes in collaboration with WCS,

13 COMMUNITY GROUPS

were created for the conservation of wild species;

116 **sustainable productive initiatives were implemented**

IN **56** PROPERTIES,

benefiting

383 PEOPLE;

five (5) scientific articles were published in an indexed journal; and 12 environmental criteria were defined in search for a Net Impact on Biodiversity.

Ecopetrol joined the World Economic Forum's **1t.org** initiative to contribute to the protection of biodiversity, and the fight against the impacts of climate change through Nature-Based Solutions.

THE COMPANY COMMITTED TO PROTECT 30,000 HA, OFFSET TWO (2) $MTCO_2$, AND PLANT 12 MILLION TREES **by 2030.**

Ecopetrol was selected as part of the Taskforce on Nature-related Financial Disclosures (TNFD) initiative to help prepare recommendations to manage risks and opportunities associated with natural capital.

The World Economic Fund's 1T.Org initiative was presented for the first time at the annual meeting of the World Economic Forum in Davos, Switzerland, in January 2020, as part of the goal established by the United Nations for the restoration of ecosystems between 2021 and 2030. Today, the movement involves more than 30 global companies, including Nestlé, Pepsico, Shell, Mastercard, HP, Eni, Astrazeneca, and others.

COMPANIES THAT ARE PART OF THE ONE TRILLION TREES MOVEMENT ARE ELIGIBLE TO JOIN IF THEY HAVE COMMITTED TO REDUCING THEIR GHG EMISSIONS IN LINE WITH THE PARIS CLIMATE AGREEMENT OR HAVE SET A "CARBON NEUTRALITY" OR "NET ZERO EMISSIONS" GOAL BY THE END OF 2050, AS THE ECOPETROL GROUP DID IN MARCH 2021.

To learn more about this initiative, go to the following link.

(304-1) (304-3) (WEF 9) Ecopetrol does not report operations in protected areas categories I to IV of the International Union for the Conservation of Nature (IUCN).

Table 52.
Protected or restored areas of the habitats (Voluntary)

Criterion	Unit of measurement	2018	2019	2020	2021
Protected or restored areas of the habitats (voluntary)					
Trees planted or contributed to communities, environmental authorities, or local governments	#	75,760	138,620	462,449	367,276*
Nurseries established	#	6	8	22	22
Seedlings produced in nurseries	#	28,820	9,000	90,724	92,868
Areas planted or in restoration processes	ha	7,832	3,976	3,201	2,772
Number of protected water sources	#	N/A	N/A	N/A	N/A
Conservation agreements signed	#	9	60	23	21
Hectares managed under conservation agreements	ha	11,659	14,127	14,048	314
Area in silvopastoral systems	ha	N/A	N/A	N/A	N/A
Area in agroforestry systems	ha	N/A	N/A	N/A	N/A
Eco-efficient stoves installed	#	N/A	N/A	N/A	N/A
Protected areas declared under any conservation mechanism	#	12	15	15	15
Protected hectares declared under any conservation mechanism	ha	16,846	17,675	17,675	17,675
Ecological households	#	N/A	N/A	N/A	N/A
Photovoltaic systems	#	N/A	N/A	N/A	N/A
Apiaries - Meliponaries	#	N/A	N/A	N/A	N/A
Intervened hydrographic subzones	#	N/A	N/A	N/A	N/A
Kms of protected water bodies	km	N/A	N/A	N/A	N/A
New or improved hydrometeorological stations	#	N/A	N/A	N/A	N/A
Endangered wild species under conservation processes	#	10	15	15	15
Number of Eco-reserves	#	1	2	6	15
Hectares of the Eco-Reserve Network	ha	128	414	11,906	15,085
Protected or restored areas of the habitats (mandatory)					
Trees planted or contributed to communities, environmental authorities, or local governments	#	9,198	442,350	220,605	67,470**
Nurseries established	#	N/A	N/A	N/A	2
Seedlings produced in nurseries	#	N/A	N/A	N/A	21,122
Areas planted or in restoration processes	ha	N/A	N/A	5,438	5,549
Number of protected water sources	#	N/A	2	92	N/A
Conservation agreements signed	#	N/A	N/A	29	161
Hectares managed under conservation agreements	ha	N/A	N/A	2,045	2,297
Area in silvopastoral systems	ha	N/A	100	N/A	34
Area in agroforestry systems	ha	N/A	181	204	22
Eco-efficient stoves installed	#	235	72	N/A	5
Protected areas declared under any conservation mechanism	#	N/A	N/A	N/A	N/A
Protected hectares declared under any conservation mechanism	ha	N/A	N/A	N/A	N/A
Ecological households	#	N/A	N/A	N/A	N/A
Photovoltaic systems	#	N/A	20	N/A	N/A
Apiaries - Meliponaries	#	N/A	N/A	N/A	N/A
Intervened hydrographic subzones	#	N/A	5	2	7
Kms of protected water bodies	Km	N/A	10	22	31
New or improved hydrometeorological stations	#	N/A	N/A	N/A	N/A
Endangered wild species under conservation processes	#	N/A	N/A	N/A	N/A
Number of Eco-reserves	#	N/A	N/A	N/A	N/A
Hectares of the Eco-Reserve Network	ha	N/A	N/A	N/A	N/A
Protected or restored areas of the habitats (consolidated)					
Trees planted or contributed to communities, environmental authorities, or local governments	#	84,958	580,970	682,054	434,746
Nurseries established	#	6	8	22	24
Seedlings produced in nurseries	#	28,820	9,000	90,724	113,990
Areas planted or in restoration processes	ha	7,832	3,976	8,640	8,321
Number of protected water sources	#	N/A	2	92	0
Conservation Agreements managed	#	9	60	52	182
Hectares managed under conservation agreements	ha	11,659	14,128	16,093	2,611
Area in silvopastoral systems	ha	N/A	100	N/A	34
Area in agroforestry systems	ha	N/A	181	204	22
Eco-efficient stoves installed	#	235	72	N/A	5
Protected areas declared under any conservation mechanism	#	12	15	15	15
Protected hectares declared under any conservation mechanism	ha	16,846	17,675	17,675	17,675
Ecological households	#	N/A	N/A	N/A	0
Photovoltaic systems	#	N/A	20	N/A	0
Apiaries - Meliponaries	#	N/A	N/A	N/A	0
Intervened hydrographic subzones	#	N/A	5	2	7
Kms of protected water bodies	Km	N/A	10	22	31
New or improved hydrometeorological stations	#	N/A	N/A	N/A	0
Endangered wild species under conservation processes	#	10	15	15	15
Number of Eco-reserves	#	1	2	6	15
Hectares of the Eco-Reserve Network	ha	128	414	11,906	15,085

Source: HSE Vice Presidency

Note: In the line of "seedlings produced in nurseries," the number reported in 2021 is associated with Nurseries and plantings, and it is the first year that this information is broken down for Ecopetrol S.A.
* Although there is a decrease of 95,000 planted trees between 2020 and 2021, during 2021 initiatives related to Natural Climate Solutions were matured that will enable the planting of nearly one million trees (250,000 TNC, 230,000 PVS and 6000,000 Natura) through of three agreements that were signed at the end of the year. The planting of these trees will be reflected in the results presented in 2022 and 2023.
**The reduction in the number of planted trees was due to the fact that the execution of these plantings were subject to the execution schedules presented to the Environmental Authority and approved by it. These schedules had for the years 2019 and 2020, the highest execution figures for the establishment of reforestation or planting. In 2021, according to the schedules, contractual planning activities for restoration programs were carried out, which are expected to be executed in 2022.

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THE GOAL FOR 2021 WAS FOUR (4) MILLION TREES, ACCUMULATED AS A GROUP, AND THE VOLUNTARY CONTRIBUTION OF 367,276 TREES ALLOWED ECOPETROL TO EXCEED THAT GOAL.

This last information only corresponds to Ecopetrol S.A., and it is lower than the number in 2020. The figure does not necessarily have to increase every year, although the Group's goal of six (6) million trees by 2023 and 12 million by 2030 remains the same.

Table 53.
Total number of species on the IUCN Red List and on national conservation lists, whose habitats are located in areas affected by the organization's operations
(304-4)

Species	Unit of measurement	2018	2019	2020	2021
Critical hazard	#	N/A	N/A	N/A	1
Endangered	#	N/A	N/A	N/A	1
Vulnerable	#	N/A	N/A	N/A	2
Near threatened	#	N/A	N/A	N/A	2
Least concern	#	N/A	N/A	N/A	1

Source: HSE Vice Presidency

- **(ECP 005)** There were **seven (7) operational incidents greater than one barrel,** totaling 157.8 barrels spilled, affecting water bodies and/or vegetation.

- Fauna and flora were affected in three (3) of the seven (7) incidents.

The species affected in these cases are reported below:

- One (1) Critically Endangered (CR) species, 230 individuals.
- One (1) Endangered (EN) species, 30 individuals.
- Two (2) Vulnerable species (VU), 11 individuals.
- One (1) Near Threatened (NT) species, 80 individuals.
- One (1) Near Threatened (NT) mammal species, 2 individuals.
- One (1) Least Concern (LC) terrestrial habit reptile species, 11 individuals.

In all cases, emergencies were dealt with in accordance with the provisions of the Emergency and Contingency Plans, with the proper cleaning of the water bodies and the remediation of the flora and fauna. In relation to the Lisama 158 event in 2018, the environmental recovery plan shows a progress of 87%.

For more information, visit the website.

(103-1) (103-2) Ecopetrol S.A. is committed to maintaining, improving, or conserving biodiversity/ecosystems for its own operating activities (production, extraction, planting, or development), and this commitment is applicable to the Company's supply chain.

The commitment to biodiversity includes the following elements:

Required commitment from own operations and the supply chain to avoid operational activities in the vicinity of World Heritage areas and IUCN Category I-IV protected areas.

Application of the mitigation hierarchy (avoid, minimize, restore, and offset) when operating in areas close to critical biodiversity.

Work with the following external partners to fulfill the commitment:

Associations:

- Fundación Natura: conservation and restoration of tropical forest ecosystems and freshwater wetlands in the Middle Magdalena region and actions to mitigate GHG emissions.
- WCS and Fondo Acción: focused on implementing conservation actions around 15 species and three (3) landscapes.
- TNC: develops a carbon monitoring protocol for restoration projects.
- Conexión Jaguar Program – ISA: GHG mitigation, biodiversity conservation, community participation.
- Cormacarrena: conservation of forests in the upper and middle basin of the Guayuriba and Metica rivers by means of payments for ecosystem services.
- Alexander Von Humboldt Institute: technical knowledge in socio-ecological planning, biodiversity baselines, and planning and development of eco-reserve networks.
- ANDI: biodiversity conservation in the Andean-Amazonian region.
- South Pole: Natural Climate Solutions and management of the carbon project portfolio for GHG compensation.

In the 2020 report, there were no Natural Climate Solutions goals related to monitored hectares, and the goal of trap cameras for biodiversity monitoring was eliminated upon achieving

100% compliance.

Ecopetrol has established environmental criteria for the selection of contractors, and in terms of Biodiversity. The Company has 12 criteria intended to minimize the impact on the supply chain, including the following:

Paper made from wood fibers: the contractor may only use fibers from certified sustainable forestry operations.

The contractor may only use **wood** from sites duly authorized in the tender.

The garbage bags used by the contractor must be made of 80% recycled plastic or contain components that allow their biodegradability without secondary effects.

In 2022, an assessment will be conducted to define the scope, potential targets, and potential implications of commitments such as Net Zero Deforestation and Net Positive Impact for the operational activities and the supply chain.

Table 54.
Biodiversity Exposure and Assessment
(304-1) (304-2) (304-3) (304-4) (OG-4) (WEF 9)

Ecopetrol evaluates its operations to determine the level of exposure of biodiversity in its areas of influence.

Biodiversity exposure and assessment	Number of sites	Area (Hectares)
Total number of sites and total area used for operational activities	130	2,201,972
Biodiversity impact assessments for sites used for operational activities in the last five years	130	2,201,972
Sites and total area evaluated in the last five years that are remarkably close to critical biodiversity	4	191,72
Sites evaluated that are in close proximity to critical biodiversity with biodiversity management plans	4	191,72

Source: HSE Vice Presidency

ROADMAP

Circular Economy

(102-12)

Outstanding Material Element

Sustainable Development Goals

(103-1)

Impacted stakeholder groups	Areas responsible for managing the impacts	Ecopetrol segments that generate the greatest impact
Suppliers	The entire Company	Upstream
Associates and Partners		Midstream
Clients		Downstream
Employees		Comercial
Investors		
State		
Society and Community		

Why is the element material?

(103-1)

Circular economy is a cross-cutting enabler that contributes to the fulfillment of goals associated with the energy transition, the goal of zero net carbon emissions, the reduction of the water footprint, the closing of the materials and waste cycle, and the management of natural capital. This element generates opportunities for growth, innovation, job creation, and the conservation of biodiversity and ecosystem services. Considering the foregoing, and its importance for stakeholders, Circular Economy is an outstanding element for Ecopetrol.

The implementation of the circular economy model allows the Company to:

(i)

Promote efficiency in the use of materials, water, energy, and the recovery capacity of ecosystems.

(ii)

Identify initiatives for the development of new business models with economic, environmental, and social benefits.

(iii)

Promote innovation, technology, and research of new products and services.

How is the material element managed?

(103-2)

The Roadmap for this element includes **five (5) lines of action:**

Strengthening of skills and knowledge generation

Generate the necessary skills to promote circular economy models in the Company.

Circular initiatives bank

Identification and follow-up on the circular initiatives of Ecopetrol Group.

Circularity criteria

Allows the incorporation of circularity criteria in operational, financial, commercial, and supply procedures.

Circularity in the supply chain

promotes circular initiatives in the procurement of goods and services and in the relationship with suppliers.

Circularity metrics

Implement quantitative and qualitative metrics to measure progress with respect to the Company's circularity.

How is the material element evaluated?
(103-3)

As part of the Roadmap, the company establishes goals, management indicators, and milestones to be achieved in the short, medium, and long term. Depending on their relevance, some of these are included in the different instances defined by the company's HSE management system, such as:

- Follow-up on the update of the circular initiatives bank to monitor its progress and implementation status in the different areas of the company.
- Calculation of the social, environmental, and economic benefits of the circular initiatives implemented.
- Measurement of the participation level of professionals in skill strengthening courses.
- Measurement of qualitative and quantitative circularity metrics to determine the Company's level of maturity regarding this subject.

Monitoring is conducted on a monthly basis in the HSE Vice Presidency Committees and those involving the Vice Presidency of Projects and Drilling. The Vice Presidency of Production's (VDP) Committee also monitors progress in this regard.

Short, medium, and long-term goals and projects
(103-2)

SHORT TERM: 0 TO 2 YEARS

- Calculation of environmental, social, and economic benefits for 100% of the initiatives implemented.
- Implementation of 100% of circular business and prioritized industrial symbiosis cases.
- Circular economy qualitative and quantitative measurements.
- Incorporation of circular criteria in operating, commercial, financial, and supply procedures.

MEDIUM TERM : 3 TO 5 YEARS

- Implementation of 100% of circular business and prioritized industrial symbiosis cases.
- Strengthening of basic skills for 100% of the selected population.

LONG TERM : LONGER THAN 5 YEARS

- Implementation of 100% of circular business and prioritized industrial symbiosis cases.
- Substitution of new raw materials for secondary or renewable materials.
- Strengthening of advanced skills for the selected population.

2021 Management Efforts
(103-3)

Circular initiatives bank

297 initiatives associated with:

- Decarbonization 49%
- Waste 29%
- Water 16%
- Materials 5%
- Biodiversity less than 1%

Status of the initiatives: 40% in execution, 15% in planning, 8% in research, 10% implemented, 23% in ideation, 2% in standby, and 2% discarded.

The link below highlights some of the initiatives implemented in 2021

Strengthening of skills

1,296 workers were trained in the "Introduction to Circular Economy" basic virtual course, and **121 people** in intermediate courses on the following topics:

- Basic concepts to formulate circular projects
- Financial model of circular projects
- Systems thinking and application in circular processes

Circularity Criteria

Circularity criteria were included in the guidelines of the Vice Presidency of Projects and Drilling to include sustainable eco-designs in engineering projects, from the conceptual to the detailed phase. This, in order to **mitigate environmental impacts and contribute to the closing of cycles,** in line with the principles of circular economy and the decarbonization, water, biodiversity, and waste goals, among others.

Circularity in the supply chain

The implementation of the circular economy model in the supply chain in 2021 led to the following results:

- **Materials showcase and lending:** platform to post the materials no longer required by Ecopetrol, also accessible by subsidiaries.
- **Buy back:** incorporation of a model, in the procurement planning phase, to offer the possibility to repurchase the asset once its useful lifespan has expired. This avoids waste and generates income from the sale of the asset once it is no longer required. These revenues amounted to COP 6.9 million in the 2018-2021 period.
- **Chemical Leasing:** In September, UNIDO (United Nations Industrial Development Organization) recognized Ecopetrol as a leading Company in the implementation of Chemical Leasing, which consists of shifting from the purchase to the payment for service of chemical products.

The certification was obtained by presenting the financial and environmental benefits of the catalyst procurement strategy for the Cartagena Refinery, and the chemical treatment strategy for the Cartagena Refinery and the Apiay Operations Management.

- **Reincorporation of waste in infrastructure:** First contractual model for ferrous waste to be used by a third party as raw material for infrastructure works at Ecopetrol S.A. warehouses.
- **Green Clause:** 27 updated clauses and incorporation of environmental criteria for the selection of partners in engineering, operation, and maintenance strategies and refining chemical treatments.
- **Circular initiatives in food:** use of the wasted arising from food preparation at the cafeterias for composting or vermiculture purposes. Analytics in production forecasts, among others, to use 83% of this waste throughout the country.

Circularity maturity level

(ECP 001)

By means of this line of action, Ecopetrol will periodically assess the implementation progress of the Circular Economy Model using qualitative and quantitative metrics.

(i) Qualitative: internally establishes the level of circularity maturity by determining to what extent the principles of circular economy (systems thinking, innovation, responsible management, collaboration, value optimization, and transparency), are implemented throughout the Company's current decisions and activities.

(ii) Semi Qualitative-Quantitative: external measurement to report information in a standardized manner and with a score to measure progress and understand where the Company is in the transition towards a circular economy, by comparing itself with other companies.

(iii) Quantitative: framework of indicators based on an evaluation of the flow of materials with other indicators related to resource efficiency and effectiveness, economic investment, and technological incorporation in circular initiatives.

In this sense, the following standards were defined as circularity metrics to start gradually and progressively measuring them as of 2021.

Table 55.
Circularity metrics

Qualitative	Semi Qualitative – Quantitative	Quantitative
This measurement will be taken using the GTC 314:2020 standard (which corresponds to an identical adoption of the BS8001-2017 standard) enacted by ICONTEC in November 2020. GTC 314:2020 icontec	**Circulitycs** was selected for this measurement, which is a tool developed by the Ellen MacArthur Foundation, a pioneer in Circular Economy. CIRCULYTICS®	Mix of indicators according to different standards (e.g.: WBCSD, Ellen MacArthur Foundation, ISO 59020, or others).

Source: HSE Vice Presidency

Below are the results for 2021:

1. Preparation of the first qualitative measurement of circular economy, whose results rank Ecopetrol at Level 3 (Committed) according to Colombian Technical Guide (GTC, by its Spanish acronym) 314:2020. The measurement scale comprises four (4) levels, where zero (0) is the basic level of legal compliance and level four (4) is the highest, in which companies innovate in their business model and in the ways they create value.
2. Based on this measurement, a work plan is structured to close gaps with the operational and support areas.
3. The percentage of circularity of the materials used in catering contracts was calculated, with a circularity of 70%; and the transformation of ferrous waste, with 50%. The international reference guide used was the Circular transition indicators v2.0 - Metrics for business by business of the World Business Council for Sustainable Development (WBCSD).
4. Bituminous material (MBL, by its Spanish acronym) from sludge or oily residues as asphalt binder for the improvement of low-traffic roads. In 2021, Ecopetrol received the Phase I results from the research currently underway with the UIS, with promising laboratory results to produce MBL bituminous materials for the construction of road surface improvement layers.

To learn more about circularity initiatives, click on the link below.

Out aspiration in 2022 is to conduct the Semi - Qualitative - Quantitative measurement using the methodology of the *Ellen MacArthur Foundation* with *Circulytics*.

ROADMAP

Use of energy and alternative sources

(102-12)

Outstanding Material Element

Sustainable Development Goals

(103-1)

Impacted stakeholder groups	Areas responsible for managing the impacts	Ecopetrol segments that generate the greatest impact
Suppliers, contractors, and their workers	VCM	Upstream
Clients	VDS	Midstream
Investors and Shareholders	VRP	Downstream
National State	VDP	Comercial
Local State		
Society and Communities		

Why is the element material?

(103-1)

The use of energy and alternative sources responds to the identified expectations of stakeholders and global trends, which is part of the Growing in the Energy Transition and Generating Value with TESG pillars of the 2040 Strategy.

How is the material element managed?

(103-2)

To address this element, short, medium, and long-term goals have been established for the incorporation of Non-conventional Renewable Energy Sources (FNCER, by its Spanish acronym), which are measured in the context of decarbonization with GHG reduction. Since 2018, the Energy Efficiency Program (PEE, by its Spanish acronym) has set the guidelines for the management of the Company's energy performance. The lines of action defined for **the management of this material element are as follows:**

(i) Operational control

(ii) Technological enhancement, and

(iii) Integration to Ecopetrol processes

With regard to Non-conventional Renewable Energies (NCRE), Ecopetrol seeks energy self-sufficiency through diversification. The Company is focused on diversifying its energy matrix, with the progressive incursion into non-conventional sources of renewable energy such as solar, wind, and geothermal technologies, and has a maturing portfolio in other technologies such as biomass and small hydroelectric plants. The objective is to leverage the demand for electrical energy from Company operations, i.e., its self-generation scheme, as well as potential requirements arising under the low-carbon hydrogen strategic plan.

How is the material element evaluated?

(103-3)

The Roadmap for this element defines the Company's ambition in the use of alternative energy and sources and defines the corresponding lines of action. Ecopetrol has set out to have a carbon-neutral self-generation matrix by 2050, for which it has defined the following paths for action:

 Self-generation

 Energy efficiency

 Routine burning

The initiatives under the first two (2) lines are evaluated according to the following criteria:

Energy saving
Optimized energy consumption compared to the baselines established in the processes. The percentage reduction is given with respect to the 2017 energy demand baseline.

Reduction of CO_2 emissions
Tons of CO_2 emissions stopped associated with the optimization of consumption.

Cost optimization
The costs associated with the optimization of energy consumption are quantified according to the rate of energy consumed.

Goals and projects in the short, medium, and long term to manage the "Use of Energy and Alternative Sources" material element
(103-2)

Incorporation of MW of renewable energy in the Company's energy matrix:

- **2023:** 400 MW

Investments in renewable energies as a percentage of the Company's total CAPEX:

- **2025:** 10%

Reduction of electrical energy consumption compared to the 2017 baseline:

- **2023 a 2028:** 6%
- **+ 2028:** +6%

Routine flaring:

- **2030:** Zero routine flaring.

2021 Management Efforts
(103-3)

In terms of energy efficiency, the savings and production of CO_2 emissions are as follows:

Table 56.
Savings and production of CO_2 emissions
(103-3)

Segment	Savings (MMCOP)	Energy savings (MW)	Energy savings (GBTU)	Production emissions (TonCO_2e)
Upstream	8.34	4.2	920	51,849
Downstream	14.27	-0.4	1,330	76,734
Midstream	2.10	0.7	-15	46
Total	**24.71**	**4.5**	**2,235**	**128,629**

Source: Commercial and Market Vice Presidency

Note: Data cutoff date November 2021, and projections December 2021
Until 2021, the energy efficiency program focused on the implementation of operational control measures. Ecopetrol is currently maturing and ensuring the CAPEX resources required for the implementation of the necessary technological improvement projects to reach the 2028 goal in all segments of the value chain.

Table 57.
Energy consumption within the organization
(302-1)

Consumption of fuels arising from renewable or non- renewable sources within the Company	Unit of measurement	2020	2021
Total consumption of fuels from renewable sources in GWh	GWh	65,4	54,6
Total consumption of fuels from non-renewable sources in GWh	GWh	3,030	2,813*
Total	**GWh**	**3,095.4**	**2,867.6**

Source: Commercial and Marketing Vice Presidency

*The reduction in the total consumption of fuels from non-renewable sources is due to two (2) factors: (i) Less discharges from the VRO, which had an impact of around 260 GWh/year, and (ii) Less consumption in the refineries, at approximately 90 GWh/year.

Table 58.
Energy consumption of the different types of energy purchased

Energy consumption of the different types of energy purchased, excluding steam	Unit of measurement	2020	2021
Electricity consumption	GWh	2,425	2,309.84
Heating consumption	GWh	-	-
Cooling consumption	GWh	-	-
Total	**GWh**	**2,425**	**2,309.84**

Source: Commercial and Marketing Vice Presidency

Table 59.
Energy consumption of the different types of self-generated energy

Energy consumption of the different types of self-generated energy, excluding steam	Unit of measurement	2020	2021
Self-generated electricity	GWh	1,612	1,515
Self-generated heating	GWh	-	-
Self-generated cooling	GWh	-	-
Total	**GWh**	**1,612**	**1,515**

Source: Commercial and Marketing Vice Presidency

Table 60.
Energy consumption of the different types of energy sold

Energy consumption of the different types of energy sold, excluding steam	Unit of measurement	2020	2021
Electricity sold	GWh	94	81.58
Heating sold	GWh	-	-
Refrigeration sold	GWh	-	-
Total	**GWh**	**94**	**81.58**

Source: Commercial and Marketing Vice Presidency

Table 61.
Self-generated and sold steam

Self-generated and sold steam	Unit of measurement	2020	2021
Self-generated steam	klb	23,962,888	22,276,124
Steam sold	klb	17,520	17,520

Source: Commercial and Marketing Vice Presidency

Table 62.
Total energy consumptionl

Total energy consumption within the Company	Unit of measurement	2020	2021
Total energy consumption within the Company	GWh	7,226.4	6,551
Total energy consumption of steam in klb	klb	23,945,368	22,293,644

Source: Commercial and Marketing Vice Presidency

Table 63.
Energy consumption and costs of energy consumption
(302-1)

Energy consumption and costs of energy consumption	Unit of measurement	2018	2019	2020	2021
a) Non-renewable fuels purchased and consumed	MWh	4,597,000	5,119,000	4,665,232	4,268,536
b) Non-renewable electricity purchased	MWh	2,414,000	2,300,000	2,049,000	2,309,840
c) Steam/heating/cooling and other purchased non- renewable energies	MWh	-	-	-	-
d) Total renewable energy purchased or generated	MWh	91,959	88,200	65,889	54,551
e) Total non-renewable energies sold	MWh	70,200	73,431	84,470	81,582
Total non-renewable energy consumption (A+B+C-E)	**MWh**	**6,940,800**	**7,345,569**	**6,629,762**	**6,496,794**

Source: Commercial and Marketing Vice Presidency

Note 1: The data above cover 81% of operations. This percentage does not include associates.
Note 2: Total energy consumption costs are calculated by subtracting the income generated (energy sold) from total energy purchase costs, using a Market Representative Exchange Rate (TRM, by its Spanish acronym) of COP 3,693 per USD.

The total non-renewable energy consumption goal for 2021 was

7,377,800 MWh.

Ecopetrol's effective management efforts ensured that the operations met the goal according to the defined range, and that they remained below that target.

Table 64.
Energy intensity
(302-3)

Energy intensity ratio	Unit of measurement	2021
Energy consumption	KWh	4,498,319,441
Barrels produced	bbls	4,230,032,541
Energy intensity ratio	**kWh/bbl**	**1.063**

Source: Commercial and Marketing Vice Presidency

Note: The type of energy used to calculate the energy intensity ratio is electricity.

Reduction of Energy Consumption
(302-4)

In 2021, the reduction in energy consumption was

2.49886E+15 J.

This includes reduction in energy consumption of fuels and electricity. The methods used for calculation are the following:

(i) **Savings from operational control:** savings are calculated according to the ISO50001 standard, establishing energy management indicators with respect to energy consumption baselines.

(ii) **Savings from technological enhancements:**

a. Establishing theoretical savings: assuming a fixed percentage value of savings from a base consumption, experimental results, and simulations.

b. Calculation of periodic savings: a base consumption is determined (through measurements or simulations) and the real energy consumed is measured at periodic intervals; this difference is determined as the savings that will be updated at the established frequency.

c. Savings according to ISO5001: savings and energy management indicators are calculated with respect to energy consumption baselines.

(iii) **Savings from IIE management:** savings are established according to the optimization of the energy intensity index obtained with the Solomon methodology.

Non-conventional Renewable Energies

In 2021, the **San Fernando Solar Ecopark** was inaugurated in the department of Meta (Colombia), with an installed capacity of 61 MWp. It is managed by Cenit, and it consists of more than **113,000 panels** with bifacial technology to capture energy on both sides, and followers that will allow them to move according to the position of the sun. For this initiative, more than 150 women were hired at the peak of construction.

The Brisas **Solar Ecopark** in the department of Huila was awarded, with a capacity of 26 MWp and to be managed by AES Colombia. It will supply part of the energy required for the operation of Ecopetrol fields in the Upper Magdalena region. Its installed capacity is enough to power a population of **35,000 inhabitants** and it will prevent the emission of approximately **216,000 tons of CO_2e.** Construction is estimated to be completed in the last quarter of 2022.

The Company initiated the call for tender to select a partner for the construction of the **Rubiales Ecopark** in the Department of Meta, with an estimated installed capacity of **87 MWp.** The energy produced will serve to supply part of the demand of the Rubiales field, owned by Ecopetrol.

The investment in **solar eco-parks** was approved in the Cartagena Refinery and La Cira, in Barrancabermeja, which will be executed by Ecopetrol under a framework contract with companies of international stature. Construction is expected to be completed between the second half of 2022 and the first quarter of 2023. Both will add around **90 MWp** of renewable installed capacity to the Group's energy matrix.

The base portfolio to reach the goal of 400 MWp by 2023 is dynamic. In 2021, the Quifa Solar Ecopark (35 MWp) and the Cravo Norte Solar Park (40 MWp) were incorporated into the base portfolio; the estimated installed capacity of the La Cira Solar Ecopark expanded from 9 to 56 MWp, and the Rubiales Solar Ecopark from 64 to 87 MWp.

Six (6) of Cenit's small solar plants were inaugurated with an installed capacity of **0.46 MWp,** which began to supply energy to the same number of pumping stations of the Cenit pipeline transport system and will **reduce 462 tons of CO_2e per year.**

Table 65.
Investment in Renewable Energies
(OG-2)

Investment in renewable energies	Unit of measurement	2021
Amount invested in first generation biofuels	COP	2,114,433,922.00
Percentage invested in renewable energies	%	8.70

Source: ICP

Commercial

At the end of December

75 BORDERS

were served **(+7 compared to 2020),** with average monthly energy of

204.4 GWh

(+11.4% compared to 2020) via Ecopetrol Energía SAS ESP.

COP **18,000** MILLION

were generated from the sale of the surplus energy of the Group.

Energy sales to Esenttia began with a tender awarded to Ecopetrol Energía, covering approximately

12 GWh-month

in two commercial frontiers.

The sale of energy to the Nare, Jazmín and Moriche frontiers began, which was incorporated into the Group's energy demand due to the termination of the Mansarovar operating contract with approximately

6 GWh-month.

Connection contracts were signed with **EPM for the supply of energy** to the non-regulated frontiers of the NARE field, with a one-year validity, and extendable for another year. In the first year, EPM will undertake the necessary actions to modernize the required infrastructure, which will allow the signing of a new contract for a longer term.

Long-term energy purchases made with Enel Green Power for the 2023-2036 period through EES, guaranteeing an energy supply of

569.4 GWh-year (65MW)

to the Group, and also being the contract with the best price in the portfolio.

In 2021, Ecopetrol Energía S.A.S. ESP (EES) conducted the Demand Aggregator activity to offer support to generators through the Voluntary Disconnectable Demand (DDV, by its Spanish acronym) mechanism, generating coverage for

555 MWh

and total revenues of

COP **553** MILLION **for Ecopetrol.**

The Company decided to divest from Ecopetrol Energía S.A.S. ESP to fulfill the commitment acquired in the inter-administrative contract with the MHCP for the purchase of shares at ISA S.A. E.S.P. Ecopetrol S.A.'s Board of Directors approved the voluntary liquidation of EES filed with empowered corporate bodies, prior transfer of the existing energy procurement contracts, as well as the commercial representation of the Ecopetrol Group frontiers that are currently under the operational management of EES. Also the execution of one or several new energy marketing contracts to meet the needs of Ecopetrol, in order to optimize the marketing rate currently paid by the Company, and that will be established with a new marketing agent.

RCSA's (Proeléctrica S.A.S. ESP) service contract for the representation of self-generation surplus was concluded, which will allow estimated savings of approximately

COP **350** MILLION

in 2022 vs. the previous provider's rate.

The contract for the sale of self-generation surpluses between VAO Sur (Orito and la Hormiga) and Enerco S.A. ESP was extended, which allows the business to secure a sales price that covers the generation costs and the regulated costs of the market, with a profitability of

COP 19.4 /kWh.

A VPN of

COP **1,800** BILLION.

is estimated for these revenues.

Planning and infrastructure

- In 2021, the Reforma – **San Fernando 230 kV power transmission line** came into operation. This will increase electrical reliability in the Orinoquía Region.
- The battery storage initiative in Tello was commissioned, with a capacity of 0.8 MW and a backup time of **three (3) minutes.**
- Short-term planning was established to support the weekly programming for the Upstream, which allowed the use of the commercial strategy of an integrated portfolio, with benefits between **COP 5,100 and COP 7,300 million** during the period.
- The information centralization initiative was redefined for four (4) phases:
  - **(i)** preparation,
  - **(ii)** Connectivity and standardization,
  - **(iii)** Datamart and integration,
  - **(iv)** implementation in planning, programming, and dispatch.

  Phase 0 closed in 2021, and Phase 1 began with the signing of the ANS with Operational Planning.
- The natural gas power generation microturbine in Yaguará **(1.6–2.2 MW)** came into operation.

Battery Storage

The implementation of energy storage began in Campo Tello 57, with the purpose of reducing the number of deferred barrels due to electrical faults associated with external causes. The installed technological solution includes a backup capacity and time of

0.8 MW and
three (3) minutes.

Since its commissioning in September 2021, it has prevented

about eight (8) events per month,

representing a reduction of deferred barrels for this external cause. Between 2019 and 2021,

the reduction went from 0.48% to 0.17%
DEFERRED BARRELS
for this external cause.

Geothermal activities

The Company continues to make progress in the maturation of the candidate wells in the Cubarral Block in the department of Meta, and it is starting a heat utilization evaluation in Cravo Norte with operating partner Sierracol.

Wind potential measurements continue in Casablanca, Araguaney, Huila, and Ballena, as well as wind self-generation initiatives with third parties on the Atlantic Coast.

With regard to Small Hydroelectric Power Plants, environmental due diligence processes and connection studies are underway. In 2021, information requests were filed with local and regional entities.

Main R&D results related to the material issue of energy use and alternative sources

Determination of carbon stock values in aerial biomass, necromass, and soil; evaluation of the potential of Morichal as a strategic system for capturing CO_2 in the Colombian Orinoquía region.

Experimental design and FAT tests of the electrolyzer for the electrolytic and/or green hydrogen production pilot.

Ecopetrol scaled up the production of asphaltene oxides and coke in 1.8- and 5-liter reactors.

First prototype of a supercapacitor based on activated carbon with a high surface area obtained from asphaltenes activated with KOH.

Pipe coating based on an MDI pre-polymer and asphaltene oxide.

Ecopetrol synthesized materials based on activated carbon for the removal of phenols in industrial waters.

The company developed additives from carbon precursors and composite materials for the construction industry.

Pilot-scale production of hydrophobic polyurethane foam to remove grease and oil from production waters (< 1 ppm).

ROADMAP

Fuel Quality

(102-12)

Outstanding Material Element

Sustainable Development Goals

(103-1)

Impacted stakeholder groups	Areas responsible for managing the impacts	Ecopetrol segments that generate the greatest impact
Society and Community	VCM	Midstream
State	VDS	Downstream
Clients	VHSE	Comercial
Investors	VRP	

Why is the element material?

(103-1)

The Energy Transition and the discussions associated with climate change addressed at COP26 have contributed to deepening the trend towards greater use of renewable energy sources and alternative fuels. This phenomenon is generating changes in the context, including new fuel quality requirements and greater restrictions on emissions and environmental regulations.

Air quality has become a priority for different stakeholder groups, including the State, society, and communities, and it is increasingly relevant for clients and investors, whose stance increasingly rewards diversification. Ecopetrol's commitment to deliver cleaner fuels precedes this growing interest and it is part of the Company's strategic vision. For this reason, in the materiality assessment, the efforts focused on improving and ensuring fuel quality were identified as an outstanding material element.

The Company recognizes the interrelationship of this material element with others such as Air Quality and Climate Change.

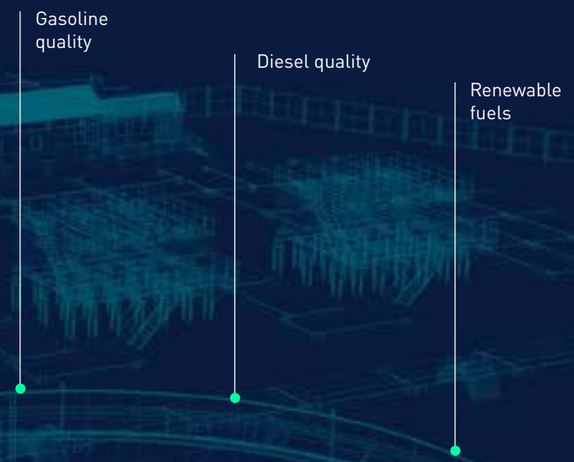
The chapters pertaining to the Air Quality and Climate Change material elements can be consulted on pages 182 and 244 of this report.

How is the material element managed?

(103-2)

Ecopetrol has a quality improvement program for the fuels produced and a quality assurance plan for fuel production at its refineries. Both are aligned with valid rules and regulations in Colombia, which is the country where these operations are located. This will allow us to have diesel and gasoline fuels with the best international quality standards in countries such as the United States, Canada, and the European Union.

The Roadmap for this material element has determined that the Company's long-term aspiration is to become an international benchmark for the production of diesel, gasoline, and renewable fuels. To achieve this, Ecopetrol must work in an agile and efficient manner in the following lines of action:



To learn more about the refining strategy, go to Refining and Petrochemical activities.

How is the material element evaluated?

(103-3)

Ecopetrol monitors the quality of the fuels produced and delivers products to clients from the refineries and the different stations and delivery points to the wholesaler, ensuring that the quality is met according to regulations. Ecopetrol has quality laboratories at its refineries and at Cenit, which is responsible for transporting said fuels to Ecopetrol's wholesale clients.

Short, medium, and long term goals and projects
(103-2)

SULPHUR CONTENT

- 2022: produce gasoline with a sulphur content of less than 50 ppm,
- 2023: produce diesel with a sulphur content of less than 15 ppm
- 2025: produce diesel with a sulphur content of less than 10 ppm
- 2030: produce gasoline with a sulphur content of less than 10 ppm and an octane number greater than 88

BIOFUELS

- 2022 – 2030: Execution of pilots for the production of biofuels

2030 ONWARDS

- Continuous production of biofuels via co-processing or with dedicated plants
- Wide diversification of the refined portfolio
- Possible development of synthetic fuels

FUEL QUALITY RESEARCH PROGRAM - 2022

- **ICP Research - Universidad Pontificia -** Politécnico Jaime Isaza Cadavid AMVA - Complete two (2) projects for a deeper analysis of air quality issues due to re-suspended particulate matter in the Valle de Aburrá metropolitan area in Medellín, Colombia.
- **Determine Transmilenio emission factors in the city of Bogotá, Colombia** – In collaboration with the ICP, the emissions in grams per kilometer of the vehicle technologies in the Transmilenio trunk fleet will be measured.

2021 Management Efforts
(103-3)

In 2021, Ecopetrol invested

USD 5 MILLION

in projects aimed at improving fuel quality at the Barrancabermeja Refinery. These include the expansion of the processing capacity of the HCM U2650 Moderate Hydrocracking Unit, the purchase of laboratory equipment, and the technological enhancement of the HCM plant-Phase I.

Maintenance activities and technological updates were implemented at the Barrancabermeja Refinery, which improved the quality of the components used for the preparation of regular motor gasoline. The a**verage sulphur content in regular** motor gasoline was

61 ppm

(average as of November 2021).

In 2021, the sulphur content in diesel remained

at 13 ppm on average,

despite the maintenance work conducted on the processing units at the refineries and the increased consumption at the national level.

Resolution 40103 was issued in April 2021 by the MME and the MADS of Colombia, which defines the quality parameters for diesel and gasoline and the dates of compliance. This allows for clear and precise regulations on the improvement of fuel quality to guide Ecopetrol's plans and projects.

The start-up of the project to improve the quality of naphtha in U-107 at the Cartagena Refinery was approved. This will allow the adaptation of the refining infrastructure to **achieve gasoline production with a sulphur content of**

less than 10 ppm

before 2030, as set forth in Resolution 40103.

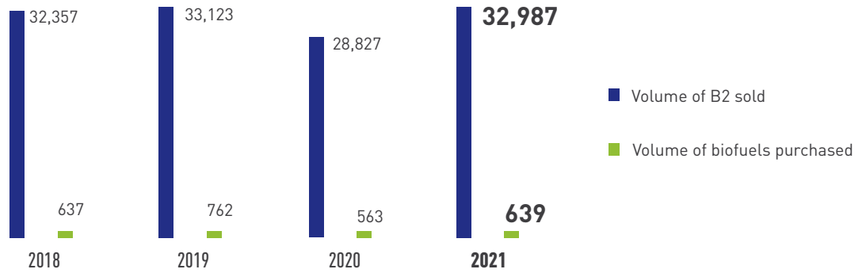
At the end of 2019, Ecopetrol S.A., through its refineries, began the supply extra fuel with an octane level of the same quality as international premium gasoline. In 2021, Ecopetrol continued to supple and ensure extra fuel with high quality standards. The following actions were also undertaken:

- Networking spaces with vehicle manufacturers and importers to strengthen partnerships to make the product portfolio of the refineries more attractive

- Update of the 2022–2024 commercial strategy to increase sales to double-digits and contribute to the improvement of air quality, including:
  - Reviewing alternatives to reduce sulphur <15ppm
  - Ensuring product availability throughout the chain
  - Granting customers longer payment terms to maintain inventories
  - Invest in a communications fund to promote the product
  - The pre-feasibility study continued to identify alternatives for the Company to achieve fuel quality comparable to world benchmarks and capture profitable growth opportunities in the target market. Viable alternatives were identified at the Barrancabermeja Refinery, within the scope of the Refining Development Program, to improve gasoline and Diesel quality.

(OG-14) In 2021, biofuel production and procurement (biodiesel B100 and diesel B2) amounted to the following volume:

Graph 30.
Biofuels volume[30]



Source: Commercial and Marketing Vice Presidency

This has allowed the Company to meet the requirement of preparing and supplying diesel with

2% BIOFUEL CONTENT,

to wholesale clients, in accordance with the provisions of current quality regulations.

30. This information was updated with information as of December 31, 2021, regarding the document published for the right of inspection.

R&D related to fuel quality
(OG-14)

GRB fuel route:

- The process configuration for diesel and gasoline was defined based on commercial technologies.
- The co-processing of vegetable oils of up to 30% were included in the scheme for the production of renewable fuels diesel line, and we also defined the design for industrial testing.

Fuel reformulation study and its impact on air quality

Together with Universidad de los Andes de Colombia, Transmilenio, and the Mayor's Office of Bogotá, Ecopetrol assessed air quality improvement in Bogotá. This identified a **78% reduction of particulate matter**, thanks to the renewal of the Phase 1 and 2 bus fleet, the incorporation **of diesel <10 ppm sulphur content, and the use of vehicular natural gas.**

ROADMAP

Air Quality

(102-12)

Outstanding Material Element

Sustainable Development Goals

(103-1)

Impacted stakeholder groups	Areas responsible for managing the impacts	Ecopetrol segments that generate the greatest impact
Society and Community	VHSE	Midstream
Employees		Downstream
		Comercial
		Upstream

Why is the element material?

(103-1)

Ecopetrol, as a relevant player in the oil and gas industry, made a commitment to the country to help preserve the air quality around its operations for the well-being of citizens and the protection of the environment.

In 2021, Air Quality was identified as an outstanding element in the materiality assessment, for which the "Clean Air for the Environment" Roadmap was built.

Ecopetrol's operations must monitor and control the emission of pollutants (particulate matter, carbon monoxide, sulphur and nitrogen oxides, and volatile organic compounds -VOCs) that affect air quality to keep them within limits that do not affect the air quality surrounding its operations.

How is the material element managed?

(103-2)

The Air Quality Roadmap: "Clean Air for the Environment" includes the following strategic lines:

Prevention

Based on standards and best practices pertaining to pollutant emissions, permanent monitoring in sensitive and prioritized areas, and implementation of technologies and design criteria in fixed sources to monitor, control, and reduce emissions

Mitigation

Have an updated and verified atmospheric emissions inventory, monitoring programs at relevant points of the operation, both for air quality and the measurement of emissions from fixed sources, definition of reduction goals and a portfolio of reduction initiatives prioritized by major emission sources.

Collective action

Implementation of research and technological development programs through intersectoral and interinstitutional actions to improve air quality.

How is the material element evaluated?
(103-3)

This is evaluated using the following elements:

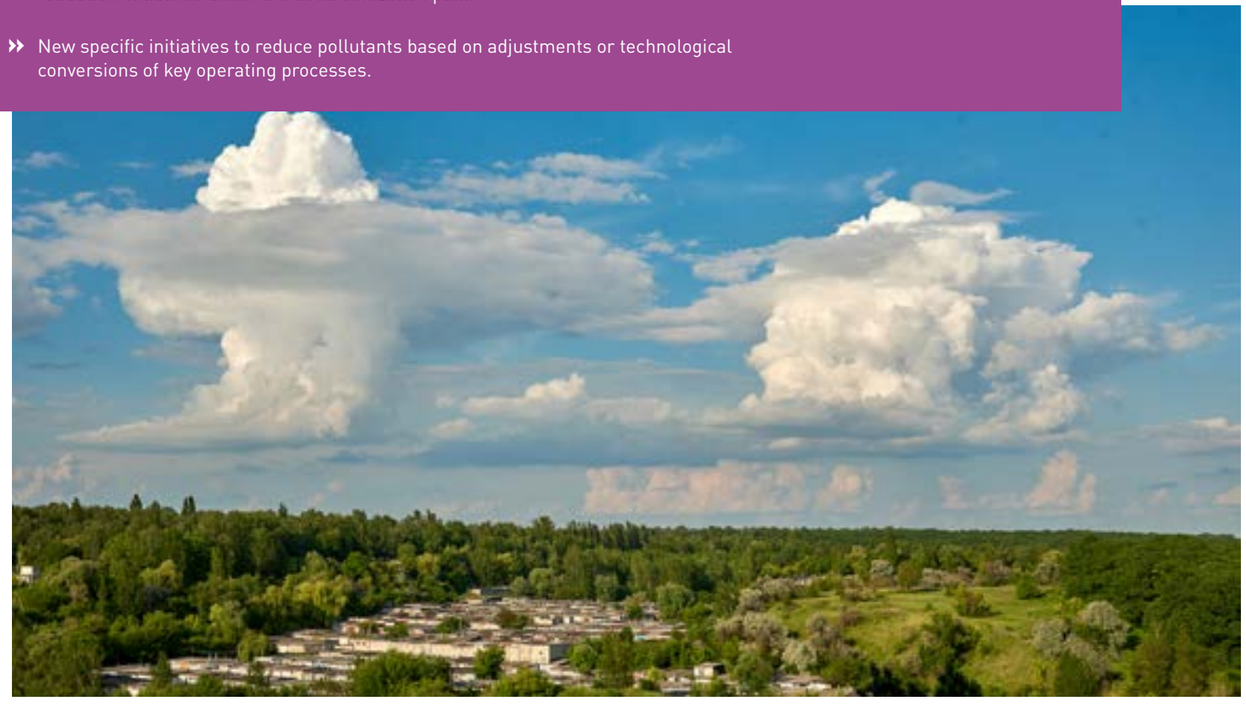
Monitoring of air quality by measuring emissions and monitoring and modeling of air quality in the surroundings of the operation to determine the contribution of own emissions.

Reduction goals for defined criteria pollutant emissions, with permanent monitoring.

Follow-up of the implementation of the portfolio of initiatives to reduce emissions, leveraged on best operating practices, control technology, monitoring and surveillance of emissions and technological reconversion of processes.

This portfolio includes:

- Annual projection for the reduction of criteria pollutants based on GHG emission reduction initiatives under the decarbonization plan.
- New specific initiatives to reduce pollutants based on adjustments or technological conversions of key operating processes.



Short, medium, and long-term goals and projects
(103-2)

2021-2025

- Updated emissions inventory identifying Company key assets.
- Definition of emission reduction goals for production and refining criteria pollutants in 2022.
- Definition of operational and technological standards in terms of pollutant emissions.

2030

- Achieve the reduction goals of criteria pollutant emissions based on the following:
  - Implementation of GHG reduction initiatives.
  - Execution of the SOx emission control project at the Barrancabermeja refinery
  - Structuring and execution of initiatives to mitigate fugitive emissions from VOCs, and venting in tanks, and industrial wastewater treatment systems.

2050

- Implementation of a technological initiatives portfolio for the frequent monitoring of the most relevant emissions to ensure air quality in the operation, according to the guidelines of the World Health Organization (WHO) by 2050.

2021 Management Efforts
(103-3)

In 2021, the **Air Quality Roadmap was formulated and approved** based on:

Strategic lines for mitigation, prevention, and collective action.

The start of the purification process of the criteria pollutant emissions inventory in the SAP-EC tool, which includes the following:

Update of emission factors based on installed technologies and the measurement of fixed sources.

Review and inclusion of new sources and inactivation of sources associated with out-of- service equipment.

Assurance of the information loading process with a cross-cutting team responsible for periodic monitoring and analysis of the emissions inventory.

Estimated impact on air quality from decarbonization initiatives (reduction of GHG emissions).

Table 66.
Other significant air emissions
(305-7) (WEF 7E)

Emissions	Unit of measurement	2018	2019	2020	2021
NOx	kt	25,76	28,09	28,78	28,30
SOx	kt	16,93	17,52	14,79	14,81
Persisten organic pollutans (POPs)	kt				
Volatile Organic Compounds (VOCs)	kt	106,69	113,8	116,35	111,64
Hazardous air pollutants (HAP)	kt				
Particulate Matter (PM)	kt	1,57	1,70	1,53	1,40
Other air emission categories identified in relevant regulations	kt	11,06	11,32	11,70	11,50

Source: HSE Vice Presidency

Note: Carbon monoxide (CO) emissions are reported in the emissions table under "Other air emission categories identified in relevant regulations".

The emission factors used for the calculation of criteria pollutants (NOx, SOx, particulate matter, and carbon monoxide) and volatile organic compounds (VOC) are mainly drawn from document AP-42 of the United States Environmental Protection Agency (EPA).

In some particular cases, emission factors were taken from the following references:

- The Regional Association of Oil and Natural Gas Companies in Latin America and the Caribbean (ARPEL, by its Spanish acronym): Atmospheric Emission Inventory Methodologies in the Oil Industry, 1999
- European Environmental Agency: (EEA)EMEP/ EEA Air pollutant emissions Inventory guidebook 2019: technical guidance to prepare national emission inventories
- EIIP Vol II Ch 14 Uncontrolled emission factor listing for Criteria Air Pollutants - Emission Inventory Improvement Program July 2001

Under the category of other relevant air emissions, carbon monoxide (CO) emissions are also reported.

Persistent organic compounds (POPs) are not part of the Company's raw materials, supplies, or product portfolio, so it is not necessary to record potential emissions of this compound category, and hence, no related emission estimates are reported.

Hazardous air pollutants (HAP) are managed from the occupational perspective by means of an epidemiological surveillance system implemented in specific areas, so as to identify risk areas and exposure groups, as well as their appraisal, the impact assessment related to the health of workers, and the proposal of prevention, management, and control alternatives. The most relevant substances are aromatic hydrocarbons and solvents, whose emissions are reported as part of the emissions inventory of volatile organic compounds (VOC) and sulphur oxides reported as SOx.

In 2021, there were operational changes that affected NOx, SOx, CO, and PM emissions compared to previous years, including the following:

- Transfer of operations from the mid-stream to Cenit since May 2021, which meant that these emissions were not reported as part of Ecopetrol S.A.
- Reduced operation in the Cracking Units (FCCs), mainly at the Cartagena Refinery, due to a three-month (3) scheduled maintenance that mainly affected PM and SOx emissions.
- Reduced energy self-generation at the Barrancabermeja Refinery, previously intended for the Central Regional Production Vice Presidency, which was replaced with external supply.
- Reduced industrial wastewater treatment in the Castilla field upon closing the discharge to the Guayuriba River in the first half of 2021.
- Optimization / reduction of energy self-generation with liquids in the Rubiales Field.
- GHG reduction initiatives, mainly related to energy optimization, the electrification of operations, fuel substitution, and the reduction of flaring.
- Increased emissions due operations in the Floreña field throughout the 12 months of the year vs. 10 months in 2020 (operation received in March 2020).

Table 67.
Production, imports, and exports of Ozone Depleting Substances (ODS)
(305-6)

Emissions	Unit of measurement	2018	2019	2020	2021
ODS emissions	t	0.82	1.32	1.32	0.19

Source: HSE Vice Presidency

Note: Ecopetrol S.A. does not produce, export (neither in bulk nor in products that contain them) or sell these substances; the Company has only purchased equipment that contains these substances from various suppliers, such as air conditioners, stationary refrigerators, and fire-fighting systems, and others, and it is therefore not an importer or exporter of this type of substances.

Table 68.
Ozone Depleting Substance (ODS) loads of the equipment category
(305-6)

Equipment category	Unit of measurement	2018	2019	2020	2021
Small domestic/commercial applications (Load between 0 and 5 lb or 0 and 2.3 Kg)	#	1,181	678	678	94
Medium and large commercial applications (Load between 5 and 15 lbs. or 2.3 and 6.8 Kg)	#	110	86	86	220
Industrial applications (Load greater than 15 lb or 6.8 Kg)	#	411	619	619	223
Total	**#**	**1,702**	**1,383**	**1,383**	**537**

Source: HSE Vice Presidency

Note: ODS emissions are reported using the advanced level 2 method of the Intergovernmental Panel on Climate Change (IPCC), and the Ozone Layer Depletion Potentials are reported in the Montreal Protocol manual.The substances used for calculation are the following ODS: CFC-12, HCFC-22.

Substitute ODS substances used in refrigeration and firefighting systems are not included in the calculation, as they have zero ozone depletion potential.

UPCC's Advanced Level 2ª Method (bottom up). The bottom-up approach considers the time interval between consumption and emission explicitly through emission factors. This is based on the number of products and end uses where chemical substances are consumed and released. With this approach, actual annual emissions are estimated based on the number of equipment units using these chemicals, the average load of the substance, the average service life, emission rates, recycling, and disposal considerations, among others. This method was selected because, although Ecopetrol S.A. is a consumer of ODS substances or their substitutes, the Company does not produce, export (neither in bulk nor in products that contain them), or sell these substances; the Company has only purchased the equipment that contains them from various suppliers (e.g., air conditioners, stationary refrigerators, and fire-fighting systems).

For the calculation of ODS emissions, in the case of blends and other ODS substances, the emission factors recommended by the IPCC are considered

(FE 1% for units with a load of less than five (5) Lb,

FE 17% for units with load greater than five (5) Lb).

(102-48) The emissions inventory purification process ended in 2021 included the updated emission factors of the catalytic cracking and sulphur recovery units at the refineries, based on the emission control technologies installed and the results of direct measurements (isokinetic studies) taken by accredited third parties. This implied that the emission values previously reported from 2018 to 2020 were adjusted.

Comprehensive waste management

(306-1) The Comprehensive Waste Management strategic pillar was defined in 2021 under the Environmental Management Strategy, and it is articulated with the Ecopetrol Group's Circular Economy model. This pillar focuses on measures to strictly comply with the national regulatory framework and on reduction and use activities in pursuit of continuous improvement.

(306-2) (WEF 12E) Within the framework of comprehensive waste management, the following prevention, reduction, and use **actions have been implemented:**

- Application of environmental criteria for the selection of suppliers.
- Inclusion of green contractual clauses to avoid waste generation or allow maximum waste reduction or use.
- Use of wood from pallets and crates in warehouse operations.
- Use of rubble in road maintenance and to fill gullies.
- Use of non-hazardous catalysts from cracking units.
- Management plan for single-use containers and packaging in the case of packaged products placed on the market.

The following measures have also been implemented for the contribution of waste towards circularity:

For the **chemical treatment service,** the Company uses chemical leasing to return leftover products and packaging to suppliers.

Post-consumer agreements: Waste deriving from electrical and electronic equipment and lighting and lead acid batteries handed over to suppliers.

Composting of organic waste from catering and food services - 69% circularity index.

Sale of metal scrap to steel mills to be reincorporated into production processes – 50% circularity index.

Of the hazardous waste generated at Ecopetrol (especially in production and refining activities)

90 % IS OILY SLUDGE,

for which the following actions have been incorporated into Ecopetrol's Comprehensive Waste Management Guide for the specific treatment of this waste:

- Identification of initiatives to reduce the generation of oily sludge.
- Centrifuge treatment to recover oils from sludge and reduce their volume and danger.
- Sludge treatment under the bioremediation technique that accelerates the total or partial degradation of the contaminant, reducing its concentration to a harmless state.
- Co-processing heat treatment, which allows sludge to be included as part of the fuel material in cement kilns, reducing substances that cannot be treated or confined.
- Disposal in security cells is also an option in case the waste cannot be treated and requires special confinement.

THE AFOREMENTIONED TREATMENT-AND-DISPOSAL-RELATED ACTIVITIES ARE CONDUCTED BY THIRD PARTIES WITH AN ENVIRONMENTAL LICENSE, UNDER STRICT MONITORING AND CONTROL.

Additionally, at the segment level, the following measures are being implemented for oily sludge:

Production: tank and vessel maintenance program to prevent oily sludge volumes from increasing and being difficult to remove, as well as technologies to minimize the amount of fluid present in the sludge, such as dehydration and centrifugation processes for oil recovery.

Refining: sending oily sludge to a third party to be used in co-processing in cement kilns (clinker production).

Refining and Production: research on the use of efficient emulsion breakers in produced wastewater treatment to prevent the generation of oily sludge and the use of sludge as asphalt binders

(306-2) (WEF 12E) Pursuant to the provisions of the Comprehensive Waste Management Guide and Good Sustainable Supply Practices, Ecopetrol ensures compliance with contractual and legislative obligations by the third parties who handle or manage its waste based on the following considerations:

- Preparation of technical specifications that include regulatory environmental obligations, description of the required service, and contractual obligations.
- Environmental criteria for the selection of suppliers.
- Application of the processes set forth in the contracting manual to select the third party that is to provide the service. Market intelligence, show room, definition of the criteria and requirements of the service, and technical and commercial evaluation of the bidders.
- Green clause.
- Verification of environmental licenses authorizing the treatments and/or processes for use and final disposal, issued by the competent environmental authority.
- Verification of environmental permits or authorizations required for engaging in the activity (for example, discharge permit and water concession), if necessary for the treatment process offered.
- Visits to the third party's facilities to ensure that the waste treatment processes and infrastructure offered comply with the provisions set forth in their environmental license and that they meet the necessary requirements for treatment.
- Follow-up by applying the External Waste Inspection Format established in Ecopetrol's Comprehensive Waste Management Guide.

Ecopetrol's comprehensive waste management is monitored using SIGAR – Waste, digital tool that tracks the amounts generated by each waste stream. This allows the monthly evaluation of hazardous and non- hazardous waste management, the timely identification of opportunities for improvement in management processes, the timely submission of waste generation reports, and the administration of legal management documentation. This information contributes to decision-making and provides the data to be reported.

The SIGAR – Waste Tool allows the following:

- Identification and classification of waste.
- Administration of storage areas.
- Storage time monitoring of the waste generated by Company operations and areas.
- Management monitoring and control of the waste generated by the Company and by third parties.
- Reports and indicators for decision making and monitoring of waste management processes.
- Identification of potential initiatives and/or alternatives for the continuous improvement of the waste management process.

In 2021, the following use and reduction goals were defined:

Vice Presidency of Development and Production

11.3% REDUCTION OF CATEGORY Y9 oily sludge waste.

84% UTILIZATION OF HAZARDOUS waste, not including category Y9 oily sludge.

6% REDUCTION of hazardous waste other than oily sludges.

94% REUTILIZATION of non-hazardous waste.

9% REDUCTION of non-hazardous waste.

Vice Presidency of Refining

15% UTILIZATION of category Y9 oily sludge waste.

15% UTILIZATION of hazardous waste, not including category Y9 oily sludges.

5% UTILIZATION of non-hazardous waste.

In addition, the Company plans to continue on the path towards circularity, leveraged on the results obtained in 2021:

- Composting of organic waste - **69%** circularity index.
- Sale of metal scrap to steel companies – **50%** circularity rate.

Table 69.
Waste generated based on its composition
(306-3)

Waste generated	Unit of measurement	2018	2019	2020	2021
Hazardous waste	TM	111,737.39	203,833.42	140,434.13	137,375.67
Non-hazardous waste	TM	178,294.27	211,506.16	157,700.91	199,716.89
Total waste generated	**TM**	**290,031.66**	**415,339.58**	**298,135.04**	**337,092.56**

Source: HSE Vice Presidency

(102-48) **Note:** The data reported on hazardous waste in 2019 was adjusted as a result of a quality review, which detected an error in the unit of measurement used during loading. The data reported in 2019 was 319,442.65 tons and decreased to 203,833.42 tons after the review.

In 2021, waste generation accounted for **337,093** TONS, of which 137,376 tons correspond to hazardous waste and 199,717 tons to non-hazardous waste. This represents a 13% increase compared to 2020, mainly due to non-hazardous waste such as debris, metal scrap, water-based drilling cuttings, and clarification sludge from drinking water treatment. The above, due to the restart of activities after the restrictions implemented during the pandemic.

Hazardous waste generation in 2021 shows a **2%** REDUCTION vs. 2020, as less soil was contaminated with hydrocarbons thanks to environmental contingencies. These are the wastes generated according to their quantities: oily sludge, HC-impregnated elements, hydrocarbon-impregnated soils, spent cracking catalyst, soda treatment clays, polyethylene additive residues, used filters, and asphalt residues.

In terms of total non-hazardous waste generated, the most representative are: metal scrap, rubble, metal scrap, organic waste, vegetable waste, wood, water-based drilling cuttings, and clarification sludge from drinking water treatment.

Table 70.
Total waste not intended for disposal based on its composition
(306-4) (WEF 17E)

Waste not intended for disposal	Unit of measurement	2018	2019	2020	2021
Hazardous waste	Tm	134.67	92.29	3,883.72	6,105.84
Non-hazardous waste	Tm	135,118.45	201,320.21	31,863.13	47,565.51
Total waste not intended for disposal	**Tm**	**135,253.12**	**201,412.5**	**35,746.85**	**53,671.35**

Source: HSE Vice Presidency

(102-48) Note: A quality review of the 2020 data of hazardous waste not intended for disposal identified that the information related to hazardous waste prepared for reutilization and recycled hazardous waste was interchanged, reporting the amounts that went into reutilization as recycled hazardous waste. The amount of hazardous waste prepared for reutilization in 2020 was 3,103.01 tons and the amount that went into recycling was 780.71 tons.

Table 71.
Amount of waste not intended for disposal based on recovery operations at the organization's facilities
(306-4) (WEF 17E)

Waste not intended for disposal	Unit of measurement	2018	2019	2020	2021
Total non-hazardous waste not intended for disposal	Tm	94,440	163,861	3,158.06	13,420

Source: HSE Vice Presidency

Table 72.
Amount of waste not intended for disposal based on recovery operations outside the Company´s facilities
(306-4) (WEF 17E)

Items	Unit of measurement	2018	2019	2020	2021
Hazardous waste going into preparation for reutilization	Tm	11.55	9.63	3,103.01	6,074.62
Recycled Hazardous Waste	Tm	61.05	82.67	780.71	31.22
Hazardous waste going to recovery operations	Tm	62.07	0	0	0
Total hazardous waste not intended for disposal	**Tm**	**134.67**	**92.29**	**3,883.72**	**6,105.84**
Non-hazardous waste going into preparation for reutilization	Tm	14.41	52.13	12.95	0.094
Recycled non-hazardous waste	Tm	34,683.02	29,125.14	17,861.58	27,922.31
Non-hazardous waste going to other recovery operations	Tm	5,981.01	8,281.94	10,830.53	6,223.11
Total non-hazardous waste not intended for disposal	**Tm**	**40,678.45**	**37,459.21**	**28,705.06**	**34,145.514**

Source: HSE Vice Presidency

Note: In 2021, non-hazardous waste going to other recovery operations not intended for disposal showed a decrease compared to 2020, due to reduced generation, mainly of vegetable waste, and to the changes made to the management of wood waste.

Table 73.
Total amount of waste not intended for disposal based on recovery operations in the Company
(306-4) (WEF 17E)

Items	Unit of measurement	2018	2019	2020	2021
Hazardous waste going to preparation for reutilization	Tm	11.55	9.63	3,103.01	6,074.62
Recycled Hazardous Waste	Tm	61.05	82.67	780.71	31.22
Hazardous waste going to recovery operations	Tm	62.07	0	0	0
Total hazardous waste not intended for disposal	Tm	134.67	92.29	3,884.72	6,105.84
Non-hazardous waste going into preparation for reutilization	Tm	94,454.41	163,913.13	3,171.02	13,420.094
Recycled non-hazardous waste	Tm	34,683.02	29,125.14	17,861.58	27,922.31
Non-hazardous waste going to other recovery operations	Tm	5,981.01	8,281.94	10,830.53	6,223.11
Total non-hazardous waste not intended for disposal	Tm	135,118.45	201,320.21	31,863.13	47,565.514
Total waste not intended for disposal	Tm	135,253.12	201,412.5	35,746.85	53,671.354

Source: HSE Vice Presidency

There was a

50% INCREASE

of total waste not intended for disposal in 2021 with respect to the data reported in 2020. This is mainly due to the sale of metal scrap (circularity index 50%) stored between March and August 2020 given the state of emergency, and to the greater reutilization of water-based drilling cuttings in 2021 from increased drilling activities.

In addition, 2021 shows a notable increase in the amount of hazardous waste not intended for disposal. This is mainly due to the shipment of more than

57% OF THE OILY SLUDGE

generated at the Barrancabermeja Refinery for reutilization as fuel in cement kilns.

Moreover,

3,020 TONS OF WASTE

were used in new internal activities, such as the composting of organic waste from food preparation and vegetable waste, by creating compost bins within the facilities.

Regarding plastic, glass, paper, and cardboard, this waste is properly classified at the source to be offered to recyclers and foundations that use these materials.

The Good Sustainable Supply Practices were updated in 2021, including green clauses and environmental criteria for the selection of suppliers.

DURING THE 2019-2021 PERIOD, NO HAZARDOUS WASTE WAS SENT TO OTHER RECOVERY OPERATIONS (REGENERATION). THESE WERE INTENDED FOR REUTILIZATION AND RECYCLING LINES.

Table 74.
Total amount of waste intended for disposal based on its composition
(306-5) (WEF 17E)

Item	Unit of measurement	2018	2019	2020	2021
Hazardous waste	Tm	111,602.72	203,741.13	136,550.41	131,269.83
Non-hazardous waste	Tm	43,175.82	10,185.95	125,837.78	152,153.12
Total waste intended for disposal	**Tm**	**154,778.54**	**213,927.08**	**262,388.2**	**283,422.95**

Source: HSE Vice Presidency

Note: An adjustment was made to the hazardous waste data reported for 2019, after a quality review that identified an error in the unit of measurement used during the data upload process. The hazardous waste generated in 2019 was 319,442.65 tons, which decreased to 203,833.42 tons after the review.

Table 75.
Amount of waste intended for disposal based on disposal operations outside the organization's facilities
(306-5) (WEF 17E)

Item	Unit of measurement	2018	2019	2020	2021
Hazardous waste going to incineration (with energy recovery)	Tm	NA	NA	NA	NA
Hazardous waste going to incineration (without energy recovery)	Tm	6,074.9	5,754.86	2,599.72	461.45
Hazardous waste transferred to landfills	Tm	16,641.99	6,012.07	30,209.79	6,034.52
Hazardous waste going to other disposal operations	Tm	88,885.83	191,974.2	103,740.91	124,773.86
Total hazardous waste intended for disposal	**Tm**	**111,602.72**	**203,741.13**	**136,550.41**	**131,269.83**
Non-hazardous waste going to incineration (with energy recovery)	Tm	NA	NA	NA	NA
Non-hazardous waste going to incineration (without energy recovery)	Tm	102.21	92.47	45.56	2.37
Non-hazardous waste transferred to landfills	Tm	43,073.61	10,093.49	125,792.22	94,729.72
Non-hazardous waste going to other disposal operations	Tm				5,7421.03
Total non-hazardous waste intended for disposal	Tm	43,175.82	10,185.95	125,837.78	152,153.12

Source: HSE Vice Presidency

Note: Ecopetrol does conduct waste disposal operations within its facilities.

Table 76.
Total amount of waste intended for disposal based on disposal operations in the organization
(306-5) (WEF 17E)

Item	Unit of measurement	2018	2019	2020	2021
Hazardous waste going to incineration (with energy recovery)	Tm	NA	NA	NA	NA
Hazardous waste going to incineration (without energy recovery)	Tm	6,074.9	5,754.86	2,599.72	461.45
Hazardous waste transferred to landfills	Tm	16,641.99	6,012.07	30,209.79	6,034.52
Hazardous waste going to other disposal operations	Tm	88,885.83	191,974.2	103,740.91	124,773.86
Total hazardous waste intended for disposal	**Tm**	**111,602.72**	**203,741.13**	**136,550.41**	**131,269.83**
Non-hazardous waste going to incineration (with energy recovery)	Tm	NA	NA	NA	NA
Non-hazardous waste going to incineration (without energy recovery)	Tm	102.21	92.47	45.56	2.37
Non-hazardous waste transferred to landfills	Tm	43,073.61	10,093.49	125,792.22	94,729.72
Non-hazardous waste going to other disposal operations	Tm				5,7421.03
Total non-hazardous waste intended for disposal	**Tm**	**43,175.82**	**10,185.95**	**125,837.78**	**152,153.12**

Source: HSE Vice Presidency

Table 77.
Waste management by operations
(306-2) (WEF 12E)

Item	Unit of measurement	2018	2019	2020	2021
a) Total waste generated	Tm	178,294.27	211,506.16	157,700.91	199,716.89
b) Total waste used/recycled/sold	Tm	135,118.45	201,320.21	31,863.13	47,565.51
Total waste eliminated (AB)	**Tm**	**43,175.82**	**10,185.95**	**125,837.78**	**152,151.38**

Source: HSE Vice Presidency

(306-5) (WEF 17E) In accordance with the provisions of the Comprehensive Waste Management Guide, the management stages initially verify whether the waste is suitable for use. If there are no treatments available on the market to utilize the waste due to its physicochemical composition, it is sent for elimination or final disposal.

In 2021, the main waste sent for disposal was:

- Debris
- HC impregnated elements
- Catalysts
- Used filters
- Oily sludge

The data also includes waste taken to co-processing and treated via bioremediation, such as oily sludge and hydrocarbon-contaminated soil, which constituted about 90% of the Company's hazardous waste in 2021. The bioremediation process currently takes place at third-party facilities that hold an environmental license authorizing the execution of this activity.

In 2021, additional co-processing contracts were initiated for the elimination of impregnated elements, which represented an increase in this disposal alternative vs. the amount reported in 2020. The hazardous waste intended for disposal that is transferred to landfills, such as elements impregnated with hydrocarbons and sludge with high asphaltene contents, is then disposed of in security cells.

Finally, there was an increase in the disposal of this waste in 2020, given that some third-party treatments and operations were suspended due to the state of emergency arising from COVID 19, thereby leaving the only option of disposing this waste in security cells. This situation returned to normal in 2021, with the activation of the aforementioned co-processing contracts.

S – SOCIAL

"LIFE FIRST"

is the first principle of Ecopetrol's Cultural Statement. This means that the fundamental premise of corporate management is to protect the well-being of workers, contractors, the community, partners, suppliers, investors, and the State. To achieve this, the Company follows its commitment to respect, promote, and exert Human Rights (HHRR) due diligence, which is in line with the responsibility that the Company has shown towards its most valuable asset: its people. The objective of being considered the company with the best social practices has steered its management efforts towards human talent and environmental matters. Being the leader in aspects related to health, employability, education, community strengthening, and participation mechanisms, among many others, is a priority for Ecopetrol.

Human Rights

Ecopetrol promotes a corporate culture of respect and promotion of Human Rights. During 2021, Ecopetrol's management activities and objectives adhered to national and international standards and best practices. In this sense, it considered the results of the perception survey applied to Stakeholders, human rights risk analyses, self-diagnoses, contractor performance evaluations, the monitoring of risk prevention and mitigation plans, consolidated petition reports, complaints and claims, legal actions and Human Rights reports, and external evaluations, such as the Dow Jones Sustainability Index and the Corporate Human Rights Benchmark.

Commitment to respect Human Rights

Ecopetrol updated its Guide on Human Rights and Business in 2021, an instrument approved by the Company's CEO that defines the guidelines for the management of Human Rights within Ecopetrol Group.

For more information on Ecopetrol's commitment to human rights, click on the following link.

The Human Rights and Business Guide can be consulted at the following link.

This update reaffirmed the Group's commitment to respect and promote human rights. Similarly, the Company continues adhering to international standards such as the United Nations Guiding Principles on Business and Human Rights, the Ten Principles of the UN Global Compact, and the OECD Guidelines for Multinational Enterprises.

This commitment extends to all those rights recognized internationally under the International Bill of Human Rights and the International Labor Organization (ILO) Declaration on Fundamental Principles and Rights at Work. The rights highlighted include: life, personal integrity, the elimination of forced labor and the abolition of child labor, freedom of association and the right to collective bargaining, equality, and non-discrimination, as well as environmental rights, and others.

The HHRR guidelines are mandatory for all Company workers, senior executives, and suppliers in the development of their activities. They are also fostered among partners, associates, and other actors with whom Ecopetrol holds a contractual or commercial relationship.

The Code of Ethics and Conduct also contains superior guidelines of mandatory application that specifically include the respect for Human Rights. To consult the Code of Ethics, click on the following link.

You may also consult the Guide to labor matters and conditions for the activities procured by Ecopetrol at this link.

Advancing Human Rights

Ecopetrol's commitment to advance human rights is framed under **six (6)** principles set forth in the Human Rights Guide:

- Due diligence
- Transversality
- Complementarity
- Collaborative work
- Differential approach, and
- Monitoring and evaluation

Based on the Company's understanding, the Human Rights Action Plan was drafted, serving as a tool to ensure the adequate implementation of Human Rights guidelines. The actions to be deployed to fulfill the standards applicable to the matter are in line with the PHVA cycle.

Table 78.
Compliance with the Human Rights action plan

2019	90% goal	**98% compliance**
2020	90% goal	**98% compliance**
2021	90% goal	**100% compliance**

Source: Secretary General

Human Rights Due diligence
(406-1) (WEF 20E)

Ecopetrol, within its human rights commitment, **refrains from infringing the human rights of third parties and addresses the negative consequences on human rights in which they are involved** (Guiding Principle 11).

For this, the Company has implemented a cycle to address human rights issues. As part of this management cycle, Ecopetrol identifies and manages the risks and negative impacts arising from its business activities, the supply chain, or other contractual or commercial relationships, and establishes corresponding prevention, mitigation, or remediation action plans. This is applicable at the strategic, process, and operational levels, in accordance with Ecopetrol's Integrated Risk Management System.

To strengthen the due diligence process, Ecopetrol launched its Human Rights Risk Management Cycle Guide in 2021. This Guide defines key concepts and considerations for the planning, identification, evaluation, treatment, and monitoring of human rights risks, in accordance with national and international initiatives and standards. Similarly, the Company has Due Diligence Instructions to address complaints related to threats or situations that affect life and personal integrity, as well as a Declaration of **Commitment to Respect Human Rights Defenders.** These guidelines nurture the Company's HHRR due diligence.

The Human Rights Risk Management Cycle Guide can be consulted at the following link

(406-1) (WEF 20E)

WOMEN, CHILDREN, INDIGENOUS PEOPLES, MIGRANT WORKERS, CONTRACTORS, LOCAL COMMUNITIES, AND VICTIMS OF ARMED CONFLICT HAVE BEEN POPULATIONS ESPECIALLY REGARDED IN THE COMPANY'S DUE DILIGENCE PROCESS AND FOR THE HUMAN RIGHTS RISK ASSESSMENT.

Human Rights Evaluation
(411-1) (412-1) (WEF 22E)

Ecopetrol, within its HHRR due diligence framework, identified and evaluated possible human rights impacts and risks associated with its own activities, its supply chain, and other business relationships.

Table 79.
Human Rights Evaluation

2021 Human Rights Evaluation	Percentage of total operating sites where human rights risks have been assessed	Percentage of total operating sites where human rights risks have been identified	Percentage of operational sites with the presence of human rights risks where management actions have been adopted
Own operations	100*	100	100
Tier 1 Contractors and Suppliers	100**	2.3***	100
Joint Venture	100*	100	100

Source: Vice Presidency of Procurement and Services, Vice Presidency of Assets with Partners, and Secretary General

*In 2021, Ecopetrol's goal was to assess, identify, and mitigate risks in its own operations and Joint Ventures in the Middle Magdalena Valley (Central Region). The geographical scope of this analysis includes the following departments in Colombia: Antioquia, Santander, Bolivar, Boyacá, and Cesar.
**Ecopetrol selected its strategic and core suppliers of 2021 as those that accounted for 80% of the Company's expenses.
***By 2021, four (4) of the 171 strategic and core suppliers had an improvement plan based on the gaps identified, covering 100% of the suppliers who require it.

(406-1) (WEF 20E) This evaluation, which allowed the identification of risks, analyzed the rights expressly recognized by Ecopetrol in its Guide on Human Rights and Business, included the right to life and personal integrity, decent life, the right to health and to a healthy environment, access to information and participation, among others.

(409-1) (WEF 14) (WEF 22E) After the Human Rights risk analysis, no situations involving the risk of forced labor were identified in the operations or in the supply chain.

Mitigation and remediation
(411-1) (412-1) (WEF 22E)

Ecopetrol publicly reports on its Human Rights mitigation and remediation actions. These reports include, among others, the processes implemented to mitigate human rights risks, the number of sites with mitigation plans, and the type of remedial actions taken.

Click on the following link for more information regarding mitigation and remediation measures.

Dissemination, surveys, and training

(409-1) (WEF 14) (WEF 22E)

Ecopetrol annually conducts trainings on Human Rights for its suppliers, addressing issues related to the ILO Tripartite Declaration and other labor issues, including decent work and the prevention of forced labor.

97%

(9,062) of the workers received **training in Human Rights policies or procedures**

+ 7,450

workers were trained in Human Rights and the Business.

More than

800

workers, including physical security, HSE, empowerment, and Cenit teams, were trained in the risk of anti-personnel mines in the areas of operation.

The first survey on Advancement on Human Rights was applied to

80% of the associates.

100

PQR solvers attended the workshop on "PQR Mechanisms associated with human rights."

Human Rights commitments on Union Agreements were fulfilled

Chapter XVII of the 2018-2022 Collective Bargaining Agreement (Union Agreement), under the title of "Human Rights and Peace," steers the efforts conducted by Ecopetrol and the Oil Industry's Trade Union (USO, by its Spanish acronym) to encourage respect, compliance, and the dissemination of human rights in the Company and in the regions where it operates.

In this chapter, the National Commission for Human Rights and Peace ECP - USO and different Human Rights Sub-commissions work towards the fulfillment of this purpose.

The National Commission is made up of two (2) representatives appointed by management to represent the Company, and four (4) workers appointed by the Union to represent the USO.

There are six (6) Subcommittees made up of one Ecopetrol representative and another Union representative for the entire Company, as follows: The Middle Magdalena, Cartagena, Neiva - Orito, Llanos, and Bogotá Sub-commissions. The National Commission for Human Rights and Peace ECP – USO, together with the Human Rights Sub-commissions, work towards the fulfillment of this purpose.

Activities undertaken in 2021

A female worker was kept following National Human Rights Commission, with the guarantees set forth in Art. 160 of the CCTV. This is a Union permission.

Nine (9) conventionally agreed meetings were held virtually, as well as five (5) in-person meetings, in compliance with the provisions established for the pandemic.

Four (4) meetings were held with Physical Security Management to address due diligence matters related to security and human rights in the regions prioritized according to the security situation.

Two (2) Human Rights biannual meetings were held, with the participation of the National Human Rights and Peace Commission and the Ecopetrol-USO Regional Human Rights Sub-commissions.

The National Diploma Course on Human Rights and Peace was imparted in collaboration with Universidad Nacional de Colombia, with the participation of 34 workers affiliated to the USO and other Trade Unions.

Various agendas were followed-through, and different solutions were devised for the effective protection of Human Rights with due diligence. This included the monitoring of workers relocated in the different areas of operation of the Company in previous years.

12 Human Rights Workshops, two (2) Regional Assemblies, and a National Workers for Peace Assembly were held.

Within the framework of the Union Agreement and under the principle of due diligence, the safety and protection requests submitted by workers and Union leaders were addressed in a timely and effective manner, guaranteeing the fulfillment and effective exercise of their rights under the constitutional and legal framework.

Indigenous communities
(OG-9) (OG-10) (WEF 21E)

Ecopetrol has a differentiated corporate approach to engaging with Indigenous peoples.

The corporate documents associated with Indigenous communities' relationships can be consulted here.

(OG-9) (OG-10) (OG-12) (WEF 21E) The relationship approach includes, among others:

The identification of the affected Indigenous peoples before acquiring a new Block or expanding the areas of operation. This implies confirming the presence of ethnic communities, their geographic location, and identifying the potential environmental, cultural, and social implications of the project.

Understanding the local context to establish relationships with Indigenous peoples: the objective of this characterization is to have an understanding of the community as a local social and political actor, in order to identify their expectations.

Identifying the principles of good participation of Indigenous peoples, using the Guide on relations with ethnic communities, Guidelines for dialogue with ethnic communities, and Guidelines on coexistence with ethnic communities.

Free, prior, and informed consent.

Commitment to protect and preserve cultural heritage from the adverse impacts of local activities.

Grievance mechanisms.

Relocation/resettlement audit and evaluation.

TO ESTABLISH RELATIONSHIPS WITH ETHNIC GROUPS LIVING IN THE AREAS OF OPERATION, ECOPETROL ADOPTS THE PROCESS OF INTERCULTURAL DIALOGUE AS A PRINCIPLE AND ARTICULATING PILLAR FOR ITS ACTIONS.

This is why, in addition to the diagnoses of the territories to identify relevant information on the characteristics of ethnic groups, baselines are built with intercultural and participatory methodologies to collect information from the community during the prior consultation processes, covering social, cultural, environmental, and cartographic aspects to understand the context of the community and, subsequently, to establish measures to manage the impacts of the project. In 2021, two baselines were defined for production projects with the Pasto-Orito-Siberia and Camentsa Biya Communities in the municipality of Orito, Putumayo.

Ecopetrol's map of operations, infrastructure, and exploration blocks identifies the presence of Indigenous Reserves and lands titled to Community Councils (**click on the link**).

However, there is no database showing the location of communities whose land has not been legally constituted, since the National Government must legalize the definition of territorial limits.

Ecopetrol's intercultural conflict prevention and management plan

The Relationship guide with ethnic communities establishes that:

1. All Ecopetrol workers must read the Guide and expressly state that they are willing to comply with it.
2. The Guide must be included as an annex to the contracts when field work is to be conducted in territories with the presence of ethnic communities.
3. Community leaders must be informed about the mechanisms available for handling suggestions, doubts, and concerns about the company's activities.
4. The workers and contractors of the project or operation must inform their respective supervisors or leaders of any conflict arising between them and the communities. Ecopetrol is open to establishing intercultural dialogue to resolve any differences with the communities.

(411-1) (WEF 22E)
No violations of the Human Rights of Indigenous peoples were recorded in 2021,

(OG-12)
nor was there any resettlement of ethnic communities.

Prior Consultation
(OG-10) (WEF 21E)

Throughout 2021, Ecopetrol's relationship with ethnic groups in its areas of influence was based on intercultural dialogue in order to maintain trust connections. Similarly, the Company reactivated the prior consultation process that had been underway in 2019 and suspended in 2020 due to the pandemic. Two(2) processes were ensured for the identification of ethnic groups in the areas of operation of the Company.

First, to guarantee the right to prior consultation for each project in Colombia, once its general operational scope and its areas of influence and intervention are defined, the Company files the formal procedure with the National Authority Administration for Prior Consultation – (DANCP, for its Spanish acronym), part of the Ministry of the Interior of Colombia, to determine whether or not to conduct the prior consultation. The supporting documentation provided by Ecopetrol for the process is part of a technical summary that includes:

- Activities to be conducted.
- General description of the biotic, physical, and socio-economic characteristics of the area.
- Description of possible pre-identified impacts, according to the characteristics of the activity.

In the areas where there is already information about the presence of ethnic communities, Ecopetrol informs the authority about the possible impacts of the project to the previously identified communities.

Second, in Colombia, once the DANCP analyzes the information, it issues a resolution that determines whether or not prior consultation is appropriate for the project. In positive cases, prior to the start of the project, Ecopetrol requests said entity to initiate the coordination of the consultation process.

During some phases of the project, ethnic groups not reported by the DANCP may be identified in the areas. In such a case, as part of the human rights due diligence process, Ecopetrol verifies the situation and reports it to the DANCP, confirming the presence of said community in the area, and requests the due pronouncement of the Authority regarding the applicability of the prior consultation. In 2021, there was no evidence of unidentified communities in the project areas.

Relevant information on the previous consultations conducted and under monitoring

In 2021, the Company took the following steps to define whether or not the prior consultation process was applicable for its projects:

Determination of applicability of the prior consultation process by the DANCP for

seven (7) projects

nine (9) prior consultation

processes were conducted for two (2) Production Field development projects.

four (4) prior consultation processes

were closed for three (3) exploratory projects, two (2) due to compliance with agreements and two (2) due to project withdrawal.

As part of the relationship strategy with the DANCP,

two (2) technical workgroups

and a training session were held, with the participation of employees from the entity.

(OG-9) In Colombia, free, prior, and informed consent is necessary for the implementation of projects involving any of the situations below specified by the Constitutional Court:

(i) Transfer or relocation of Indigenous or tribal communities from their place of settlement.

(ii) Storage or deposit of hazardous or toxic materials in their territories.

(iii) Measures implying high social, cultural, and environmental impact on their subsistence.

Relationship with ethnic communities

Intercultural Dialogue with the Unuma Meta Indigenous Reservation

After the reversal of the Rubiales Field to Ecopetrol, a consultation for reparation was conducted by Court order with this reservation. Since the consultative process, dialogues have been maintained with the reservation in two (2) aspects:

1. First, the establishment of a Relationship Guide to serve as a Roadmap for dialogue, conflict resolution, and the planning of future actions;

2. Second, both parties worked together during 2021 on the formulation of "trust-building" projects, which has prioritized the projects that seek to improve the living conditions of the community.

Agreement to sponsor ethnic group artisans in EXPOARTESANIAS

Expoartesanías is the most important craft fair in Colombia, with the participation of local artisans from all over the country. In 2021, Ecopetrol enabled the participation of

124
ARTISANS

from different ethnic groups from

17
DEPARTMENTS.

The participation of these artisans in the fair is an important contribution to their economy, and it also strengthens the cultural practices and the ancestral knowledge applied when elaborating these masterpieces.

Archaeological authorizations

Activities were undertaken as part of

41
PREVENTIVE ARCHEOLOGY PROGRAMS

implemented in

four (4)
OF ECOPETROL'S REGIONS,

mainly in Orinoquía and Middle -Central- Magdalena, which gather the largest number of these types of activities. Within these programs,

10
NEW PREVENTIVE ARCHEOLOGY PROGRAMS

initiated in operational and exploration areas, pursuant to Decree 138 of 2019, in order to standardize the Company's archaeological processes and the correct monitoring of all these activities.

Resettlements

Ecopetrol's population resettlement procedure is based on the United Nations Guiding Principles on Business and Human Rights and International Policies on Population Resettlement, which establish the conceptual and methodological route to prevent, mitigate, correct, and offset the economic and social impacts caused by the involuntary displacement of the population as a result of the Company's operations and projects. The procedure also defines actions to restore socioeconomic conditions and generate opportunities to improve the conditions of the population to be resettled.

In 2021, there were

1,785
RESETTLEMENTS

ases on involuntarily displaced families in the Central Region. The table below shows the Company's assets and projects that required such resettlements:

Table 80.
2021 resettlements cases

Asset / Project	Type of Resettlement			
	Temporary	Permanent	Status	Total
Casabe Field Well 929	3	0	Closed	3
Casabe Field Well 967	4	0	Closed	4
Casabe module III Cluster 9	0	1	Follow-up	1
La Cira - Infantas Field	1,720	45	Follow-up	1,765
Nafta Project	6	6	Follow-up	12
Totales	1,733	52		1,785

Source: Vice Presidency of Sustainable Development

Security and Human Rights

(410-1) **Ecopetrol has explicitly stated its commitment to the Voluntary Principles on Security and Human Rights by adopting an approach that advances and respects HHRR.**

This approach includes the following elements:

1 Risk evaluation:

the identification methodology compiles a specific risk associated with the violation of Human Rights, known as "GDE3.4 Violation of Human Rights, by the public force or private security companies in the planning, sustainability, and closure of local activities or commitments."

2 Interactions with public security:

Ecopetrol enters into collaboration agreements with the Public Force, incorporating the Human Rights clause and emphasizing respect for said rights in legal and conventional terms.

3 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 related to private security.

4 Supervision of security providers to ensure that they comply with their obligation to provide security in a manner consistent with the rules of conduct established by Ecopetrol:

The Company exerts risk control to monitor security providers in order to guarantee that they meet their obligation to provide security in accordance with the standards of conduct described by the Company. In addition, a specialized team reviews and issues a report with the findings and areas for improvement.

5 Grievance mechanisms that protect the security forces:

The citizen participation office (OPC, by its Spanish acronym) at Ecopetrol is responsible for receiving PQRs (petitions, claims, and complaints) related to Ecopetrol's presence in the different regions in the country. PQRs allow the Company to address citizen concerns directly and this feeds into the monitoring efforts to improve internal processes.

6 Audit and evaluation of security contractors:

Within the various contractual clauses, Ecopetrol contemplates mechanisms to control and measure performance in all activities under the contract,including Human Rights. Procuring private security services is a process that entails the selection of different bids (not contracted directly).

(401-1) Ecopetrol establishes training requirements for all direct workers and organizations providing security staff. Below is a chart of security personnel who have received formal training in specific Human Rights policies or procedures:

Table 81.
Total number of security employees trained on Human Rights

2,947
Total number of security workers

1,424
Number of security workers who have received formal training in specific Human Rights policies or procedures

48.32%
Percentage of security personnel who have received formal training in specific Human Rights policies or procedures.

Source: Vice Presidency of Sustainable Development

Promoting Human Rights in the supply chain
(412-2)

Ecopetrol's internal labor regulations establish the labor standards to be met by all suppliers when undertaking activities for the Company. By means of this policy, the commitment to respect all human rights is explicitly stated, with special emphasis on the supply chain:

- Decent, favorable, and adequate working conditions.
- Freedom of association and collective bargaining.
- Equality in employment and occupation.
- The abolition of any form of child labor.

Similarly, as part of Ecopetrol's Human Rights Training Program, the Company led the

2ND CO-CREATION WORKSHOP ON HUMAN RIGHTS IN THE SUPPLY CHAIN

in September 2021, with the participation of the Office of the United Nations High Commissioner for Human Rights in Colombia, the ILO, and the OECD.

More than **70 key suppliers** participated in this workshop, which allowed the Company to reinforce the practical implementation of international human rights standards. Ecopetrol's suppliers demonstrate their commitment to advance and respect Human Rights through the implementation and dissemination of policies and good practices.

For more information, visit the following link.

Significant investment agreements and contracts containing human rights clauses or submitted to Human Rights evaluation
(412-3) (WEF 22E)

At Ecopetrol, two (2) determinants are considered to define significant investment agreements and contracts containing human rights clauses:

(i) Agreements or cooperation agreements deriving from or managed by the Vice Presidency of Sustainable Development, entered into for protecting the critical infrastructure of the Company, in addition to being representative in risks associated with human rights and security.

(ii) Service contracts entered into as of 2016 and in force as of December 31, 2021, managed by the Vice Presidency of Supply (goods and services) and subject to the Human Rights and Corporate Social Responsibility annex.

At Ecopetrol,

99.57%
of significant agreements and contracts

contain human rights clauses and are subject to the corresponding evaluations. As of December 31, 2021, there were

3,989
valid service contracts,

of which 3,972 were signed after the entry into force of the Annex on HumanRights and Social Responsibility in October 2016. The remaining 17 contracts were signed before the aforementioned date, which is why the are not subject to the Annex.

Table 82.
Investment agreements and contracts containing human rights clauses

3,997	**Total number of significant investment agreements and contracts**
3,980	**Number of significant investment agreements and contracts containing human rights clauses or submitted to human rights evaluation**
99.58%*	**Percentage of significant investment agreements and contracts containing human rights clauses or submitted to human rights evaluation**

Source: Vice Presidency of Procurement and Services and Vice Presidency of Sustainable Development

Also,

100%
of the security contracts

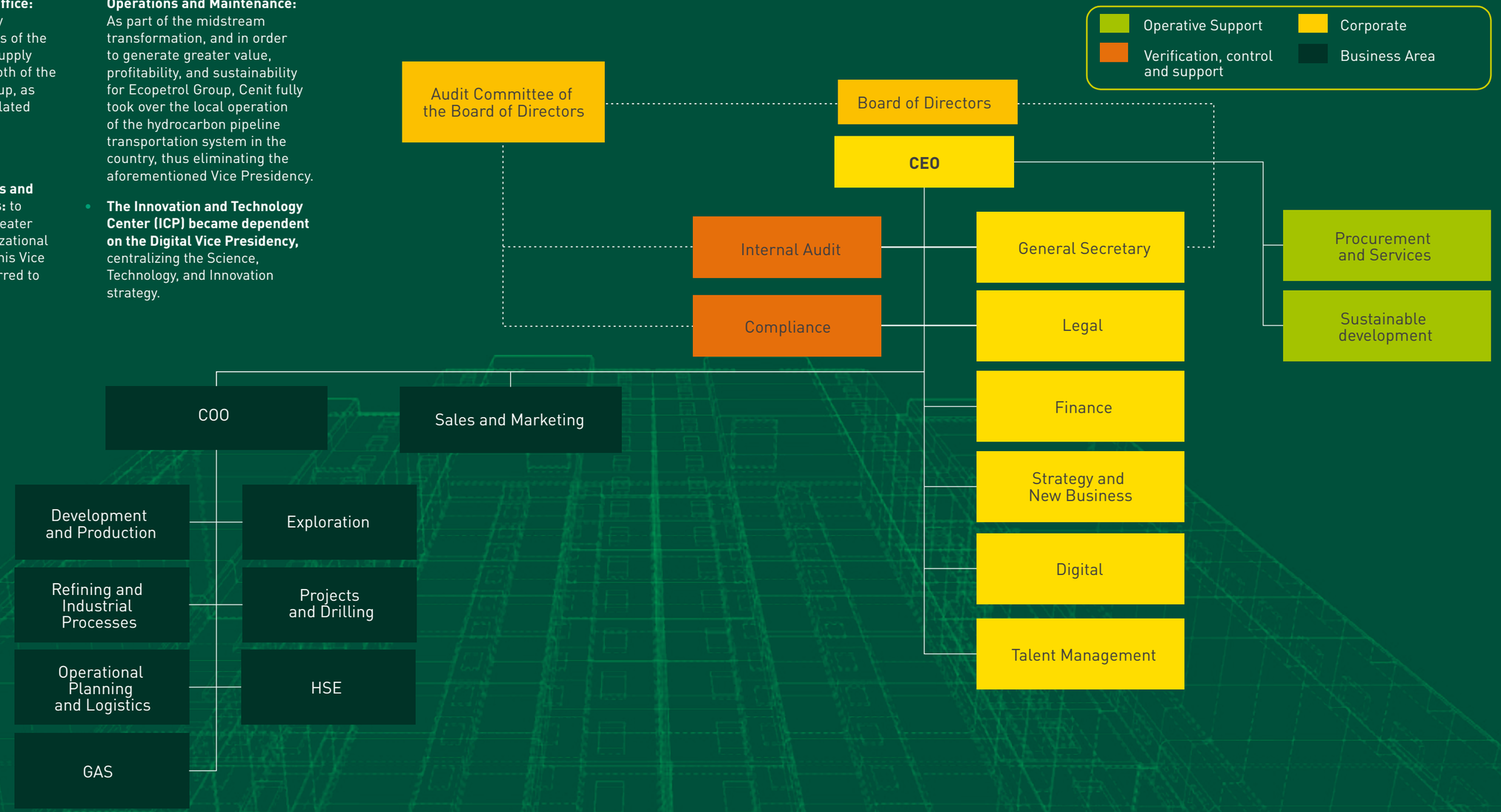
entered into by Ecopetrol contain a specific clause on the Voluntary Principles on Security and Human Rights.

Human talent

Organizational structure

These are the main changes made to the organizational structure in 2021:

- **Operational Planning Office is now the General Operational Planning and Logistics Office:** thereby comprehensively addressing the processes of the crude oil and products supply chain in all segments, both of the Company and of the Group, as well as the processes related to integral logistics and transport services.
- **Elimination of the Vice Presidency of Operations and Transportation Logistics:** to achieve synergies and greater efficiencies in the organizational structure, the duties of this Vice Presidency were transferred to other areas of Ecopetrol.
- **Elimination of the Vice Presidency of Transportation Operations and Maintenance:** As part of the midstream transformation, and in order to generate greater value, profitability, and sustainability for Ecopetrol Group, Cenit fully took over the local operation of the hydrocarbon pipeline transportation system in the country, thus eliminating the aforementioned Vice Presidency.
- **The Innovation and Technology Center (ICP) became dependent on the Digital Vice Presidency,** centralizing the Science, Technology, and Innovation strategy.



Compensation & Benefits

Ecopetrol's Compensation Policy ensures conditions that encourage employees to invest their maximum commitment and potential in the Company, thereby attracting, creating loyalty, and retaining the human talent required for the development of the Corporate Strategy.

The main components of the Total Compensation at Ecopetrol are

FIXED COMPENSATION, BENEFITS, AND VARIABLE COMPENSATION.

Fixed Compensation

Fixed compensation corresponds to all guaranteed payments received by employees; this means that, in addition to the basic salary, it includes legal and extralegal benefits and other components.

With regard to fixed compensation (monetary income), Ecopetrol applies a salary range between

80% and 120%

of the reference market,

allowing a progressive salary increase for employees, according to their performance, experience, skills, among other criteria, and according to the labor expense budget defined for each term.

An equity analysis is systematically conducted so that employees holding equivalent positions receive a fixed compensation within the established ranges, according to the level of the position held.

Below are some specifics about fixed compensation:

In 2021, the legal monthly minimum wage (SMLV) in Colombia was COP 908,526; at Ecopetrol, according to the salary structure in force as of January 1st, 2021, **the lowest monthly salary is**

COP **2,161,950**
(2.4 SMLV)

which is

138% higher

than the legal minimum wage. The following table shows the information from 2016 to 2021.

Table 83.
Difference between the legal minimum wage and Ecopetrol wages

Year	Minimum wage (SM) in Colombia	Ecopetrol minimum wage	No. SM equivalent to Ecopetrol's minimum wage	Percentage difference (%)
2016	COP 689,455	COP 1,721,850	2.5	150%
2017	COP 737,717	COP 1,811,400	2.5	146%
2018	COP 781,242	COP 1,891,290	2.4	142%
2019	COP 828,116	COP 1,983,570	2.4	140%
2020	COP 877,802	COP 2,092,680	2.4	138%
2021	COP 908,526	COP 2,161,950	2.4	138%

Source: Vice Presidency of Human Talent

The overall annual salary increase recorded in 2021 was

3.31%,

which is 0.60% lower than the 2020 adjustment, which stood at 5.5%. Table 84 shows the overall wage increase recorded between 2016 and 2021:

Table 84.
Overall Salary Increase

2016	2017	2018
9.81%	5.20%	4.41%
2019	**2020**	**2021**
4.88%	5.50%	3.31%

Source: Vice Presidency of Human Talent

For 2021, the fixed compensation of the highest paid employee was equal to

7.99 times

the average monetary income of other employees. Table 85 specifies this information for the years 2016 to 2021:

Table 85.
Average fixed compensation of the highest paid employee

2016	2017	2018
8.6	8.4	8.2
2019	**2020**	**2021**
8.1	8.1	7.99

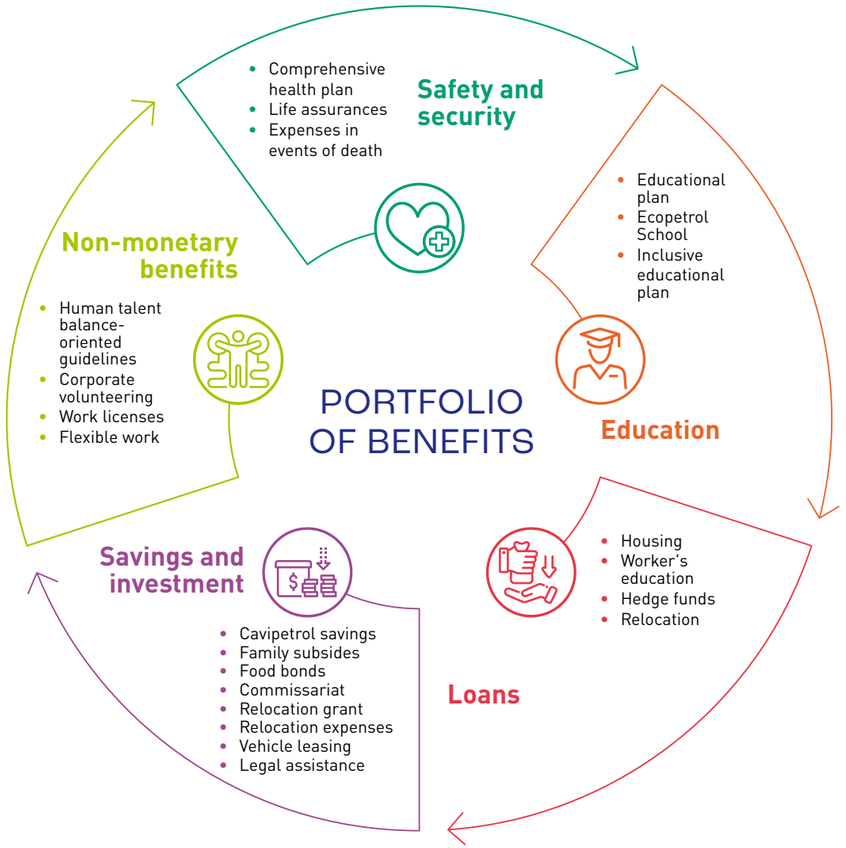
Source: Vice Presidency of Human Talent

Benefits

(201-3) (401-2) (WEF 18)

Ecopetrol offers an attractive and competitive benefits portfolio focused on the following five (5) main aspects, in order to ensure the well-being of employees and their families:

Graph 32.
Benefits Portfolio



Source: Vice Presidency of Human Talent

Graph 33 shows the benefits coverage and their application as of December 31, 2021.

Graph 33.
Benefits coverage

Source: Vice Presidency of Human Talent

Health

As part of the excepted regime of the General Social Security System established in Law 100 of 1993, Ecopetrol acts as insurer and health service provider, and as the occupational risk administrator of its employees.

Life insurance

By virtue of the Law and the conventional agreement, all Ecopetrol S.A. workers are entitled to life insurance as a benefit from the Company, regardless of their type of contract.

Education

In 2021, Ecopetrol invested

COP 192,119
million

in the education of employees and their families. Table 86 shows the investment made in education from 2016 to 2021.

Graph 34 shows the distribution of beneficiaries of the 2021 education plan.

Table 86.
Investment in education

2016	2017	2018
COP 112,689	COP 131,517	COP 163,807
2019	**2020**	**2021**
COP 171,748	COP 185,700	COP 192,119

Source: Vice Presidency of Human Talent

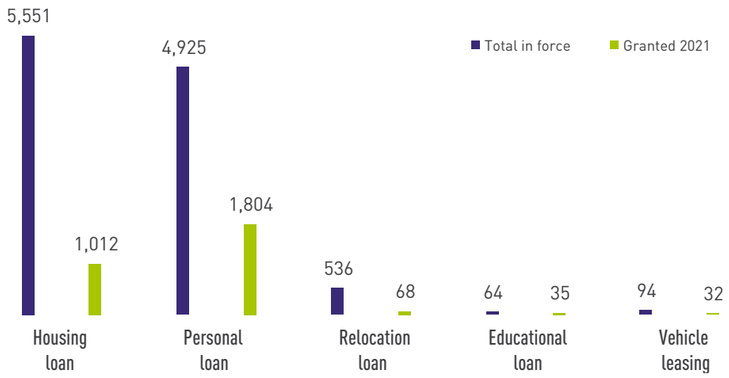
Graph 34.
Beneficiaries of the 2021 Education Plan

Source: Vice Presidency of Human Talent

Loans

Graph 35 shows the total number of loans and the allocations made in the 2021 period.

Graph 35.
Total number of loans and allocations made in 2021



Source: Vice Presidency of Human Talent

According to the restriction established by the Securities and Exchange Commission (SEC), in relation to the award of personal loans to senior executives (Executive Officers), the positions of CEO, Operational Executive Vice President, and CFO may not be beneficiaries of this loan.

Non-monetary benefits

Ecopetrol offers its employees a series of non-monetary benefits and incentives. Table 87 lists these benefits and the number of employees who benefited from them in 2021.

Table 87.
Coverage of non-monetary Benefits

5,762 Birthday leave	**330** Absence to purchase a home	**78** Absence during moving days	**116** Marriage leave
90 Extended paternity leave	**21** Extended maternity leave	**11** Volunteering	**2,286** Fractionated vacations

Source: Vice Presidency of Human Talent

Extended maternity and paternity leave are paid permissions longer than the leave stipulated by law, allowing working mothers to gradually return to their work environment, and granting fathers the possibility of spending three more days with their children.

Parental leave.

Maternity leave: every worker has the right to an 18-week paid leave when giving birth (Law 1822 of 2017), which must be paid with the salary earned by the worker at the time the leave started.

Extended maternity leave: once the legal maternity leave is over, every employee working in shifts is entitled to two (2) weeks of additional paid leave. Every female worker who does not work in shifts, from her return to work at the end of the legal maternity leave, is entitled to a paid leave of half a day for the next four (4) weeks, in addition to the breastfeeding hour.

Paternity leave: two (2) week paid leave granted to workers for the children born from their spouses or permanent partners, an also in the case of adoptive fathers. (Law 2114 of 2021)

Shared parental leave: this allows parents to distribute the last six (6) weeks of the mother's leave. This leave will be remunerated based on the salary of the person enjoying this benefit during the corresponding time. (Law 2114 of 2021).

Extended Paternity Leave: The Company grants three (3) business days paid leave following the expiration of the paternity or childbirth leave.

Table 88.
Parental leave in 2021
(401-3)

Parental leave	Men	Women	Total
Employees who have been entitled to parental leave	184	69	253
Employees who have taken parental leave	184	69	253
Employees who returned to work in the corresponding period after completing parental leave	184	69	253
Employees who returned to work after completing parental leave and remained employed 12 months after returning to work	183	67	250
Return to work rate	100	100	100
Employee retention rate	99.457	97.101	98.82

Source: Vice Presidency of Human Talent

Variable compensation

Short term

His is paid based on the Company's results and individual performance, and aligns employees with the company's objectives for the year. This variable compensation element is determined and assigned considering factors such as the result of financial and management indicators, HSE impacts, environmental, ethical, and disciplinary events, internal control failures, and the individual performance of each employee. The payment of this compensation is subject to the approval of the Board of Directors.

Table 89.
Eligible for variable compensation and % paid vs. budgeted

Year	No. eligible employees	% paid vs. budgeted (Global Company)
2017	9,057	108.40%
2018	9,311	92.50%
2019*	9,882	76.40%
2020	9,792	88.50%

*The value authorized by the Board of Directors in February 2020 for recognition was 86.5%. The effective payment made was 76.4% due to savings applied as a result of the COVID-19 pandemic and the drop in oil and fuel prices in the international market.

Variable compensation results for 2021 are reviewed between January and April 2022, once the results of the year are available and the individual performance evaluation process for the period is closed.

Long Term Incentives (ILP, by its Spanish acronym)

Long Term Incentives (ILP, by its Spanish acronym): they are associated with the achievement of strategic objectives that guarantee the sustainability of the Company and foster the cohesion of the management team. This benefit is determined and assigned based on business results over three (3) years and the resources are invested in Ecopetrol's share portfolio. Its payment is subject to the approval of the Board of Directors, who seek to recognize and encourage the achievement of extraordinary long-term business results and favor the interests of shareholders.

The objectives of this plan are associated with the generation of cash, the reduction of the carbon footprint, specifically the reduction of GHG emissions, and the replacement of reserves.

ILPs are part of the compensation structure for the CEO, Vice Presidents, equivalent positions, and other positions, according to their level of responsibility and under performance criteria. The percentage of the population subject to these incentives is

1.4%
of Company employees.

Additionally, the Board of Directors issued the compensation guideline for the subsidiaries 100% owned by Ecopetrol to adopt these incentives for presidents or general managers and other positions.

The 2020-2022 ILP Plan and the 2021-2023 ILP Plan, which are recognized between January and April 2023 and 2024, respectively, are currently underway if the defined goals are met. Metrics associated with the corporate strategy and the financial plan are adopted for each edition of the ILP Plan, and the target population is updated. In December 2021, the Board of Directors approved the Plan for 2022- 2024.

33. For example, Managers, Department Heads, Leaders, among others.

Retirement plan
(201-3) (WEF 18)

Ecopetrol S.A., as part of the Human Talent planning process, structured a Retirement Plan to facilitate the mutually agreed termination or workers who had been with the Company for more than 20 years and are less than 12 years away from retirement.

94 WORKERS JOINED THE RETIREMENT PLAN IN 2021

and a total of

515 **between 2020 and 2021;**

this plan was designed and agreed upon with the Workers' Union. Visit e following link to learn more about the retirement plan.

Visit e following link to learn more about the retirement plan.

Obligations defined in the Company's benefit plan, pension plan, and other retirement plans
(201-3) (WEF 18)

Employees who retired from Ecopetrol for having consolidated their right on July 31, 2010, continue to receive allowances and social benefits (health services for employees and registered family members), as well as an educational benefit from the Company.

Regarding workers affiliated to the General Pension System, Ecopetrol makes the corresponding periodic contributions established by law. The respective pension administrators are the ones responsible for pension obligations. The health and education benefits to which they are entitled are part of Ecopetrol's labor liabilities.

As of December 31st, 2021,

13,078

retirees were under Ecopetrol S.A.'s responsibility, distributed as follows:

Table 90.
Number of Ecopetrol retirees in 2021 distributed by regional unit

Bogota	Caribbean	Central
3,066	**1,278**	**7,180**
Orinoquia	**Andina Oriente**	**Grand total**
93	**1,461**	**13,078**

Source: Vice Presidency of Human Talent

Visit the website to learn more about the retirement plan and pension obligations.

ROADMAP

Talent Attraction, Development, and Retention

Outstanding Material Element

Sustainable Development Goals

5 GENDER EQUALITY

8 DECENT WORK AND ECONOMIC GROWTH

(103-1)

Impacted stakeholder groups	Areas responsible for managing the impacts	Ecopetrol segments with the greatest impact
Employees, retirees, and their Beneficiaries	VTH	*Upstream*
Society and Communities		*Midstream*
		Downstream
		Commercial

Why is the element material?

(103-1)

Employees are Ecopetrol's main asset. Due to the impact of talent management on the Company's performance, and due to the priority given to it by stakeholders, it is an outstanding material element recognized in the 2040 Strategy in the Cutting-edge Knowledge Pillar.

(102-7) (102-8) (WEF 17) Ecopetrol S.A. employed more than 9,000 people in 2021. The commitment to each of them is what guides talent management in the Company.

Table 91.
Employees by region and by type of contract

Total number of employees	6,972	2,350	9,322
Indefinite term contracts	6,564	2,233	8,797
Temporary contracts	408	117	525

Source: Vice Presidency of Human Talent

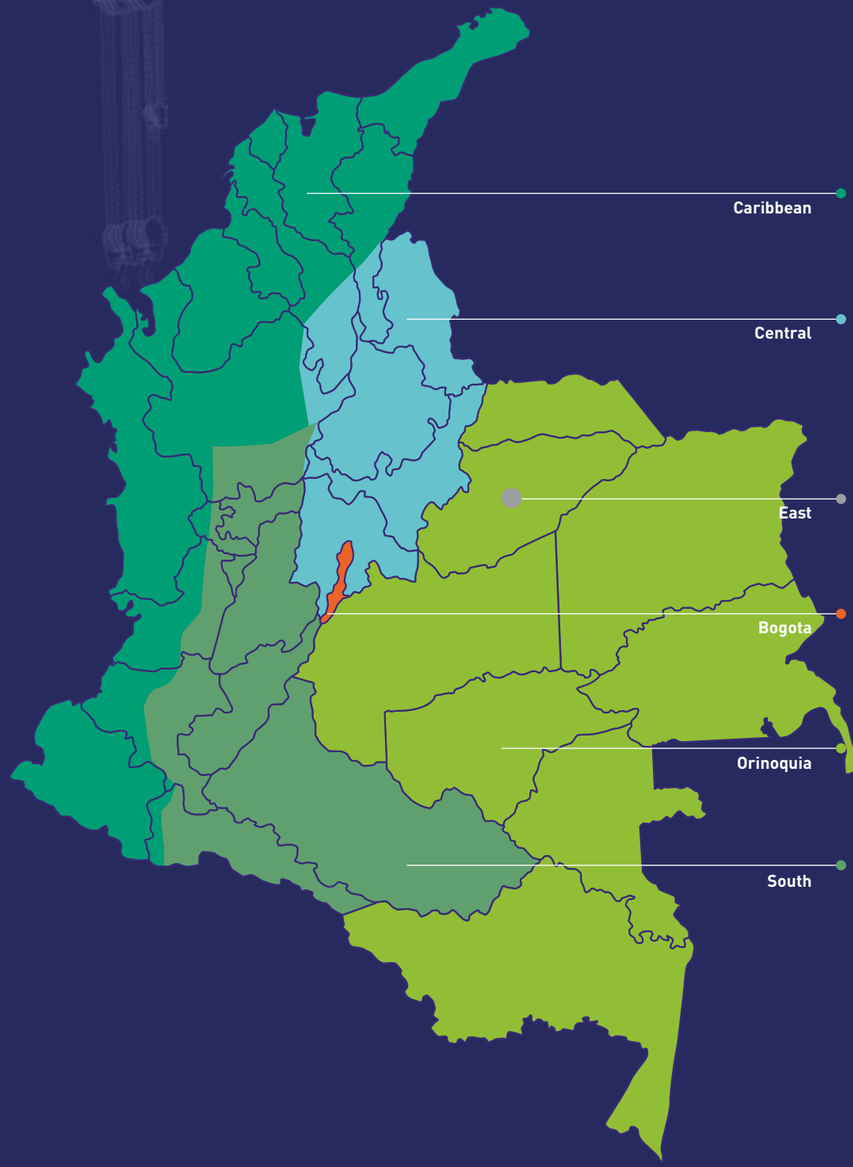


Table 92.
Employees by region and by type of contract

	Undefined	Temporary	
Caribbean	1,067	32	TOTAL 1,099
Central	3,148	223	TOTAL 3,371
East	251	53	TOTAL 304
Bogota	3,146	100	TOTAL 3,246
Orinoquia	830	89	TOTAL 919
South	355	28	TOTAL 383

Table 93.
Employees by region and by gender

	Men	Women
Caribbean	962	137
Central	2,834	537
East	285	19
Bogota	1,859	1,387
Orinoquia	729	190
South	303	80

Source: Vice Presidency of Human Talent

How is the material element managed?
(103-2)

The Vice Presidency of Human Talent is responsible for managing this material element. To ensure compliance with the goals defined in the Roadmap, Ecopetrol focuses on the following **lines of work:**

(i) Capacities, knowledge, and skills

(ii) Culture.

(iii) Employee Experience.

(iv) Succession.

(v) Appropriation of the new leadership brand and certification of leaders.

(vi) Talent Renewal.

How is the material element evaluated?
(103-2)

The goals defined in the attraction, development, and retention Roadmap are monitored in the Vice Presidency of Human Talent through the TBG indicators of the area, which are aligned with the goals defined in this material element, and their follow-up is conducted at least quarterly.

Short, medium, and long-term goals and projects
(103-2)

To leverage the 2040 Strategy, Ecopetrol seeks exceptional performance from its talent, which translates into the following goals by 2030:

1 Retooling[32] provided for
70%
of the workers (Reskilling/Upskilling[33]).

2 Maintain the favorability indices
(90)
in the Group's Cultural Transformation index.

3 Achieve
40 points
in the Net Promoter Score (NPS)[34] related to employee experience.

4 **100**
of the Ecopetrol Group's critical positions with established successors by 2030.

5 A Leadership Brand adopted by the leaders and
100%
certification.

6 Talent renewal by employing
500 semilleros.

7 Be the
#1
company in the **attraction**, **retention**, and **development** of Talent in Colombia, according to external measurements.

32. Re-equipping of new capabilities via reskilling and upskilling.
33. Reskilling refers to the acquisition of new skills and Upskilling implies developing the necessary skills in current workers.
34. Measure the recommendation rate of collaborators.

Projects in the lines of work

	SHORT TERM: 0 TO 2 YEARS	MEDIUM TERM: 3 TO 5 YEARS	LONG TERM: MORE THAN FIVE (5) YEARS
1 Capacities, knowledge, and skills	• Talent Planning. • Competencies and skills plan. • Upskilling and Reskilling programs. • Learning platform for self-development.	• Differentiated Learning Strategies. • Certifications. • Leadership training. • Self-Development Programs. • Metrics.	• Continuous updating of learning and talent development programs and practices
2 Behavior and culture	• Appropriation of a higher purpose (country-level). • Appropriation of the Cultural Statement. • Diversity and inclusion. • Change management.	• Systematic evaluation of the culture model. • Union Culture based on the Ecopetrol Group's "Generating Value with TESG" pillar.	• The Group's Culture model review cycle.
3 Employee Experience	• Employment schemes and flexible work. • Segmented compensation schemes. • Work schemes (Time economy). • Employer Brand at the local and international level.	• Extension of employee experience practices to the entire Group.	• Cycle of employee experience improvement practices.
4 Talent Renewal	• Planificación de TH - Business Plan. • Flexible and dynamic organizational structure. • Retirement and pension plans, new generations, talent renewal, succession.	• Total mobility scheme in Ecopetrol Group.	• Staff planning review cycle.

2021 Management Efforts
(103-3)

1 Capacities, knowledge, and skills

(404-2) (WEF 16) A skills survey was conducted in Ecopetrol Group in 2021, by means of more than 35 workshops involving more than 370 strategic and operational leaders. As a result, **12 large sets of skills** to be developed in 2022–2030 were identified and prioritized. The five **(5) most important** to be developed in the next three (3) years were prioritized: **innovation**, **agility**, **digital transformation**, **execution**, and **energy transformation.**

Competencies and skills plan

The **competencies** of

99.3%

of petro-technicians and

76.5%

of all workers were evaluated.

33% (3,062)

of workers were covered under the

10

people retooling programs:

Unconventional Reservoirs, Offshore Projects, Enhanced Recovery (water injection), Associated Operations, HSE Leadership, Digital Transformation, Energy Transition, Innovation & Technology. Click on the following link to learn about the objective, the progress, and the impacted population in each thematic area.

Click here to know more about the objectives and progress of the plan.

99%(9,223)

of the workers received training during 2021, with an average of

70 HOURS

per worker.

More than

8,900

workers are part of the **Genius** platform, the new way of learning at Ecopetrol Group.

88%

of the training actions deployed (internships, virtual, or in-person courses, on-the-job training, coaching) followed the "on-the-job – virtual" modality, offering contents and real time and deferred online training sessions.

TRAINING PROGRAM FOCUSED ON THE ENERGY TRANSITION

The purpose is to train 100% of the Company's population in basic knowledge about circular economy, renewable energies, energy efficiency, and fuel quality, to ensure that more than 900 people involved in the Energy Transition have the necessary technical skills.

10% of all Ecopetrol full-time employees partake in this initiative

Table 94.
Average training hours imparted to the organization's employees during the reporting period, by job category
(404-1)

Job category	Total number of training hours	Average training hours per employee
Senior management	317	10
Management	4,051	34
Middle management	32,241	53
Supervisors	71,171	149
Professional technician	329,799	54
Operational staff	212,915	106
Total	**650,494**	**70**

Source: Vice Presidency of Human Talent

Table 95.
Average training hours per employee and by gender
(404-1)

	Total number of training hours 2021	Average training hours per employee
	560,348	80
	90,146	38
	650,494	70

Note: Due to face-to-face restrictions during 2020, in 2021 the operation's own training increased considerably, especially operational excellence training, which increased by more than 34% compared to the previous year. Taking into account that this type of training applies to areas with large populations and mostly men (operations and maintenance), a high numerical impact was generated in the total number of training hours for Ecopetrol. Discriminating the training in themes for administrative areas, where the number of women is greater than in the operation, the average hours of training for women is similar to the average hours of training for men, as can be seen below and as it has been in the last years.

Table 96.
Average hours of training in administrative topics

	270,813	39
	78,679	34
	349,492	38

Table 97.
Average hours of training on operational issues

	289,535	67
	11,467	25
	301,002	63

Source: Vice Presidency of Human Talent

Note: women and men in similar roles have the same training load since it depends on the role and not on gender; however, there are many more men in supervisory and operating positions that, by requiring more hours of training, impact the average.

In 2021, Ecopetrol's full-time employees received an average of

70 training hours,

an investment of

COP 2.49
million on average

made by the Company per employee.

Click on the following link to learn about other programs, knowledge management actions, and learning tools at Ecopetrol, such as the Master's or PhD scholarship for studying abroad, the bilingualism program, "Genius", the New Learning Platform, the E+ talks, and the RANE.

2 Culture

The behaviors laid out by the

SIX (6) PRINCIPLES

under Ecopetrol's Cultural Statement were incorporated into the performance evaluation since 2020. The evaluation cycle covers a period of one year, from January to December. The Individual Performance process covers **100% of the employees** subject to the performance evaluation

In 2021, Ecopetrol **Group's Cultural Transformation Index** (ITC, by its Spanish acronym) stood a

88/100,

and Ecopetrol S.A.'s Index at

87/100,

both maintaining a favorable status. The "Looking at the Mirror" strategy validates the level of appropriation in three dimensions: **Culture, Leadership and Environment, and Commitment.** The participation of Ecopetrol S.A. workers accounted for

91%

and the Ecopetrol Group

92%.

353
team alignment workshops
were held as part of the cultural transformation program, covering close to

2,065 people,

including leaders and collaborators. The focus was on: The generation of trust and emotional security, Leaders as the engine of transformation, From fear to trust, and An environment free of fear based on innovation.

Click on the following link for more actions and results related to the adoption of the Ecopetrol Culture.

3 Employee Experience

Diversity and inclusion

Ecopetrol applies a zero tolerance approach to discrimination and harassment, which is why it has a Group Policy specifying the Company's commitment to non-discrimination and the prohibition of all forms of harassment, the measures to train and educate employees on these issues, the process for reporting and escalating incidents, and the corrective and disciplinary measures associated with confirmed behaviors of harassment or discrimination, among others.

In accordance with the provisions set forth in its human rights guidelines and the Code of Ethics and Conduct, Ecopetrol defined clear guidelines establishing the duty of employees to ensure, respect, and foster human rights, diversity, and inclusion. In terms of human talent, the Company develops labor practices aligned with this framework, applicable to the Board of Directors, senior executives, and all the people working in the Company and in the Group. Emphasis is made on the Diversity and Inclusion Program (D&I), based on the principles of meritocracy, equity, and justice. Here are some advancements and achievements:

The team of sponsors and champions continues to grow: The Group has **32 senior management sponsors and 695 volunteer diversity champions..**

Talent diversity is advancing: in three (3) years, female participation in leadership positions has increased by 12 percentage points, **growing from 18% in 2019 to 29% in 2021 in Ecopetrol, and from 24% to 31% in the Group.**

The staff includes more than **597 people with disabilities (6%),** 91% of which have a physical disability. Progress continues in the characterization of ethnic self-identification. Ecopetrol has gone from **9 to 26 people who register a same-sex partner.**

To learn more about the composition of the labor force, click on the following link.

Internal and external communication drives D&I: in 2021, **225 publications** were made (27.8% more vs. the 176 publications in 2020), with more than **24 million views.** The contents standing out in June include the LGBTQ Pride month and the #EllaEsAstronauta Program. In terms of internal communication, **22 content publications** were made, with more than **75,000 views.**

Entrepreneurial support with a diversity and inclusion perspective: the responsible procurement administration has more than 1,500 productive ventures led or integrated mainly by people of difficult labor insertion, conducting **more than 32 commercial rounds** between 2020 and 2021, **with the participation of nearly 450 companies.** More than **COP 20 billion have been generated in businesses, and 800 jobs supported via entrepreneurship.** They have also been accompanied by the Diversity and Inclusion Training Center and its "Emprende con Energía" school, sharing knowledge to strengthen entrepreneurship.

Promotion of inclusive chain employment: dissemination of the diversity policy and the benefits of inclusive employment to more than 4,000 companies. Implementation of the inclusive employment guide in the activities procured, which guides contractors towards sustainable commitments for these jobs; so far this year, **16,622 people have been associated with job placement barriers,** including 14,296 women, 120 people with disabilities, 1,145 young people with first jobs, 863 people from groups ethnic groups, and 198 victims of armed conflict.

Click on the following link to learn more about the Diversity and Inclusion Program.

For more details, including statistics related to incidents of harassment and discrimination, go to the Ethics chapter on page 152.

To ensure that the Company is fulfilling its promise of being a diverse and inclusive space, the following indicators are monitored:

Table 98.
Percentage of employees by job category and gender
(405-1) (WEF 2) (WEF 11)

Job category	Unit	Men	Women	Total
Senior management	#	25	6	31
Management	#	84	36	120
Middle management	#	430	182	612
Supervisors	#	471	6	477
Professional technicians	#	4,106	1,974	6,080
Operational staff	#	1,856	146	2,002
Senior management percentage	%	81	19	100
Management percentage	%	70	30	100
Middle management percentage	%	70	19	100
Supervisor percentage	%	99	1	100
Professional technicians' percentage	%	68	32	100
Operational staff percentage	%	93	7	100

Source: Vice Presidency of Human Talent

Table 99.
Percentage of employees by job category and age group
(405-1) (WEF 2) (WEF 11)

Employees by job category	Under 30 years old	Between 30 and 50 years old	Over 50 years old	Total
Senior management	0	12	19	31
Management	0	74	46	120
Middle management	0	442	170	612
Supervisors	1	313	163	477
Professional technicians	312	4,599	1,169	6,080
Operational staff	102	1,279	621	2,002
Senior management percentage	0	12	61.29	100
Management percentage	0	61,667	38,333	100
Middle management percentage	0	72,222	27,778	100
Supervisor percentage	1,333	65,618	34,172	100
Professional technicians' percentage	5,132	75,641	19,227	100
Operational staff percentage	5,095	63,886	31,019	100

Source: Vice Presidency of Human Talent

Table 100.
Percentage of employees by job category and other diversity indicators[35]
(405-1) (WEF 2) (WEF 11)

Employees by job category	Unit	Ethnic minority	People with disabilities	LGBTQI+	Total
Senior management	#	1	-	-	1
Management	#	6	-	-	6
Middle management	#	26	8	-	34
Supervisors	#	23	54	3	80
Professional technicians	#	267	187	20	474
Operational staff	#	234	348	3	585

Source: Vice Presidency of Human Talent

Table 101.
Participation of minorities in the labor force
(405-1) (WEF 2) (WEF 11)

Category	Participation as a % of total labor force	Participation in managerial positions as a % of the total managerial workforce
People of African descent	2.15	2.13
Caucasians	30.3	41.6
Indigenous	0.57	0.14
Mestizos	55.6	48.4
Afro-Colombians	1.05	0.43
Other ethnicities	2.92	1.84

Source: Vice Presidency of Human Talent

35. The tables related to "Percentage of employees by job category and other indicators of diversity" and "Employees by job category", which was in the version of the report for right of inspection, replicated information for which they were eliminated and replaced by the current table.

Table 102.
Participation of women by level of responsibility
(405-1) (WEF 2) (WEF 11)

Participation of women by level of responsibility	%
Participation in the Company's total workforce	25.21
Participation in all management roles (junior, middle, and senior management) as a percentage of total management roles	29
Participation in entry-level or first-level management roles as a percentage of total entry-level roles	30
Participation in senior management roles (maximum two levels of CEO or comparable) as a percentage of total senior management roles	28
Participation in income-generating management roles as a percentage of total income-generating management roles (does not include support areas)	23
Participation in roles related to science, technology, engineering, and mathematics (STEM)	19

Source: Vice Presidency of Human Talent

(102-8) (405-1) (WEF 2) (WEF 11) (WEF 17)

In 2021 el **6%** of full-time jobs were held by **people with disabilities,**

0.30% **by people from the LGTBI community,**

4% **employed under 30 years of age,**

72% **between 30 and 50 years of age,**

and **23%** **older 50 years of age.**

Table 103.
Proportion of base salary and remuneration between women and men for each job category
(405-2) (WEF 12) (WEF 19E)

Salary ratio	Average female salary	Average male salary	Proportion
Executive level (base salary only)	810,579,744	836,100,110	0.97
Executive level (base salary + other cash incentives)	1,020,024,680	1,074,203,897	0.95
Management level (base salary only)	349,598,090	382,223,995	0.92
Management level (base salary + other cash incentives)	404,711,807	446,244,317	0.91
Non-administrative level	177,034,973	164,073,130	1.08

Source: Vice Presidency of Human Talent

The Company improved with the diversity and inclusion standards adopted:

Equipares Silver Seal: Ecopetrol is awarded the Equipares Silver Seal (Gender Equity System) with a rating of **98.47%**. There are already five (5) Group companies that have favorable gender equity processes under the program.

Inclusive Company Seal: Ecopetrol was awarded the highest recognition for inclusion by ANDI,USAID Colombia's partnership Program for Reconciliation, ACDI/VOCA Colombia, and Deloitte.

Global Diversity, Equity, and Inclusion Benchmark (GDEIB): In the maturity verification of the GDEIB standard, Ecopetrol was given the score of **4.0/5.0 (Progressive level)** by expert panelists authorized by the Center for Global Inclusion.

Friendly Biz Corporate Seal: Ecopetrol received this seal, which is granted by the Merchants Chamber LGBT Colombia and audited by Future Builder to companies committed to respecting and including the LGBT+ community.

Club del 30%: Ecopetrol adheres to this initiative that fosters greater participation of women in Boards of Directors.

United Nations Women's Empowerment Principles (WEPs): Ecopetrol advances in the rating, from 87 to **91 points**.

Ecopetrol adheres to the UN's **principles and standards of conduct for companies** that address and prevent discrimination against the SOGI (Sexual orientation and Gender Identity or LGBTIQ+) population.

Ecopetrol Group's score of

4.5/5.0

for Worker Satisfaction with their work environment and well-being under the new work schemes is also worth noting. Time economy, such as the smart use of time to achieve balance between personal and work life, and the implementation of WPA, Microsoft's tool to obtain information for managing different work habits and identifying actions for greater balance between work and personal life.

Mobility

Ecopetrol has mechanisms that facilitate the mobility of workers within the Group and to and from external organizations. Also to transfer them to different regions in the country within the Company, under principles of equity and ensuring competitive conditions.

Both **internal and external mobility** can occur at Ecopetrol.

Click on the following link to see this year's data.

Employee well-being

The Wellness Plan fosters a balance between work and personal life and the achievement of good physical and emotional health for workers to develop their full potential and contribute to the sustained growth of the Company's strategy. This plan incorporates three (3) interrelated pillars:

Have fun | **Share** | **Take care of yourself**

Performance evaluation
(404-3)

The percentage of employees by gender and job category that have a periodic performance evaluation process is **100%** of the eligible population. They are those workers with a contract as of December 31, 2021, who joined the company before September 30, and who do not have absences of more than **270 days**.

Of the **9,322** workers of Ecopetrol S.A., 9,191 were eligible as of December 31 and of these, **100%** have a performance evaluation process for 2021.

Table 104.
Performance Evaluation

Category	Men with performance evaluation	Women with performance evaluation	% Men of the total category	% Women of the total category	Total position level	% position level
Senior Management	25	6	0.27%	0.07%	31	0.34%
Management	84	35	0.91%	0.38%	119	1.29%
Middle management	430	179	4.68%	1.95%	609	6.63%
Supervisors	473	6	5.15%	0.07%	479	5.21%
Technical professional staff	4,054	1,968	44.11%	21.41%	6,022	65.52%
Operational staff	1,822	109	19.82%	1.19%	1,931	21.01%
Total	6,888	2,303	74.9%	25.1%	9,191	100%

Source: Vice Presidency of Human Talent

100% of Ecopetrol workers are recurrently evaluated against the fulfillment of previously defined objectives. 6.9% of workers also undergo a multidimensional evaluation that includes a feedback process from their leaders and co-workers.

Labor Benefits
(401-2) (WEF 18)

Ecopetrol has a benefit portfolio for all its employees, which can be found on page 284 of this Report.

Succession

The Succession program continued in Ecopetrol Group, where leaders and candidates for succession are assessed to define development plans for them and prepare them in advance. This is a cyclical process, and it is reviewed each year to include new critical leadership positions and new candidates as potential successors. This process is one of the Company's key resources to ensure the filling of leadership vacancies.

370
CRITICAL LEADERSHIP ROLES SUBJECT TO SUCCESSION,
with a growth of
27%
compared to the 290 roles defined in 2019. Of the roles defined in 2021,

24 correspond to senior management levels,
120 to managerial levels,
165 to department heads,
61 to coordinators.

There is a total base of
1,000
successor candidates in the Company, with a
25%
growth compared to the 800 candidates in 2019. Of the total population of successors,
37 % (373) are **women** and
63 % (627) are **men**.
The results of the process are consolidated at the end of 2021 in
29 **talent maps** covering all of Ecopetrol Group, with a
16 % growth compared to the 25 maps consolidated in 2020.

Development and Leadership

Support to leaders continued throughout different development strategies.

The School of Culture and Leadership extends to **100% of the leaders, successors, and new generations.** It includes a development model consisting of exposure and practice actions, supportive learning, and classroom training.

Tools for autonomous learning, such as GetAbstract **(12,000 active users, 19,000 summaries downloaded,** mainly on Leadership and Innovation topics) and WOBI (1,035 active leaders), enabled for all Ecopetrol Group employees and leaders.

The scope of the **coaching processes** was expanded by **36%** to a total of **127 leaders** (88 men and 39 women). **60+ webinars and web conferences** were also held on topics associated with leadership in changing environments, innovation, and strategy.

360° Evaluation of Leadership Competencies: the result obtained was **4.32/5,** exceeding the 2019 result by 0.37 points. For this, leadership competencies and behaviors were updated, and the assessment was scoped for new levels of leadership, growing from 347 assessments in 2019 to 552 in 2021.

The details of the roles assessed can be found in the following link.

Women's Leadership Mentoring Program

AS PART OF THE LEADER DEVELOPMENT STRATEGIES, AND IN LINE WITH THE PURPOSE OF DIVERSITY, A MENTORING PROGRAM WAS LAUNCHED FOR A GROUP OF 41 WOMEN,

to develop competencies within the framework of the new Cultural Statement, facilitating their access to new job opportunities and empowering them with the necessary skills to exercise more diverse and inclusive leadership roles.

4 Talent Renewal

Table 105.
2021 Employmen
(401-1)
(WEF 17)

	Number of new hires	New Hire Rate
>Under 30 old	228	50.11
Between 30 and 50 years old	202	44.396
< Over 50 years old	25	5.495
Total	455	100

Source: Vice Presidency of Human Talent

Table 106.
2021 Hires by gender
(401-1)
(WEF 17)

Women	198	43.516
Men	257	56.484
Total	455	100

Source: Vice Presidency of Human Talent

Table 107.
2021 Hires by region
(401-1)
(WEF 17)

Central	97	21.319
Bogota	267	58.681
Caribbean	29	6.374
Orinoquia	44	9.67
South	13	2.857
East	5	1.099
Total	455	100

Source: Vice Presidency of Human Talent

Table 108.
Internal hiring

% of internal hiring	Unit of measurement	2018	2019	2020	2021
Total number of hires	#	767	603	318	455
% of roles filled with internal candidates	%	40	43	48	51

Source: Vice Presidency of Human Talent

In compliance with Decree 1668/16 regarding local labor, the calls for tender referred to in said rule were published on the page of the Public Employment Service.

Click on the following link for more information on the Human Talent Selection process.

Staff turnover

The staff turnover rate measures the percentage of employees joining and leaving a company during a given period of time. The time horizon used for calculations in this report was 2021, considering the following variables:

V: Number of external people employed by Ecopetrol S.A. in 2021.

D: Number of people dismissed from Ecopetrol S.A. in 2021.

F_1: Number of workers at the beginning of the period (January 1, 2021) at Ecopetrol S.A.

F_2: Number of workers at the end of the period (December 31, 2021) at Ecopetrol S.A.

The formula used to compare these variables was as follows:

$$\frac{\frac{V+D}{2}\ x\ 100}{\frac{F_1\quad F_2}{2}}$$

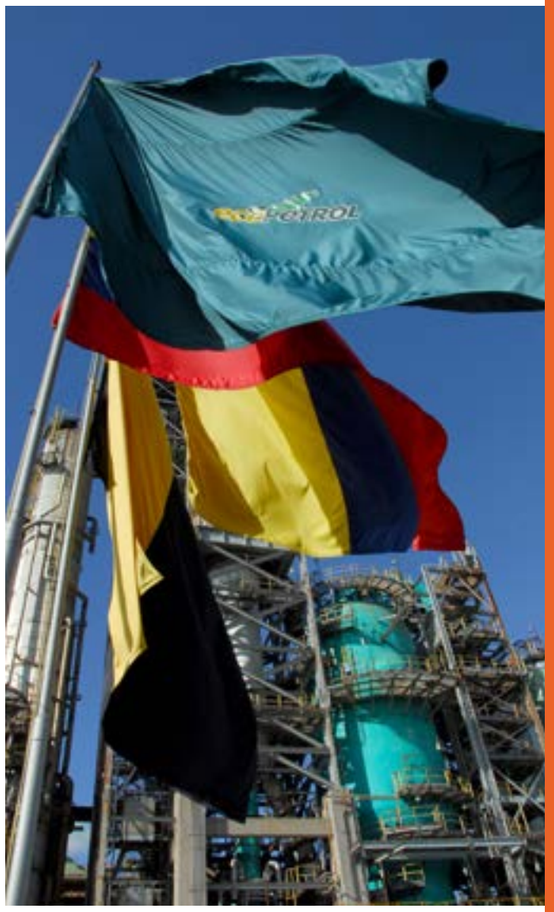


Table 109.
Turnover Rate

	Turnover Rate
Total Company Turnover Rate	**6.11**
Management Level Turnover Rate	
Extended Steering Committee - President, Vice Presidents, and Managers who are on the extended committee	9.43
Managers who are not part of the Extended Committee	4.58
Middle Management	4.95
Supervisors	1.82
Professional Technical Level	5.78
Operational Level	8.21
Turnover rate by gender	
Women	6.60
Men	5.95
Turnover rate by nationality	
Argentina	4.55
Colombia	6.14
The Bolivarian Republic of Venezuela	3.25
Voluntary Turnover Rate	**2.77**
Turnover Rate by Region (Colombia)	
Bogotá	7.48
Caribbean	5.39
Central	4.23
East	2.56
Orinoquia	6.48
South	13.92
Turnover rate by age	
Under 30	37.31
Between 30 and 50	4.85
50 or older	4.58

Source: Vice Presidency of Human Talent
Note: he data in this table pertains to Ecopetrol S.A., therefore the denominator is 9,320 employees.

The turnover rate in 2021 is higher compared to the immediately previous year **(6.1% vs. 4.8%)**, which can be explained by three significant factors according to the variables indicated above: The hiring of **180 youths** for the Semilleros program, the transformation of the Midstream segment where CENIT took over operations and transfered more than **300 employees** to their company, and finally, the **Retirement Plan** strategy which benefitted more than **90 employees**.

THE TURNOVER RATE AT ECOPETROL IS WITHIN THE RECOMMENDED RANGE (10%) AND BELOW THE SECTOR AVERAGE (9.7%).

***Semilleros* Program**

The coverage of the program was expanded as part of the retooling strategy, growing from 21 professionals to 180 (97 men and 83 women) who became part of the third cohort of the Program, with a duration of two (2) years as promoters of change and transformation. The training pillars for the growth of these professionals are: **Energy transition, cultural transformation,** and **digital skills.** Program participants have supportive learning (mentoring and tutoring) and exposure (rotations and industrial visits) at their disposal.

The total population of Semilleros is distributed in different areas of the Company, with

30% assigned to the corporate team,

10% to downstream,

24% to support, and

36% to upstream.

High Potential Program

The second cohort of High Potentials was defined with **25 professionals** (13 men and 12 women), who were selected after a rigorous process to identify and evaluate the potential for personal growth in the Company and to define compliance with program requirements.

The Development Program lasts three (3) years, and it is conducted collaboratively between Ecopetrol University and Universidad Los Andes in Colombia on topics such as strategic thinking, value chain, leadership skills, management skills, energy transition, cultural transformation, and digital skills.

The population of the second cohort of High Potentials are young people between **27 and 35 years** of age. In line with the diversity and inclusion strategy, **52%** of the population is **male** and **48% female**.

The High Potentials are distributed in different areas as follows:

36% in the Corporate team,

8% in downstream,

32% in support,

24% in upstream.

Association and Collective Bargaining

(407-1) (WEF 21E)

Ecopetrol is committed to respecting the right to association and collective bargaining, in accordance with the highest international standards on Human Rights. The Company respects and promotes fundamental labor rights. In 2021, it continued working with the coexisting union organizations in the Company, by means of harmonious and constructive labor relations based on direct communication that strengthen union relations with the recognition and respect of rights and duties, to establish healthy relationships to boost the growth of Ecopetrol and the well-being of workers.

As a fundamental basis of these relationships, Ecopetrol fulfills the commitments agreed with union organizations established in the Collective Bargaining Agreement and others, both with the Boards of Directors and with the Sub-directorates of these coexisting organizations in the Company, in compliance with current regulations.

In 2021,

357
RELATIONSHIP OPPORTUNITIES:
were generated:

187 with National Boards, and

170 with the different sub-directorates at the national level, giving rise to

284 commitments, which were

100% fulfilled.

Similarly, eight (8) extra-conventional minutes were signed with the Workers' Union (USO, by its Spanish acronym), some with the purpose of providing support to workers during the pandemic.

104 labor abnormality incidents were recorded throughout the year, with losses in man-hours, distributed as follows: 46 Central Regional Unit, 16 Orinoquía Regional Unit, 21 Caribbean Regional Unit, and 20 Eastern Andean Regional Unit. An incident (rally) was also recorded at the national level associated with protests against the National Government.

None of these incidents generated an impact or operational interruption with economic losses for the Company. There were also no strikes recorded in 2021.

There are currently **27 union organizations** at Ecopetrol S.A., to which Company workers are affiliated, of which, 18 are industry unions or by economic activity, and nine (9) are Company unions.

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Table 110.
Trade Unions

Industry Unions	Company Unions
USO	ASPEC
ADECO	ASOPETROL
SINDISPETROL	TRASINE
UTIPEC	ASTECO
SINATRINHI	SINPECO
SINTRAMANPETROL	SINPROECOP
ASINTRAHC	APROTECO
USTRASEN	ASTIPHEC
SYNTRAMEN	SITRAECO
USOLEODUCTOS	
ASINPE	
SINTRAPETGAS	
SINDINAPETROLEO	
SINANPE	
SINDEIP	
ASOPETROGAS	
UNTRAPETROL	
SINOME	

Source: Vice Presidency of Human Talent

IN 2021, 48.6% OF COLLABORATORS AT ECOPETROL WERE AFFILIATED TO ONE OF THE PREVIOUS UNION ORGANIZATIONS.

(102-41) (WEF 21E) Around that same date, and in accordance with the legal provisions that regulate the matter, the Current Collective Bargaining Agreement applied to **77.7%** of total Ecopetrol S.A. workers.[36]

36. The figures shown account only for direct active workers as of December 31, 2021, excluding those with a suspended contract for mobility reasons.

Roadmap

Occupational health and industrial safety

(102-12)

Outstanding material element

(103-1)

Impacted stakeholders	Areas responsible for managing the impacts	Ecopetrol segments where the greatest impact is generated
Suppliers, contractors, and their workers	VHSE	Upstream
Clients		Midstream
Investors and Shareholders		Downstream
National State		Comercial
Local State		
Society and Communities		
Associates and Partners		
Employees, retirees, and their Beneficiaries		

Why is the element material?

(103-1)

Occupational health and industrial safety are a material element at Ecopetrol S.A. because it generates value by providing healthy and safe work environments, free of accidents, sound, aware of people's well- being, ensuring the least impact on the communities, contributing to the efficiency of the processes, and preserving the Company's reputation.

UNDER ECOPETROL'S CULTURAL STATEMENT, AND IN LINE WITH THE "LIFE FIRST" PRINCIPLE, OCCUPATIONAL HEALTH AND SAFETY RISKS ARE MANAGED IN ADVANCE AND PROACTIVELY, PRIORITIZING THE PROTECTION OF THE LIVES OF WORKERS, PARTNERS, AND COMMUNITIES IN THE AREAS OF OPERATION OF ECOPETROL S.A.

How is the material element managed?

(103-2)

Hazards and risks in the work environments are managed in line with the following pillars:

- Intervention of work environments in existing facilities and incorporation of Occupational Health standards into new projects
- Mental health and psychosocial risk at work to achieve a balance between work and a healthy work environment
- Preventive and Occupational Medicine
- Environmental health: Management of risk factors arising from operations in order to mitigate and prevent damage to the health of communities

This, leveraged on legal compliance, occupational epidemiological surveillance, technological innovation, data analytics, financial management, and the HSE culture.

Occupational health and safety management system

(403-1)

Ecopetrol S.A.'s HSE Management System seeks to establish the necessary elements for the Company to adequately manage risk, to protect life and foster the preservation of the environment. The HSE Management System was established based on current Colombian regulations (Decree 1072 of 2015) and international standards (ISO 45001 and ISO14001).

The System consists of developing a logical and staged process based on continuous improvement, including culture, leadership, policy, organization, planning, and the application, evaluation, auditing, and improvement of actions to anticipate, recognize, evaluate, and control the risks that may affect safety and health at work and in the environment.

THIS CONSISTS OF 22 SUB-ELEMENTS, EACH DEFINING THE PRINCIPLE AND THE BASIC IMPLEMENTATION REQUIREMENTS, WHICH IN TURN, PROVIDE GUIDANCE ON THE DOCUMENTS THAT SPECIFY THE APPLICATION OF THE BASIC REQUIREMENTS.

The System covers oil and gas exploration and production processes, the production of refined products and petrochemicals, marketing of hydrocarbons, and administrative and/or business support processes. The process owners are responsible for implementing the sub-elements of the HSE Management System, which must be consistent with the risks associated with each process.

The System is under the leadership of the HSE Vice Presidency, with the participation of all workers and contractors who are an integral part of the Company's processes, thereby guaranteeing the application of occupational health and safety measures through said system, uplifting worker behaviors, improving working conditions and the work environment, and exerting effective control of hazards and risks in the workplace.

(403-2) Within the framework of the Life First cultural principle, workers have a tool at their disposal for reporting unsafe behaviors and conditions, either electronically or via telephone. Visits, inspections, and spaces for conversation between leaders and collaborators are also facilitated to report dangerous situations and conditions and strengthen existing controls.

On the other hand, the Company promotes autonomy and self-care as part of its prevention approach. As a fundamental element of on-the-job oversight, when an unsafe act or condition is identified, "**Everyone has the obligation and authority to stop the unsafe activity.**" This premise has been passed along from senior management to all direct workers and contractors. The next step is to engage in a safety conversation with the people involved in the act or condition to be corrected, to reevaluate together whether the activity can continue safely or whether the activity should be suspended until the unsafe conditions are resolved.

Ecopetrol S.A. offers different means of communication to workers and contractors, where they can raise queries or file complaints about the possible reprisals to which they are exposed after reporting a situation associated with the unsafe activity. For more details on the mechanisms for raising queries and escalating situations that go against the Company's principles, go to Ecopetrol´s webpage.

(403-2) Although there are different methodologies for identifying hazards, analyses, and risk assessments depending on the type of hazard, Ecopetrol uses the **"bowtie"** methodology for hazards associated with industrial safety, and for occupational health hazards and risks, the Company applies the HRA (Health Risk Assessment) methodology. A task risk analysis must be conducted for all activities, which must be prepared in advance and approved by competent personnel from the executing party and by the person in charge of the area where the activity will take place. Each hazard identification and risk analysis and assessment methodology defines intervention priorities by applying controls aligned with the hierarchy established in the **ISO 45001:2018 standard.** Risk analysis is applied continuously to each activity, and health and "bowtie" risks are updated periodically or each time a new hazard is identified, a new production or technological process is introduced, or a change is made that may pose risks to the health of people or the environment.

(403-2) All environmental, industrial safety, process safety, and occupational health incidents or alarms that occur in the Company are subject to reporting, registration, investigation, and the implementation of corrective actions, to ensure the incorporation of lessons learned, and thus reduce the probability of recurrence and improve the organization's performance.

Based on the actual or potential consequence of the incident, the investigative team is assigned as defined by the Company. The causes leading to the incident are determined, as well as the necessary actions to avoid their recurrence by identifying critical factors, immediate causes, unsafe conditions or behaviors, and basic causes or the root cause. The lesson learned is then communicated and incorporated in the applicable area or areas of the Company. Compliance with the actions resulting from the incidents is monitored using the technological tool established by the Company.

In general, the consolidated results of the investigations are analyzed to identify common causes and their trends and define actions to improve the HSE Management System.

(403-3) (WEF 15) Ecopetrol's Occupational Health Department is responsible for:

Managing Preventive and Occupational Medicine at Ecopetrol S.A.

Providing technical support to the Business Units at Ecopetrol S.A. in Occupational Medicine and other Occupational Health issues, by participating in strategic scenarios to ensure control over the occupational risks in the work environment.

Defining and establishing the necessary guidelines, guides, procedures, instructions, formats, and tools for the adequate provision of Occupational Medicine services.

Monitoring compliance with Preventive and Occupational Medicine guidelines and standards.

Planning and ensuring the necessary budgetary resources to leverage Occupational Health management.

Participating in the investigation of work accidents and occupational diseases.

To guarantee the quality of occupational health services, Ecopetrol S.A., through the Department of Occupational Health, offers the induction process to the personnel of Preventive and Occupational Medicine companies.

This induction includes the provision of hygiene, ergonomic, and psychosocial results reporting on the health conditions of workers, which must be used for promotion and prevention activities and the structuring of comprehensive action plans targeted to individuals. In addition, a quality assessment of the health services provided at work is conducted in accordance with current regulations in Colombia.

How is the material element evaluated?
(103-3)

The effectiveness assessment of the Occupational Health strategy is conducted as follows:

Intervention of work environments: Compliance with intervention plans (HRA-Hygiene- Ergonomics-Psychosocial) and risk control of critical trades.

Occupational risk management in projects: Intervention of psychosocial aspects, ergonomic risk management, industrial hygiene, and occupational risk in the New Normal.

Preventive and Occupational Medicine: Periodic comprehensive health, occupational disease, and occupational risk management assessments during the COVID-19 health emergency.

Innovation and Technology: Data analytics to predict and alert possible occupational health risks.

The progress made in Occupational Health management is monitored in different scenarios such as:

(i)

The HSE Committee of the Board of Directors.

(ii)

The Steering Committee.

(iii)

The monthly Operational Excellence Committees of the Vice Presidencies, Managements, and Departments.

(iv)

The monthly Joint Occupational Health Committees (National, Regional, and Local).

Short, medium, and long-term goals and projects
(103-2)

There are short, medium, and long-term goals focused on strategic options, as follows:

	SHORT TERM (2022-2023)	MEDIUM TERM (2024-2026)	LONG TERM (2027 en adelante)
1 Improvement of existing facilities	• Control the level of risk of identified critical trades. • Complete diagnosis in the management of high-risk health operations (operation of valves, control rooms, equipment, and tools, closed sampling, and hermetic measurement of tanks)	• Evaluate the cost-efficiency of interventions to improve working conditions • Fulfill 20% of the facilities occupational risk intervention program.	• Implement systems to reduce occupational exposure to chemical substances in the measurement and hermetic sampling of tanks. • Implement the recommendations deriving from the ergonomic diagnoses conducted by the Department of Occupational Health, related to the operation of critical valves, control rooms, equipment, and tools. • Fulfill 50% of the facilities occupational risk intervention program.
2 New facilities of international quality in petrochemical processes and new processes (generation of alternative energies)	• Update the Industrial Hygiene and Ergonomics criteria applicable to new projects based on findings in existing facilities and international standards. • Start incorporating industrial hygiene and ergonomics standards in the phase I high risk projects defined with the Business Unit.	• Continue incorporating industrial hygiene and ergonomics standards in the phase II moderate risk projects defined with the Business Unit.	• Incorporate the concepts of human factors and their control strategies under incident management into operational processes. • Incorporate Industrial Hygiene and Ergonomics standards in the new energy production projects developed by the Company.
3 Opportunities for innovation, technological update, and application of Data Analytics	• Incorporate Data Analytics for effective intervention and risk control in the work environment (optimization processes, high risk procedures, characterization of exposure and risk) • Incorporate technology to monitor the health of workers while executing their tasks, and analysis of the data	• Predictively detect potential cases of occupational disease to prevent them from emerging.	• Manage health cases using risk detection models with an accuracy greater than 85%.
4 Mitigating the health risks of workers and of the community (environ-mental health)	• Generate a methodological guide to mitigate the health risks of workers and of the community Medium term (2024-2026).	• Application of the guide in critical areas / processes.	

2021 Management Efforts
(103-3)

1 Intervention of work environments:

a) Intervention plans:
- HRA: 90% compliance. *
- Hygiene: 96.67% compliance. *
- Ergonomics: 97.84% compliance. *
- Psychosocial: 100% compliance. *90% goal
- Comparison of the percentage of compliance with psychosocial intervention plans: 2020 compliance: 92.5%- Compliance in 2021: 100%.

b) Risk Level Control:
- Intervention of 27 trades with tasks quantified as high risk from the ergonomics and industrial hygiene perspective. 96% Compliance with total trades to be intervened in 2021.

2 Occupational risk management in projects:

In 2021, Ecopetrol advanced in the following actions in occupational risk management:

a) Psychosocial risk management in the new norma
- Evaluation of psychosocial risk factors: 760 evaluations were planned, and 1,011 employees were evaluated.
- Intervention in psychosocial aspects while teleworking: 2,512 were planned and 2,627 teleworking employees were intervened.
- Risk activities identified from Psychosocial Risk factors: -Leadership and administrative roles. 418 leadership roles were evaluated.

b) Ergonomic risk management in the new normal.
- Assessments and recommendations for teleworking employees: Assessment of 4,012 employees. 95% coverage of all teleworking employees.
- Verifying compliance with recommendations related to home office conditions: 100% coverage of home office verifications scheduled for the period.
- Verification of workstations in the facilities: 100% coverage of all facility verifications.

c) Industrial Hygiene Risk management in the new normal.
- Diagnosis and recommendations for intervening the ventilation conditions in the New Normal. 100% compliance with the Work Plan.
- Verification of compliance with biosafety guidelines in the business units planned for the New Normal (VRP, VDP, Corporate): 100% compliance with the verification plan. (3 business units scheduled / 3 units verified).

d) Occupational risk management in Comprehensive Investigation Pilot Projects (Fracking)
- Health Risk Assessment: 100% compliance with the work plan. Delivery of the following outcomes: Identification and characterization of hazards in chemical substances and blends, identification and characterization of the danger of carryback or leachate NORM materials (Naturally occurring radioactive material). Methodologies for exposure assessment and risk characterization.

3 Preventive and Occupational Medicine

a) Periodic Comprehensive Health Assessments.
- Coverage of periodic comprehensive health assessments: 96.23%

b) Occupational disease
- Occupational Disease Rate: 0.52 (rate x 1000)

c) Occupational risk management during the COVID-19 health emergency.
- Provision of guidelines to secure the operation during the health emergency and advice and support for implementation.
- 100% compliance with the communications plan for the health emergency.
- Vaccination coverage: 93.4% of the working population with a complete vaccination schedule

4 Innovation and Technology

a) Data analytics to predict and alert possible occupational health risks.
- 100% compliance with the work plan of the innovation initiative, "How to generate data to predict and alert possible occupational health risks".

b) Digital evaluation of the ergonomic conditions of teleworking employees.
- • Compliance with the work plan: 30 assessments of employees working from home using sensory and assisted digital evaluation.

5 Occupational Health Committees

a) Management of 12 Regional Joint Occupational Health Committees under Resolution 2013 of 1986.

(409-15) The activities in the hydrocarbon sector are considered of high risk. The risk assessments identify the activities or processes where a sudden release of energy can cause severe injury. The hazards that can cause serious injuries include work at height, intervention of electrical systems, driving vehicles, going into confined spaces, mechanical load lifting, operation of pressure systems, and others. For this type of activities, Ecopetrol S.A. adopts safe practices that define the responsibilities, competencies, and control measures to be followed.

These dangers and their respective controls make up the Rules that Save Lives, which is the communication and assimilation mechanism for workers. The first control principle, if feasible, is to not conduct or try to conduct the activity in another way to eliminate the risk.

Table 111.
Injuries caused by to occupational accidents
(403-9) (WEF 15)

Occupational illnesses and diseases per employee	Unit of measurement	2018	2019	2020	2021
Number of hours worked	#	25,408,899.70	26,750,733.23	27,308,241.84	24,533,067.50
Number of deaths resulting from injuries related to workplace accidents	#	-	1	1	-
Number of injuries caused by high-consequence occupational accidents (not including deaths)	#	1	-	-	-
Number of recordable injuries caused by workplace accidents	#	16	21	12	9
Death rate related to injuries caused by workplace accidents	Index	-	0.04	0.04	-
Injury rate related to high-consequence workplace accidents (not including fatalities)	Index	0.04	-	-	-
Recordable injury rate related to workplace accidents	Index	0.63	0.79	0.44	0.37

Source: HSE Vice Presidency

Table 112.
Injuries related to workplace accidents by contractor
(403-9) (WEF 15)

Contractors	Unit of measurement	2018	2019	2020	2021
Number of hours worked	#	82,561,445.52	98,856,457.83	79,003,968.19	87,666,784
Number of deaths resulting from injuries related to workplace accidents	#	1	2	2	0
Number of injuries caused by high-consequence occupational accidents (not including deaths)	#	2	2	1	3
Number of recordable injuries caused by workplace accidents	#	52	53	34	40
Death rate related to injuries caused by workplace accidents	Index	0.012	0.02	0.03	0
Injury rate related to high-consequence workplace accidents (not including fatalities)	Index	0.02	0.02	0.01	0.034
Recordable injury rate related to workplace accidents	Index	0.63	0.54	0.43	0.456

Source: HSE Vice Presidency

No fatal accidents were recorded in 2021; there was a

29 %
DECREASE

in recordable injuries related to workplace accidents at Ecopetrol S.A. The workplace accidents suffered by employees occurred mainly in equipment and well maintenance activities during processing plant operations and while walking. In 50% of the accidents, the upper limbs were affected, specifically the fingers, with cuts and fractures.

In general, the types of injuries suffered by Ecopetrol S.A. employees were friction or scrapes, blows, overexertion, and contact with elevated temperatures.

THERE WERE NO FATAL ACCIDENTS RECORDED IN THE CONTRACTOR POPULATION IN 2021 AT ECOPETROL S.A.

The injuries suffered by contractors due to work accidents at Ecopetrol S.A. occurred mainly in equipment maintenance, drilling, and well maintenance activities, and while walking. 49% of the injuries suffered by contractor employees were in the upper limbs, specifically the fingers. The types of injuries occurred were entrapment, falls, blows, and contact with elevated temperatures.

Table 113.
Occupational illnesses and diseases suffered by employees
(403-10) (WEF 15)

Occupational illnesses and diseases suffered by employees	Unit of measurement	2018	2019	2020	2021
Number of deaths resulting from an occupational disease or illness.	#	0	0	0	0
Number of recordable work-related ailments and illnesses	#	14	3	1	3

Source: HSE Vice Presidency

Table 114.
Injury frequency rate with lost time (employees)
(ECP 002)

Injury frequency rate with lost time (employees)	Unit of measurement	2018	2019	2020	2021
	LIFTR	0.35	0.49	0.26	0.12

Source: HSE Vice Presidency

Table 115.
Injury frequency rate with lost time (contractors)

Injury frequency rate with lost time (contractors)	Unit of measurement	2018	2019	2020	2021
	LIFTR	0.46	0.3	0.35	0.3

Source: HSE Vice Presidency

Table 116.
Total recordable injury frequency rate (employees)
(ECP 003)

Total recordable injury frequency rate (TRIFR, by its Spanish acronym	Unit of measurement	2018	2019	2020	2021
Employees	TRIFR	0.63	0.79	0.44	0.367
Total employee data coverage rate	%	100	100	100	100

Source: HSE Vice Presidency

Table 117.
Total recordable injury frequency rate (contractors)

Total recordable injury frequency rate (TRIFR, by its Spanish acronym)	Unit of measurement	2018	2019	2020	2021
Contractors	TRIFR	0.63	0.54	0.43	0.456
Total contactor data coverage rate	%	100	100	100	100

Source: HSE Vice Presidency

ROADMAP

Process Safety
(102-12)

Outstanding material element

Sustainable Development Goals

(103-1)

Impacted stakeholders	Areas responsible for managing the impacts	Ecopetrol segments where the greatest impact is generated
Suppliers, contractors, and their workers	VHSE	Upstream
Society and Communities	VDP	Midstream
Employees	VRP	Downstream
	VGS	

Why is the element material?
(103-W1)

Process safety is designed to achieve the best operational performance by intervening in the highest technological risk, implementing the necessary measures and actions to prevent and mitigate the release of dangerous substances or energy. The impact of these measures is focused on the reduction of operational and occupational accidents with the potential of causing major accidents or disasters, providing an effective management framework for Ecopetrol's operations, and demonstrating commitment to the first principle of the Cultural Statement, **Life First.**

How is the material element managed?
(103-2)

Process Safety is classified as a prominent element in the Sustainability pillar of Ecopetrol's 2040 Strategy. Ecopetrol's ambition is to become a global benchmark in industrial safety, adopting best practices and undertaking operations under tolerable risk levels for Process Safety. **To this end, the Company works on four (4) fronts:**

- Coherence, commitment, and visible leadership in process safety
- Risk-based process safety management
- Trend analysis and learning from experience
- Emerging risk management

How is the material element evaluated?
(103-3)

This element is evaluated using "Process Safety Performance Indicators for the Refining and Petrochemical Industries" (API 754), issued by the American Petroleum Institute. The results are monitored in different instances and at different frequencies: in the weekly HSE reports, in the monthly performance report submitted to Ecopetrol's Executive Committee and Board of Directors, and in the monthly HSE committees of the businesses.

Tier 1 Frequency Rate of Process Safety Incidents

Measures the number of incidents involving an unplanned or uncontrolled loss of containment of any material (including non-toxic or non-flammable substances such as steam, hot condensate, nitrogen, compressed CO2, or compressed air), giving rise to the consequences defined in the current edition of API 754 to be classified as "Tier 1", per million man hours worked at all Ecopetrol S.A. facilities. Incidents N1 ("Tier 1") are considered those with the greatest consequences, such as disabling injuries or fatalities, major impacts on the environment, fire or explosion damage in excess of USD100,000, or material containment losses in excess of the limits defined by API 754

Tier 2 Frequency Rate of Process Safety Incidents (IFSP N2)

Measures the number of incidents involving an unplanned or uncontrolled loss of containment of any material (including non-toxic or non-flammable substances such as steam, hot condensate, nitrogen, compressed CO2 or compressed air), giving rise to the consequences defined in the current edition of API 754 to be classified as "Tier 2", per million hours worked at all Ecopetrol S.A. facilities. Incidents N2 ("Tier 2") are considered of less consequence than N1 ("Tier 1") according to API 754.

Short, medium, and long-term goals and projects
(103-2)

SHORT TERM (2021-2023)

Goals

- Tier 1 Frequency rate of process safety incidents (IFSP N1) at 0.05
- Tier 2 Frequency rate of process safety incidents (IFSP N2) 15% lower compared to 2020.

Projects

- Incorporation of guidelines for the evaluation of NATECH risks (events of natural origin that cause technological accidents).
- Establishment of onsite and off-site individual risk measurement for all Ecopetrol facilities.
- Definition of the process safety strategy for the Alternative Energies portfolio.
- Update of Ecopetrol's risk assessment matrix.

MEDIUM TERM (2024-2030)

Goals

- Tier 1 Frequency rate of process safety incidents (IFSP N1) at 0.04.
- Tier 2 Frequency rate of process safety incidents (IFSP N2) 30% lower compared to 2020.

Projects

- Prioritization and strengthening of asset integrity based on risk management.
- Definition of Process Safety competencies for leadership roles.
- Inclusion of hydrogen, gas, and offshore in existing process safety guidelines.

LONG TERM (2031-2050)

Goals

- Tier 1 Frequency rate of process safety incidents (IFSP N1) at 0.04.
- Tier 2 Frequency rate of process safety incidents (IFSP N2) 50% lower compared to 2020.

Projects

- Management of individual onsite and off-site non-tolerable risk values.[37]
- Attain the Process Safety competencies defined for all roles that have an impact on process safety.
- Inclusion of NATECH in dynamic risk management.

37. Individual Risk: Fatality risk to which an individual is exposed annually for being in certain location surrounding an activity.

2021 Management Efforts
(103-3)

Performance of key indicators

(ECP006) **Tier 1 Incident frequency rate (IFSP N1):**
the result obtained in 2021 was

0.03

incidents per million hours worked,
which represents a positive performance with respect to the maximum limit of 0.05 established for the reporting year (2021).

Table 118.
IFSP N1

Tier 1 Incident Frequency Rate (IFSP N1):	Unit of measurement	2018	2019	2020	2021
Number of incidents per million hours worked	#	0.05	0.03	0.05	0.03
Data coverage (expressed in % of employees)	%	100	100	100	100

Source: HSE Vice Presidency

Tier 2 Incident Frequency Index (IFSP N2):
Ecopetrol's result was

0.09,

which is rather positive given the maximum limit of **0.17** established for 2021

Table 119.
Incidents occurred in the period
(OG13)

Cantidad de incidentes	Unit of measurement	2020	2021
Tier 1	#	5	3
Tier 2	#	5	9

Source: HSE Vice Presidency
Note: Tier 1 and 2 process safety incidents are events related to the Company's industrial processes that gave rise to a loss of containment of a hazardous substance.

These Tier 1 and Tier 2 incidents (2021) consequently affected individuals, the environment, and the infrastructure.

Fulfilling challenges and strengthening process management

- Risk reduction by **17%** in high consequence scenarios, at tolerable risk levels[38].
- Integration of comprehensive HSE change management, related to changes in infrastructure and technology, organizational changes, and procedural changes.
- Incorporation of Process Safety guidelines for YNC and Hydrogen initiatives, to identify and manage the risks in these initiatives and proactively prevent the occurrence of process safety incidents.
- Implementation of the Gap Analysis tool to evaluate compliance with Process Safety requirements in the operational areas.
- Implementation of tools and learning programs to strengthen Process Safety competencies.
- Participation in the national legal regulatory definition of Process Safety.

38. Tolerable risk: it has a maximum valuation M in the matrix defined in the corporate guidelines.

Community Engagement[39]

Community Investments

Community investments

The Social Development Portfolio invests in the three **(3) strategic pillars** of the Community Engagement Strategy. The investment made in 2021 for each of these pillars is represented as follows:

Table 120.
Investments by Strategic Pillars in 2021

Strategic Pillar	Strategic Investment Value (COP millions)	Compulsory Investment Value (COP millions)	Total Value (COP millions)
Investment for Engagement	15,838	10,751	26,589
Social investment	183,219	10,808	194,027
Subtotal	199,057	21,559	220,616
Physical security	N/A	N/A	206,173
Total	**199,057**	**21,559**	**426,789**

Source: Corporate Vice Presidency of Finance

Note: In the 2021 period, more than COP 156 million were also executed in sponsorships (commercial initiatives).

Community engagement focuses on the **three (3) strategic options** prioritized in the Roadmap:

(i) Revitalization of local economies

(ii) Education

(iii) Access to Public Services

39. Given the evolution and growth of Ecopetrol Group, the Community Engagement Strategy is dynamic and subject to updates, in alignment with the Group's Strategy. Considering the foregoing, the guidelines of the Community Engagement Strategy are being updated in accordance with the new pillars of the corporate strategy.

These strategic options are deployed in five **(5) lines of social investment:**

1 Education, Sports, and Health (Ecopetrol Educa).

2 Inclusive Rural Development (Ecopetrol al campo).

3 Entrepreneurship and Business Development (Ecopetrol Emprende).

4 Public and Community Infrastructure (Ecopetrol Construye).

5 Public Services (Ecopetrol Agua y Vida and Ecopetrol Conecta).

In addition to social investments, Ecopetrol also invests in engagement, in the form of actions for institutional and community strengthening, to empower suitable and trained actors to take on the challenges of transforming their territories.

Education, Sports, and Health (Ecopetrol Educa)

Investments in education and sports improve school quality, coverage, and retention. With this, Ecopetrol contributes to promoting the rights of children and adolescents, the dissemination of culture, the peaceful resolution of conflicts, and the strengthening of democratic principles. Ecopetrol has set the goal of benefiting more than

626,000 children and youth, by 2024, equivalent to

9%

enrollment in public institutions in the country. In 2021,

102,715 students

benefited from initiatives associated with greater coverage, greater retention, and better quality, as indicated below:

Greater coverage

- **Coverage extended to higher education: 1,678 students** were supported in different modalities thanks to the Ecopetrol High School program, the **Generation E Program** of the Ministry of National Education and Icetex, and the **Utopia Program,** in partnership with Universidad de la Salle.
- **Improvement of educational infrastructure:** the construction of the Henry Daniels school in the municipality of Castilla La Nueva was completed, and eight educational centers were ungraded, benefiting more than **5,000 students** in the departments of Meta, Putumayo, Santander, and Huila.

Higher retention

- **Provision of school furniture,** benefitting more than **12,700 students** in the departments of Norte de Santander, Santander, Meta, Casanare, Huila, Putumayo, Antioquia, and Bolívar.
- **50,400 school kits** handed out in the educational centers located in Ecopetrol's areas of influence, in the departments of Meta, Casanare, Huila, Cundinamarca, and Santander.

Better Quality

- Implementation of pedagogical models in rural multi-grade schools, training for teachers, and handing out pedagogical material for students returning to class, thereby beginning the execution of 12 educational alternation projects, and lectures on peace and environmental education for the benefit of more than 39,000 students and teachers in 229 schools around the country.

Health (Ecopetrol Salud)

Investments in health are aimed at developing actions to improve the quality of health services and close gaps.

- **Provision of medical equipment:** As part of the support for the COVID-19 health emergency, **1,020 pieces of medical equipment** were delivered to different hospitals nationwide.

Inclusive Rural Development (Ecopetrol al campo)

six (6) projects

were completed in 2021, involving

1,099 small rural producer

families from Meta, Casanare, Arauca, Magdalena, and Santander. Two (2) of the most relevant projects helped strengthen productive chains:

- **Sustainable panela production** in the Sierra Nevada de Santa Marta with the Arhuaco Community and in partnership with the United Nations Office on Drugs and Crime (UNODC).
- **Citrus fruit production in the municipality** of Saravena, by providing technical, organizational, and commercial support to 120 small producers to improve their production and ability to generate income.

In 2021, under the agreement between the National Land Agency (ANT) and Ecopetrol, the Company assisted in the property diagnosis in the municipalities of Aguazul, Yopal, and Tauramena, gathering the property files of more than **80 small-holder families,** who will begin the titling process of their land in 2022.

In 2021, more than

10 commercial partnerships

were established between producer associations and Ecopetrol's cafeteria operators and other related businesses. On the other hand, farmer's markets were organized in the municipalities of Castilla, Villavicencio, Guamal, Akacías, and Puerto Gaitán, with theobjective of revitalizing local economies as a strategic option for local development.

To learn more about these projects, visit the website by clicking on the following link.

Entrepreneurship and Business Development (Ecopetrol Emprende)

With the purpose of strengthening the business fabric by generating entrepreneurship and innovation capacities, thus favoring income generation and employment, Ecopetrol has set the goal of reaching

5,878 beneficiaries by 2024.

Some of the most relevant initiatives in 2021 include the consolidation of the Ecopetrol Emprende program, executed in partnership with CREAME Business Incubator, whose objective is to support economic reactivation by accompanying entrepreneurs and revitalizing the business fabric. In its first year, this program benefited

425 entrepreneurs and Small and Medium Enterprises (PYMES, for the Spanish acronym)

FROM 33 MUNICIPALITIES

in the South, Orinoquía, Piedemonte, Central, Arauca- Catatumbo, Caribbean, and East Regional Units, with technical assistance aimed at reviewing business models to help them adapt to the New Normal.

Another program worth highlighting is Youth 4.0, Innovating and Transforming Territories, whose purpose is to foster a mindset for innovation and entrepreneurship, and offer training in technologies and fourth industrial revolution (4RI) skills, to teenagers between the ages of 14 and 28 in the municipalities of Puerto Wilches, Tauramena, and Villavicencio.

Public and Community Infrastructure (Ecopetrol Construye)

To promote the reactivation of local economies, local and national partnerships were strengthened in 2021 with territorial entities, unions, and international organizations to diversify the infrastructure investment strategy.

Road infrastructure

Different projects were completed in 2021 for the intervention of

62 Km of roads

that benefit

more than 70,000 people,

thereby contributing to the revitalization of the regions and the generation of employment, mostly local. Some of the most relevant projects include the rehabilitation of the Soberanía road in the department of Arauca, the improvement of the El Pedral - Puente Sogamoso Road in the municipality of Puerto Wilches, the improvement of urban roads in Sabana de Torres, department of Santander, and the improvement of roads in Aguazul, department of Casanare, among others.

Additionally,

19 projects are under the direct execution

of Ecopetrol for the improvement of

236 Km of tertiary roads.

Community public infrastructure

The intervention and construction of **15 community buildings** for cultural development were completed in 2021 in the Orinoquía regional unit, as well as the promotion of coexistence in the Central and Eastern regional units.

Public Services (Ecopetrol Agua y Vida and Ecopetrol Conecta)

Ecopetrol Agua y Vida - Drinking water and basic sanitation

Construction works were executed in 2021 for the protection, stabilization, and to the catchment system of the urban aqueduct in the municipality of Puerto Gaitán, benefiting

8,166 inhabitants.

Projects are being undertaken to benefit more than **900,000 people** by 2022: the metropolitan aqueduct in the municipalities of Cúcuta, Villa del Rosario, and Los Patios, the construction of the San Silvestre Wastewater Treatment Plant (WWTP) in Barrancabermeja, and the implementation of four (4) individual water purification solutions in educational institutions in the municipality of Puerto Wilches.

Along these same lines, in collaboration with national and municipal authorities, three (3) agreements were signed in 2021 to bring drinking water supply solutions that will benefit more than **18,700 people** in the municipalities of Tibú (Norte de Santander), Villavicencio, and Guamal (both in Meta).

Ecopetrol Conecta - Energy and gas

By means of Ecopetrol Conecta, the Company helps close gaps in the access to public energy and gas services. Eight (8) projects were completed in 2021, facilitating access to residential public gas services through the construction of service grids, the expansion of coverage, the construction of distribution and marketing networks, and the development of service massification plans. Projected benefitted

6,132 users,

improving the quality of life of these families.

To learn more about these projects, visit the website by clicking on the following link.

Investments for Institutional and Community Strengthening

In 2021,

59,979 people

benefited from institutional and community strengthening programs and projects. Some of the projects executed include the empowerment of youth leaders in Puerto Wilches (180 beneficiaries), in partnership with the United Nations Office on Drugs and Crime (UNODC), and another 650 youth from the rest of the country, in partnership with Asociación Amigos of the National Museum. Also, the qualification of

64 Community Action Boards in Meta,

in partnership with the Administrative Unit for Solidarity Economy Organizations, so that these institutions develop capacities as managers of their own territories, as specified by Law.

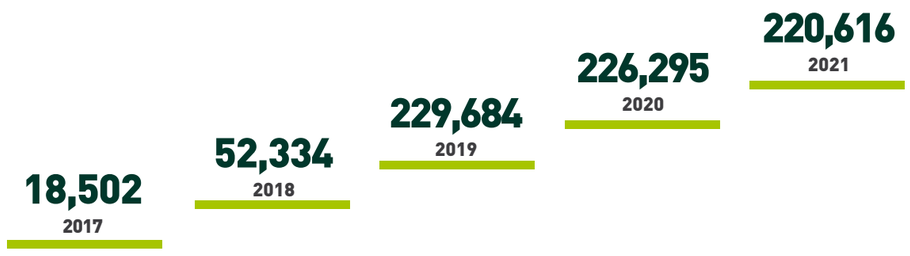
Execution of Social Investment and Engagement

Social investment and engagement projects and initiatives (strategic/voluntary and mandatory) were executed in the amount of

COP 220,616
MILLION IN 2021

(See Graph 36), with the signing of additional social investment and engagement conduits to be executed in the next terms. There is a 3% decrease in the amount executed in relation to the previous period, due to capital efficiencies in the execution of resources to support the COVID-19 emergency.

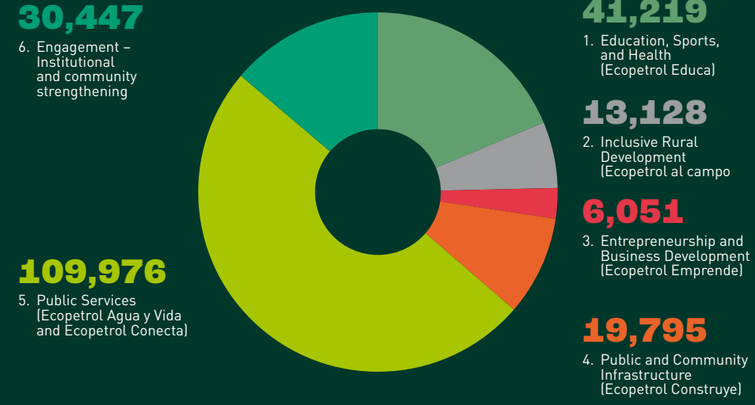
Graph 36.
Ecopetrol's Execution of Social Investment and Engagement from 2017 to 2021 (COP millions)



Source: Vice Presidency of Sustainable Development

The strategic (voluntary) and mandatory investments executed in 2021 are classified in the following lines of investment (See Graph 37), generating impact on the different dimensions of Local Development (See Table 120).

Graph 37.
Social Investment and Engagement in 2021 (COP millions)



Source: Vice Presidency of Sustainable Development

Table 121.
Results by line of social investment and engagement*

Investment Lines	2021 Results
1. Education, Sports, and Health (Ecopetrol Educa)	Number of Beneficiaries: **102,715**[40] No. Structures Built: **1** No. Infrastructures Intervened: **8**
2. Inclusive Rural Development (Ecopetrol al Campo)	No. Indigenous Communities Supported: **1** No. Small and Medium Producers: **1,099**
3. Entrepreneurship and Business Development (Ecopetrol Emprende)	Number of Beneficiaries: **491**
4. Public and community infrastructure. (Ecopetrol Construye)	Km. of Roads Intervened: **32** No. Structures Built: **200** No. Infrastructures Intervened: **15**
5. Public Services (Ecopetrol agua y vida y Ecopetrol conecta)	**Water** No. of people: **8,166** **Gas** No. Users Connected: **6,132** **Basic sanitation** No. of people: **160**
6. Engagement – Institutional and community strengthening	**Health emergency - COVID19** No. Institutions Strengthened: **21** **Institutional and Community Strengthening** Humanitarian Aid - No. Markets: **2,200** Indigenous Communities Supported: **11** No. of Beneficiaries: **59,979** No. Institutions Strengthened: **1**

Source: Vice Presidency of Sustainable Development
* Certified goals in 2021

40. Includes 79,916 program beneficiaries to help children return to school in the post-pandemic framework.

ECOPETROL S.A.'S SOCIAL INVESTMENT PORTFOLIO IS BUILT BY IDENTIFYING OPPORTUNITIES TO CONTRIBUTE TO LOCAL DEVELOPMENT UNDER THE DEFINED SOCIAL INVESTMENT LINES.

The projects and initiatives are prioritized in consultation with Stakeholders (national, departmental, and local governments, society, and the community), and are rigorously formulated and structured as an integral part of the Company's environment plans to facilitate operations.

Mandatory investments consist of those made by Ecopetrol S.A. in order to comply with the social obligations laid out in the contracts with the National Hydrocarbons Agency (ANH). This are also enforced by the environmental authorities as part of the permitting and licensing processes and other obligations, such as those arising from the processes to guarantee the right to prior consultation, which are executed not only to meet legal requirements but also as opportunities to improve local socioeconomic conditions.

With respect to 2020, there was a significant **increase in the Public Services investment line** in 2021, with an additional investment of more than

COP 40 billion,

including projects such as the **Cúcuta Aqueduct**, with a total execution of

COP 97,977 billion,

and the Education, Sports, and Health line, with an additional investment of more than

COP 8 billion.

The latter includes the "Generación E" Corporate Project, with an execution of

COP 9 billion,

and the Furniture Provision Project in educational institutions of Rionegro, Sabana de Torres, San Vicente de Chucurí, Barrancabermeja, and San Martín, with an execution of

COP 3 billion.

Of the investments distributed by regional unit, Arauca Catatumbo stands out in the Public Services investment line. In addition, the **Central regional** unit executed more than

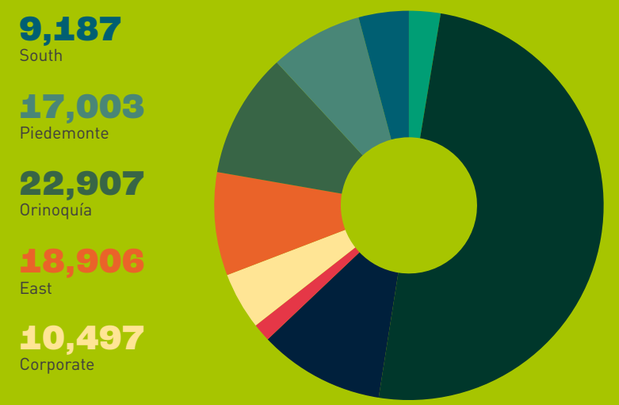
COP 7 billion

in the improvement of the El Centro Road (Barrancabermeja), the provision of medical equipment for the Middle Magdalena Regional Hospital, and the provision of furniture for GMA (Management of Development and Production Operations of Mares) municipalities. The Orinoquía regional unit executed more than

COP 8 billion

in the implementation of an inclusive food supply model (FAO) in the municipalities of Villavicencio, Acacías, Castilla, and Guamal. Additionally, the gasification for 1,500 inhabitants of township 4 and 7 in the municipality of Villavicencio, and the provision of medical equipment during the health emergency. (See Graph 38)

Graph 38.
Regional Social Investment and Engagement landscape in 2021 (COP millions)



Source: Vice Presidency of Sustainable Development

Graphs 37 and 38 include investments made through the Community Benefit Programs - PBC (mandatory investment).

IN 2021, ECOPETROL INVESTED COP 14.615 BILLION IN PBCS, EXECUTED IN 68 PROJECTS NATIONWIDE.

Ecopetrol articulates and generates synergies between mandatory social investments such as PBCs and voluntary investments. The Company promotes and facilitates the confluence of available mechanisms and sources of social investment together with local and national governments, in order to maximize the impacts of said projects in the communities.

Ecopetrol's Social Investment is aligned with State social policies and with the goals proposed in the 2030 National Agenda and the SDGs.

Public Works for Taxes

In 2021, Ecopetrol S.A. continued to lead the implementation of the **Public Works for Taxes** mechanism[41] in Colombia, achieving the highest participation in the country, with

four (4) projects

awarded this term in the amount of

COP **36,836** billion,

benefitting more than

89,000 Colombians.

With the allocation of these projects, Ecopetrol accumulates a total of **29 projects**, since the inception of the program, in the amount of **COP 318.490 billion.**

In 2021, Ecopetrol completed

11 projects

in the amount of

COP **119,175** billion,

benefitting more than

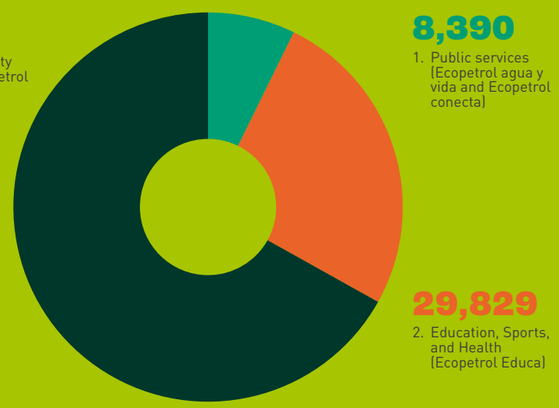
103,000 inhabitants in

31 municipalities

in **nine (9)** departments.

around the country.

Graph 39.
Execution of Works for Taxes in 2021 (COP millions)



Source: Vice Presidency of Sustainable Development

Table 122.
Works for Taxes 2021 Results*

Investment line	2021 Results
Public Services (Ecopetrol Agua y Vida and Ecopetrol Conecta)	**Basic sanitation** Number of People: 514 **Aqueduct** Number of People: 12,885
Education, Sports, and Health (Ecopetrol Educa)	**Education** Number of Beneficiaries: 89,908
Public and community infrastructure. (Ecopetrol Construye	Km of Intervened Road: 30

Source: Vice Presidency of Sustainable Development

The most significant investments made under Public Works for Taxes in 2021 include the Public and Community Infrastructure investment line, with the following projects: Rehabilitation of the La Antioqueña-La Yuca secondary road in the department of Arauca, and the improvement of the Stage 3 Paujil-Cartagena del Chairá secondary road in the department of Caquetá.

THE ACCOUNT FOR A JOINT EXECUTION CLOSE TO 60% OF THE TOTAL VALUE OF THE INVESTMENT LINE.

(See Graph 39 and Table 122).

41. Public Works for Taxes is a mechanism created by the National Government in 2017, which allows companies to pay up to 50% of their income and complementary taxes via the direct execution of social impact projects in the Area Most Affected by Armed Conflict – ZOMAC, aimed at the construction, improvement, optimization, or expansion of infrastructure, and the necessary endowment for the supply of road infrastructure, drinking water and sewage systems, energy, education, and public health services, among others.

Mechanisms for participation and involvement of stakeholders in the management of social impacts

With regard to community engagement or consultation, the most commonly used mechanisms in 2021 were in-person information and follow-up meetings, social dialogue, virtual information meetings, follow- up with authorities, and digital and/or printed newsletters.

(413-1) In 2021

1,114 community participation and consultation sessions

(984 in-person and 130 virtual) were held throughout Colombia, based on **current production assets (199 in total) and development projects (168 in total),** thus guaranteeing a

42.2% and **49.4%,**

respectively, with community participation and consultation.

The main mechanisms implemented were social **dialogue, in- person information processes, and community consultation (769 session out of 1,114 held – 69%).**

Also, in 2021,

349

non-mandatory engagement sessions were held,

as part of Ecopetrol's actions to build trust and strengthen the social fabric with the communities. Below is a summary of these sessions by region.

Table 123.
Engagement sessions

Regional unit	Total Engagement Sessions
Central	120
Andina Transporte	116
South	44
Piedemonte	18
Caribbean	21
Orinoquía	12
East	11
Catatumbo-Arauca	7
Total	349

Source: Vice Presidency of Sustainable Development

THE COMPANY ESTABLISHED CONTACT WITH 41,603 PEOPLE AS A RESULT OF THESE SESSIONS. THE COMMUNITY REMAINED THE MAIN FOCUS OF ENGAGEMENT.

(413-1) In the same way that Ecopetrol recognizes and respects diversity, it also interacts with ethnic groups in search for a constructive relationship. It stays attentive to the dynamics and processes between these communities, their organizations, and the State. In this sense, the Company has implemented internal guidelines and procedures for engaging with ethnic communities, for conducting prior consultations, and for dealing with situations of economic or physical resettlement, in compliance with Colombian legislation and the highest international standards, as further explained in the section on Human Rights.

(413-2) (WEF 28E) All operations and projects undertaken by Ecopetrol must adhere to the regulations and legal requirements established by environmental authorities, such as the MADS, the ANLA, and the CARs. By means of these instruments, Ecopetrol ensures the identification and assessment of social impacts and the definition of prevention, mitigation, control, and/or compensation measures.

Extensive and sufficient opportunities for citizen participation are created for the identification of impacts, by establishing a respectful, representative, two-way relationship, with transparent access to information, adapted to the language and cultural development of each case.

The institutional framework was articulated at all levels for the management of impacts, from local governments to national entities, also involving different associations, industry representatives, community guarantors, and the State, in order to ensure due process in the management of conflict. Conflicts in 2021 were triggered by higher expectations in the hiring of local labor and the acquisition of goods and services by the communities nearby the projects and the operation.

The impacts identified and the management measures adopted are as follows:

Table 124.
Impacts and management measures

Regions in Colombia	Operations	Identified impact	Management measures
East	Production of the Rubiales and Caño Sur fields in the municipality of Puerto Gaitán, Department of Meta	**1. Generation and/or alteration of social conflicts given** a) high labor expectations and the acquisition of local goods and services, b) pressure from ethnic communities with labor expectations different from those established in the regulations regarding the procurement of labor and goods and services, and c) environmental issues related to the preservation of water bodies and the disposal of liquid waste **2. Pressure on public and community services** due to the demographic and migratory surge in oil-influenced rural areas **3. Deterioration of road infrastructure,** which worsens during wintertime.	1. Information and communication program to solve PQRs in a timely manner, channel expectations, and address social conflicts with work teams constantly present locally. 2. Joint working groups with institutions at the national, departmental, and local levels to strengthen the relationship between Ecopetrol and communities. The trust generation process built together with the Alto Unuma Reservation is highlighted. 3. Program to Support the Institutional Management Capacity in local development projects, in order to promote initiatives in partnership with the institutional framework for the improvement of educational, community, and public service institutions, among others. 4. Road plan, signage, mobilization of personnel, equipment, and machinery. Partnership with the Meta Infrastructure Agency and ACP to structure the Alto Neblinas – Rubiales Road improvement project (40km).
South	**Upstream:** Acae- San Miguel (Puerto Colón), Arrayán, Balcón, Brisas, Cebu, Churuyaco, CPI – Dina Tertiario, Dina Cretaceo, Dina Norte Espino, Hormiga, La Jagua, Loma Larga, Loro, Mansoya, Orito, Palermo, Palogrande, Pijao, and Quriyana fields. Ceibas, San Antonio, San Francisco, Santa Clara, Sucio, Sucumbíos, Tello, Tempranillo, Tempranillo Norte Superior, Tenay, Yaguara, and Yurilla rivers. The operations are executed in the municipalities of Neiva, Aipe, Palermo, Tello, Villavieja, and Yaguará in the Department of Huila. Guamuez, Hormiga, Puerto Caicedo, Puerto Asís, Orito, and San Miguel valleys in the department of Putumayo, and Ipiales in the department of Nariño.	**1. Generation and/or alteration of social conflicts** associated with local labor participation, the acquisition of local goods and services, and social investment.	1. Information and communication program to address PQRS in a timely manner. Expectations and social conflicts are similarly addressed through the Company's channels. There are work teams locally specializing in engagement, which strengthen the Company's communication channels. Joint dialogue sessions with national, departmental, and local institutions that contribute to strengthening Ecopetrol's engagement with its stakeholders.

Regions in Colombia	Operations	Identified impact	Management measures
Piedemonte	**Upstream:** CCupiagua, Cupiagua Sur, Cusiana, Floreña Mirador, Pauto, Sur, and Volcanera fields, and exploratory activities in LLANOS 122. The operations are executed in the municipalities of Aguazul, Tauramena, Paz de Ariporo, Hato Corozal, and Yopal, in the department of Casanare.	**1. Generation and/or alteration of social conflicts as** consequence of labor aspects associated with the demand and supply of job opportunities with respect to the needs and expectations of the communities. **2. Modification of the economic activities in the area** as a consequence of changing the use or vocation of the land. **3. Changes in the labor dynamics of the communities and guilds given** the increased number of inhabitants in the area of influence, lured by the opportunities arising from the projects.	1. Information and communication program to address PQRS in a timely manner. Expectations and social conflicts are similarly addressed through the Company's channels. There are work teams in the territory specializing in engagement, which strengthen the Company's communication channels. 2. Joint working groups with national, departmental, and local institutions to strengthen Ecopetrol's engagement with the communities and participation in traditional and cultural activities. 3. Strengthen and support agricultural activities and productive vocations with the Agrosol program and sustainable productive projects and ventures. Spaces for dialogue with industry associations and communities to promote economic diversification. Signing of the Pact for Decent Work in the Hydrocarbons Sector in Casanare.
Central	**Upstream:** Abarco, Teca-Cocorna, Aullador, Bonanza, Casabe, Casabe Sur, Colorado, Cristalina, Flamencos, Garzas, Girasol, Infantas, Jazmin, La Cira, Lisama, Llanito, Moriche, Nare Sur, Nutria, Peñas Blancas, Provincia, San Roque, Tesoro, Tisquirama, Underriver, and Yarigui-Cantagallo fields. Delineation wells for exploration activities in Flamencos, Nfe in Tisquirama - San Roque, seismic in Valle Medio, and Comprehensive Research Pilot Projects in Non- conventional Hydrocarbon Reservoirs. The operations are executed in the municipalities of Barrancabermeja, Puerto Wilches, Sabana de Torres, San Vicente de Chucurí, Rionegro in the department of Santander, Puerto Nare, Puerto Triunfo, and Yondó in the department of Antioquia, Cantagallo in the department of Bolívar, Puerto Boyacá in the department of Boyacá, and San Martín in the department of Cesar.	**1. Generation and/or alternation of social conflicts as** a consequence of labor aspects associated with the expectations of hiring labor, acquiring local goods and services, and social investment. **2. Changes to accessibility, mobility, and local connectivity** given the deterioration of roads due to the transiting of long and heavy cargo on roads not built for this purpose. **3. Alteration of the visual perception of the landscape** Landscape affected, and impacts related to noise, light, and particulate matter.	1. Information and communication program to address PQRS in a timely manner. Expectations and social conflicts are similarly addressed through the Company's channels. There are local work teams specializing in engagement, which strengthen the Company's communication channels. Joint working groups with national, departmental, and local institutions that contribute to strengthening the relationship between Ecopetrol and the communities Signing of the Pact for Decent Work and Spaces for Social Dialogue, boosting labor inclusion of the population experiencing difficult labor insertion in Magdalena Medio. 2. Road and Transit Plans, signage, mobilization of personnel, equipment, and machinery. Manage contractors to implement measures for mitigating noise, luminosity, and emissions. Monitor adequate environmental recoveries.

Regions in Colombia	Operations	Identified impact	Management measures
Andina	Direct operation in the MEDINA OCCIDENTAL Exploratory Drilling Area, FARALLONES prospect. The operations are executed in the municipalities of Ubalá, Medina, Paratebueno, Guaduas, Caparrapí, Puerto Salgar in the department of Cundinamarca, Suarez, San Luis, Cunday, Carmen de Apicalá, Espinal in the department of Tolima, and Santamaría in the department of Boyacá	**1.Generation and/or alternation of social conflicts as a** consequence of abandonment and environmental recovery activities versus environmental and labor participation issues, and the acquisition of local goods and services.	1. Information and communication program to address PQRS in a timely manner. Expectations and social conflicts are similarly addressed through the Company's channels. There are local work teams specializing in engagement, which strengthen the Company's communication channels. The following activities are conducted in the community: - Informative and dialogue sessions with authorities and communities on the progress of the request to modify the environmental license. - Informative sessions on compliance with Social Investment and Environmental Compensation - Implementation of an educational process for communities and stakeholder groups, through the Colombian Association of Petroleum Geologists and Geophysicists (ACGGP), on issues pertaining to the hydrocarbon industry. - Institutional and community support and empowerment. - Support and participation in cultural activities for children in the area of influence. - Identification of suppliers in the area of influence.
Orinoquía	**Upstream:** Akacias, Apiay, Apiay Este, Austral, Castilla, Castilla Este, Castilla Norte, Chichemene, Chichemen SW, Gavan, Guatiquia, La Reforma, Libertad, Libertad Norte, Pompeya, Saurio, Suria, Suria Sur, Tanane, and Lorito fields, and exploratory activity in the Tejón well. The operations are executed in the municipalities of Villavicencio, Akacías, Guamal, Castilla La Nueva, Cubarral, San Martín de los Llanos, Puerto Lleras, San Carlos de Guaroa, and Puerto López in the department of Meta.	**1. Generation and/or alternation of social conflicts as** a consequence of labor aspects associated with expectations of contracting labor, goods, and socio- environmental issues. **2. Mobilization of equipment and heavy machinery on tertiary road infrastructure,** leading to a temporary alteration in mobility. **3. Changes in demographic and migratory variables**	1. Information and communication program to address PQRS in a timely manner. Expectations and social conflicts are similarly addressed through the Company's channels. There are local work teams specializing in engagement, which strengthen the Company's communication channels. Spaces for dialogue between communities and contractor companies, in articulation with official institutions. Informative contractual processes for the mass disclosure of labor requirements and the acquisition of goods and services. 2. Contractor mobilization plans submitted to local authorities, and regulatory dissemination and assurance of authorized mobilization schedules and routes. Collaboration with the municipal administration of Guamal and Acacias for the management of irregular population centers.

Source: Vice Presidency of Sustainable Development

Issues and concerns raised via the participation of stakeholders
(102-44)

Ecopetrol has a variety of mechanisms and channels to properly receive and manage petitions, complaints, claims, and requests from stakeholders. Detailed information on these mechanisms and their operation can be found on page 65 of this report.

(103-3) (413-1) Addressing requests, complaints, claims, and suggestions (PQRS) in a timely manner, and sending out congratulations, are a key pillar for engaging with our stakeholders. To ensure timeliness and relevance, Ecopetrol adopts a formal process and technological tools to respond to PQRS in an agile and timely manner, depending on the issue.

For 2021, the timely citizen response indicator stood at

99.99%.

Click on the following link for the detailed distribution of frequent and relevant issues by stakeholder, with the Employees, retirees, and beneficiaries group submitting the highest number of non-conformities, mainly related to the health service.

Graph 40.
Timely citizen response indicator by stakeholder – 2017 to 2021

Table 125.
Timely citizen response indicator by stakeholder – 2021

Stakeholders	General indicator
Shareholders	100.00%
Clients	100.00%
Employees, pensioners and beneficiaries	99.98%
State	100.00%
Suppliers, contractors, and their workers	99.91%
Society and community	100.00%
Associates and Partners	100.00%
Total	**99.99%**

Source: Office of Citizen Participation - OPC

Incidents caused by third parties

To prevent incidents caused by third parties, which are beyond the management of internal incidents, Ecopetrol has an Enabling Plan. The plan serves to implement a preventive physical security model that gradually incorporates more technology and better training, supported by better partnerships. All of the above, in compliance with the guiding principle of Ecopetrol's Declaration of Culture: **Life First.**

Incidents caused by third parties
(ECP 004)

Three (3) attacks on the Company's infrastructure were recorded in 2021; all three (3) attributed to illegal groups in Middle Magdalena, in the municipality of Barrancabermeja, Department of Santander (Colombia).

CENIT

(ECP 005) **Volume of spilled barrels.** 275 events were recorded in 2021, with 17,609 barrels spilled. However, considering that

93%
of the events were caused by third parties,

it is not possible to accurately quantify product loss. As of December 31, 2021, the volume spilled on soil or into water bodies for 61 environmental events is yet to be confirmed.

In 2021, the incidents caused by third parties reported by Cenit affected a total of **161,770m² (0.016177 Hade soils) and 35,715 linear meters** (watercourses edges) due to containment losses,

of which 17,125 m,
were recovered, of which

42,093m²
were recovered (0.0042093 Ha).

ROADMAP

Local Development
(102-12)

Elemento material Excepcional

Sustainable Development Goals

(103-1)

Impacted stakeholders	Areas responsible for managing the impacts	Ecopetrol segments with the greatest impact
Society and Community	VAB	Upstream
Investors and Shareholders	VDS	Midstream
Local State	VDP	Downstream
Society and Communities	VRP	
	VEX	

Why is the element material?
(103-1)

Local Development is a material element of an exceptional nature at Ecopetrol. That is, the Company seeks to become a best practice and to be recognized in the world for its efforts by generating its own knowledge and technology to enable development in its areas of influence. This translates into Ecopetrol's commitment to improve the quality of life in the prioritized areas, consolidating high levels of trust in its communities of influence by means of **three (3) objectives:**

1 Closing socioeconomic gaps.

2 Reducing the factors of social conflict.

3 Obtaining social license in terms of levels of trust and identification.

Adapting and improving the conditions in the surroundings is essential to increase the Group's operational execution capacity, achieve excellent levels of environmental performance in all Company processes, and become an agent of positive transformation by attracting partnerships, resources, and generating sustainable development in its areas of influence.

This is considered a material element due to its potential to generate value, the relevance for stakeholders, and its alignment with Ecopetrol's Declaration of Culture.

How is the material element managed?
(103-2)

The purpose of the Community Engagement Strategy is to magnify Ecopetrol Group's value while supporting the creation of sustainable development in its areas of operation. It also seeks to build relationships of trust with stakeholders as a basis for creating mutual and lasting benefits.

ECOPETROL HAS ADHERED TO THE UNITED NATIONS GLOBAL COMPACT SINCE 2009.

The Principles of the United Nations Global Compact can be consulted at the following link.

The guideline for this element is defined in the Community Engagement Strategy, which is the set of activities aimed at building favorable conditions for the growth of Ecopetrol and its Group, while favoring sustainable development conditions in the territories.

For this purpose, Ecopetrol uses the SDGs as a framework, in adherence to the United Nations Global Compact initiative.

The Strategy is based on **three (3) pillars:**

(i) Social investment,

(ii) Engagement, and

(iii) Physical security

Social investment, in accordance with corporate Bylaws, allows contributions to manage the surroundings of the various Company projects and operations, while contributing to the generation of sustainable development in Ecopetrol's areas of interest or in regions around the country where said contributions are aligned with the corporate strategy.

The Community Engagement Strategy can be consulted following this link.

To learn more about the 2021 results of the Community Engagement strategy visit the website by the following this

The Vice Presidency of Sustainable Development is the area at Ecopetrol that leads the implementation of the Community Engagement Strategy, with operating costs[42] amounting to **COP 77,705 billion.**

42. Management costs (overheads): According to the key definition indicated by DJSI.

How is the material element evaluated?
(103-3)

The material element is evaluated by monitoring the goals for 2024, 2030, and 2040, based on the objectives and strategic options proposed.

These results are monitored monthly using the social investment indicator that is part of the Vice Presidency of Sustainable Development's TBG, which is monitored through the Department of Business Performance of the Vice Presidency of Finance, and whose fulfillment directly impacts variable compensation.

Short, medium, and long-term goals and projects
(103-2)

Goals and projects are defined by **three (3) objectives.**

		2024	2030	2040
1	**Closing socioeconomic gaps** To materialize this objective, Ecopetrol has defined goals for 2024, 2030, and 2040 in three (3) strategic options	**(i) Revitalization of local economies** • 25,000 jobs generated by executing the voluntary social investment • Linking 4,475 peasant families to production chains • 5,878 young entrepreneurs and 1,219 micro, small, and medium enterprises (MSMEs) strengthened • 958 Km of tertiary roads intervened **(ii) Education promotion** • 626,333 students benefited **(iii) Access to Public Services** • 1,329,704 inhabitants with access or improved access to drinking water • 34,448 users with access to fuel gas through grids	**(i) Revitalization of local economies** • 105,000 jobs generated by executing voluntary social investments • Linking 9,000 small-producer families to production chains • 13,500 young entrepreneurs and MSMEs strengthened • 1,800 Km of tertiary roads intervened **(ii) Education promotion** • 1,252,000 students benefited **(iii) Access to Public Servicess** • 1,900,000 inhabitants with access or improved access to drinking water • 75,000 users with access to fuel gas through grids	**(i) Revitalization of local economies** • 230,000 jobs generated by executing the voluntary social investment • Linking 18,000 small-producer families to production chains • 25,000 young entrepreneurs and MSMEs strengthened • 3,000 Km of tertiary roads intervened **(ii) Education promotion** • +2,000,000 students benefited **(iii) Access to Public Services** • 2,400,000 inhabitants with access or improved access to drinking water • 150,000 users with access to fuel gas through grids
2	**Reducing the factors of social conflict** Goals in the short and medium term	• Strengthen the engagement model and preventive and inclusive dialogue • Strengthen the citizen participation model by implementing Eco Zones	• Strengthen the engagement model and preventive and inclusive dialogue • Strengthen the citizen participation model by implementing Eco Zones	
3	**Social license in terms of levels of trust and identification in Ecopetrol's regions of interest**	Short-term goals: • National baseline definition of the level of social license using the Thomson & Botiller methodology in the regions prioritized by Ecopetrol. • Define the methodology and baseline to contribute to the SDGs.	Medium-term (2030) goal: • Percentage increase in national confidence level	

2021 Management Efforts

(103-3)

The **revitalization of local economies** includes the efforts made for economic reactivation after the pandemic, involving nearly

1,100

small producer families

in rural development programs and more than

450

entrepreneurs and MSMEs

under the Ecopetrol Emprende program, in order to boost income generation.

There are also

19 **projects**

underway for the improvement of

236 **km of tertiary roads,**

mainly in Meta, Casanare, Santander, Cundinamarca, and Huila, directly executed by Ecopetrol.

In terms of **education promotion**, the Company benefited

more than

190,000

students

with pedagogical models, teacher training, material for students returning to school, higher education scholarships, and the improvement of educational infrastructure.

Local employment generation through the intervention of

62 **Km of roads,**

with works beginning in an additional **238 Km.**

The **Society and Community** stakeholder is Ecopetrol's partner in the execution of its corporate purpose. Efforts were made in 2021 to ensure compliance with the value proposal and to maintain a relationship based on trust and transparency

(201-1) (WEF 18) (WEF 21) (WEF 32E) The economic value in voluntary investments in the community amounted to

COP **199,056,832,849**,

in 2021, with a

3%

decrease compared to 2020, due to the achievement of capital efficiencies in the execution of resources to support the COVID-19 emergency.

Table 126.
Investment category

Investment category	COP	% of total social investment
Assignments without cost	374,416,824	0.18
Voluntary social and engagement investment	199,056,832,849	99.73
Sponsorships related to social causes and promotion of the Ecopetrol brand	156,922,975	0.08
Total	**199,588,172,648**	**100**

Source: Vice Presidency of Sustainable Development

Table 127.
Type of contribution[43]

Type of contribution	Unit of measurement	2021
Voluntary social and engagement investment + Sponsorships related to social causes and the promotion of the Ecopetrol brand	COP	199,213,755,824
Cost-free transfer of assets	COP	374,416,824
Operating costs	COP	77,705,310,939

Source: Vice Presidency of Sustainable Development

43. The units in which the figures were reported in the version of this report for the right of inspection were adjusted.

In the strategic option "Access to Public Services,"

more than 21,000

INHABITANTS BENEFITED

from access to water in the municipalities of Cúcuta, Barrancabermeja, Villavicencio, Guamal, and surrounding villages.

The necessary activities were similarly conducted through Ecopetrol Conecta to connect

6,132

families in rural communities

in the departments of Arauca, Casanare, Antioquia, Santander, and Meta, benefitting

10,691 **families**

with Ecopetrol's Social Gas Program (via agreements) since 2019.

08

RELEVANT CORPORATE RESPONSIBILITY ISSUES

HUMAN RIGHTS DUE DILIGENCE APPLIED TO PARTICULAR CASES

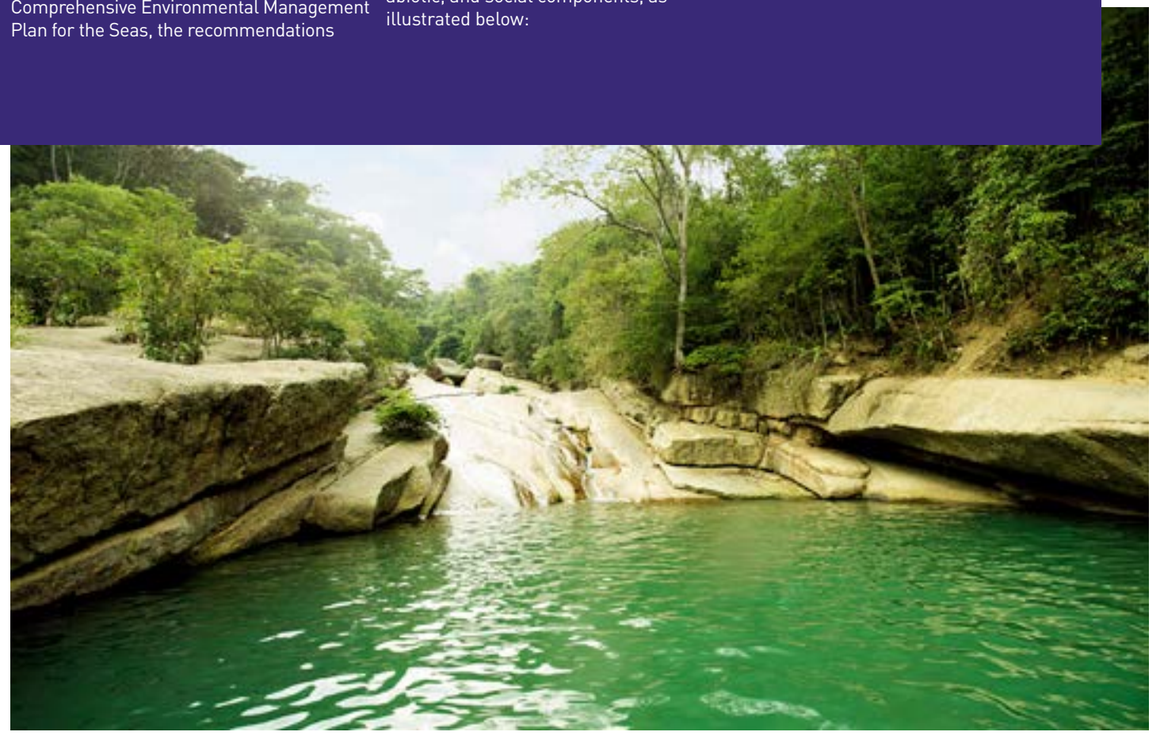
Ecopetrol is committed to implementing its human rights guidelines and continuing its duty of due diligence. That is why a series of cases are presented below, which have required special management efforts to identify, prevent, and mitigate negative impacts, monitor the implementation of human rights plans and their results, and report on how negative impacts are addressed.

Lisama 158 Contingency

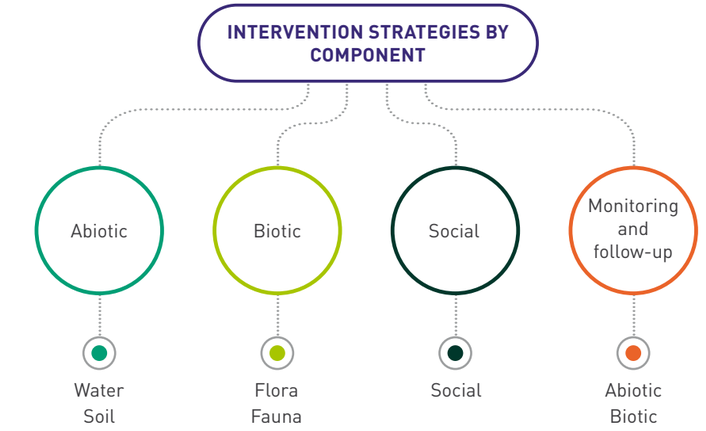
Progress on environmental recovery

Ecopetrol S.A. continues to execute the environmental recovery activities established due to the contingency in the Lisama 158 well in March 2018, by deploying the actions described in the Environmental Recovery Plan (PRA, for its Spanish acronym). This plan incorporated the management measures set forth in the Comprehensive Environmental Management Plan for the Seas, the recommendations made by the Alexander von Humboldt Institute (IAvH), the guidelines generated by the UN, and the advice of partner expert consultants, as well as the company Geotecnologia, and Universidad Industrial de Santander - UIS.

The PRA contemplates the biotic, abiotic, and social components, as illustrated below:



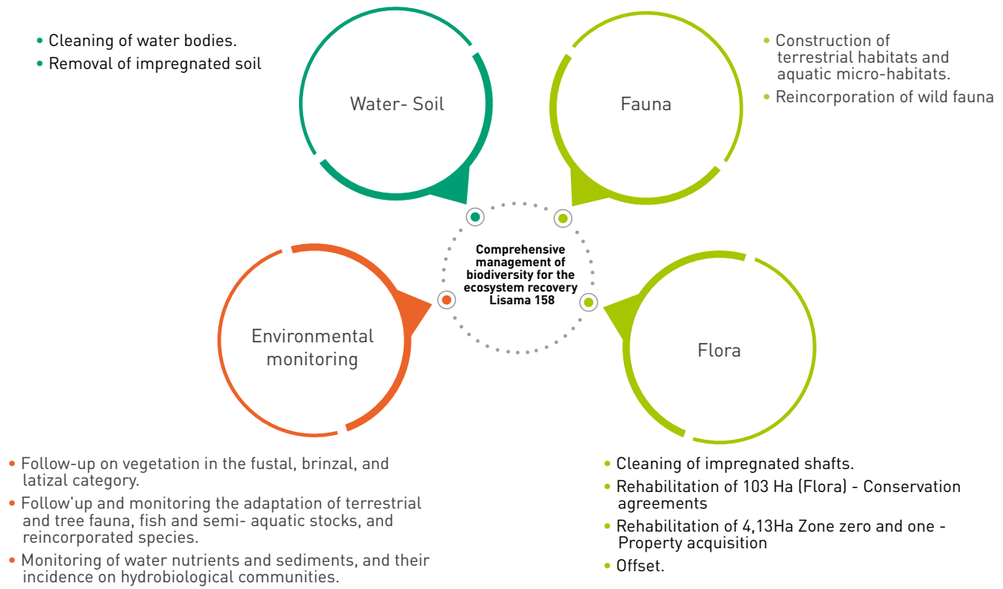
Graph 41.
Environmental Recovery Plan (PRA)



Source: HSE Vice Presidency

The following actions were implemented as part of the comprehensive management of biodiversity for the ecosystem recovery of the area:

Graph 42.
Comprehensive management of biodiversity for the ecosystem recovery



Source: HSE Vice Presidency

Below are some of the most relevant advances in the execution of the PRA:

Graph 43.
Relevant advances in the PRA

WATER
Cleaning of **27,226 mts** above Caño La Muerte and the Lizama gorge
16 water, sediment, and hydrobiologicasl monitoring campaigns

FLORA- Zone zero and one
0.12 Ha Revegetated with grass Zone Zero.
5,663 seedlings planted in Zone One
Compensation of **0.0317 Ha** in the Santo Tomas II property

FLORA - Riparian forest
29.19 Ha in rehabilitation process.
17,627 seedlings planted.

FAUNA
2,400 specimens reincorporated
135 habitats and 34 micro- habitats built.
18 monitoring campaigns.

MONITORING
5,472 Samples analyzed (water, soil, air, sediments, hydrobiologicals).
6 Flora-parcel campaigns
9 Flora-shaft campaigns.
4 Monitoring of water nutrients and sediments and their incidence on hydrobiological communities.

BIODIVERSITY
1 Environmental ecological assessment.
2 Biodiversity and ecosystem services monitoring campaigns.

Source: HSE Vice Presidency

These activities are subject to monitoring and control by Environmental Authorities such as ANLA, with the participation of the Autonomous Corporation of Santander (CAS), and municipal environmental secretariats (Barrancabermeja and San Vicente de Chucurí) generating reports on a quarterly basis. **The thirteenth quarterly activity progress report** was presented in December 2021, with an **87% progress.**

Monitoring Results

WATER RESOURCE

The results allow us to conclude that the water bodies of the Lisama gorge and Caño La Muerte report normal concentrations within the limits stipulated in Decree 1076 of 2015. The parameters slightly in excess are related to the influence of anthropic factors developed within and alongside the banks of the monitored water bodies, the discharges of domestic wastewater, the presence of solid waste, and other actions.

FLORA

Based on the results of the **nine (9) vegetation monitoring** activities conducted in the Shaft category and the verification by expert forest pathologists and dendrologists, Ecopetrol S.A. observes that these specimens are growing and developing naturally.

The reincorporation actions in the PRA as an assisted process have been successful, and the predominant vegetation cover is offering better resources for the habitats of the species.

Leptotila verreauxi

WILDLIFE

No evidence of deterioration was found during the execution of the first two sampling campaigns associated with the Biodiversity Monitoring Program, but on the contrary, there was evidence of an environmental recovery process, at site-scale, for indicators related to the structure of the vegetation and a stable environment, at landscape-scale, especially for indicators related to the composition of the fish community.

Apteronotus milesi recorded in Caño La Muerte.

Social Progress

In support of the strategy for advancing environmental recovery, engagement sessions were held in 2021 with communities, authorities, and institutions, such as tripartite dialogue spaces and systematic meetings with artisanal fishermen. This, to establish a two-way communication with stakeholders, and present the progress of the PRA, as well as the complementary actions undertaken with the communities of influence.

Similarly, by means of the communications strategy, concerns associated with this contingency and the implementation of the PRA were clarified via Facebook and the audiovisual magazine, La Voz de Lizama, which was broadcasted on social media and the local television channel, Enlace TV. Progress was made in communications with the publication of audiovisual pieces, graphic posts, loudspeaker announcements, contests, and live broadcasts on the Profe Aguas official page on Facebook.

In 2021, engagement sessions were held with communities, authorities, and institutions, including the spaces for tripartite dialogue and the systematic meetings with artisanal fishermen. In this way, Ecopetrol establishes a two-way communication with stakeholders to present the advances of the Lisama 158 PRA and the complementary actions deployed with the communities of influence.

As part of compliance with the PRA, SENA offered training programs in "body-to-body aquatic rescue," and Universidad del Magdalena in "how to capture information from fishing." Training sessions were also conducted on ecological issues by professionals from the regional social and environmental team.

The progress made on social investment projects includes locative improvement and in-kind donations works in the Yacaranda, La Unión, Guarumo, and Meseta de San Rafael educational institutions in Barrancabermeja. Also, improvement works and in-kind donations in the Pedral community center, the La Lucha village school, the Puente Sogamoso sports arena, and the Puerto Cayumba community center and multi-sports court in Puerto Wilches. In addition, Ecopetrol delivered the improvement works and in- kind donations in the Lizama II school in San Vicente de Chucurí, the rural gasification project of La Fortuna in Barrancabermeja, and the fishing monitoring contract in the lower part of the Sogamoso River implemented by the APETRAS fishermen's association. Progress was also made in the execution of rural gasification projects in La Lizama in San Vicente de Chucurí, and the project for the rehabilitation of riparian corridors in Puerto Wilches.

As part of the complementary actions undertaken, we provided support to the diocese of Barrancabermeja in the celebration of the patronal festival of San Francisco de Asís, with the organization of the first fair in the parish community and sharing knowledge seeds, and flavors. In this event, we handed out trees to be planted by the community, provided technical support with the presence of a forestry engineer in the environmental pedagogical workshop, and set up a stand to present the progress of the PRA during the event.

Furthermore, we held the "Huertas Caseras – Sembrando con Amor" volunteer activity, with help of Fundación Grupo Ecopetrol, allowing the expansion of home gardens to ensure food security for the fishing families in the El Llanito township, and maintaining healthy lifestyle habits with a balanced family basket.

Finally, the Company contributed to the striped catfish bans in the region by handing out fliers and conducting an outreach campaign. Support was also given to the follow-up visits conducted by the ANLA, which served to monitor compliance with the requirements set forth in the PRA framework. Thus, benefitting

2,000
PEOPLE

in the rural areas of the municipalities of San Vicente de Chucurí, Puerto Wilches, and the district of Barrancabermeja.

Dialogue with the U'wa People (Colombia)

Since Ecopetrol's engagement in the dialogue roundtable established by the National Government with the U'wa people[45] in 2017, communication between Ecopetrol and Asou'wa has strengthened through intercultural workspaces designed to foster trust and mutual understanding. In these spaces, Ecopetrol has had the opportunity to better understand the U'wa people and the participants have been able to hear and solve their doubts about Ecopetrol's activities.

In 2018, an engagement plan was initiated between Ecopetrol (Regional Environment Management - Vice Presidency of Sustainable Development) and Asou'wa (Association that brings together the 17 communities of the U'wa United Reservation in Santander, Norte de Santander, and Boyacá) to build a joint vision of the territory, based on three (3) pillars: direct and permanent dialogue, mutual understanding, and fostering trust. The plan has turned confrontation and resistance into a willingness to establish dialogue, reach mutual understanding, and exchange knowledge. In addition, the engagement plan focuses on deepening strategies for the protection of the environment and determining how the impacts deriving from the evolution of extractive activities can be avoided or mitigated.

The "Building the Territory's Joint Vision" strategy, which is part of the Engagement plan, allowed mutual understanding between the community and the Company strengthening mutual trust. To this end, knowledge exchange activities were conducted with an intercultural approach to understand why there are needs and concerns regarding the survival of the U'wa People despite industrial activities.

In 2021, agreements were reached for some community benefit projects associated with food security and health for the U'wa people, as well as the improvement of ancestral roads for better and safer mobility for the community in their reservation. Finally, progress was made in an agreement with the Government of Boyacá in order to build the "Thought Center". In terms of developing infrastructure to provide meeting spaces for the communities, a project was structured in 2021 for the construction of the Intercultural Thought Center of the U'wa Indigenous community in the municipality of Cubará (Boyacá), with the Company signing a partnership agreement for construction, which will benefit

MORE THAN **7,500** PEOPLE.

After several years of estrangement, there is now stable and permanent communication with Asou'wa.

45. The Intercultural Dialogue Roundtable with the U'wa People is forum dialogue between the National Government and the U'wa People, formalized by Resolution 0473 of 2017 of the Ministry of the Interior. This Roundtable has a regulation that requires three (3) annual meetings to follow up on the agreements reached in 2014, 2016, and 2017. By express request of the U'wa People, Social Organization delegates are accepted as guests in said forum. Some of the issues addressed are: cleaning up the U'wa United Reservation (National Land Agency), Via de la Soberanía (Invías), and the Arauca - Sarare gasification projects (Ecopetrol). The last meeting held was on September 3, 2021, in Saravena (Arauca).

ON THE OTHER HAND, HEALTH WORKDAYS WERE HELD IN THE CATATUMBO REGION, WITH THE SUPPORT OF FUNDACIÓN OPERACIÓN SONRISA AND PROFAMILIA, BENEFITING 3,500 CHILDREN AND MOTHERS FROM THE U'WA INDIGENOUS COMMUNITY.

Asou'wa and Ecopetrol workspace for intercultural recognition.l.
Source: Vice Presidency of Sustainable Development

Temporary discharge suspension in the Guayuriba River (Colombia)

Ecopetrol currently has a permit to discharge treated produced water associated with the production activities of Campo Castilla into the Guayuriba River , in the municipality of Acacías, in the Department of Meta.

On December 14, 2020, the Cormacarena Environmental Authority imposed a preventive measure to suspend discharge due to apparent contamination in the water source, in accordance with the visits made by the Authority in the months of March and October of that year, and also due to an alleged breach of the provisions of follow-up writ PS-GJ.1.2.64.20.0329 of 2020[47]. Ecopetrol submitted several requests to the environmental authority to lift the measure, arguing that the discharge conditions fully complied with the provisions of Resolution 631 of 2015 and local regulations on Water Quality Objectives. An action plan was similarly presented to improve the water conditions of the river, including short, medium, and long-term actions to mitigate the natural clogging of the river, accelerate dilution, and improve the quality of the discharge. This action plan was approved by the environmental authority.

Considering above, Cormacarena ordered the provisional lifting of the preventive measure on June 11, 2021, subjecting it an effectiveness verification of the actions initiated by Ecopetrol. On November 24, 2021, the Company requested the permanent lifting of the preventive measure given its compliance with the parameters set forth in current national and local regulations.

It is worth pointing out that, due to the situations that gave rise to the preventive measure, Cormacarena initiated a sanctioning process on February 11, 2021, and, on December 17, 2021, a statement of objections was issued against Ecopetrol, which was notified on January 6, 2022. As a result of this process, a sanction could be applied against Ecopetrol.

Ecopetrol continues to comply with the actions recommended in administrative acts by the environmental authority and continues to submit periodic reports on the execution of deblinding activities[48] 41 at the point of discharge, reports on the piping process in the Guayuriba River, and progress reports on the medium and long-term actions proposed in the discharge system improvement plan.

46. Granted by Cormacarena, by means of Resolution 0904 of 2007, and extended for 5 years via Resolution PS.GJ.1.2.6.1012 of August 5, 2016.
47. By means of which CORMACARENA raised the following requirements, among others:
a) Total removal of material with hydrocarbon remnants or residues from treated industrial discharge from the riverbed or rocky material from the bottom of the watercourse.
b) Conduct physicochemical monitoring on the valve points of km22 of the discharge transfer line from the Akacías Station to the Guayuriba River.
c) Submit a detailed report on the activation of the Risk Management Plan for Discharge Management (PGRMV, for its Spanish acronym), as well as its contingency plan (PDC), to contain the iridescence and hydrocarbon remnants on the rocky material of the riverbed in the discharge strip.
48. Action of removing sediment deposits from the water source at the point of discharge.

Submitting the Report to the Truth Commission

As part of its commitment to Human Rights, Ecopetrol S.A. has established relations with entities that are part of Colombia's Comprehensive System of Truth, Justice, Reparation, and Non-Repetition (SIVJRNR, by its Spanish acronym), as is the case of The Truth Commission (CEV, by its Spanish acronym), created by means of Legislative Act 01 of 2017 "...which establishes transitional provisions in the Constitution for terminating armed conflict and building stable and lasting peace, as well as other provisions."

Ecopetrol has taken actions to continue engaging with State entities in specific mandates associated with the respect and promotion of human rights. Similarly, to keep its commitment to contribute to peace in the country, the Company has undertaken actions towards this objective, by engaging entities such as the High Presidential Council for Human Rights and Ecopetrl Group's contribution to the "Public Works for Taxes" state initiative.

Ecopetrol has particularly engaged with the CEV, an extrajudicial entity part of the SIVJRNR, as follows:

a. Providing timely response to information requests;

b. Participating in different public forums such as the Dialogues for Non-Repetition and the meetings on "Dialogues, Business, and Truth;"

c. Entering into inter-administrative cooperation agreements to assign a company official responsible for fulfilling the objectives and duties of the CEV, among others.

Furthermore, in order to contribute to the objectives of the CEV, a first report was prepared by Ecopetrol under the title of "Ecopetrol in Magdalena Medio: Corporate narrative on the impacts of armed conflict on the Company's operations," which was officially submitted to the CEV at a meeting led by Ecopetrol's CEO, Felipe Bayón, and Father Francisco de Roux, President of the CEV, on August 12, 2021.

Cartagena Refinery Case – Reficar

The Cartagena Refinery expansion and modernization project has been audited and inspected by the Office of the Inspector General of the Nation and the Office of the Comptroller General of the Republic of Colombia, and criminal proceedings are currently underway. All proceedings are filed against former Cartagena Refinery or contractor employees. None of the proceedings are filed or have been filed against the Cartagena Refinery or Ecopetrol, neither in Colombia nor in the United States or any other country.

The administrative authorities (Office of the inspector General of the Nation and Office of the Comptroller General of the Republic) have issued their ruling by means of several decisions. The events under investigation, which the control entities have already ruled on, correspond to the following:

(i) Increased budget for project execution by means of the five (5) exchange controls[49] in relation to the initial budget.

(ii) Late commissioning of the refinery.

(iii) Subscription and implementation of billing procedures.

(iv) Structuring and implementation of the incentives plan.

None of these investigations is related to charges or crimes of corruption, bribery, or fraud; nor does it correspond to conduct associated with the embezzlement of funds, or irregularities in the costs of the project.

There has been no sanction or conviction to this date by the judges of the Republic.

The administrative authorities (Office of the Inspector General of the Nation and Office of the Comptroller General of the Republic) have ruled on different decisions. None of these investigations concluded that there was any bribery, fraud, or corruption.

The Office of the Inspector General shelved three (3) investigations[50] against former employees of the Cartagena Refinery and former members of the Board of Directors of Ecopetrol, concluding that their conduct was not irregular, since the additions to the project budget were necessary. The cost estimate and schedule submitted by the contractor were shown to be inaccurate and underestimated.

For the Office of the Inspector General, the change controls responded to erroneous budget projections by the contractor, which made it impossible to continue with the execution of the work if the increase of the initial budget was not authorized, and it was also the most convenient solution to continue with the project.

The Office of the Inspector General concluded that there was clarity in the structuring, implementation, and results process of the incentives plan, and the milestones for payment were also met.

The Comptroller General of the Republic, under fiscal responsibility process PRF-005-2017, decided, since 2018, to shelve and disassociate all parties involved (former directors, former employees, contractors, Ecopetrol insurers) in the approval of change controls 1 and 5 for not constituting property damage, and all former members of the Board of Directors of Ecopetrol in change controls 2, 3, and 4, by considering that they made timely decisions to ensure the financing of the project, and that they acted with diligence and prudence within the framework of their duties.

By means of the ruling of April 26, 2021, confirmed by the same Office of the Comptroller General on July 6 of the same year, five (5) former employees of the Cartagena Refinery, seven (7) former members of the Board of Directors, four (4) contractors, and four (4) insurance companies were found accountable for fiscal responsibilities. However, their conduct is not related to acts of corruption, bribery, or fraud. For the Office of the Comptroller General, the fiscal damage caused in the project was the result of the decisions that led to the loss of value of the largest investments, by approving the additions of CAPEX resources in excess of the levels consistent with the remuneration of the capital contributed to the project, at its opportunity cost in change controls 2 and 3.

The Office of the Comptroller General considered the fiscal damage to be the sum of each addition to the project's CAPEX that affected profitability and the value proposal, represented in the impact on the net present value (NPV) and the internal rate of return (IRR) of the project.

This is an administrative decision, and its legality has not been reviewed by a judge of the Republic. The parties found to be fiscally accountable can file an administrative claim by means the legal actions provided for in the Colombian legal system.

In relation to the late commissioning of the refinery, the Office of the Comptroller General shelved the proceeding on February 3, 2022, as it found no proven damage or detriment to public property, among other reasons, caused by the forced delay of the project schedule due to adverse channeling of the asset. This was due to the winter wave and labor abnormalities arising during execution. According to current regulations, the writ will be referred to the Prosecution and Sanctions Chamber of the Office of the Comptroller General to be reviewed as a consultation process.

The criminal proceedings underway[51] do not involve any current Cartagena Refinery or Ecopetrol employees, and none of the crimes under investigation is related to bribery or fraudulent behaviors. Both companies have been considered victims in the proceedings. There are no criminal convictions to date related to the aforementioned events.

49. Change control is a procedure at the Ecopetrol Business Group to modify the budget and estimated schedules of a Project, prior to execution. It is a systematic process to manage the changes arising during project execution to evaluate their impact, make decisions, control deviations in scope, time, cost, and quality, and identify the causes that generate said changes, which can be incorporated as lessons learned and practices for continuous improvement, prior to execution. Change Control Procedure in Projects Code ECP-DPY-P-003 dated 10/31/2013.
50. The investigations shelved by the Attorney General's Office in relation to the expansion and modernization project of the Cartagena refinery are the following: i) IUS 2012-332368 IUC-D-2012-792-548377, ii) IUS 2012-332368 D- 2016-139-836519 y iii) IUS 2012-332368 D-2017-948630.
51. The criminal proceedings underway are: i) Proceeding No. 110016000101201600023 - MOA - PIP and EPC, ii) Proceeding No. 110016000101201800132 – Business Line, and iii) Proceeding No. 110016000101201800134 – Signing of the PMC Contract - Foster Wheeler.

09 ANNEXES

Building a better working world

Messrs,
Ecopetrol S.A.

AS-5517-22
June 6th, 2022

To the Management of Ecopetrol S.A.

The 2021 Integrated Sustainable Management Report of Ecopetrol S.A., as of December 31, 2021 have been prepared in accordance with the Global Reporting Initiative (GRI) standards, Measuring Stakeholder Capitalism (SCM) of WEF (World Economic Forum) and IBC (International Business Council), and Company's own criteria.

Ernst & Young Audit S.A.S., acted as independent auditor of the identified sustainability information, contained in the Integrated Sustainable Management Report, and its limited assurance report was released on May 31, 2022. Our engagement was conducted in accordance with International Standard for Assurance Engagements Other Than Audits or Reviews of Historical Financial Information ('ISAE 3000').

According to your request, we have reviewed the English language translation of the Integrated Sustainable Management Report and our respective limited assurance report as independent auditor.

Cordially,

PATRICIA MENDOZA SIERRA
Firmado digitalmente por PATRICIA MENDOZA SIERRA
Fecha: 2022.06.06 14:28:23 -05'00'

Patricia Mendoza
Assurance Partner
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AS-5299-22
May 31, 2022

Independent Accountant's Assurance Report

To the Management of Ecopetrol S.A.

Scope

We have been engaged by **Ecopetrol S.A.** (here after referred to as "Ecopetrol" or "the Company") 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 **Appendix 1** and contained in the Integrated Sustainable Management Report of Ecopetrol S.A. (the "2021ISMR") for the period between January 1 to December 31, 2021.

1. Criteria applied by Ecopetrol

In preparing the sustainability information identified, which is detailed in Annex 1, **Ecopetrol** applied the criteria listed below (the **Criteria**) and which are related in the GRI content index of the **Report** and in **Annex 2** of this Report.

a) GRI *Global Reporting Initiative* standards in accordance with the self-declared conformance option in GRI content 102-54.
b) Measuring Stakeholder Capitalism (SCM) of WEF (World Economic Forum) and IBC (International Business Council) published in September 2020
c) Own criteria

2. Ecopetrol's Responsibilities

Ecopetrol's management is responsible for selecting the **Criteria**, and for presenting the identified sustainability information 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.

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Sirs. Ecopetrol S.A.

3. EY's responsibilities

Our responsibility is to express a conclusion on the presentation of the **Subject Matter** based on the evidence we have obtained.

We conducted our engagement in accordance with the International Standard for Assurance Engagements Other Than Audits or Reviews of Historical Financial Information ('ISAE 3000'), and the terms of reference for this engagement as agreed with **Ecopetrol** on December 28, 2021. Those standards require that we plan and perform our engagement to obtain limited assurance about whether, in all material respects, the Subject Matter is presented 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.

4. Our Independence and Quality Control

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 Control 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements,* and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

5. 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.

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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.

A limited assurance engagement consists of making enquiries, primarily of persons responsible for preparing the identified sustainability information detailed in **Appendix 1** and applying analytical and other appropriate procedures.

Our limited assurance procedures included, but were not limited to:

- Conducted interviews with **Ecopetrol's** personnel to understand the business and reporting process
- Conducted interviews with key personnel to understand the process for collecting, collating, and reporting the **Subject Matter**.
- Checked that the calculation criteria have been correctly applied in accordance with the methodologies outlined in the **Criteria**
- Undertook analytical review procedures to support the reasonableness of the data
- Identified and testing assumptions supporting calculations
- Tested, on a sample basis, underlying source information to check the accuracy of the data
- Read the management approaches (GRI 103-1, GRI 103-2 and GRI 103-3) of the material topics associated with the **Subject Matter** to verify that they have been applied in accordance with the **Criteria**.
- Compare the disclosures presented in the **2021ISMR** with what is established according with the self-declared option as detailed in the disclosure GRI 102-54 of the GRI standards.

We also performed such other procedures as we considered necessary in the circumstances.

6. Inherent Limitations of our assurance engagement

Our assurance engagement was limited to the **Subject Matter** contained in the **2021ISMR** for the period between January 1 and December 31, 2021, and consequently it does not cover information from prior years included in the **2021ISMR** or related to forecasts or future targets.

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Sirs. Ecopetrol S.A.

Nor was it intended to determine whether the technological tools used to prepare the **2021ISMR** are the most appropriate and/or efficient.

7. Conclusion

Based on our procedures and the evidence obtained, we are not aware of any material modifications that should be made to the identified sustainability information (the "Subject Matter") that is detailed in **Appendix 1** and contained in the **2021ISMR** for the period between January 1 to December 31, 2021, for it to be in accordance with the **Criteria**.

8. Restricted Use

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 with this assurance engagement, is solely with the **Company'** Management, therefore, we do not accept or assume any responsibility for any other purpose or against any other person or organization.

Patricia Mendoza
Executive Director
Ernst & Young Audit S.A.S.

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APPENDIX 1

Subject Matter:

The identified sustainability information (the "Subject Matter") in the scope of this Statement and included in the **2021ISMR** issued by **Ecopetrol** on its website[1] is presented in the following table[2]:

Material topic	Indicator / disclosure	Criteria	Description
General contents	102-1 to 102-56	GRI	General contents of GRI 102 standard
Local development, sourcing and supplier management	204-1	GRI	Proportion of spending on local suppliers
Climate Change	305-1 / WEF7	GRI WEF /	Direct (scope 1) GHG emissions
	305-2 / WEF7	GRI WEF /	Energy indirect (Scope 2) GHG emissions
	305-5	GRI	Reduction of GHG emissions
Integrated Water Management	303-3 / WEF10	GRI / WEF	Water withdrawal
	303-4	GRI	Water discharge
	303-5	GRI	Water consumption
Local development	413-1 / WEF17	GRI / WEF	Operations with local community engagement, impact assessments, and development programs
Process Safety	ECP005	Company's own criteria	Volume of hydrocarbon spills
	ECP006	Company's own criteria	Incident frequency rate N1 (IFSP N1)
	OG-13	GRI 11: Oil and Gas Sector	Number of process safety events, by business activity
Occupational Health And Safety	403-9 / WEF15	GRI / WEF	Work-related injuries
	403-10 / WEF15	GRI / WEF	Work-related ill health
	ECP002	Company's own criteria	Lesions with time loss frequency rate (LTIFR)

1 The maintenance and integrity of the Company's website (https://www.ecopetrol.com.co/wps/portal) repository of the **2021ISMR**, is the responsibility of Ecopetrol's Management. The work carried out by EY does not include these activities and, therefore, EY does not accept any responsibility for any difference between the information presented on said website and the Subject Matter contained in the Report on which the Engagement was carried out and the conclusion was issued.

2 Besides from what is described in the table, which establishes the scope of our work, we do not apply assurance procedures on the other information included in the Report and, accordingly, we do not express a conclusion on said information.

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Material topic	Indicator / disclosure	Criteria	Description
	ECP003	Company's own criteria	Total recordable lesions frequency rate (TRIFR)
Biodiversity and ecosystem services	304-1 / WEF9	GRI / WEF	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas
	304-3 / WEF9	GRI / WEF	Habitats protected or restored
	OG4	GRI 11: Oil and Gas Sector	Number and percentage of significant operating sites in which biodiversity risk has been assessed and monitored
Attraction, loyalty and retention human talent	404-3	GRI	Percentage of employees receiving regular performance and career development reviews
	405-1 / WEF2 / WEF11	GRI / WEF	Diversity of governance bodies and employees
	405-2 / WEF12 / WEF19E	GRI / WEF	Ratio of basic salary and remuneration of women to men
Waste Management	306-2 / WEF12E	GRI	Management of significant waste-related impacts
	306-3	GRI / WEF	Waste generated
Circular economy	ECP001	Own / WEF	Circularity Maturity Level
Air Quality	305-7 / WEF7E	GRI / WEF	Nitrogen oxides (Nox), sulfur oxides (SOx), and other significant air emissions
Fuel quality	OG14	GRI 11: Oil and Gas Sector	Volume of biofuels produced and purchased meeting sustainability criteria
Use of Energy and Alternative Sources	302-1	GRI	Energy consumption within the organization
	302-3	GRI	Energy intensity
	302-4	GRI	Reduction of energy consumption
Human Rights Evaluation	412-3 / WEF22E	GRI / WEF	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening

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APPENDIX 2

1. GRI Disclosures Criteria:

The assurance criteria that are applicable to the Subject Matter and to the presentation in accordance with self-declared conformity option, are defined based on what is established in the GRI 101 standard: Fundamentals (2016) and its thematic disclosures available on the page https://www.globalreporting.org/standards/gri-standards-translations/gri-standards-spanish-translations-download-center/

2. Measuring Stakeholder Capitalism Criteria:

The following are the assurance criteria that are applicable to the indicators of Measuring Stakeholder Capitalism and are available in the appendix of the Ecopetrol Report called **Measuring Stakeholder Capitalism (SCM) of WEF (World Economic Forum) and IBC (International Business Council).**

Indicator	Criteria
WEF2: Quality of governing body	**Governance body composition** Composition of the highest governance body and its committees by: competencies relating to economic, environmental, and social topics; executive or non-executive; independence; tenure on the governance body; number of each individual's other significant positions and commitments, and the nature of the commitments; gender; membership of under-represented social groups; stakeholder representation.
WEF7: Climate Change	**Greenhouse gas (GHG) emissions** For all relevant greenhouse gases (e.g., carbon dioxide, methane, nitrous oxide, F-gases etc.), report in metric tonnes of carbon dioxide equivalent (tCO2e) GHG Protocol Scope 1 and Scope 2 emissions. Estimate and report material upstream and downstream (GHG Protocol Scope 3) emissions where appropriate.
WEF7E: Climate Change	**Air pollution** Report wherever material along the value chain: nitrogen oxides (NOx), sulfur oxides (SOx), particulate matter and other significant air emissions. Wherever possible estimate the proportion of specified emissions that occur in or adjacent to urban/densely populated areas.
WEF9: Nature loss	**Land use and ecological sensitivity** Report the number and area (in hectares) of sites owned, leased or managed in or adjacent to protected areas and/or key biodiversity areas (KBA).
WEF10: Freshwater availability	**Water consumption and withdrawal in water-stressed areas** Report for operations where material: megaliters of water withdrawn, megaliters of water consumed and the percentage of each in regions with high or extremely high baseline water stress, according to WRI Aqueduct water risk atlas tool. Estimate and report the same information for the full value chain (upstream and downstream) where appropriate.
WEF11: Dignity and equality	**Diversity and inclusion (%)** Percentage of employees per employee category, by age group, gender and other indicators of diversity (e.g., ethnicity).
WEF12: Dignity and equality	**Pay equality (%)** Ratio of the basic salary and remuneration for each employee category by significant locations of operation for priority areas of equality: women to men, minor to major ethnic groups, and other relevant equality areas.

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Indicator	Criteria
WEF12E: Air pollution	**Impact of solid waste disposal** Report wherever material along the value chain, the valued societal impact of solid waste disposal, including plastics and other waste streams.
WEF15: Health and well-being	**Health and safety (%)** The number and rate of fatalities as a result of work-related injury; high consequence work-related injuries (excluding fatalities); recordable work related injuries; main types of work-related injury; and the number of hours worked. An explanation of how the organization facilitates workers' access to non-occupational medical and healthcare services, and the scope of access provided for employees and workers.
WEF 17E: Solid Waste	**Impact of water pollution** Report wherever material along the value chain: the valued impact of water pollution, including excess nutrients, heavy metals and other toxins.
WEF19E: Dignity and equality	**Pay gap (%, #)** 1. Mean pay gap of basic salary and remuneration of full-time relevant employees based on gender (women to men) and indicators of diversity (e.g., BAME to non-BAME) at a company level or by significant location of operation. 2. Ratio of the annual total compensation for the organization's highest-paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country.
WEF22E: Dignity and equality	**Human rights review, grievance impact & modern slavery (#, %)** 1. Total number and percentage of operations that have been subject to human rights reviews or human rights impact assessments, by country. 2. Number and type of grievances reported with associated impacts related to a salient human rights issue in the reporting period and an explanation on type of impacts. 3. Number and percentage of operations and suppliers considered to have significant risk for incidents of child labor, forced or compulsory labor. Such risks could emerge in relation to: a) type of operation (such as manufacturing plant) and type of supplier; and b) countries or geographic areas with operations and suppliers considered at risk.

3. Own Indicator Criteria:

Below are the assurance criteria that are applicable to the Company own indicators, which are subject to limited assurance, which are related in the annex to the **Ecopetrol Report** and in this Report to make them available to stakeholders.

These evaluation criteria are an integral part of our limited and independent accountant's assurance report.

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Description	Criteria
ECP001 Circularity Maturity Level	**Responsible area:** VHSE **Requirements:** Indicate the Circularity Maturity Level obtained by the Company in the reporting period according to the Colombian Technical Guide (GTC) 314:2020 - Framework for the implementation of circular economy principles in organizations. **Reporting guidelines:** The levels defined by the Technical Guide are: • **Level 0-Immmature:** Characterized by limited and/or ad-hoc actions (e.g., limited legal compliance actions). • **Level 1-Basic: Initial setting of framework and scope - active exploration of opportunities** • **Level 2 - Improving (Process Improvement): Ways of working that align with the principles of the Circular Economy.** • **Level 3 - Committed: Product/service/process innovation, Align value proposition with Circular Economy principles.** • **Level 4 - Optimization:** Business Model Innovation, Organizational forms of doing business and creating value fully in line with Circular Economy principles.
ECP002 Lesions with time loss frequency rate (LTIFR)	**Responsible area:** VHSE **Requirements:** • **Employee lost time injury frequency rate per million hours worked for the most recent reporting year.** • **Contractor lost-time injury frequency rate per million hours worked for the most recent reporting year.** • **Data Coverage**. **Reporting guidelines:** **Lost Time Injury Frequency Rate (LTIFR)** - any work injury that results in an absence on the next workday by the employer or contractors, per million hours worked in the period. **LTIFR** = (Number of injuries resulting in absences/Total number of hours worked in the period) x 1,000,000
ECP003 Total recordable lesions frequency rate (TRIFR)	**Responsible area:** VHSE **Requirements:** • Total **employee recordable injury frequency rate per million hours worked for the most recent reporting year.** • **Total recordable injury frequency rate of contractors per million hours worked for the most recent reporting year.** • **Data Coverage** **Reporting guidelines:** Total recordable injury frequency rate - total number of recordable injuries per million hours worked. **TRIFR =** (Number of incidents in the reporting period/Total hours worked in the period) x 1,000,000

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Description	Criteria
ECP005 Volume of hydrocarbon spills	**Responsible area:** VHSE **Requirements:** • Volume of oil **spilled in the reporting period (bbls)** • **Data coverage** **Reporting guidelines:** • SASB and IPIEC **guidelines are to report spill volumes greater than one barrel (bbl) that reach the environment.** • **The data reported should represent a total estimate of the total volume spilled that reached the environment. It should not be a quantity reduced by volumes recovered, evaporated and lost.** • **The data should include discharges from subway and surface operations, as well as from transportation operations** under the company's control. • The data **should include events beyond the Company's control such as sabotage, earthquakes or weather events.** • **The data should include subway and surface leaks and these should be counted once at the time they are identified.** • **The data reported should exclude hydrocarbons present in water discharges or in permitted discharges**.
ECP006 Incident frequency rate N1 (IFSP N1)	**Responsible area:** VHSE **Requirements:** • Number of N1 **incidents per million hours worked in the period.** • **Data coverage** • **The Company's** target for the latest reporting period in absolute terms. **Reporting guidelines:** N1 incidents - are defined in API 754 and IOGP 456 and comprise unplanned or uncontrolled incidents of discharge of materials, including non-toxic and non-flammable materials resulting in one or more of the following consequences: • Days **of absence of employees, contractors or subcontractors.** • **Death of employees, contractors or subcontractors** • **Death of a third party** • **The officially declared evacuation of a community, including precautionary evacuations** • **Damage equal to or greater than $100,000USD in direct costs** • **A discharge to the atmosphere or downstream of manually initiated pressure of a quantity greater than or equal to the quantities defined in Table 1 of the American Petroleum Institute Guide to Reporting Process Safety Events Version 3.0 in a one-hour period** • **Emissions from permitted or regulated sources in quantities equal to or greater than the thresholds defined in Table 1 of the American Petroleum Institute Guide to Reporting Process Safety Events Version 1.0.** • **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

Annex 01. Content index

	INDICATOR	PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
FOUNDATION										
101 A	Reporting Principles	Pg. 6								
101 B	Using GRI Standards for sustainability reporting	Pg. 6								
101 C	Making claims related to the use of the GRI Standards	Pg. 6								
GENERAL DISCLOSURES										
ORGANIZATION DETAILS										
102-1	Name of the organization	Pg. 118							X	
102-2	Activities, brands, products, and services	Pg. 10							X	
102-3	Location of headquarters	Pg. 10							X	
102-4	Location of operations	Pg. 10							X	
102-5	Owner ship and legal form	Pg. 18							X	
102-6	Markets served	Pg. 11							X	
102-7	Scale of the organization	Pg. 10 Pg. 99 Pg. 290		WEF 17			EM.EP.000.A EM.EP.000.B EM.EP.000.C		X	
102-8	Information on employees and other workers	Pg. 10 Pg. 290		WEF 17	Principles 6	8 - Decent work and economic growth		Work and labor relations	X	
102-9	Supply chain	Pg. 10 Pg. 116		WEF 17			EM.EP.000.A EM.EP.000.B EM.EP.000.C		X	
102-10	Significant changes to the organization and its supply chain	Pg. 22							X	
102-11	Precautionary Principle or approach	Pg. 177			Principles 7				X	
102-12	External initiatives	Pg. 409							X	
102-13	Membership of associations	Pg. 407						Organization Government	X	

	INDICATOR	PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
STRATEGY AND RISKS MANAGEMENT										
102-14	Statement from senior decision-maker	Pg. 12						Organization Government	X	TCFD G.a.
102-15	Key impacts, risks, and opportunities	Pg. 166		WEF 6					X	TCFD G.a. TCFD R.a. TCFD R.b.
ETHICS AND INTEGRITY										
102-16	Values, principles, standards, and norms of behavior	Pg. 158 Pg. 163 Pg. 406 Pg. 407			Principle10	16 - Peace, justice and strong institutions.	EM-EP-510a2	Organization Government	X	
102-17	Mechanisms for advice and concerns about ethics	Pg. 160 Pg.162		WEF 4	Principle 10	16 - Peace, justice and strong institutions.	EM-EP-510a2	Organization Government	X	
205-1	Operations assessed for risks related tu corruption	Pg. 163		WEF4		16 - Peace, justice and strong institutions.	EM-EP-510a2			
205-2	Communication and training about anti-corruption policies and procedures	Pg. 159		WEF 4		16 - Peace, justice and strong institutions.	EM-EP-510a2			
205-3	Confirmed incidents of corruption and actions taken	Pg. 162 Pg. 163		WEF 4		16 - Peace, justice and strong institutions.				
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Pg. 163				16 - Peace, justice and strong institutions.				
307-1	Non-compliance with environmental laws and regulations	Pg. 181 Number of environmental sanctions in the reporting period: 1 Total monetary value of the significant environmental sanctions in the reporting period: 3.863.918.267COP Number of non monetary environmental sanctions in the reporting period: 1 Number of environmental cases submitted to litigation resolutions: NA		WEF 5E		16 - Peace, justice and strong institutions.		Pollution prevention.		

	INDICATOR	PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
406-1	Incidents of discrimination and corrective actions taken	Pg. 163		WEF 20E		5 - Gender equality		Avoid complicity. Claim resolution. Discrimination and vulnerable groups. Fundamental rights and principles in the workplace. Work and labor relations.		
GOVERNANCE										
102-18	Governance structure	Pg. 134 Pg. 136						Organization Government	X	TCFD G.a.
102-19	Delegating authority	Pág. 166						Organization Government	X	
102-20	Executive-level responsability for economic, environmental, and social topics	Pág. 166		WEF 2				Organization Government	X	TCFD R.c.
102-21	Consulting stakeholders on economic, environmental, and social topics	Pg. 124 Pg. 128				16 - Peace, justice and strong institutions.		Organization Government	X	TCFD G.a.
102-22	Composition of the highest governance body and its committees	Pg. 142 Pg. 144		WEF 2		5 - Gender equality 16 - Peace, justice and strong institutions.		Organization Government	X	
102-23	Chair of the highest governance body	Pg. 142 Pg. 144		WEF 2		16 - Peace, justice and strong institutions.		Organization Government	X	
102-24	Nominating and selecting the highest governance body	Pg. 142 Pg. 143				16 - Peace, justice and strong institutions.		Organization Government	X	
102-25	Conflicts of interest	Pg. 141 Pg. 142 Pg. 1444				16 - Peace, justice and strong institutions.		Organization Government	X	
102-26	Role of highest governance body in setting purpose, values, and strategy	Pg. 136		WEF 6E				Organization Government	X	
102-27	Collective knowledge of highest governance body	Pg. 148 Pg. 173						Organization Government	X	
102-28	Evaluating the highest governance body´s performance	Pg. 149				16 - Peace, justice and strong institutions.		Organization Government	X	
102-29	Identifying and managing economic, environmental, and social impacts	Pg. 124 Pg. 127 Pg. 166				16 - Peace, justice and strong institutions.		Organization Government	X	TCFD G.a. TCFD R.a.
102-30	Effectiveness of risk management processes	Pg. 140				16 - Peace, justice and strong institutions.		Organization Government	X	TCFD R.B

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
102-31	Review of economic, environmental, and social topics	Pg. 138						Organization Government	X	TCFD G.a.
102-32	Highest governance body´s role in sustainability reporting	Pg. 7						Organization Government	X	
102-33	Communicating critical concerns	Pg. 138				16 - Peace, justice and strong institutions.		Organization Government	X	TCFD G.a.
102-34	Nature and total number of critical concerns	Pg. 138						Organization Government	X	TCFD G.a.
102-35	Remuneration policies	Pg. 150 Pg. 151						Organization Government	X	
102-36	process for determining remuneration	Pg. 150 Pg. 151						Organization Government	X	
102-37	Stakeholders involvement in remuneration	Pg. 151				16 - Peace, justice and strong institutions.		Organization Government	X	
102-38	Annual total compensation ratio	Pg. 151						Organization Government	X	
102-39	Percentage increase in annual total compensation ratio	Pg. 151		WEF 18				Organization Government	X	
STAKEHOLDERS ENGAGEMENT										
102-40	List os stakeholder groups	Pg. 126							X	
102-41	Collective bargaining agreements	Pg. 313		WE 21E	Principle 3	8 - Decent work and economic growth		Fundamental principles and rights at work Work and work relations Work conditions and social protection Social dialogue	X	
102-42	Identifying and selecting stakeholders	Pg. 126							X	
102-43	Approach to stakeholders engagement	Pg. 115 Pg.127 Pg. 128							X	
102-44	Key topics and concerns raised	Pg. 128							X	
REPORTING PRACTICES										
102-45	Entities included in the consolidated financial statements	Pg. 7							X	
102-46	Defining report content and topic Boundaries	Pg. 6		WEF 3					X	
102-47	List of material topics	Pg. 124		WEF 3					X	TCFD G.a. TCFD R.c.
102-48	Restatements of information	Pg. 6							X	
102-49	Changes in reporting	Pg. 7		WEF 3					X	

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
102-50	Reporting period	Pg. 7							X	
102-51	Date of most recent report	Pg. 7							X	
102-52	Reporting cycle	Pg. 7							X	
102-53	Contact point for question regarding the resort	Pg. 7							X	
102-54	Claims of reporting in accordance with the GRI Standards	Pg. 6							X	
102-55	GRI content index	Pg. 388							X	
102-56	External assurance	Pg. 7							X	
ECONOMIC PERFORMANCE										
201-1	Direct economic value generated and distributed	Pg. 47		WEF 18 WEF 21 WE 32E		8 - Decent work and economic growth		Active participation and community development. Generation of wealth and income.		
201-4	Financial assistance received from government	Pg. 48		WEF 18				Responsible political participation		
OG11	Number of sites that have been decommissioned and sites that are in the process of being decommissioned	Pg. 94 Pg. 95								
PROCUREMENT										
308-1	New suppliers that were screened using environmental criteria	Pg. 115 Pg. 116 Pg. 119				Principle 8	12 - Responsible consumption and production			
308-2	Negative environmental impacts in the supply chain and actions taken	Pg. 118 Pg. 119		WEF10 E WEF17 E		Principle 7	12 - Responsible consumption and production			
408-1	Operations and suppliers at significant risk for incidents of child labor	Pg. 118 Pg. 119		WEF14		Principle 1 Principle 2 Principle 4	7 - Affordable and clean energy	EM-EP-201b.1	Due diligence Human rights risk situations. Avoid complicity. Discrimination and vulnerable groups Fundamental rights and principles in the workplace.	

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Pg. 267		WEF 22E WEF 14	Principle 1 Principle 4	8 - Decent work and economic growth		Due diligence Human rights risk situations. Avoid complicity. Discrimination and vulnerable groups Fundamental rights and principles in the workplace.		
412-2	Employee training on human rights policies or procedures	Pg. 278			Principle 1	8 - Decent work and economic growth	EM-EP-210a.1	Due diligence Avoid complicity. Promote social responsibility in the value chain		
414-1	New suppliers that were screened using social criteria	Pg. 116 Pg. 119				12 - Responsible consumption and production				
MATERIAL ELEMENT: CLIMATE CHANGE										
103-1	Explanation of the material topic and its Boundary	Pg.182		WEF 7	Principle 8	13 - Climate Action		Mitigation and adaptations to climate change		
103-2	The management approach and its components	Pg. 183		WEF 7	Principle 8	13 - Climate Action		Mitigation and adaptations to climate change		TCFD G.b.
103-3	Evaluation of the management approach	Pg. 183 Pg. 185		WEF 7 WEF 7E	Principle 8	13 - Climate Action		Mitigation and adaptations to climate change		
305-1	Direct (scope 1) GHG emissions	Pg. 185		WEF 7		13 - Climate Action	EM-EP-110a.1 EM-EP-110a.2	Mitigation and adaptations to climate change	X	TCFD M.a. TCFD M.b.
305-2	Energy indirect (Scope 2) GHG emissions	Pg. 185		WEF 7		13 - Climate Action	EM-EP-110a.1 EM-EP-110a.2	Mitigation and adaptations to climate change	X	TCFD M.a. TCFD M.b.
305-3	Other indirect (Scope 3) GHG emissions	Pg. 185		WEF 7		13 - Climate Action		Mitigation and adaptations to climate change		TCFD M.a. TCFD M.b.
305-4	GHG emissions intensity	Pg. 187				13 - Climate Action		Mitigation and adaptations to climate change		TCFD M.a. TCFD M.b.
305-5	Reduction of GHG emissions	Pg. 188 Pg. 189				12 - Responsible consumption and production 13 - Climate Action		Mitigation and adaptations to climate change	X	TCFD M.a. TCFD M.b.
OG6	Volumen of flared or vented hydrocarbon	Pg. 190				12 - Responsible consumption and production 13 - Climate Action		Mitigation and adaptations to climate change		

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
MATERIAL ELEMENT: INTEGRATED WATER MANAGEMENT										
103-1	Explanation of the material topic and its Boundary	Pg. 192		WEF 11E	Principle 8	6 - Clean water and sanitation				
103-2	The management approach and its components	Pg. 193		WEF 11E	Principle 8	6 - Clean water and sanitation				
103-3	Evaluation of the management approach	Pg. 194 Pg. 196		WEF 11E	Principle 8	6 - Clean water and sanitation				
303-1	Water withdrawal by source	Pg. 397		WEF 11E		6 - Clean water and sanitation				
303-2	Water sources significantly affected by withdrawal of water	Pg. 199		WEF 11E		6 - Clean water and sanitation 12 - Responsible consumption and production				
303-3	Water withdrawal	Pg. 201		WEF 10		6 - Clean water and sanitation 12 - Responsible consumption and production	EM-EP-140a.1		X	TCFD M.a.
303-4	Water discharge	Pg. 200 Pg. 203 Pg. 204				6 - Clean water and sanitation 12 - Responsible consumption and production	EM-EP-140a.2		X	

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
303-5	water consumption	Pg. 198 Pg. 205 Water consumption is defined as the difference between total volume of extracted water and total volume of water returned to the natural environment. De acuerdo con la metodología del CDP Water Security Reporting Guidance (2020), estimated water consumption in 2021 was 15.3 million of m3, which are equivalent to 4% of total entries. Most of the consumption is registered in the refinement segment because of high evaportation losses. According to the CDP methodology for water consumption estimation, changes in water storage is not relevant for the calculations. This is fundamented in the continous nature of our activities and, because of the large amounts of water we have to manage, storage is not generally an option in effluent management. For the year 2021, the data corresponding to Production water reinjected for recovery was 12,980 thousand m^3.	The information reported does not include that related to the total consumption of water in all areas (megaliters). Only information related to total water consumption in areas of water stress is included.			7 - Affordable and clean energy 12 - Responsible consumption and production	EM-EP-140a.1		X	TCFD M.a.
OG5	Volume of produced water	Pg. 203		WEF 10		6 - Agua limpia y saneamiento 12 - Producción y consumo responsable				TCFD M.a.
MATERIAL ELEMENT: BIODIVERSITY AND ECOSYSTEM SERVICES										
103-1	Explanation of the material topic and its Boundary	Pg. 206			Principle 8	15 - Life on land		Sustainable use of resources.		
103-2	The management approach and its components	Pg. 206			Principle 8	15 - Life on land		Sustainable use of resources.		
103-3	Evaluation of the management approach	Pg. 208 Pg. 211			Principle 8	15 - Life on land		Sustainable use of resources.		

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Pg. 219		WEF 9		15 - Life on land		Sustainable use of resources.	X	
304-2	Significant impacts of activities, products, and services on biodiversity	Pg. 219		WEF 9		15 - Life on land		Sustainable use of resources.		TCFD M.a.
304-3	Habitats protected or restored	Pg. 219			Principle 8	15 - Life on land		Sustainable use of resources.	X	TCFD M.a.
304-4	IUCN Red list species and national conservation list species with habitats in areas affected by operations	Pg. 219				15 - Life on land		Sustainable use of resources.		
OG4	Number and percentage of significant operating sites in which biodiversity risk has been assessed and monitored	Pg. 219 The description of the hierarchy and management criteria, as well as the description of the management measures that are developed can be consulted at: https://www.ecopetrol.com.co/wps/portal/Home/en/Corporateresponsibility/Environment/Biodiversity		WEF 9	Principle 8	15 - Life on land		Sustainable use of resources.	X	
MATERIAL ELEMENT: CIRCULAR ECONOMY										
103-1	Explanation of the material topic and its Boundary	Pg. 220		WEF13 E	Principle 8	12 - Responsible consumption and production		Sustainable use of resources.		
103-2	The management approach and its components	Pg. 221		WEF13 E	Principle 8	12 - Responsible consumption and production		Sustainable use of resources.		
103-3	Evaluation of the management approach	Pg. 222 Pg. 223		WEF13 E	Principle 8	12 - Responsible consumption and production		Sustainable use of resources.		

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
ECP001	Circularity Maturity Level	Pg. 225 Considering the action line Circularity Metrics, defined in the 2050 roadmap for the implementation of the Circular Economy Model in the framework of the Group's Sustainability Strategy; in 2021 the Company chose to carry out its first qualitative evaluation in circularity, based on the Colombian Technical Guide CTG) 314:2020 In this sense and considering the guide´s flexibility, a revision and adjustment to the questions was carried out to be used on a target sample divided in 2 levels: 1. Professionals who had done the basic virtual course on Circular Economy, which is active on the Ecopetrol University platform. The list of professionals that completed the course is provided by Ecopetrol University directly. 1. Professionals with special designations on circular economy issues or that work in the implementation of the circular economy model in the organization. presidency oversaw these questionnaires. The Level 1 target audience were asked to fill out the questionnaire via email, directly sent from the vice presidency's address.		WEF13 E	Principle 8	12 - Responsible consumption and production		Sustainable use of resources.	X	

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
		The Level 2 audience, interviews were carried out to fill out the questionnaires. These interviews were carried out by the professionals from the HSE vice presidency that led and implement the Circular Economy Model. One the information was tabulated and consolidated the level of circularity proposed by the GTC 314:2020 is identified. The tool was built by suitable professionals, with knowledge and experience in environmental issues, management systems ISO 9001:2015; 14001:2015, OHSAS 18001:2007, sustainability, ecoefficiency, waste and chemical substances and other.								
MATERIAL ELEMENT: USE OF ENERGY AND ALTERNATIVE SOURCES										
103-1	Explanation of the material topic and its Boundary	Pg. 226			Principle 8 Principle 9	7 - Affordable and clean energy				
103-2	The management approach and its components	Pg. 227			Principle 8 Principle 9	7 - Affordable and clean energy				
103-3	Evaluation of the management approach	Pg. 227 Pg. 228			Principle 8 Principle 9	7 - Affordable and clean energy				
302-1	Energy consumption within the organization	Pg. 230 In table 62, the item total energy consumption within the organization does not include the self-generation of energy from the Barrancabermeja refinery during December 2021.				7 - Affordable and clean energy 12 - Responsible consumption and production		Pollution prevention. Sustainable use of resources. Mitigation and adaptations to climate change	X	TCFD M.a.
302-2	Energy consumption outside of the organization	Pg. 230 Table 60				7 - Affordable and clean energy		Pollution prevention. Sustainable use of resources.		
302-3	Energy intensity	Pg. 231				7 - Affordable and clean energy		Sustainable use of resources.	X	TCFD M.a.

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
302-4	Reduction of energy consumption	Pg. 231 The reported number of 12 of the 16 initiatives corresponds to projections to december 2021. The difference between the projected and real values of electric demand is 0.1.				7 - Affordable and clean energy 12 - Responsible consumption and production		Sustainable use of resources.	X	TCFD M.a.
OG2	Total amount invested in renewable energy	Pg. 233			Principle 9	7 - Affordable and clean energy 12 - Responsible consumption and production	EM-EP-420a.3			TCFD M.a.
MATERIAL ELEMENT: FUEL QUALITY										
103-1	Explanation of the material topic and its Boundary	Pg. 238			Principle 8	12 - Responsible consumption and production				
103-2	The management approach and its components	Pg. 239			Principle 8	12 - Responsible consumption and production				
103-3	Evaluation of the management approach	Pg. 241			Principle 8	12 - Responsible consumption and production				
OG14	Volume of biofuels produced	Pg. 243	For this indicator, the information related to the following numbers is not reported: 2.1. Sustainability criteria applied to produce and purchase biofuels. 2.3. Location and area of land dedicated to direct production (ha).		Principle 9	12 - Responsible consumption and production			X	TCFD S.a. TCFD M.a.
MATERIAL ELEMENT: AIR QUALITY										
103-1	Explanation of the material topic and its Boundary	Pg. 244		WEF 13E	Principle 8	3 - Salud y Bienestar		Pollution prevention		
103-2	The management approach and its components	Pg. 245		WEF 13E	Principle 8	3 - Salud y Bienestar		Pollution prevention		
103-3	Evaluation of the management approach	Pg. 246 Pg. 248		WEF 13E	Principle 8	3 - Salud y Bienestar		Pollution prevention		

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
305-6	Emissions of ozone-depleting substances (ODS)	Pg. 250				13 - Climate Action		Pollution prevention		TCFD M.a.
305-7	Nitrogen oxides (Nox), sulfur oxides (SOx), and other significant air emissions	Pg. 248		WEF 7E		13 - Climate Action	EM-EP-120a.1	Pollution prevention	X	
COMPRENHENSIVE WASTE MANAGEMENT										
306-1	Water discharge by quality and destination	Pg. 256		WEF 17E		12 - Responsible consumption and production		Sustainable use of resources.		TCFD M.a.
306-2	Management of significant waste-related impacts	Pg. 254 Pg. 261		WEF 12E		12 - Responsible consumption and production		Pollution prevention Sustainable use of resources..	X	TCFD M.a.
306-3	Waste generated	Pg. 256				12 - Responsible consumption and production		Sustainable use of resources.	X	TCFD M.a.
306-4	Transport of hazardous waste	Pg. 257		WEF 17E		12 - Responsible consumption and production		Sustainable use of resources.		TCFD M.a.
306-5	Water bodies affected by water discharges and/or runoff	Pg. 259-260		WEF 17E		12 - Responsible consumption and production		Sustainable use of resources. Pollution prevention		TCFD M.a.
HUMAN RIGHTS										
410-1	Security personnel trained in human rights policies or procedures	Pg. 276			Principle 1 Principle 2	16 - Peace, justice and strong institutions.	EM-EP-201a.3	Avoid complicity. Work and labor relations. Promote social responsibility in the value chain.		
411-1	Incidents of violations involving rights of indigenous peoples	Pg. 271		WE 22E	Principle 1 Principle 2			Claim resolution. Civil and political rights. Respect for property rights.		
412-1	Operations that have been subject to human rights reviews or impact assessments	Pg. 267		WE 22E	Principle 1 Principle 2 Principle 5		EM-EP-210a.3	Human rights. Due diligence Human rights risk situations		
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	Pg. 279		WE 22E	Principle 1		EM-EP-210a.3	Avoid complicity	X	
MATERIAL ELEMENT: HUMAN TALENT ATTRACTION, DEVELOPMENT AND RETENTION										
103-1	Explanation of the material topic and its Boundary	Pg. 290			Principle 6	8 - Decent work and economic growth				

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
103-2	The management approach and its components	Pg. 292				8 - Decent work and economic growth				
103-3	Evaluation of the management approach	Pg. 296				8 - Decent work and economic growth				
201-3	Defined benefit plan obligations and other retirement plans	Pg. 289		WEF 18				Work conditions and social protection		
401-1	New employee hires and employee turnover	Pg. 308		WEF 17		8 - Decent work and economic growth		Work and labor relations		
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Pg. 284		WEF 18		None		Work and labor relations. Work conditions and social protection		
401-3	Parental leave	Pg. 287				None		Work conditions and social protection		
402-1	Minimum notice periods regarding operational changes	A minimum number of weeks to inform significant operational changes that may affect workers is not defined. Nevertheless, these reports are always made to workers before hand, and thorugh the area managers, as per the Company's communication strategy. Similarly, diaogue spaces are opened with the most representative union organizations, where any changes as well as the Company strategy are presented to guarantee the workers' and organizations' rights.				8 - Decent work and economic growth 16 - Peace, justice and strong institutions.		Work conditions and social protection		
404-1	Average hours of training per year per employee	Pg. 297						Human development and training in the workplace		
404-2	Programs for upgrading employee skills and transition assistance programs	Pg. 296		WEF 16		4 - Quality education		Human development and training in the workplace		
404-3	Percentage of employees receiving regular performance and career development reviews	Pg. 305				None		Human development and training in the workplace	X	

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
405-1	Diversity of governance bodies and employees	Pg. 301-303		WEF 2 WEF 11	Principle 6	5 - Gender Equality		Discrimination and vulnerable groups. Fundamental rights and principles in the workplace Work and labor relations	X	
405-2	Ratio of basic salary and remuneration of women to men	Pg. 303 B. The definition of locations with significant operations used in this indicator: Ecopetrol's operations in Colombia.	The information reported does not include that related to the non-administrative level (base salary + other cash incentives)	WEF 12 WEF 19E	Principle 6	5 - Gender Equality		Discrimination and vulnerable groups. Fundamental rights and principles in the workplace Work and labor relations	X	
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Pg. 312		WEF 21E	Principle 3	16 - Peace, justice and strong institutions.		Due diligence. Human rights risk situations. Avoid complicity. Civil and political rights. Fundamental rights and principles in the workplace. Work and labor relations. Social discourse		
MATERIAL ELEMENT: PROCESS SAFETY										
103-1	Explanation of the material topic and its Boundary	Pg. 328				8 - Decent work and economic growth				
103-2	The management approach and its components	Pg. 328				8 - Decent work and economic growth				
103-3	Evaluation of the management approach	Pg. 329 Pg. 332				8 - Decent work and economic growth				
ECP004	Incidents caused by third parties	Pg. 353								
ECP005	Volume of hydrocarbon spills	Pg. 353					EM-EP-160a.2		X	
ECP006	Incident frequency rate N1 (IFSP N1)	Pg. 332							X	
MATERIAL ELEMENT: OCCUPATIONAL HEALTH AND SAFETY										
103-1	Explanation of the material topic and its Boundary	Pg. 314				8 - Decent work and economic growth				
103-2	The management approach and its components	Pg. 315				8 - Decent work and economic growth				
103-3	Evaluation of the management approach	Pg. 319 Pg. 322				8 - Decent work and economic growth				

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
403-1	Workers representation in formal joint management -worker health and safety committees	Pg. 316				8 - Decent work and economic growth	EM-EP-320a.2	Health and safety at work		
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Pg. 317				8 - Decent work and economic growth	EM-EP-320a.2	Health and safety at work		
403-3	Workers with high incidence or high risk of diseases related to their occupation	Pg. 318		WEF 15		8 - Decent work and economic growth		Health and safety at work		
403-9	Work-related injuries	Pg. 324		WEF 15		8 - Decent work and economic growth		Health and safety at work	X	
403-10	Work-related ill health	Pg. 326		WEF 15		8 - Decent work and economic growth		Health and safety at work	X	
OG13	Number of process safety events, by business activity	Pg. 332				8 - Decent work and economic growth	EM-EP-540a.1		X	
ECP002	Lesions with time loss frequency rate (LTIFR)	Pg. 236				8 - Decent work and economic growth			X	
ECP003	Total recordable lesions frequency rate (TRIFR)	Pg. 327				8 - Decent work and economic growth	EM-EP-320a.1		X	
MATERIAL ELEMENT: LOCAL DEVELOPMENT										
103-1	Explanation of the material topic and its Boundary	Pg. 355				8 - Decent work and economic growth 16 - Peace, justice and strong institutions.				
103-2	The management approach and its components	Pg. 356				8 - Decent work and economic growth 16 - Peace, justice and strong institutions.				
103-3	Evaluation of the management approach	Pg. 357				8 - Decent work and economic growth 16 - Peace, justice and strong institutions.				

INDICATOR		PAGE	OMISION	WEF-IBC	GLOBAL COMPACT	SDG	SASB	ISO26000	VERIFICATION	TCFD
204-1	Proportion of spending on local suppliers	Pg. 117 b. The definition of local used for this indicator: timely, suitable and competitive provisioning of goods and services from suppliers/contractors domiciled in the municipality, state or region where Ecopetrol carries out its operations. c. The definition of location of significant operations used in this indicator: Ecopetrol's operations in Colombia.		WEF 18		8 - Decent work and economic growth		Promote social responsibility in the value chain. Employment relations and skill development. Income and wealth generation	X	
413-1	Operations with local community engagement, impact assessments, and development programs	Pg. 346				8 - Decent work and economic growth		Economic, social, and cultural rights. Employment relations and skill development. Income and wealth generation. Respect for property rights.	X	
413-2	Operations with significant actual and potential negative impacts on local communities	Pg. 348		WEF 28E		8 - Decent work and economic growth	EM-EP-210b.1 EM-EP-540a.1	Economic, social and cultural rights. Pollution prevention. Protection of the environment, biodiversity, and natural habitat restoration. Active participation and community development		
OG9	Operations where indigenous communities are present or affected by activities and where specific engagement strategies are in place	Pg. 273				16 - Peace, justice and strong institutions.				
OG10	Number and description of significant disputes with local communities and indigenous people	Pg. 272		WEF 21E		16 - Peace, justice and strong institutions.				
OG12	Voluntary or involuntary resettlement	Pg. 271								

Annex 02. Associations, guilds, voluntary initiatives, and awards

Associations or guilds that Ecopetrol is part of

(102-13)

Ecopetrol is committed to the sustainable development of the sector and the country. That is why it participates in different dialogue sessions at the local, regional, and international level to engage in high- level discussions. Below is a list of the associations and guilds that the Company is part of:

- American Productivity & Quality Center (APQC)
- Colombian Association of Carbon Market Actors (Asocarbono)
- Colombian Natural Gas Association (Naturgas)
- Colombian Association of Petroleum Geologists (ARPEL)
- National Business Association of Colombia (ANDI)
- Latin American Petrochemical and Chemical Association, APLA.
- Center for the Fourth Industrial Revolution (C4Ri), affiliated to the World Economic Forum
- Water Coalition of Colombia
- Casanare Regional Competitiveness Commission (CRCI)
- Regional Commission for Competitiveness, Science, Technology, and Innovation (CRECI)
- Regional Competitiveness Commission, Santander Competitivo
- Petroleum Industry Committee (CINPAC)
- Business-State-University Committee (CUEE)
- Business-State-University Committee of Santander (CUEES)
- Concentra
- Colombian Security Council
- Basin councils – Territorial Planning.
- Network Corporation of Educational, Research, and Development Institutions of Eastern Colombia (UNIRED)
- CUEE - Business-State-University Committee
- Global Innovation Index (GII)
- International Gas Union (IGU)
- International Petroleum Industry Environmental Conservation Association (IPIECA)
- Membership in the international Plug and Play ecosystem to seek innovative solutions to industry challenges
- Neomundo
- Petroskills Oil & Gas trainning
- Prosantander
- The Global Energy Interconnection Development and Cooperation Organization (GEIDCO)
- The National Center for Construction Education and Research (NCCER)
- World Economic Forum (WEF)
- World Energy Council (WEC)

Table 128.
Below are the payments made to associations and guilds in 2021.

(102-16)

Item	Unit of measurement	2018	2019	2020	2021
Trade associations or tax-exempt entities[1]	COP	585,958,290	721,837,190	692,839,850	513,900,251

Note: Ecopetrol, being a mixed economy company, falls under to the decentralized services sector. By constitutional mandate, the Company is expressly forbidden from making donations or contributions to political parties, movements, or candidates (Articles 110 and 355 of the Political Constitution of Colombia.

The variation is because the affiliation to the Water Coalition of Colombia (COP 180 million) was not paid in 2021.

Voluntary initiatives supported by Ecopetrol

(102-13)

Ecopetrol seeks to stay at the forefront of trends and best practices in all material elements of its management efforts. For this reason, the Company identifies and engages in initiatives that are aligned with its values and principles and that contribute to fulfilling the commitments acquired with its stakeholders. In 202,1 Ecopetrol voluntarily participated in the following initiatives:

- The Commercial and Marketing Vice Presidency (VCM), as part of the "Ecopetrol Country Support" program, has been building the "Providencia Island Solar Ecopark" initiative to mitigate the impacts of Hurricane Lota, which destroyed 98% of the infrastructure and suspended the power service on the island. Currently, it is undergoing the basic engineering process and it is projected to start operating in 2022.
- Partnering Against Corruption Initiative (PACI) of the World Economic Forum
- United Nations Integrity Initiative on Drugs and Crime (UNODC) Colombia
- United Nations Global Compact
- UNODC Compliance Officers Network
- Pacto Global Red Colombia in partnership with the Bogotá Chamber of Commerce within the framework of the "Hacia la Integridad" (Towards Integrity) initiative.
- Transparency Pact of the Vice Presidency of the Republic
- Business Integrity Route
- Interinstitutional Transparency and Anticorruption Network (RITA) of the Secretariat of Transparency.

1. National Business Association of Colombia (ANDI): COP 182,932,000; Chamber of Digital Commerce and Services – ANDI: COP 16,576,940: Colombo-American Chamber of Commerce – AmCham: COP 30,000,000
National Council for Natural Gas Operations: COP 38,491,531; APLA (Latin American Petrochemical and Chemical Association) : COP 11,048,520; LGBTI Chamber of Commerce: COP 12,000,000; Colombian Natural Gas Association – Naturgas: COP 147,720,000; International Gas Union (IGU): COP 26,815,260; Colombian Security Council CCS: COP 48,316,000

- Natural Gas Partnership: path towards carbon-neutrality, signed voluntarily on November 3, 2021, which seeks to consolidate and strengthen the implementation of measures and good practices in the companies affiliated to Naturgas, to contribute to the country's commitments to carbon neutrality by articulating the initiatives of the companies, consolidating the reduction goals and Roadmap, offsetting GHG (Greenhouse Gases), and reaching carbon neutrality by 2030 - 2050.
- Extractive Industries Transparency Initiative (EITI)
- Sectoral Pact for Transparency and for the Fight against Corruption, with the Colombian Chamber of Petroleum Goods and Services (Campetrol)
- Pact for Legality and Transparency in the Promotion of Local Procurement with the chambers of commerce in Ecopetrol's areas of influence.
- Pact for decent work in Casanare
- One trillion trees 1.t.org of the World Economic Fund
- Colombia's Gender Parity Initiative (IPG) since 2019, which is a public-private collaboration model that seeks to accelerate the closing of gender gaps in labor participation, remuneration, and leadership.
- The Valuable 500 since 2021, whose mission is to use the power of business (500 companies in the world) to drive lasting change for the 1.3 billion people around the world living with a disability.
- Subscription to the Colombian Energy Market information system, which describes the behavior of Natural Gas, Electric Power, and LPG Markets.
- Climate and Clean Air Coalition
- Zero Routine Flaring Initiative
- Taskforce on Nature Related Disclosures (TNFD)
- The CEO Water Mandate
- Diverse Productive Ventures Program
- Prompt Payment Initiative to guarantee the cash flow of local entrepreneurs to leverage a favorable environment during the pandemic
- Wildlife Project
- Fibers Project
- Biodiversity and Development for Putumayo.
- Water Governance Mechanism for the Supply Basins in the Municipalities of Villavicencio and Akacías
- Sembrar nos une
- Fundación Natura
- ISA Conexión Jaguar
- Pacto Unidos por un nuevo aire de Bogotá
- Pact for air quality in Medellin and Valle de Aburrá.
- Hydrological environmental base line and surface water quality in the Middle Magdalena Valley.
- Barrancabermeja Weather Radar
- Agreement with the Autonomous Corporation of Santander to take action for the recovery of the swamp and Caño San Silvestre
- Agreement with the Colombian Petroleum Association to participate in a planning instrument for land management in the hydrocarbons sector
- Sector agreement between the Ministry of Environment and Sustainable Development and Ecopetrol S.A.
- Voluntary Agreement with the Ministry of Mines and Energy to promote carbon neutrality and climate resilience in the hydrocarbon sector
- Support for the Aroma and Health Nursery initiative in La Cira Infantas
- Eco-environmental Schools
- Through Fundación El Alcaraván, Ecopetrol undertakes volunteer and social management work in the area of influence of the Cravo Norte, Rondón, Chipirón, and Cosecha contracts.
- Occupational training for the communities near the refinery. NCCER- SENA-Torque, electricity, metalworking, HSE, Welding, and the productive vocation of the territory
- Agreement with CORPOEDUCACIÓN to improve Educational Quality in ICBF centers and schools in Barrancabermeja.
- On a voluntary and non-binding basis, the Cartagena Refinery - Production Management took part in the review group of the ARPEL Project "Energy Transition of the Refining Sector.

Statutes, principles, and other economic, environmental, and social documents developed externally in addition to the ones that Ecopetrol is aligned with

(102-12)

- Principles of the United Nations Global Compact
- Sustainable Development Goals (SDG)
- National Carbon Neutrality Program led by the Ministry of Environment and Sustainable Development

Awards and/or recognitions granted to Ecopetrol in 2021

- Innovation Ranking: in 2021, Ecopetrol was considered the second most innovative company in Colombia, a recognition awarded by ANDI and Revista Dinero. Thanks to innovation and the development of new technologies, the Company proved that its TESG strategy contributes to the transformation of the country.
- Innovadores de Santander Award: recognition by the Chamber of Commerce of Bucaramanga within the framework of the fifteenth edition of the Award, highlighting the work of the ICP, for being the most innovative company in Santander, and the second in the country.
- The market and various analysts recognized Ecopetrol's expansion and internationalization process in entering new markets and exporting new products to international markets.
- Ecopetrol's anti-corruption policies and procedures were assessed by the United Nations Global Compact with a rating of 100%.
- In the Business Integrity Route of the Secretariat of Transparency of the Presidency of the Republic, the Company was rated 100% in all the self-assessment criteria of the integrity and compliance program.
- Ecopetrol was one of the 3 companies invited to participate as mentors for other companies in Transparency for Colombia's Corruption Risk Management measurement pilot.
- Bancolombia's analysis on Ecopetrol's ESG performance concluded as follows: "Analysts recognize that Ecopetrol's practices and policies are among the top tier of the industry: bribery and anti- corruption policies, audits, training on ethics and money laundering, also including suppliers.
- Winner of Corporate Social Responsibility, Premios Portafolio 2021, Mejor Gente, Mejor País: for the Ecopetrol Group's solidarity with the country during the pandemic; for promoting economic reactivation and contributing to improving the quality of life of Colombians.

- Awards for the promotion of diversity and inclusion of women by supporting the "Ella es Astronauta" (She is an Astronaut) Program, which fosters the interest of female beneficiaries in the fields of Science, Technology, Engineering, Arts, and Mathematics. Winner in SDG 5 Gender Equality.
- 2021 National Ranking of Inclusive Companies of the National Consulting Center (CNC) and the LGBT Chamber of Commerce of Colombia (CCLGBT). Ecopetrol ranked fourth.
- Inclusive Company Seal, highest recognition for inclusion awarded by ANDI - National Business Association of Colombia, the Partnerships for Reconciliation program of USAID Colombia, ACDI/VOCA Colombia, and Deloitte.
- 91% rating on the United Nations Women Empowerment Principles (WEPS)
- Recognition at the Women Economic Forum held in Colombia, at the She Is Global Awards, as an Organization with the Power to create Change towards Gender Equity.
- Involvement in the Book "Good practices towards gender equality in large organizations in Colombia, under the leadership of the SHE IS FOUNDATION and CIDER – Universidad de los Andes.
- Recognition for Sustainable Development Good Practices led by the UN Global Compact, for the 100x100 Program, which promotes decent work and fosters respect for Human Rights through open innovation.
- The Plug and Play Tech Center recognized Ecopetrol for Corporate Innovation, for thinking differently, boosting digital-based start-ups, and implementing new capabilities in the organization.
- Ecopetrol was chosen for the Case Study on Cybersecurity Principles for the O&G Boards of Directors in the WEF's O&G Industry Cyber Resilience Playbook.
- Ernesto Gutiérrez de Piñeres, Digital Vice President, was included for the second year in the HITEC 50 program, which recognizes the achievements of the most influential Hispanic executives in the technology industry.
- According to the National Agency for Judicial Defense of the State, Ecopetrol S.A.'s judicial management efforts undertaken by the Legal Vice Presidency has been recognized as one of the most efficient and successful in the public sector.
- Fitch Ratings maintained the credit rating at BB+, with a stable outlook, and the stand-alone credit rating at bbb.
- S&P maintained the long-term international rating at BB+, with a stable outlook, and the stand- alone credit rating at 'bbb-'.
- The Company was awarded the Investor Relations Recognition (IR) granted by the Colombian Stock Exchange (BVC), thanks to the adoption of best practices in information disclosure and investor relations.
- Dow Jones Sustainability Indexes-DJSI: In its 2021 edition, the Company ranked 1st in the Supply Chain criterion, with 92 points (+3 vs. 2019), positioning itself as the most sustainable company in the global industry.
- Ecopetrol S.A. was recognized as a Business Leader by the Chemical Leasing Award 2021 of the United Nations Industrial Development Organization (UNIDO) for the implementation of the Circular Economy model in the supply strategies for Hydroprocess catalysts in the Cartagena Refinery, Chemical treatments in the Cartagena Refinery, and Chemical treatments in the Management of the Apiay operations.
- Ecopetrol S.A. ranked first in the "Red Muévete Mejor" awards granted to National Public Entities for the "Sustainable and Different Mobility" initiative.

CERTIFICATIONS

- Resolution of the Ministry of Science, Technology, and Innovation, certifying the ICP as a Technological Development Center for 5 years
- The ICP's Metrology Laboratory was granted the Accreditation Certificate by the National Certification Body (ONAC)
- ECOPETROL qualified as Authorized Economic Operator (OEA) for both imports and exports, by means of Resolution 005251 and 52 of July 19, 2021. This certification is the highest level of trust generated by a foreign trade company before the Colombian State and its customs authorities.
- Silver Seal in the Equipares certification process related to the prevention and punishment of sexual harassment, with a score of 100/100. The Equipares Seal is a certification granted by the Ministry of Labor and the Presidential Council for Women's Equality, with the technical support of UNDP, to companies and organizations that implement the Gender Equality Management System.
- Icontec renewed the Company's ISO 9001: 2015, 14001:2015, and ISO 45001:2018 certifications in 2021, concluding that the risk management system is adequate, without any non-conformities.
- In 2021, Ecopetrol verified the maturity in the implementation of Diversity, Equity, and Inclusion policies, practices, processes, and initiatives according to the GDEIB 2021 Global Diversity, Equity, and Inclusion Benchmarks, with the authorization of the GDEIB Authors Team and The Center for Global Inclusion. Upon reviewing the elements set forth in the GDEIB Model, Ecopetrol is at a general level of 4.0 (progression).
- Ecopetrol was awarded the Good Innovation Practices Seal (BPI), which is a shared brand certificate between the Bogotá Chamber of Commerce and ICONTEC, granted to companies that have implemented an Innovation Management System (SGI) and that comply with at least 76% of the benchmarks created by both institutions, based on the NTC 5801:2018 Standard on "Research, development, and innovation management. The seal evinces the maturity level of Ecopetrol's system, with a score of 93.1%, equivalent to an advanced maturity model.
- Recertification of the HSE and Quality Management System by Icontec.

Annex 03. Acronyms in the 2021 Integrated Sustainable Management Report

INITIALS	Meaning
ACPM	Diesel Oil
ADR	American Depository Receipts
ANH	National Hydrocarbon Agency
ANLA	National Authority for Environmental Licenses
ANP	Agência Nacional do Petróleo, Gás Natural e Biocombustíveis(National Petroleum, Natural Gas, and Biofuels Agency, by its Portuguese acronym)
ANT	National Land Agency
AP-42	Compilation of Air Pollutant Emissions Factors
AR5	The Fifth Assessment Report of the Intergovernmental Panel on Climate Change.
ARD	Domestic Wastewater
ARPEL	Regional Association of Oil and Natural Gas Companies in Latin America and the Caribbean
BVC	Colombian Stock Exchange
CAJD	Audit and Risk Committee of Ecopetrol S.A.'s Board of Directors
CAPEX	Capital expenditure
CAR	Regional Autonomous Corporation
CAS	Santander Autonomous Corporation
CAUJD	Audit and Risk Committee of the Board of Directors
CCAC	Climate & Clean Air Coalition
CCTV	Current Collective Labor Agreement
CCUS	Carbon Capture, Use, and Storage
CEDCO	Colombia Energy Development Co.
CEO	Chief Executive Officer
CEV	Truth Clarification Commission
CNC	National Consulting Center
CND	National Dispatch Center
CNOOC	China National Offshore Oil Corporation
COBIT	Control Objectives for Information and related Technology
Colcap	Stock market index of the Colombian Stock Exchange
Conpes	National Council for Economic and Social Policy
COP	Colombian peso
Corinair	Core inventory air emissions
COSO	Committee of Sponsoring Organizations of the Treadway Commission
CRC	Shared Risk Agreement
CREG	Energy and Gas Regulation Commission
CT+I	Science, Technology, and Innovation
CVX	Chevron USA Inc.
D&I	Diversity and inclusion
DANCP	Directorate of the National Authority for Prior Consultation
DDHH	Human rights
DDV	Voluntary Disconnectable Demand
DIAN	National Directorate of Taxes and Customs
DJSI	Dow Jones Sustainability Index
E&P	Exploration and production
EA	Ecopetrol América LLC
EAL	Ecopetrol América (Gulf of Mexico)
Ebitda	Earnings before interest, taxes, depreciation, and amortization
ECAs	Export Credit Agencies
EEA	European Environmental Agency
ESS	Ecopetrol Energía S.A.S.ESP
EIA	Environment Impact Assessment
EOR	Enhanced Oil Recovery
EPA	Environmental Protection Agency
EPP	Vice Presidency of Projects and Drilling
EPR	Proprietary Company of the Network
EY	Ernst & Young
FAO	The Food and Agriculture Organization of the United Nations
FCC	Fluid Catalytic Cracking
FCPA	Foreign Corrupt Practice Act
FDN	Financiera de Desarrollo Nacional
FECOC	Colombian Fuel Emission Factors
FPADM	Financing the Proliferation of Weapons of Mass Destruction
FPIC	Free, Prior, and Informed Consent
FT	Terrorist Financing
GBTUD	Giga BTU per day unit
GDEIB	Global Diversity, Equity, and Inclusion
GE	Ecopetrol Group
GEI	Greenhouse gases
GHG	Greenhouse Gas
GIR	Integrated Risk Management
GLP	Liquefied petroleum gas
GMA	Management of Development and Production Operations of the Seas
GNV	Vehicle Natural Gas
GRI	Global Reporting Initiative

GRT	Corporate Responsibility Management
GSF	Physical Security Management
GSS	Sustainability and Decarbonization Management
GTC	Colombian Technical Guide
GWh	Gigawatt hour
HSE	Health, Security, and Environment
I+D+i	Research, development, and innovation
IaaS	Infrastructure as a Service
IAvH	Alexander von Humboldt Institute
AAI	Industry and commerce tax
ICBF	Colombian Family Welfare Institute
Icetex	Mariano Ospina Pérez Colombian Institute of Educational Credit and Technical Studies Abroad
ICO	Investment for Operational Continuity
Icontec	Colombian Institute of Technical Standards and Certification
ICP	Innovation and Technology Center
IIE	Energy intensity index
ILP	Long-term incentives
IoT	Internet of things
IPCC	Interconnection of the Cartagena Crude Oil Plants
IPIECA	International Petroleum Industry Environmental Conservation Association
ISA	Interconexión Eléctrica S.A. ESP
ISO	International Organization for Standardization
IVA	Value Added Tax
JD	Board of Directors of Ecopetrol S.A.
JKM	Japan Korea Market
JOA	Joint Operating Agreement
kbd	Thousand barrels per day
Kbped	Thousand barrels of oil equivalent per day
Klb	Kilopounds
KPI	Key Performance Indicator
KRI	Key risk indicator
kt	Kiloton
Kv	Kilovolts
kW	Kilowatts
LA	Money Laundering
LDAR	Leak Detection and Repair
LNG	Liquefied Natural Gas
MADS	Ministry of Environment and Sustainable Development
Mbtu	1,000 BTUs (British Thermal Unit)
MEM	Wholesale Energy Market
MHa	Millions of Hectares
MHCP	Ministry of Finance and Public Credit

MM	Major Maintenance
MMA	Environmental Management Measures
Mmbd	Million barrels per day
MME	Ministry of Mines and Energy
MW	Megawatts
NPS	Net Promoter Score
NYSE	New York Stock Exchange
O&G	Oil and Gas
OCDE	Organization for Economic Co-operation and Development
ODC	Colombian Pipeline
SDG	United Nations Sustainable Development Goals
ILO	International Labor Organization
OMS	World Health Organization
OPC	Citizen Participation Office
OPEP	Organization of Petroleum Exporting Countries
PaaS	Platform as a Service
PACI	Partnering Against Corruption Initiative
PBC	Community Benefit Programs
PEP	Politically Exposed Person
PHVA	Plan, Do, Check, and Adjust
PIB	Gross domestic product
PMAI	Comprehensive Environmental Management Plans
PPII	Comprehensive Research Pilot Projects
PQRS	Petitions, Complaints, Claims, and Suggestions
PRA	Environmental Recovery Plan
PRTLGV	Plan for the Reconversion of Clean Technologies in Discharge Management
PSC	Production Sharing Contract
PTAR	Wastewater treatment plant
RANE	Expert Meeting
RCD	Construction and Demolition Waste
RCSA	Proeléctrica S.A.S. ESP
ROACE	Return on Average Capital Employed
RVO	Renewable Volume Obligation
SaaS	Software as a Service
SAO	Ozone Depleting Substances
SASB	Sustainability Accounting Standards Board
SBN	Nature-Based Solutions
ICS	Internal Control System
SCM	Stakeholder Capitalism Metrics
SEQ	Securities and Exchange Commission
SHU	Selective Hydrogenation Unit
SIEPAC	Central American Electrical Interconnection System

SIVJRNR	Comprehensive System for Truth, Justice, Reparation, and Non-Repetition
SNC	Natural Climate Solutions
SOX	Sarbanes Oxley Act
SP	Process Safety
SRI	Integrated Risk Management System
TBG	Balanced Management Dashboard
TCFD	Task Force on Climate-related Financial Disclosures
TESG	Technology, Environment, Social, and Governance
TIC	Information technology and communications
TIR	Internal rate of return
TNC	The Nature Conservancy
TNFD	Taskforce on Nature-related Financial Disclosures
TonCO2eq	Ton Carbon Dioxide Equivalent
TRIF	Total recordable injury frequency rate
TTF	Title Transfer Facility
UIAF	Information and Financial Analysis Unit
UICN	International Union for Conservation of Nature
UN	United Nations
UNODC	United Nations Office on Drugs and Crime
UPME	Mining-Energy Planning Unit
USD	American dollar
USD/bl	Dollars per barrel
USGOM	United States Gulf of Mexico
USO	Workers Union
VAB	Vice Presidency of Procurement and Services
VAS	Vice Presidency of Assets with Partners
VCM	Commercial and Marketing Vice Presidency
VCU	Corporate Vice Presidency of Compliance
VDI	Digital Vice Presidency
VDP	Vice Presidency of Development and Production
VDS	Vice Presidency of Sustainable Development
VEX	Vice Presidency of Exploration
VHSE	HSE Vice Presidency
VMM	Middle Magdalena Valley
VOCs	Volatile Organic Compounds
VPN	Net Present Value
VRP	Vice Presidency of Refining and Industrial Processes
WBSD	World Business Council for Sustainable Development
WCS	Wildlife Conservation Society
WEF	World Economic Forum
WEPs	Women's Empowerment Principles
YNC	Unconventional Reservoirs

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