

2023

SUSTAINABILITY ACCOUNTING STANDARDS BOARD (SASB) METRICS REPORT



We are energy that transforms!

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THE PRESIDENT OF
ECOPETROL S.A.

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01

Message from the president of Ecopetrol S.A.



In line with our strategic pillar of generate value with SosTECnibilidad® and transparency with our stakeholders, we are proud to present the results report within the framework of the Sustainability Accounting Standards Board (SASB) standard for the period 2023, which is an international reference on the disclosure of sustainability metrics at the industry level.

Throughout 2023, the Ecopetrol Group ratified and continued with the execution of its long-term strategy called “Energy that Transforms”, which includes the pillars of (i) growing with the energy transition, (ii) generate value with SosTECnibilidad®, (iii) cutting-edge knowledge, and (iv) competitive returns.

This report reflects the efforts and results obtained by the entire Ecopetrol Group, to achieve the objectives proposed in the pillar of “Generate value with SosTECnibilidad®,” for which we invested a total of \$1.94 billion COP during 2023.

In our decarbonization goals, the Group highlights the reduction of approximately 1.5 MtCO₂e between 2020 and 2023, of which in 2023 we managed to reduce 581,532 tCO₂e, exceeding the goal established for this year by 40%.

Along these same lines, efforts to increase energy efficiency in our operation have generated 10.86 PJ between 2018 and 2023, which represents \$262 billion COP in savings for the Group and 708 ktonCO₂e reduced for the same period.

Our commitment to decarbonization and energy security is a fundamental axis for our line of low-emission solutions, which has allowed us to reach 472 MW incorporated into our energy matrix by 2023, as a result of our process of incorporating non-conventional energy sources of renewable energy.

Finally, within the framework of the COP 28 Climate Change Conference of the Parties (Dubai), the Ecopetrol Group's commitment to goals such as: i) Net zero carbon emissions by 2050 (scopes 1 and 2) was highlighted, (ii) Eliminate routine gas flaring by 2030 and (iii) Aim for zero net methane emissions in 2030. Along these same lines, the Group obtained recognition from the United Nations Environment Program (UNEP) for its progress in measuring, reporting, and reducing methane emissions goals.

Our environmental approach has allowed the Group to reuse 79% of the water required for its operation during 2023, reducing pressure on water resources in Colombia. In line with our commitment to care for nature, we went from 15 to 20 eco-reserves where more than 500 species of flora and fauna are conserved in a cumulative 15,583 hectares.

Regarding the social dimension, the frequency of total recordable injuries (TRIF) has decreased from 0.6 to 0.3 compared to the base year of calculation 2019. Likewise, the social and environmental investment made by the Group stood at 615 billion COP in 2023, prioritizing megaprojects of road and community infrastructure, education, sports, and health.

Based on the above, our SASB report incorporates metrics related to the environment, social capital, human capital, innovation and the business model, leadership, and governance for 28 companies of the Ecopetrol Group distributed in the Extraction and Processing sectors. of Minerals, Resource Transformation, Renewable Resources and Alternative Energies, Infrastructure and Services, with which 98% coverage was achieved in the reported metrics (2022: 98% and 2021: 89%).

Our goal for 2024 is to protect the integrity and value of our business as we accelerate toward portfolio diversification and a just energy transition.

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Scope of the report
by sector and
SASB
standard



Sectors we report



¹ By the end of 2023, Oleoducto Bicentenario S.A.S. - OBC merged with Cenit S.A.S.; however, for presentation purposes of this report the metrics of OBC are disclosed separately.

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SASB Metrics Report 2023



Activity metrics

Oil & Gas – Exploration & Production

EM-EP-000.A *(1) Oil
(2) Natural gas
(3) Synthetic oil
(4) Synthetic gas*

Oil & Gas Exploration & Production												
Metric	1			2			3			4		
Unit	Mbbbl/day			MMscf/day			MMbbl/day			MMscf/day		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Ecopetrol S.A.	485.91	492.80	498.71	601.14	640.29	624.21	0			0		
Hocol	18.10	17.10	17.00	110.50	112.69	113.86	0					
Ecopetrol Permian	13.48	23.48	29.07	14.52	35.77	52.01	3.21	7.68	11.48			
Ecopetrol America	9.45	8.10	5.86	8.33	6.89	5.41	0					
Ecopetrol Brasil	Not applicable											

EM-EP-000.B *Number of offshore sites*

Metric	1		
Unit	Number		
Year	2021	2022	2023
Ecopetrol S.A.	2	2	2
Hocol	2	2	2
Ecopetrol Permian	0	0	0
Ecopetrol America	3	3	3
Ecopetrol Brasil	0	0	0

Ecopetrol S.A.: The fields correspond to Chuchupa and Ballena where Ecopetrol S.A. has a 57% stake and Hocol 43%.

Ecopetrol America: Marco Polo Platform (GC-608) - operated by Occidental, processing K2 production (Occidental) with a 20.8% stake.

Petronius Platform (VK-786) – operated by Chevron, processing Dalmatian (Murphy) production with a 30% operating stake.

Gulfstar-1(MC-724) platform – operated by Hess, processes the production of Esox (Hess) with an EA share of 21.43% and the production of Gunflint (QuarterNorth Energy) with a 31.5% stake.

EM-EP-000.C		Number of onshore sites		
Metric	1			
Unit	Number			
Year	2021	2022	2023	
Ecopetrol S.A.	189	156	164	
Hocol	52	53	50	
Ecopetrol Permian	114	231	350	
Ecopetrol America	0	0	0	
Ecopetrol Brasil	0	0	0	

Overview of Land-Based Site Types:

- Oil Type: Corresponds to fields that have oil or petroleum wells.
- Gas Type: Corresponds to fields that have gas wells.
- Definition of a well: Refers to any drilling in the ground designed for the purpose of finding and extracting combustible fluid, whether oil or gaseous hydrocarbons.
- Definition of field: Refers to an area with a certain number of wells from which hydrocarbons are extracted from the subsoil.

Ecopetrol S.A.: The fields in production in 2023 are higher than those reported in 2022 due to:

- Incorporation of Tinamú, Alqamari and Kimera exploration assets.
- Production of development fields in Arauca, Pachaquiario, Pompeya and Libertad.

Likewise, 159 onshore sites correspond to fields under development and 5 to exploratory fields (Flamingos, Lorito, Tinamú, Alqamari and Kimera).

Ecopetrol Brasil: The company follows the standards of the best international practices of the Exploration & Production industry, in addition to the specific regulations of Brazil, under local rules and laws with the definitions of the industry. According to Law 9.478/1997, the definition of field is regulated in its article 6, numeral XIV: "XIV - Oil or Natural Gas Field: crude oil or natural gas producing area, from a continuous reservoir or from more than one reservoir, with variable depths, encompassing production facilities and equipment;" The definitions of types of wells and their specific nomenclatures are regulated by the ANP (Agência Nacional do Petróleo, Gás Natural e Biocombustíveis) standard, according to ANP Resolution # 699/2017.



Oil & Gas – Midstream

EM-MD-000.A		(1) Natural Gas (2) Crude Oil (3) Refined Petroleum Products transported by mode of transport							
Transport & Logistics									
Metric	1			2			3		
Unit	ton/day			Mbbbls/day Pipelines			Mbbbls/day Polyducts		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023
Enit S.A.S.	0	0	0	268.26	299.60	302.41	277.19	298.12	305.88
Oleoducto Central S.A.S. - Ocesa	0	0	0	537.35	538.48	579.10	0	0	0
Oleoducto de los Llanos Orientales S.A. - ODL	0	0	0	196	213	244	0	0	0
Oleoducto Bicentenario S.A.S. - OBC	0	0	0	20.80	7.98	17	0	0	0
Oleoducto de Colombia S.A. - ODC	0	0	0	187.23	191.62	189.77	0	0	0
Promotora de Gases del Sur - Progasur	4,701	5,489	4,468	0	0	0	0	0	0

Enit: The volumes of crude oil transported correspond to the following systems: Vasconia - Galán, Ayacucho - Galán (L8 and L14), Ayacucho - Coveñas (L16 and L24), the OTA and OSLA.

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, Cartagena - Baranoa + Sébastopol Injection.

Ocesa: The barrels of crude oil transported correspond to Segment II. The values presented as of December of each year are calculated based on the best estimate available at the closing date. Faced with the increase in the volume of barrels of crude oil transported, national production and production in the area of influence increased. Ocesa's segment II serves as a catchment line for the nearly 300 production fields in the Eastern Plains of Colombia (Meta and Casanare). In 2023, it served 94.23% of the natural market in the area of influence.

ODL and OBC: They do not transport by tankers or trucks, only by pipelines (Crude oil).

Refining & Marketing, Chemicals, Biofuels & Gas Distributors

EM-RM-000.A (1) Refining throughput of crude oil and other feedstocks

Refining & Marketing			
Metric	1		
Unit	Bbls-e		
Year	2021	2022	2023
Refinería de Cartagena	52,097,679	51,092,982	72,200,556
Refinería de Barrancabermeja	77,016,503	79,467,952	80,960,587

Refinería de Barrancabermeja: The amount of other raw materials processed corresponds to fuel gas purchased for the process (generation of H2 for hydrotreating).

Refinería de Cartagena: The increase presented in 2023 is due to the fact that in September 2022 the project called IPCC (Integration of Cartagena Crude Oil Plants) was introduced, which incorporated more crude cargo with the entry of the U-001 crude unit, which is the original unit of this refinery before the expansion and modernization project.

RT-CH-000.A (1) Production by reportable segment

Chemicals			
Metric	1		
Unit	Ton		
Year	2021	2022	2023
Esenttia	499,759	469,046	440,783

Esenttia: Decrease in plant production due to contraction of commercial demand and high volatility in commodity prices.

RR-BI-000.A (1) Biofuels production capacity

Biofuels			
Metric	1		
Unit	Mgal		
Year	2021	2022	2023
Ecodiesel	40.22	41.76	43.95

Ecodiesel: For 2023, there is a 5% increase in the production of Biodiesel from Palma, compared to 2022, due to optimizations made in the production process.

IF-GU-000.A Number of: (1) Residential, (2) Commercial, (3) Industrial Customers Served, (4) Other

Gas Distributors												
Metric	1			2			3			4		
Unit	Number			Number			Number			Number		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Alcanos	945,922	995,121	1,037,372	11,490	12,096	12,512	220	228	231	509	545	555
Gases del Oriente	203,470	219,042	229,801	1,553	1,917	2,389	9	10	12		0	
Metrogas	145,497	153,794	158,320	1,819	2,046	2,098	19	20	23	34	35	39

Gases del Oriente: The Company managed to increase the number of users served by 5.08%, representing a total of 11,231 new users in 2023.

Metrogas: Other customers served by the Company are equivalent to the official customers, together with the CNG (Natural Gas Vehicle) Company and other marketers.

EM-RM-000.B Refining operative capacity

Refining & Marketing			
Metric	1		
Unit	Mbbbls/day		
Year	2021	2022	2023
Refinería de Cartagena	0.15	0.21	0.21
Refinería de Barrancabermeja	0.24	0.24	0.24

Refinería de Barrancabermeja: The results obtained during the year are generated by the use of the available cargo capacity due to the management carried out by the Refinery to acquire and process domestic and imported crude oils. The values for 2021 and 2022 were restated for comparison purposes with 2023.

RR-BI-000.B Production of (1) renewable fuel, (2) advanced biofuel, (3) biomass-based diesel, and (4) cellulosic biofuel

Biofuels												
Metric	1			2			3			4		
Unit	Mgal			Mgal			Mgal			Mgal		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Ecodiesel	0	0	0	40.22	41.76	43.95	0	0	0	0	0	0

IF-GU-000.B *Natural gas supplied to (1) residential customers, (2) commercial customers, (3) industrial customers, (4) transferred to third parties, (5) others*

Gas Distributors															
Metric	1			2			3			4			5		
Unit	MMBtu			MMBtu			MMBtu			MMBtu			MMBtu		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Alcanos	4,421,000	4,536,735	5,207,949	711,105	730,462	821,675	401,521	369,914	423,813	2,347,259	2,111,157	2,710,808	38,605	38,700	44,363
Gases del Oriente	1,245,351	1,212,377	1,246,745	110,020	158,357	188,095	330,825	431,592	449,259		0			0	
Metrogas	900,844	906,713	897,259	172,620	201,269	198,085	66,510	67,783	62,700	48,949	39,740	66,216	12,026	55,269	89,295

Metrogas: The variations correspond to the increase in the CNG segment as a result of the implementation and acquisition of new customers (service pumps) that leads to an increase in volume for this sector.

RR-BI-000.C *Amount of feedstock consumed in production*

Biofuels			
Metric	1		
Unit	Tone		
Year	2021	2022	2023
Ecodiesel	133,127	135,146	142,668

IF-GU-000.C *Length of gas (1) transmission and (2) distribution pipelines in Kilometers(km)*

Gas Distributors						
Metric	1			2		
Unit	Km			Km		
Year	2021	2022	2023	2021	2022	2023
Alcanos			14,251		14,831	14,954
Gases del Oriente	Not applicable				3,123	3,170
Metrogas			1,835		1,873	1,886

Engineering & Construction Services

IF-EN-000.A *Number of active projects*

Engineering & Construction Services			
Metric	1		
Unit	Number		
Year	2021	2022	2023
ISA INTERVIAL	11	4	1

ISA INTERVIAL: The Company's main active project is the construction of Ruta del Loa, an 11-kilometer highway in northern Chile, which will be put into service to users during the first half of 2024.

IF-EN-000.B *Number of commissioned projects*

Engineering & Construction Services			
Metric	1		
Unit	Number		
Year	2021	2022	2023
ISA INTERVIAL	4	4	1

ISA INTERVIAL: During 2023, the Company delivered the implementation of the Free Flow system at the Fifth Trunk Toll in Chile.

IF-EN-000.C *Total revenue contractually expected*

Engineering & Construction Services			
Metric	1		
Unit	SCOP		
Year	2021	2022	2023
ISA INTERVIAL	\$ 904,029,000,000	\$ 2,868,846,000	\$ 0

ISA INTERVIAL: The Company does not report lost income for the 2023 cut-off, given that the ongoing project has not received authorization to start collection.



Professional & Commercial Services

SV-PS-000.A									
Number of employees by: (1) full-time and part-time, (2) temporary, and (3) contract									
Professional & Business Services									
Metric	1			2			3		
Unit	Number			Number			Number		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023
XM	267	333	369	28	53	59	295	333	369
US Trading	Not applicable	Not applicable	3	Not applicable	Not applicable	0	Not applicable	Not applicable	0
Trading Asia	Unavailable	4	8	Unavailable	0	0	Unavailable	4	8

Ecopetrol US Trading: The Company started operations in October 2023.

Ecopetrol Trading Asia: No information was recorded for 2021 because Trading Asia began operations in July of the same year and began reporting its indicators from 2022.

SV-PS-000.B						
(1) Employee hours worked, (2) percentage billable hours						
Professional & Business Services						
Metric	1			2		
Unit	Hours			%		
Year	2021	2022	2023	2021	2022	2023
XM	Unavailable	671,417	674,041	Not applicable		
US Trading	Not applicable		1,344	Not applicable		0
Trading Asia	Unavailable	5,048	11,040	Unavailable		0

Electric Utilities & Power Generators

IF-EU-000.C			
Length of transmission and distribution lines			
Electric utilities			
Metric	1		
Unit	Km		
Year	2021	2022	2023
ISA	Not applicable	Not applicable	Not applicable
ISA CTEEP	16,003	16,003	16,284
ISA REP	11,836	11,838	12,189
ISA INTERCOLOMBIA	11,640	11,982	12,048
ISA INTERCHILE	1,954	1,954	1,954
ISA TRANSELCA	1,588	1,588	1,587

ISA: Transmission line kilometers are reported by ISA affiliates.

Environment chapter

Greenhouse Gas Emissions

EM-EP-110a.1 EM-MD-110a.1 EM-RM-110a.1 RT-CH-110a.1 IF-EU-110a.1									
(1) Gross Global Scope 1 Emissions (2) Percentage of Methane (3) Percentage Covered Under Emission-limiting Regulations									
Oil & Gas Exploration & Production									
Metric	1			2			3		
Unit	TonCO ₂ eq			%			%		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023
Ecopetrol S.A.	7,490,783	7,212,126	6,792,141	26.58	24.28	23.44	Not applicable	Not applicable	Not applicable
Hocol	271,213	250,397	295,548	3.09	3.04	14.17	Not applicable	Not applicable	Not applicable
Ecopetrol Permian	26,454.53	36,209.6	47,053.08	9.00	7.70	9.81	100	100	100
Ecopetrol America	35,804	39,290	26,261	22.00	31.91	2.04	0	0	0
Ecopetrol Brasil	Not applicable			Not applicable			Not applicable		

After verification processes of gas inventories, actual calculation of emissions after estimates or projections made or changes in methodology from theoretical calculation to direct measurement, some of the 2022 values associated with emissions were recalculated.

Ecopetrol S.A.: The Company has an inventory of GHG emissions, prepared under the ISO 14064-1 Standard and the Greenhouse Gas Protocol for corporate inventories (GHG Protocol) and the calculation of Ecopetrol's GHG emissions is done through the Atmospheric Emissions Management System – SIGEA, which uses the SAP Environmental Compliance – SAP EC calculation engine. The inventory is conducted under the Operational Control approach, in this sense, 100% of the emissions are accounted for in those facilities where the company has control of the operation, regardless of whether it is an owner or partner. In accordance with the above, the inventory includes emissions from the Barrancabermeja and Cartagena refineries and in the production segment, the corresponding emissions from the assets operated and controlled by Ecopetrol are included.

The GHG emissions estimation methodology, used in the inventory, is a combination of mass balances, emission factors, simulation models, and fixed measurements. The choice of methodology to estimate GHG emissions from each source that is part of the inventory was defined depending on the quality of the available input data. CO₂ emissions from combustion and flaring processes are estimated from mass balance, considering the composition of the fuels used. In relation to the methane emissions associated with the flaring process in teas, the mass balance is used as an estimation model, which, in addition to the composition of the gas burned, takes into account the efficiency of the tea. The fixed measurements that have been conducted in the production segment of the fugitive and vent categories have served as the basis for the establishment of our own emission factors. For all other methane sources, generic industry emission factors (Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Gas Industry – API, FECOC, UPME, AP-42, ARPEL, CORINAIR) are used. N₂O emissions are estimated from emission factors, mostly from AP42.

It is important to mention that, in 2023, the production segment had a decrease in its emissions of 6%, compared to 2022, due to the implementation of emission reduction projects, which have achieved a significant closure of leaks and a decrease in gas flared in tea.

Hocol: the greenhouse gas inventory registered in 2023 grows by more than 10% compared to the previous term due to the incorporation of the production of a new asset in Hocol's portfolio (Boquerón Contract), and due to the incorporation of the methane emissions baseline, which was measured during 2023 to respond to resolutions 40066 and 40317 of the Ministry of Mines and Energy of Colombia.

These inventories will be verified by an external entity during 2024. For the calculation of emissions, the Company uses ISO 14064-1 and the GHG Protocol as a reference for its definitions and calculations.

Given the productive activity, the main consumption data are those concerning:

- Natural gas: emission factors calculated from the chromatographic characteristics of the gases in each field are used for the GHG CO₂, using the methodology for the development of emission factors of the Mining-Energy Planning Unit (UPME) of the Ministry of Mines and Energy of Colombia. For the other GHGs (CH₄ and N₂O), the Intergovernmental Panel on Climate Change (IPCC) factors were used.
- Fuels such as ACPM and gasoline: emission factors from the Mining and Energy Planning Unit (UPME) of the Ministry of Mines and Energy of Colombia are used.
- SIN energy: the emission factor published by XM during 2023 is used.

Ecopetrol Permian: According to the API 2009 Methodology, emissions from combustion, flaring and venting were estimated using mass balance calculations and emission factors were used for fugitive emissions. These estimates consider only the Company's production and facilities (P&F) operations.

Ecopetrol America: Emissions for 2023 were estimated using an emissions calculator implemented by Ecopetrol America, where the CO₂ equivalent for each producing field is estimated. The inputs in the estimate are actual production data (BOPD, total gas, net gas, venting, flaring and fuel). 2023 emissions were calculated using a mass balance calculator that inputs actual daily data from the Company.

From 2022 to 2023, the Company achieved a significant reduction in total GHG volume: from 39,290 MT to 26,261 TmCO₂eq (33%). This reduction was mainly due to the elimination of vents on the Petronius platform, which processes oil and gas from the Dalmatian field. The elimination of the vents was made possible by the installation of a burning system on the platform.



Transport & Logistics						
Metric	1			2		
Unit	TonCO ₂ eq			%		
Year	2021	2022	2023	2021	2022	2023
Cenit	125,335	124,360	129,063	0.05	0.05	0.00
Ocensa	299,766	288,830	321,990	1.60	0.03	0.03
ODL	1,406	1,811	1,873	0.03	0.04	0.05
OBC	646.70	904.81	502.20	0.02	0.03	0.14
ODC	23,382	23,051	29,569	0.10	0.08	0.13
Progasur	146	165.90	210.36	0	0	0

Ocensa: The reduction between what was estimated and what was verified in 2023 corresponds to the technical concept and recommendation of the verifying entity Ruby Canyon Environmental – TUV SUD, based on the API 2021 standard, where the reduction in the percentage of methane reported is due to the fact that fugitive emissions associated with the transport of hydrocarbons are excluded from the inventory, whereas stabilized crude oil is transported. This means that the SASB 2023 report will restate the information reported in 2022.

OBC and ODL: For the inventory of GHG emissions, the Companies accept the methodologies and calculation tools that Ecopetrol S.A. has used for the estimation and reporting of its annual emissions inventories, which is conducted through its Atmospheric Emissions Management System - SIGEA. The NTC ISO 14064-1:2020 standard, recently updated, as well as the GHG Protocol standard for presenting GHG emissions inventory reports are used as a methodological reference. It is clarified that the Companies had been developing their inventory under the NTC ISO 14064-1:2006 methodology. The inventory is developed bottom-up and the information is aggregated by grouping emissions by type of sources considered in the inventory, by type of GHG and by facility. Calculations are performed using the SAP EC calculation tool.

ODC: The Company follows the methodologies of the American Petroleum Institute (API) 2009 Compendium. The Company conducted the verification of its inventory under operational control and with a rational approach in 2023 for the year 2022. As a result, there were variations with what was reported in previous years since the verification validated and adjusted the emission sources. The verification was conducted by Ruby Canyon Engineering. Total GHG emissions are expressed in metric tons of CO₂ equivalent (tCO₂e), using the most recent Global Warming Potentials, which correspond to the IPCC's fifth assessment report (AR5) and are those used by Colombia in its national inventories.

Progasur: The materialization events of the loss of containment of the volumes released into the atmosphere are the determinants to report the information requested in the metric.

Refining & Marketing / Chemicals				
Metric	1			3
Unit	TonCO ₂ eq			%
Year	2021	2022	2023	2021-2023
Refinería de Barrancabermeja	2,960,377	3,002,216	3,093,703	Not applicable
Refinería de Cartagena	2,063,973	2,124,419	2,572,679	
Esenttia	60,938	65,536	61,076	

Cartagena and Barrancabermeja Refineries: Ecopetrol S.A. has an inventory of GHG emissions prepared under the ISO 14064-1 Standard and the Greenhouse Gas Protocol for corporate inventories (GHG Protocol). The inventory is conducted under the Operational Control approach, in this sense, 100% of the emissions are accounted for in those facilities where the company has control of the operation, regardless of whether it is an owner or partner. In accordance with the above, the inventory includes emissions from the Cartagena and Barrancabermeja refineries and in the production segment, the corresponding emissions from the assets operated and controlled by Ecopetrol S.A. are included.

The GHG emissions estimation methodology, used in the inventory, is a combination of mass balances, emission factors, simulation models, and fixed measurements. The choice of methodology to estimate GHG emissions from each source that is part of the inventory was defined depending on the quality of the available input data. CO₂ emissions from combustion and flaring processes are estimated from mass balance, considering the composition of the fuels used. In relation to the methane emissions associated with the flaring process in teas, the mass balance is used as an estimation model, which, in addition to the composition of the gas burned, takes into account the efficiency of the tea. The fixed measurements that have been conducted in the production segment of the fugitive and vent categories have served as the basis for the establishment of our own emission factors. For all other sources of methane, generic industry emission factors are used. N₂O emissions are estimated from emission factors, mostly from AP42.

Esenttia: The variation in direct and indirect emissions from electricity (categories 1 and 2 of ISO 14064-1 and scopes 1 and 2 of the GHG Protocol) for the year 2023 with respect to the year 2019 (base year for analysis of decarbonization processes. ISO 14064-1:2018 implementation), which are the emissions included in the scope of the Carbon Neutral certification, corresponds to a reduction of 17%, which means that the Company has decreased the value of its emissions by 14,617.97 TonCO₂eq/year.

Electric utilities			
Metric	1		
Unit	TonCO ₂ eq		
Year	2021	2022	2023
ISA	0	0	0
ISA CTEEP	21,903	15,622	12,557
ISA REP	3,198	299	671
ISA INTERCOLOMBIA	2,548	2,200	986
ISA INTERCHILE	916	8,021	1,527
ISA TRANSELCA	3,141	2,241	2,487

ISA: The Company does not have scope 1 emissions since ISA INTERCOLOMBIA has operational control.

ISA CTEEP: In 2023, a reduction of almost 20% of scope 1 emissions was achieved, corresponding to approximately 3,000 tonnes of CO₂e. Scope 1 emissions covered by the Kyoto protocol are not reported because there is no regulation in Brazil that requires it.

ISA REP: The methodological bases considered for the calculation of gross scope 1 emissions were ISO 14064-1:2018, the GHG Protocol and as determined by the IPCC. For the year 2023, there is a 124% increase in scope 1 emissions compared to the previous year, from 299 TonCO₂eq to 671 TonCO₂eq, due to higher fuel consumption due to the increase in the vehicle fleet used in the new facilities that came into operation in 2023. Scope 1 emissions covered by the Kyoto Protocol are not reported because there is no regulation in Peru that requires it.

ISA INTERCOLOMBIA: The calculation methodology is based on the GHG Protocol, taking emission factors from public data sources. By 2023, a 55% reduction in gross scope 1 emissions was achieved, corresponding to 1,214 TonCO₂eq. No scope 1 emissions covered by the Kyoto protocol are reported, as there are no regulations in the country that require it.

ISA INTERCHILE: The company reports scope 1, 2 and 3 emissions. By 2023, an 80% reduction was recorded, approximately 6,500 TonCO₂eq.

ISA TRANSELCA: The company reports scope 1 and 2 emissions. An 18% reduction in emissions was achieved compared to the previous year, registering the lowest figure in the last 4 years, signifying an achievement of the Company thanks to the commitment and dedication of the different work teams at Transelca dedicated mainly to innovation, asset optimization, maintenance and operation. In 2023, the first source of greenhouse gas emissions was the refilling of R-410a refrigerants (55.42% of the total Scope 1), followed by SF₆ leakage with 39.35% of the total Scope 1.

EM-EP-110a.2 Amount of gross global Scope 1 emissions from: (1) flared hydrocarbons, (2) other combustion, (3) process emissions, (4) other vented emissions, and (5) fugitive emissions

Oil & Gas Exploration & Production															
Metric	1			2			3			4			5		
Unit	TonCO ₂ eq			TonCO ₂ eq			TonCO ₂ eq			TonCO ₂ eq			TonCO ₂ eq		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Ecopetrol S.A.	906,688	946,763	806,610	4,490,921	4,398,363	4,264,974	817,999	826,285	801,285	1,063.47	912,532	823,663	211,706	128,182	95,607
Hocol	52,691	51,229	46,516	210,171	187,045	207,296	0	0	0	3,137	7,464	3,120	5,214	4,659	38,617
Ecopetrol Permian	18,823	10,249	5,575	6,841	24,038	37,419	0	0	0	82	154.5	106.6	785	1,768	3,952
Ecopetrol America	3,811	3,152	4,341	24,068	23,602	21,385	0	0	0	7,224	11,766	25.2	702.0	770.0	509.9
Ecopetrol Brasil	Not applicable														

Ecopetrol S.A.: Within the other combustion category, emissions from combustion from stationary and mobile sources are reported. Within the venting emissions category, emissions associated with vents in storage tanks, vents in compressors and vents in wells are included. Within the category of process emissions, emissions associated with gas treatment are included.

Hocol: The greenhouse gas inventory registered in 2023 grows by more than 10% compared to the previous period due to the incorporation of the production of a new asset in Hocol's portfolio (Boquerón Contract), and due to the incorporation of the methane emissions baseline, which was measured during 2023 to respond to resolutions 40066 and 40317 of the Ministry of Mines and Energy of Colombia. These inventories will be verified by an external entity during 2024.

Ecopetrol Permian: Estimates for 2023 consider only the Company's production operations and facilities.

Ecopetrol America: The Company reports an emissions value consistent with its approach of participating in partnership contracts as a non-operator.

EM-EP-110a.3 EM-MD-110a.2 EM-RM-110a.2 RT-CH-110a.2 IF-EU-110a.3		Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets
Oil & Gas Exploration & Production Transportation & Logistics Refining & Marketing Chemicals Electric utilities		
Metric	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions.	
Unit	Discussion and analysis	
Year	2023	
Ecopetrol Group	<p>The Ecopetrol Group defined its corporate strategy “Energy that Transforms” with a horizon to 2040, which comprehensively responds to the current challenges in environmental, social and governance matters, maintaining the focus on the generation of sustainable value for all its stakeholders. One of the 4 pillars of the strategy is “Generating Value with Sustainable SustainabilitySM”, which seeks to accelerate and prioritize decarbonization and energy efficiency. In 2021, the Group was a pioneer at the regional level in committing to achieve Net Zero Emissions by 2050. This commitment also includes a 25% reduction in Scope 1 and 2 emissions by 2030 and a 50% reduction in Scope 1, 2 and 3 emissions by 2050 compared to 2019.</p> <p>In order to comply with these commitments, Ecopetrol S.A. defined a decarbonization plan that includes: (i) management of GHG emissions information, to ensure the quality, integrity, consistency and transparency of the information reported; (ii) reduction of GHG emissions, through the identification and implementation of initiatives associated with the optimization of energy consumption, renewable energies, reduction of flaring in teas, fugitive emissions and vents (methane), and development of emerging low-emission technologies; (iii) strategic portfolio management for the analysis of the impact of business lines on climate ambition; (iv) offsetting residual emissions that cannot be avoided or reduced in operation;</p> <p>The plan has specific goals in:</p> <ol style="list-style-type: none"> 1. Reduction of 1.6 MtCO₂e for the period 2020-2024, in 2023 a reduction of 581,532 tCO₂e was achieved for a cumulative reduction between 2020 – 2023 of 1.5 MtCO₂e. 2. Optimization of internal energy consumption by 25 PJ for the period 2018-2030, a cumulative advance of 10.86 PJ has been achieved. 3. Generation of 900 MW of renewable energy for self-consumption by 2025 and 1,000 MW (megawatts) by 2030, in 2023 a capacity of 472 MW was reached, in this line, additional progress has been made in measurements of the wind potential in the departments of Huila and Casanare. 4. Zero routine burning by 2030, in 2023 the report to the World Bank for the year 2022 was presented, in which a total burning of 10,077 million cubic feet of total burning was reported, of which 6,667 million cubic feet corresponded to routine burning. 5. Pilot projects in CCUS and hydrogen, including the launch of the hydrogen mobility park in Cartagena and the development of proofs of concept and studies that allow the validation of different initiatives such as the blending of hydrogen with natural gas in a mobile laboratory of the Caribbean Innovation Center and strategic planning for the development of capture, use and storage of carbon dioxide CO₂ (CCUS). <p>In March 2023, within the framework of the Climate and Clean Air Coalition initiative, Ecopetrol S.A. announced the commitment to reduce methane emissions by 45% by 2025 and by 55% by 2030 compared to 2019, in direct operations of the production segment.</p>	

Ecopetrol Group	<p>For its progress in measuring, reporting, and reducing methane emissions, Ecopetrol S.A. received the Gold Standard recognition from the United Nations Environment Program (UNEP). The distinction is given to companies in the oil and gas sector that have a detailed plan to measure and report methane emissions and reduction targets, as established in the Oil and Gas Methane Alliance (OGMP 2.0), of which Ecopetrol S.A. has been a member since 2020.</p> <p>In December 2023, within the framework of COP28, Ecopetrol S.A. joined OGCI’s “Aiming for Zero Methane Emissions by 2030” Initiative and confirmed its commitment to action on climate change by adhering to the Global Sector Agreement to accelerate the decarbonization of oil and gas (OGDC). The OGDC establishes the reference framework to align the efforts and commitments of companies in the sector, with the purpose of keeping the increase in the global average temperature below 2°C and seeking to limit it to 1.5°C., through alignment with net zero in 2050, aiming for zero methane emissions, eliminate routine burns by 2030 and promote the dissemination, implementation and transfer of best practices among companies, their value chain and in the uncontrolled operations of their partners.</p> <p>In line with the Group’s climate ambition, in the Upstream segment, Hocol, committed to creating social, environmental, and economic value, promotes the decarbonization and energy management of its operations with a focus on the production of low-carbon energy sources. The company committed to a 35% reduction in emissions for scopes 1 and 2 in the period 2019-2026 and 18 thousand tCO₂e in 2024, in addition to the elimination of methane emissions by 2025.</p> <p>For their part, Ecopetrol Permian and Ecopetrol Brasil seek to assess and manage GHG emissions through operational energy efficiency in joint operations with partners, taking into consideration applicable local requirements and the Group’s strategy.</p> <p>In the Gato do Mato project, in the Santos basin, offshore in Brazil, it was agreed to apply the Energy Transition Principles developed jointly with other companies in the industry.</p> <p>In relation to the Midstream segment, Cenit, Bicentennial Pipeline and Colombia Pipeline are aligned with the Ecopetrol Group’s climate ambition for 2030 and 2050 and seek to consolidate an energy transition program to meet its goals. For its part, Ocensa maintains its goal of reducing projected emissions by 51% by 2030. To this end, it has established a decarbonization plan that includes the implementation of 12MW of renewable energies, the continuity of energy efficiency applied to operation and maintenance, and the reduction of the consumption of fossil sources by electricity.</p> <p>As for the Downstream segment, Esentia seeks to generate strategies aimed at climate change adaptation and mitigation, thus seeking to reduce GHG emissions and changes in production and consumption patterns, while contemplating the risk scenarios associated with climate variability and change. Its focus is on maintaining carbon neutrality and implementing energy efficiency projects. It is also making progress in the analysis of the alignment with the GEE of the medium- and long-term goals and in the definition of a strategy for the management of indirect emissions (categories 3, 4 and 5) in the value chain. In addition, Ecodiesel de Colombia, Ecopetrol’s biofuels subsidiary, obtained carbon neutrality certification in its operations from Icontec in November 2023.</p> <p>In the transmission and roads segment, ISA and its companies aim to reduce 11 million tCO₂e by 2030. 102,500 tCO₂e, through the implementation of the program to reduce its own consumption and emissions (water, energy, and sustainable mobility programs). Regarding scope 1 of the GHG inventory, 80% is represented by fugitive emissions of , for which it continues to comply with the international standard IEC IEC62271-203 (0.5% of leaks over the total installed inventory) and, for the sake of continuous improvement, go beyond the standard by 2030 by 15% for all energy transmission companies. This will be achieved through the implementation of actions to prevent, reduce, and correct leaks. 1.9 million tonnes of CO₂e as a contribution to the decarbonisation of energy matrices, through the development of new energy businesses. In line with the Hierarchy of Mitigation, ISA considers offsetting emissions with the Conexión Jaguar project, whose goal by 2030 is to support 20 forest conservation and restoration initiatives along the Jaguar Corridor in Latin America, contributing to the reduction of 9 million tons of CO₂.</p>
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IF-EU-110a.2 Greenhouse gas (GHG) emissions associated with power deliveries			
Electric utilities			
Metric	TonCO ₂ eq		
Unit	Year		
Year	2021	2022	2023
ISA	Not applicable	Not applicable	Not applicable
ISA CTEEP	Unavailable	1,535	1,472
ISA REP	Unavailable	907	1,302
ISA INTERCOLOMBIA	1,019	1,248	1,615
ISA INTERCHILE	Unavailable	541	430
ISA TRANSELCA	Not applicable	Not applicable	Not applicable

Not Applicable: This metric does not apply to the companies listed as they have operations in the transmission segment of the value chain and do not participate in generation or distribution activities.

Air Quality

Metric	Oil & Gas Exploration & Production											
	1			2			3			4		
Unit	Ton Nox			Ton Sox			Ton VOC			Ton PM10		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Ecopetrol	23,397	23,485	23,788	3,952	4,141	3,855	90,392	98,521	98,006	798	883	976
Hocol	Unavailable	622.34	Unavailable	2.67	Unavailable	269.12	Unavailable	31.2	Unavailable	31.2	Unavailable	31.2
Ecopetrol Permian	Unavailable			Unavailable			Unavailable			Unavailable		
Ecopetrol America	Unavailable			Unavailable			Unavailable			Unavailable		
Ecopetrol Brasil	Not applicable											

Air emissions of the following pollutants:
(1) Nox (excluding N2O),
(2) Sox
(3) volatile organic compounds (VOCs)
(4) particulate matter (PM10)

Ecopetrol S.A.: Calculations of emissions of air pollutants are developed using mass balances for emissions of sulfur oxides (Sox) in combustion systems and emission factors for the remaining pollutants: particulate matter (PM), nitrogen oxides (NOx) and volatile organic compounds (VOCs). The emission factors used for the calculation of emissions of criterion pollutants, NOx, PM, and VOCs are mainly extracted from the US Environmental Protection Agency (EPA) document AP-42. In the case of VOC emissions from tanks, the correlations recommended in section 7.1 of AP-42 are used.

In some particular cases, emission factors taken from the following references are used:

- Compendium of Greenhouse Gas Emissions Methodologies for the Natural Gas and Oil Industry del API 2009.
- Methodologies for Atmospheric Emissions Inventories in the Petroleum Industry, 1999, - Regional Association of Petroleum and Natural Gas Companies in Latin America and the Caribbean (ARPEL).
- (EEA) EMEP/EEA Air pollutant emissions Inventory Guidebook 2019: Technical guidance to prepare national emission inventories – European Environmental Agency.
- EIIIP Vol II Ch 14 Uncontrolled emission factor listing for criteria air pollutants – Emissions Inventory Improvement Program July 2001.

In cases where information is available from direct emission measurements, these are incorporated directly into the inventory, such as in specific cases of hydrocarbon vent measurement.

- Monitoring of emissions from leaks and vents as part of the strategy to identify and reduce methane emissions has provided information to update VOC emission estimates, which have offset the reductions achieved in initiatives to reduce flaring in teas and wastewater treatment systems.
- Nitrogen oxide emissions have been reduced based on energy efficiency initiatives and reduction of flaring in teas; however, total emissions were increased by the entry into service of new power generation systems in the Caño Sur field.
- Particulate matter emissions have increased due to the entry into service of new power generation systems in the Caño Sur field.

Hocol: For the calculation of air pollutant emissions, the Company uses the emission factor method, for which it makes use of the factors defined in the documents of the AP-42: Compilation of Air Emission Factors from Stationary Sources of the United States Environmental Protection Agency - EPA, specifically for external and internal combustion sources. It is pertinent to note that the results obtained during the 2023 report are limited to seven projects (La Cañada Norte, La Hocha, Guarrojo, Cicuco, VIM 8, Arjona and Alto Magdalena Pipeline fields) and contain emissions information for the atmospheric pollutants of nitrogen oxides (NOx), particulate matter (PM), and volatile organic compounds (VOCs). The mass balance method is used for the calculation of sulphur oxides (SOx). In 2024, the collection of information and generation of air pollutant inventories for the Company's remaining fields will continue.

Transport & Logistics												
Metric	1			2			3			4		
Unit	ton NOx			ton SOx			ton VOC			ton PM10		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Cenit	1,543	1,345.62	1,376.35	122.31	100.08	115.08	1,338.91	1,010.78	1,174.80	33.53	28.04	29.48
Ocensa	2,458	2,380	2,756	672	651	872	64	62	72	80	77	89
ODL	10.8	10.45	9.00	0.45	0.32	0.28	528.0	507	515	0.34	0.33	0.35
OBC	0.69	0.20	0.23	0.14	0.18	0.19	17.38	15.89	15.93	0.05	0.015	0.017
ODC	337.60	331.19	266.41	297	297.21	175.43	84.50	81.14	83.97	10.60	10.39	6,74
Progasur	0.98	1.10	1.49	0.01	0.01	0.01	0.42	0.44	0.53	0.06	0.07	0.10

Cenit: Mass balance is based on the application of the Law of Conservation of Matter in the process. In essence, if there is no accumulation within the system, then the mass of the materials entering the system must come out. Basically, in fixed combustion sources, CO₂ emissions are estimated from the mass balance, using the compositional report of the fuel and the volume of fuel burned at each emission-generating source. In the same way, mass balance is used in other emission sources, such as tea burning, whose station considers the burning efficiency in the device.

Published emission factors are often based on a sample of measurement data, calculated as an average to determine a representative rate of emissions for a given level of activity under a given set of operating conditions.

The estimated criteria pollutants are nitrogen oxides (NOx), sulfur oxides (SOx), particulate matter (PM), volatile organic compounds (VOCs) and carbon monoxide (CO). All emissions are expressed in mass units of metric tons.

Ocensa: During 2023 the Company transported higher barrels compared to 2022, so the energy consumption of the operation increased and naturally a higher total consumption of fossil fuels in the Pipeline operations, which in turn caused an increase in emissions of criterion pollutants. Considering that there was no discrimination in fuel consumption by type of equipment and that the emissions of the air pollutants evaluated will depend on the technology of the equipment that uses the fuel, the emission factor values described in AP-42: Compilation of Air Emissions Factors are used, in order not to underestimate them.

Emissions calculations of air pollutants for transport and logistics are developed using emission factors, with which pollutants are calculated: particulate matter (PM), nitrogen oxides (NOx), sulfur oxides (SOx) and volatile organic compounds (VOCs). The emission factors used for the calculation of emissions of SOx, NOx, and PM and VOC criteria pollutants are mainly extracted from the document AP-42 of the United States Environmental Protection Agency (EPA). In relation to the reporting of particulate matter emissions, the emission factors used for its calculation correspond to total particulate matter without distinction of size according to the methodology, this factor can be used as an estimate of PM10, PM2.5 or PM1 emissions.

ODC: Because of the Ruby Canyon verification, the estimate of fugitive emissions was suppressed. The Pipeline has already spent two consecutive years checking its inventory by a third party.

The Company uses various methodologies for the estimation of its pollutants. The use of emission factors is the most frequent, where the emission is obtained by multiplying the emission factor by the amount of material or fuel. In the computer solution, non-discriminated particulate matter is estimated in particle size.

ODL: The Company adopts the methodologies and calculation tool that Ecopetrol S.A. has used for the estimation and reporting of its annual emissions inventories, through its Atmospheric Emissions Management System - SIGEA.

Progasur: The estimation of emissions of air pollutants is based on a calculation, taking into account the (annual) mileage of the vehicles rented for the Company's operation and the emission factor for each unit.

EM-RM-120a.1

Air emissions of the following pollutants:
(1) NOx (excluding N2O),
(2) SOx,
(3) particulate matter (PM10),
(4) H2S, and
(5) volatile organic compounds (VOCs)

Refining & Marketing															
Metric	1			2			3			4			5		
Unit	Ton NOx			Ton SOx			Ton PM10			Ton H2S			Ton VOC		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Refinería de Barrancabermeja	3,251	3,389	3,504	8,618	8,288	8,304	371	374	488	0	0	0	21,037	20,658	20,083
Refinería de Cartagena	1,955	2,249	2,485	1,958	2,985	3,637	233	329	358	0	0	0	9,147	8,427	5,240

RT-CH-120a.1

Air emissions of the following pollutants:
(1) NOx (excluding N2O)
(2) SOx,
(3) volatile organic compounds (VOCs)
(4) hazardous air pollutants (HAPs)

Chemicals													
Metric	1			2			3			4			
Unit	µg/m ³ NOx			µg/m ³ SOx			Ton VOC			Ton PAHs			
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	
Esenttia	676.82	490.76	461.48										

RR-BI-120a.1

Atmospheric emissions of the following pollutants:
(1) NOx (excluding N2O),
(2) SOx,
(3) volatile organic compounds (VOC)
(4) particulate matter (PM10), and
(5) hazardous air pollutants (HAPs)

Biofuels															
Metric	1			2			3			4			5		
Unit	mg/m ³			mg/m ³			mg/m ³			mg/m ³			mg/m ³		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Ecodiesel	64.70	83.10	83.10	1.10	4.70	4.70	Unavailable			6.70	5.90	5.90	Unavailable		

Barrancabermeja and Cartagena Refineries: In relation to particulate matter (PM10) emissions, the emission factors used for their estimation correspond to total particulate matter without distinction of size. A report of H₂S emissions are not included since there are no fixed sources of emission of this compound. In processes where potential H₂S emissions need to be managed, streams are treated in thermal oxidation systems to convert traces of H₂S to SO_x, prior to their emission into the atmosphere. Calculations of air pollutant emissions are developed using mass balances for sulphur oxide (SO_x) emissions in combustion systems, and emission factors for the remaining pollutants: particulate matter (PM), nitrogen oxides (NO_x) and volatile organic compounds (VOCs).

The emission factors used for the calculation of emissions of criterion pollutants (NO_x, and PM) and VOCs are mainly extracted from the United States Environmental Protection Agency (EPA) document AP-42. In the case of VOC emissions from hydrocarbon storage tanks, the correlations recommended in section 7.1 of AP-42 are used.

In some particular cases, emission factors taken from the following references are used:

- Compendium of Greenhouse Gas Emissions Methodologies for the Natural Gas and Oil Industry del API 2009.
- Methodologies for Atmospheric Emissions Inventories in the Petroleum Industry, 1999, - Regional Association of Petroleum and Natural Gas Companies in Latin America and the Caribbean (ARPEL).
- (EEA) EMEP/EEA Air pollutant emissions Inventory Guidebook 2019: Technical guidance to prepare national emission inventories – European Environmental Agency.
- EIIP Vol II Ch 14 Uncontrolled emission factor listing for criteria air pollutants – Emissions Inventory Improvement Program July 2001.
- A new tool is currently being implemented for the calculation of emissions in hydrocarbon storage tanks at the Refinería de Barrancabermeja, applying the methodology of section 7.1 of the AP-42, using updated operational information, which seeks to significantly improve the quality of VOC emission estimates.
- The increases observed at the Refinería de Barrancabermeja in emissions of Nitrogen Oxides and Particulate Matter have been due to the increase in the load to Cracking Units (FCC) and higher energy requirements of the operation.
- During 2023, a new tool was implemented for the calculation of emissions in storage tanks of the Refinería de Cartagena, applying the same methodology, using updated operational information, which leads to the improvement of the quality of VOC emission estimates. - Emissions of nitrogen oxides, sulfur oxides and particulate matter increased at the Refinería de Cartagena, due to the entry into service of the Refinery expansion project, which implied higher crude oil loads to the units and greater requirements for energy self-generation.

IF-EU-120a.1											
<i>Air emissions of the following pollutants: (1) NO_x (excluding N₂O), (2) SO_x, (3) particulate matter (PM₁₀), (4) lead (Pb), and (5) mercury (Hg); (6) percentage of each in or near areas of dense population</i>											
Electric utilities											
Metric	1			2			3			4	5
Unit	Ton NO_x			Ton SO_x			Ton PM₁₀			Ton Pb	Ton Hg
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021-2023	2021-2023
ISA	0	0	0	0	0	0	0	0	0	0	0
ISA CTEEP	18.23	18.79	14.38	137	141	108	0.55	0.57	0.43	Not applicable	
ISA REP	2.54	2.54	6.27	0.19	0.19	0.21	0.08	0.08	0.12		
ISA INTERCOLOMBIA	0.92	1.07	0.86	0.07	0.08	0.064	0.03	0.03	0.03		
ISAINTERCHILE	0.26	0.20	0.01	0.0046	0.02	0.007	0.00018	0	0		
ISATRANSELCA	0.45	0.69	0.72	0.03	0.05	0.05	0.05	0.08	0.08		

ISA: Because ISA does not consume ACPM, no emissions of other pollutants are generated. The Group's electricity companies show a general trend of reducing emissions for NO_x, SO_x and PM₁₀, with the exception of ISA Transelca, which registers a slight increase for NO_x and stable values for SO_x and PM₁₀. Likewise, neither Lead (Pb) nor Mercury (Hg) is generated because the fuel marketed in Colombia and which is reported in the GHG inventory is Diesel B10 in which within its technical data sheet it does not report compounds with these metals, therefore, no emissions of Pb and Hg are generated in the combustion process.

EM-RM-120a.2			
<i>Number of refineries in or near areas of dense populations</i>			
Refining & Marketing			
Metric	1		
Unit	Number of refineries		
Year	2021	2022	2023
Refinería de Barrancabermeja	1	1	1
Refinería de Cartagena	1	1	1

RR-BI-120a.2 Number of incidents of non-compliance associated with air quality permits, standards, and regulations

Biofuels						
Metric	1					
Unit	Number					
Year	2021	2022	2023	2021	2022	2023
Ecodiesel		0			0	

Energy Management

RT-CH-130a.1

(1) Total energy consumed
(2) percentage grid electricity
(3) Percentage renewable
(4) Total self-generated energy

Chemicals												
Metric	1			2			3			4		
Unit	GJ			%			%			GJ		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Esenttia	1,442,703	1,348,200	635,114	61.18	49.30	49.12	0.22	0.22	0.20	264,650	325,180	321,872

Water Management

EM-EP-140a.1
RT-CH-140a.1
RR-BI-140a.1
IF-EU-140a.1

(1) Total fresh water withdrawn,
(2) total fresh water consumed,
(3) percentage fresh water withdrawn and
(4) percentage fresh water consumed in regions with High or Extremely High Baseline Water Stress

Oil & Gas Exploration & Production												
Metric	1			2			3			4		
Unit	Mile			Mile			%			%		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Ecopetrol S.A.	11,592	9,615	10,291	9,716	8,755	9,578	1.0	1.8	1.0	0	0.8	0
Hocol	182.20	194.64	149.12	146.20	53.30	37.55	0	5.81	3.78	0	21.22	15.02
Ecopetrol Permian	Unavailable	10.3	0	Unavailable	10.3	0	Unavailable	0	0	Unavailable	0	0
Ecopetrol America	Not applicable			Not applicable			Not applicable			Not applicable		
Ecopetrol Brasil	Not applicable			Not applicable			Not applicable			Not applicable		

Ecopetrol S.A.: (1) In 2023, the Upstream segment captured 10.29 million m³ of fresh water, which represents an increase of 7% compared to 2022, mainly due to higher injection activity for recovery in the La Cira Infantas and Tibú fields. Water-stressed areas are identified when the relationship between the demand and supply of surface water in the basin is greater than 40% according to hydrological information from the National Water Study (IDEAM, 2022). Under this condition, the assets Llanito, Lisama, Huila Norte, Tello, Río Ceibas, Yaguará, San Francisco and Oripaya are located. In 2023, a 64% reduction in freshwater extraction was achieved in water-stressed areas, mainly due to optimizations in the injection process into the assets of Huila, where the volume of captured water required for recovery was reduced by more than 99%. Note: The 2021 and 2022 values are updated due to adjustments in some specific measurements, however, in no case is there a significant variation compared to the values of previous reports.

Hocol: The amount of water withdrawn from fresh water sources in 2023 corresponds to 149.12 thousand m³; The percentage of water collected from regions classified in the 2018 National Water Study as having a high, very high and critical water use index corresponds to 3.78% of the total water extracted from surface and underground sources, of which 99.8% comes from underground sources. located in the departments of Huila and Tolima. It should be noted that sources of water purchase from aqueducts or third parties are not included, as there is no certainty of their location.

Ecopetrol America: As it is off-shore, it does not extract water in its production process. The water used is immaterial because it only obeys the water used for human consumption on the platform and cleaning tasks.

RT-CH-140A.1

(1) Total fresh water withdrawn,
(2) percentage recycled,
(3) percentage extracted and
(4) percentage consumed in regions with High or Extremely High Baseline Water Stress

Chemicals Biofuels												
Metric	1			2			3			4		
Unit	Mile			Mile			%			%		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Esenttia	1,018	1,442	1,025.6	868	1,255	901.7	100	100	100	100	100	100
Ecodiesel	73,187	81,191	73,728	65,714	70,149	68,004	0	0	0	0	0	0

Esenttia: In 2023, additional consumption was presented due to the entry into service of the new steam turbine cooling tower cell. On the other hand, according to the sedimentation situation of the Canal del Dique, Esenttia has identified the following future strategies, which are under evaluation, for the water supply:

1. Achieve Zero Spillage
2. Seawater harvesting
3. Receiving treated water or drinking water from third parties

Ecodiesel: A decrease in the amount of water withdrawn from any source is observed in 2023, with a reduction of 10.12% compared to 2022. Likewise, the amount of water withdrawn for operations shows a 3.1% reduction in 2023 compared to 2022. This is in accordance with the Company's water conservation program, which includes measures to improve efficiency in the use of water resources and sustainable practices.

EM-RM-140a.1

(1) Total fresh water withdrawn,
(2) percentage recycled,
(3) percentage extracted and
(4) percentage consumed in regions with High or Extremely High Baseline Water Stress

Refining & Marketing												
Metric	1			2			3			4		
Unit	Mile			%			%			%		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Refinería de Barrancabermeja	23,085	20,721	22,547	52	61	61	18.3	12.8	15.2	37.6	31.9	26.8
Refinería de Cartagena	6,970	7,699	8,357	69	53	62	100	100	100	100	100	100

Refinería de Barrancabermeja: 8.8% increase in water extraction from the Magdalena River and Ciénaga San Silvestre compared to the previous year, mainly due to greater demand to meet operational contingencies and the entry of new projects. This meant a 7% increase in the intensity of water collected, which was at 1.76 Bbl water captured/Bbl refined crude. The percentage of reuse of the previous year is maintained, however, the increase in the volume of reused water stands out, which went from 12.7 million cubic meters in 2022 to 13.8 million cubic meters in 2023.

Note: The 2021 values are updated due to adjustments in some specific measurements, however, in no case is there a significant variation compared to the values of previous reports.

Refinería de Cartagena: There is an 8.5% increase in water extraction (purchase of raw water from the Acucar Company) compared to the previous year due to an increase in the loading of refined crude oil. However, in terms of the intensity of water collected, there is an improvement in the efficiency of its use, reaching a value of 0.73 Bbl water captured/Bbl refined crude oil, which represents a decrease of 23% compared to the previous year. 100% of the water extraction is consumed, since the discharge is carried out into the sea, in accordance with the parameters established in the current regulations.



EM-EP-140a.2

(1) Volume of produced water and flowback generated;
(2) percentage discharged,
(3) injected,
(4) recycled;
(5) hydrocarbon content in discharged water

Oil & Gas Exploration & Production															
Metric	1			2			3			4			5		
Unit	Mile			%			%			%			tone		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Ecopetrol S.A.	388,117	430,551	461,942	11.8	14.9	15.4	63.3	57.7	54.6	24.9	27.4	30.0	101.8	127.0	124.3
Hocol	19,865	21,535	22,425	1.42	0.93	1.78	79.21	77.82	78.38	19.37	20.53	20.05	1.67	1.49	9.59
Ecopetrol Permian	1,510	3,197	5,819	0	0	0	57.2	59.9	56.7	42.75	40.10	43.27	0	0	0
Ecopetrol America	11	46.3	96.6	100	100	100	0	0	0	0	0	0	0	0.23	0
Ecopetrol Brasil	Not applicable														

Ecopetrol S.A.: It does not carry out hydraulic fracturing activities in unconventional reservoirs and therefore no return liquid is generated. Compared to the volume of injected produced water includes the water that is injected for final disposal, the volume of recycled production water includes reinjection for recovery (EOR), recirculation/reuse in other activities such as drilling, road irrigation, steam generation, etc., and reuse for agroforestry irrigation in the ASA La Guarupaya and SAARA Ecoreserve (Rubiales). The weighted average concentration of HTP in discharges from Ecopetrol S.A.'s E&P assets is 1.74 mg/L, well below the limit established by national regulations of 10 mg/L. Note: The 2021 values are updated due to adjustments in some specific measurements, however, in no case is there a significant variation compared to the values of previous reports.

Hocol: Of the total associated water extracted in 2023 in the production process, only 1.78% of the water is not returned to the reservoir via injection or reinjection. After being treated, these waters are disposed of at the surface level, which is in line with the commitment to gradually reduce discharges on surface freshwater bodies. The increase in the average concentration of HC is due to the continuous operation of the Cicuco field and the increase in discharges in the Guajira Association.

Ecopetrol Permian: The water extracted by the Company is also used in its fracking operations. In commitment to the environment, Ecopetrol Permian presents an improvement in the recycled percentage of water resources for 2023.

Ecopetrol America: There is a significant supply of water from the Gunflint field due to the increase in water cuts in some wells.

EM-EP-140a.3

Percentage of hydraulic fractured wells for which there is public disclosure of all frac fluid chemicals used

Oil & Gas Exploration & Production			
Metric	1		
Unit	%		
Year	2021	2022	2023
Ecopetrol S.A.	Not applicable		
Hocol	Not applicable		
Ecopetrol Permian	100	100	100
Ecopetrol America	Not applicable		
Ecopetrol Brasil	Not applicable		

EM-EP-140a.4		<i>Percentage of hydraulic fracturing points where groundwater or surface water quality deteriorated compared to a baseline</i>		
Oil & Gas Exploration & Production				
Metric	1			
Unit	%			
Year	2021	2022	2023	
Ecopetrol S.A.	Not applicable			
Hocol	Not applicable			
Ecopetrol Permian	0	0	0	
Ecopetrol America	Not applicable			
Ecopetrol Brasil	Not applicable			

EM-RM-140a.2 RT-CH-140a.2 IF-EU-140a.2 RR-BI-140a.3		<i>Number of non-conformance incidents related to water quality permits, standards, and regulations</i>		
Refining & Marketing Chemicals Biofuels				
Metric	1			
Unit	Number			
Year	2021	2022	2023	
Refinería de Barrancabermeja	0	0	0	
Refinería de Cartagena	0	0	0	
Esenttia	1	0	0	
Ecodiesel	0	0	0	



RT-CH-140a.3 RR-BI-140a.2		<i>Description of water management risks and discussion of strategies and practices to mitigate those risks</i>
Chemicals Biofuels		
Metric	1	
Unit	Discussion and analysis	
Year	2023	
Esenttia	<p>In the field of water management, there are risks such as:</p> <ol style="list-style-type: none"> Unavailability of the resource due to possible failures in the raw water supply system by the supplier. Exclusive dependence of the company Aguas de Cartagena E.S.P. as the sole supplier of raw and drinking water. Strong impact that the El Niño phenomenon could generate in terms of droughts and shortages, limiting access to water for communities. Risk of malfunction in Esenttia's internal clarified water system. <p>The strategies used to mitigate such risks are:</p> <ol style="list-style-type: none"> The Company has a 24-hour autonomy backed by an operation plan that involves the temporary suspension of minor processes and the temporary closure of purges. On a temporary basis, the Company has a supply of water in tank cars to supply the process for a limited time, giving time for Empresa Aguas de Cartagena to re-establish the continuous supply. The Company has reviewed this scenario with the company Acucar, and the supplier has a pumping plan from the Dique channel to maintain the level in the Ciénaga de Dolores. Execution of periodic inspections of the supply pipes. Esenttia has 2 raw water treatment plants that provide flexibility in operation. Commitment to the 2045 Water Neutral Strategy. Exploration of alternative sources of water (desalination). Consolidate the water management strategy and increase water reuse in the process. <p>As mentioned above, the potential effects of risks associated with water management on operations could manifest themselves through climatic phenomena such as El Niño, which could lead to potential shortages. However, as a preventive strategy, effective coordination has been established with various actors, including Aguas de Cartagena and other companies, which allows the implementation of contingency measures to ensure supply and mitigate the risk of shortages.</p> <p>It is important to note that, to date, this risk has not materialized in more than 30 years, suggesting the effectiveness of preventive measures and the capacity to respond to possible water scarcity scenarios.</p> <p>On the other hand, among the short- and long-term strategies or plans, the management objectives, good practices, or compensations are developed by Esenttia:</p>	

<p>Esentia</p>	<p>In the short term:</p> <ul style="list-style-type: none"> Establish the 2024 baseline aligned with Ecopetrol’s Strategy. Calculate and certify the water footprint for the year 2023. Ensure efficiency in water management. <p>Short-term plans:</p> <ul style="list-style-type: none"> Implement the reuse of ultrafiltration reject water. <p>In the medium term:</p> <ul style="list-style-type: none"> Consolidate the water management strategy. Increase the reuse of water in the production process. Maximize concentration cycles in cooling towers. <p>Medium-term plans:</p> <ul style="list-style-type: none"> Optimize the operation of cooling towers to bring the outlet temperature closer to the design temperature. Collaborate with the Refinería de Cartagena to take advantage of the discharge waters. Reduce internal consumption by correcting leaks and improving the operation of steam traps. <p>Long-term plans:</p> <ul style="list-style-type: none"> Develop a conceptual analysis to evaluate the applicability and rationale of changing evaporation technology. Explore alternative sources of water, such as desalination in a hybrid approach. Commit to being water neutral by 2045.
<p>Ecodiesel</p>	<p>Water Consumption Risks:</p> <ol style="list-style-type: none"> Shortage of water sources: Excessive consumption of water for biodiesel production can lead to shortages of local water sources, which can affect the supply for other community and ecosystem needs. Contamination of water sources: The consumption of water from contaminated sources can introduce harmful substances into the production process, affecting the quality of clarified water in the process. Inefficient use: Excessive or inefficient water consumption can result in higher operating costs and can lead to the risk of shortages. Cross-contamination: The use of water at different stages of the production process can cause cross-contamination if water flows are not effectively managed. <p>Risks in the discharge of water on surface bodies and wastewater:</p> <ol style="list-style-type: none"> Environmental pollution: The discharge of wastewater outside the parameters established in the regulations can contaminate local water bodies, which can affect aquatic flora and fauna and the quality of water for other uses. Failure to comply with regulations: Dumping wastewater without complying with environmental regulations can result in legal penalties and damage to the plant’s reputation. Treatment problems: Failure to properly treat wastewater prior to discharge can increase the risks of contamination and costs associated with water purification.

	<p>Effects on operations.</p> <p>Water Source Contamination: Likely; Low to medium, depending on the quality of local water sources. Impact: High, may affect public health and the environment.</p> <p>Water Use Inefficiency: Probability: Low, water consumption is medium in the biodiesel production process. Impact: Medium, may increase costs and the plant’s environmental footprint.</p> <p>Environmental Pollution: Likely; Low, good wastewater treatment practices. Impact: High, may cause significant harm to the environment and public health.</p> <p>Non-compliance with regulations: Probability: Low, all applicable legal requirements are met. Impact: High, may result in fines and damage to the company’s reputation.</p> <p>Wastewater Treatment Costs: Probability: Low, treatment system efficiency. Impact: Medium, may increase costs.</p> <p>Associated controls:</p> <ul style="list-style-type: none"> Conduct regular water quality analyses and take corrective action as needed. Develop water management plans that promote sustainable consumption practices. Implement water conservation technologies and practices, such as recycling and reuse. Contingency plans for periods of drought or other extreme weather events. Efficient wastewater treatment systems. <p>Strategies.</p> <p>In the short term:</p> <ul style="list-style-type: none"> Optimization of water use: Implement measures to reduce water consumption in the production process, installation of more efficient equipment, optimization of processes and reuse of water at different stages of the process. Monitoring and control: Maintain real-time monitoring systems to measure water use and wastewater quality, allowing for opportunities for improvement to be identified and corrective action to be taken in a timely manner. <p>In the long term:</p> <ul style="list-style-type: none"> Water risk management: Conduct regular water risk assessments to identify potential threats to water supply and develop contingency plans to mitigate such risks.
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Management objectives.
<ul style="list-style-type: none"> Reduce total water consumption per unit of production. Comply with water quality standards set by environmental regulations. Minimize water pollution through proper wastewater treatment. Promote the reuse and recycling of water within the production process.
Compensation.
<ul style="list-style-type: none"> Recognition and certification by external bodies for sustainable practices in water management and quantification of water footprint.

Hazardous Materials Management

EM-RM-150a.1 RT-CH-150a.1	Amount of (1) hazardous waste generated (2) Recycled percentage					
	Refining & Marketing Chemicals					
Metric	1			2		
Unit	Tone			%		
Year	2021	2022	2023	2021	2022	2023
Refinería de Barrancabermeja	12,437	24,273	9,803	49.09	80.30	90.79
Refinería de Cartagena	2,418	3,008	1,708	24.40	10.27	39.22
Esenttia	197.82	209.85	147.70	36.60	27.84	36.29

Refinería de Barrancabermeja: In 2023, the generation of hazardous waste at the Refinería de Barrancabermeja presented a reduction of 14,470 Tons, due to the reduction of oily sludge, associated with periodic pool maintenance carried out during 2022. 90% of the volume of hazardous waste generated was used, achieving an increase of 10% compared to the use of 2022.

Refinería de Cartagena: The low generation of hazardous waste at the Refinería de Cartagena is due to the fact that a high percentage of the generation of oily sludge is redirected as an inflow into the coke unit, a practice that has been developed since 2020. 39% of the volume of hazardous waste generated was used through processing in cement kilns, achieving an increase of 19% compared to 2022.

Esenttia: The hazardous waste generated comes from the operation of the plants, activities carried out in the execution of new projects, removal of equipment and materials from the operation, dismantling work, maintenance during plant shutdowns and expansion of administrative areas.

Biodiversity Impacts

EM-MP-160a.1 EM-MD-160a.1		(1) Description of Environmental Management Policies and Practices for Active Operations
Oil & Gas Exploration & Production		
Metric	1	
Unit	Discussion and analysis	
Year	2023	
Ecopetrol S.A.		<p>The Environmental Strategy of Ecopetrol S.A., approved by the Vice Presidency of HSE in 2021, aims to formulate the guidelines for Ecopetrol's environmental management, including the vision, principles, and objectives, as well as the identification of strategic environmental pillars and levers. This strategy is articulated with the 2040 Strategy "Energy that Transforms" and is developed within the framework of the HSE Management System, in accordance with the guidelines established in the ISO 14001 standard.</p> <p>The main specific objectives of the strategy are:</p> <ol style="list-style-type: none"> Environmental legal compliance. Identification and systematic management of potential environmental impacts and risks associated with Ecopetrol S.A.'s activities, with a focus on continuous improvement and the application of the mitigation hierarchy. Continuous improvement through the definition of strategic pillars and levers. Promotion of environmental culture among employees, contractors, and the Ecopetrol Group. Generation of long-term environmental value in the environment of our operations. Facilitate the fulfillment of corporate environmental goals on the road to the energy transition. <p>The Environmental Strategy is aligned with Ecopetrol's Risk Management System (SRI), seeking to promote the prevention of the materialization of potential risks that lead to the impact of natural resources and biota, as well as the preparation and response to potential emergencies that may present risks to the environment. This strategy is applicable to all projects and activities of Ecopetrol S.A. and may be adopted in turn by the companies of the Ecopetrol Group.</p> <ul style="list-style-type: none"> The Environmental Strategy is based on the following basic principles: Protecting the environment is a corporate responsibility that is driven through company culture. Environmental legal compliance is the foundation of environmental stewardship. The hierarchy of mitigation as the foundation of environmental planning of projects and operations. Continuous improvement as a path to excellence in environmental performance. The environmentally smart challenge for the fulfillment of corporate goals. The path to net positive environmental impact.

The Environmental Strategy defined 8 Strategic Pillars, described below:

Environmental Planning and Compliance: Prior knowledge and diagnosis of environmental aspects and determinants, as well as the specific regulations of the areas where Ecopetrol S.A. develops projects and operations, allow the identification of potential environmental impacts and essential opportunities for the conception and planning of measures focused mainly on the application of the mitigation hierarchy. contributing to the successful development of operations, the viability of new projects and sustainable development in the territories where it operates. Ecopetrol S.A., in the management and obtaining of environmental authorizations, implements the national regulations associated with citizen participation in the territories where it intends to develop its operations and projects in order to inform about the scope of the activities, as well as the environmental and social impacts that may be caused, and the joint construction of environmental management measures with the different social actors in the area of influence of the projects and operations. Likewise, during the execution, it establishes permanent communication mechanisms with the authorities, communities, associations, and other interested parties, in order to know and respond to concerns associated with the environmental management of projects and operations. To this end, the company has the Office of Citizen Participation, to comply with the PQRS (petitions, complaints, claims, and requests), and in this way reach the requirements of the interested party, within the times established by Colombian law.

It is important to note that the Colombian State, through the ANLA, as part of the National Environmental System, is responsible for evaluating and authorizing projects, works or activities in the hydrocarbons sector, since it has preventive competence in the field of hydrocarbons and in those environmental instruments that predate the issuance of Law 99 of 1993. this competence is shared with the CARs, which are the ones who issue specific environmental permits for the use of natural resources.

To obtain an environmental license for a project, ECOPETROL S.A. proceeds to comply in legal and environmental terms for the specific activity it requires, filing with the environmental authority the application for an Environmental License or modification of the Environmental License, which “is a process used for the planning and administration of projects that ensures that human and economic activities are adjusted to ecological and resource constraints and in this way becomes a key mechanism to promote sustainable development in the Nation.” (ANLA, 2020).

The environmental licensing process begins by filing an Environmental Impact Study and an application for an environmental license or modification, which includes the identification of environmental and social impacts caused by the development of a project, work, or activity. The impacts can be classified as indirect, synergistic and/or cumulative, likewise, the evaluation and assessment must be carried out with methodologies according to the nature of the project through the justification of the assessment of each impact, whether negative or positive. In addition, the Environmental Impact Study proposes an environmental management plan that includes a set of management actions and measures aimed at preventing, mitigating, correcting and compensating for the identified environmental and social impacts generated by the development of a project, work or activity and, once the evaluation of the same is carried out by the environmental authority, The administrative act containing the environmental license is issued and is the base instrument for the monitoring activities carried out by the environmental authority.

In terms of environmental legal compliance, from the sub-element of the HSE Management System, there are corporate guidelines, and the Environmental Legal Compliance Index is measured annually to monitor compliance with the requirements.

- Climate action: Ecopetrol S.A. maintains its commitment to reduce its carbon footprint and thus join efforts to limit the increase in global temperature to below 1.5°C. For this reason, it is taking action to maintain a low-carbon operation that is resilient to the effects of climate change, through adequate management of climate-related risks and opportunities.

- Towards water neutrality: Ecopetrol S.A. declared the commitment to be water neutral by 2045, which has been defined as achieving the balance between the water required by the Company for its operations and the direct water footprint, considering efforts to reduce it as much as economically and technically possible, and subtracting the compensation of 100% of the remaining water required to operate. through compensation projects executed in the water basin where it operates. To achieve this, by 2045 Ecopetrol S.A. has committed to reducing the collection of fresh water for industrial use by 66% compared to the base year (2019), eliminating the discharge of industrial wastewater to bodies of fresh water, and offsetting 34% of the remaining water consumption, through initiatives that contribute to improving the availability of water in the watersheds where it operates.

- Integrated Waste Management: Ecopetrol S.A. adopts operational and organizational measures to reduce (to economically and technically feasible levels) the quantity and hazard of the waste generated, based on three (3) fundamental aspects: a) reduction at the source or at the source; b) recovery of materials through the use of waste, through the implementation of the Multi-R or 9Rs concept of circular economy c) incorporation of technologies.

- Biodiversity and ecosystem services: The purpose of the Strategic Biodiversity Pillar is to adequately manage the risks and opportunities associated with biodiversity and ecosystem services, meeting the expectations of stakeholders, and maintaining the license to operate. This pillar has four main axes: i) Mitigation hierarchy: Its purpose is to prevent, avoid and mitigate impacts on biodiversity and compensate for residual impacts. Ecopetrol S.A. does not have, nor does it plan to carry out exploration, production, or refining activities in areas of great value for biodiversity categories I to IV according to the International Union for Conservation of Nature (IUCN), nor in areas declared World Heritage Sites by UNESCO. ii) Nature-based solutions seeks to maintain biodiversity and ecosystem services in strategic areas, identifying synergies between nature, society, and the local economy, to respond to challenges such as climate change (Natural Climate Solutions), water resource management and biodiversity. iii) Knowledge generation: Originates new information on biodiversity and ecosystem services to strengthen decision-making. iv) Culture of biodiversity: Seeks to strengthen the value of biodiversity and ecosystems in the Company.

- Circular Economy: According to the materiality exercise carried out by the Company in 2023, the Circular Economy was identified as a cross-cutting element of material matters, due to the fact that this element is present throughout different stages in Ecopetrol’s value chain, which, in turn, allows for greater leverage of the 2040 Strategy in its pillar of generating value with Sustainability *. Circular Economy (CE) is defined as a system of production and consumption that promotes efficient and sustainable management of all resources along the value chain to mitigate risks and generate new opportunities for the company and society. The CE seeks through process efficiency, material recirculation and new business models to enable and contribute positively to the nature and strategic objectives of the Group.

- Clean Air: Focuses on monitoring and managing the contribution to the reduction of air emissions of criterion pollutants and/or the improvement of air quality from specific initiatives to reduce pollutant emissions and the benefits of decarbonization, energy transition and clean fuels.

The main objectives are:

- o Reduce emissions of pollutants to world-class standards and contribute to the improvement of air quality to protect the health of the environment.
- o Have a Verified Atmospheric Emissions Inventory in the assets operated by Ecopetrol.
- o Contribute to achieving and sustaining a level of air quality in the areas of influence of operations at the level of the objectives of the WHO Air Quality Guide.

	<p>Prevention and Remediation: The prevention and remediation of environmental effects caused by operational and process safety incidents focuses on prevention, incorporating proactive risk management and the analysis of the potential materialization of environmental risks typical of the Company's different businesses, for which five strategic lines were proposed:</p> <ol style="list-style-type: none"> 1. Proactive risk management. 2. Incorporation of technology in the management of environmental information. 3. Analysis to continuous improvement. 4. Remediation and improvement of the condition. 5. Impact on culture. <p>The environmental strategy and associated commitments are communicated to all stakeholders on an ongoing basis and in accordance with their needs and expectations. In this regard, the Company publishes its strategy and commitments through its website, external and internal communication, the relationship plan with partners and environmental authorities, and other relevant mechanisms.</p>
<p>Hocol</p>	<p>Hocol has a Sustainability Strategy focused on the protection of natural wealth, participation in the social development of the territories, management of the environment and work for a sustainable operation, which is the basis for the Company's environmental management, with specific strategies and goals in the short, medium and long term defined in the Climate Change roadmaps. Water Management, Circular Economy, and Protection of Natural Wealth.</p> <p>In addition, Hocol has a robust Environmental Management System (EMS) that covers the entire life cycle of the asset. This system facilitates the development of the environmental component of our strategy, establishing mechanisms to manage environmental aspects and impacts of operations and projects. It is important to note that Hocol is currently certified under the ISO 14001 standard, covering the hydrocarbon exploration process in the stages of new opportunities, prospect management, new discoveries, development and abandonment, production, and transportation processes in the Ocelote – Guarrojo and Arrecife Fields and the Ocelote – Palmeras Pipeline.</p> <p>Hocol aligns with the policies and practices defined in Standard 1 to the extent that it has developed and keeps updated its risk map, which includes those inherent to environmental and social issues and whose management leverages the achievement of the goals proposed in the Sustainability strategy.</p> <p>Hocol has strategic guidelines for the identification, management, and management of environmental impacts; It has also defined the mechanisms to manage environmental aspects and impacts on resources in the different stages of the project. Environmental aspects and impacts are evaluated and managed mainly from the environmental management plans, which are verified by the environmental authorities and as part of the company's good practices and environmental and social commitment.</p> <p>The Company has defined specific strategies and goals in areas such as Climate Change, Water Management, Circular Economy, and Protecting Natural Wealth. These pillars have roadmaps that are periodically evaluated through the follow-up to specific plans.</p> <p>The Company's policies and practices are aligned with Standard 6, since within the framework of the Sustainability strategy there is a focus through which it tends to favor the protection and conservation of biodiversity through ecosystem restoration and conservation strategies; support for the protection of representative sensitive species; education, culture, knowledge transfer and management programmes; reforestation and follow-up and monitoring through actions that are part of the axes of Biodiversity and Reforestation.</p>

<p>Ecopetrol Permian</p>	<p>Since Permian and America participate in all contracts as "non-operators", the description of the environmental management policies and practices of the fields and platforms are attributed to the environmental management policies formulated by the respective operator for each location where operations are conducted.</p>
<p>Ecopetrol America</p>	<p>Since Permian and America participate in all contracts as "non-operators", the description of the environmental management policies and practices of the fields and platforms are attributed to the environmental management policies formulated by the respective operator for each location where operations are conducted.</p>
<p>Ecopetrol Brasil</p>	<p>Not applicable</p>

<p>Transport & Logistics</p>	
<p>Metric</p>	<p>1</p>
<p>Unit</p>	<p>Discussion and analysis</p>
<p>Year</p>	<p>2023</p>
<p>Cenit</p>	<p>During 2023, environmental management has been strengthened, through the identification of environmental aspects, impact assessment and environmental risks resulting from the interaction of the activities, operations, projects, and services developed by Cenit, motivating sustainable development in the areas of influence focusing on decision-making around the climate conversation, economic circularity, biodiversity and ecosystem regeneration, consolidating itself as a Carbon Neutral company, walking the path towards an innovative and environmentally responsible business, and for this we are working on the consolidation and implementation of the C-Siembrá subprograms, the Blue Cenit Program, the Sustainable Stations Program focusing on the Repeat the Cycle, Putting Down Roots, Save or never, the Zero Waste and Water Neutrality Strategy, the viability of strategic projects and the monitoring of environmental compliance.</p> <p>The Sustainable Stations Program was implemented, which aims to materialize the organization's Sustainability strategy in the activities of the facilities, based on environmental compliance, it seeks to generate value and sustainability in the operation by articulating the issues of handling and management of waste and materials, water management, climate change, biodiversity and emergency preparedness, this has resulted in 5 badges with the names: Repeat the Cycle, Save or Never, Not One Degree More, Putting Down Roots, Prepared. Through the implementation of actions for each of these badges, improvements in the operation of Cenit have been evidenced.</p> <p>Within the framework of sustainable development, Cenit makes its operations and projects socio-environmentally viable through the design and implementation of socio-environmental management measures that allow it to prevent, control, mitigate and compensate for the potential impacts that could be generated by the operation.</p> <p>Based on the Ecopetrol Group's strategic environmental guidelines, Cenit implements 5 environmental strategic lines that contribute to the development and well-being of the environment: integrated water management, biodiversity, climate change, circular economics, and environmental authorizations. The implementation of these strategic lines allows the achievement of an efficient, balanced operation, allowing economic growth, care for the environment and social welfare.</p> <p>The hierarchy of mitigation to prevent, avoid, reduce, control, recover and compensate for potential impacts on the biotic environment. This planning process contributes to the generation of natural capital in terms of biodiversity gains, associated with the areas of influence of our transport systems, tending in some cases to the generation of non-oil income for local communities in the areas where we operate.</p> <p>The nature of significant impacts on biodiversity is associated with habitat transformation and fragmentation, reduction in the number of individuals of harvested forest species, and changes in ecological processes. During 2023, a total of 25 hectares were accounted for in which recovery activities were carried out in areas that correspond to mandatory investments, established by the Environmental Authorities for the impacts that could not be avoided, and 49 hectares correspond to voluntary investments made by the Company within the framework of the Socio-Environmental Investment Program. To date, the Company reports 3,742 hectares restored between 2018 and 2023.</p>

Ocensa	<p>Ocensa has practices of care and conservation of the environment. An essential part of this commitment involves identifying risks and opportunities in order to prevent or reduce the level of impact on the business and the environment.</p> <p>Ocensa, through the enterprise risk matrix, covers in its assessment, the impacts on workers, the environment and communities that may be affected by the organization's activities; including in the socio-environmental part, issues such as diversity and inclusion, labor standards, human rights (due diligence), relationship with communities, relationship with indigenous communities, complaint management, cultural heritage, land acquisition, social investment, job creation, protected areas, biodiversity, among others. Likewise, issues associated with the improvement of financial results were considered, such as: revenue transparency, business ethics and crisis management, promoting consistent and sustainable performance in environmental and social matters.</p>
	<p>Through the Environmental Management System (EMS), the Company has established the following management actions or instruments:</p> <ul style="list-style-type: none"> - Comprehensive Responsibility, Diversity, Equity, and Inclusion Policy. - Biodiversity and Ecosystem Services Programme. - Procedure for identifying environmental aspects and impacts. - Matrix for the identification of environmental aspects and impacts. - Life Cycle Matrix. - Environmental Management System Manual. - Measuring Environmental Performance <p>In the same way, guidelines, processes, and procedures have been implemented and studied, such as:</p> <ul style="list-style-type: none"> • Environmental Management Plan. • Prevention and Monitoring Program. <p>The Company's policies and practices are aligned with the standards of ISO 14001:2015.</p> <p>Through the environmental and energy management system, the Company is aligned with the guidelines of IFC Standard 3, through the incorporation of waste management, circular economy and energy efficiency strategies and climate change mitigation and adaptation, within the framework of the Decarbonization Plan.</p> <p>On the other hand, in 2023, Ocensa's Biodiversity strategy was consolidated and ratified, through which the Company seeks to contribute to the conservation of ecosystems and species through the consolidation of strategic alliances, which strengthen the knowledge and sustainable use of biodiversity. Likewise, define strategies with stakeholders to manage risks and conserve protected areas, promote the sustainable use of biodiversity, and support the conservation of ecosystems through tree planting.</p> <p>The biodiversity strategy is established with the objectives of contributing to the protection of strategic ecosystems in our right-of-way, promoting a better social relationship with the ecosystem and supporting national conservation and decarbonization goals. This strategy is based on a process of prioritization of ecosystems based on socio-ecological and institutional variables, which allowed the identification of 4 biomes of interest due to their dynamics of vulnerability, diversity, ecological importance, and possibility of interacting with relevant actors in the territory.</p>

	<p>In the same way, functional ecological and socio-ecological parameters were used for a prioritization scheme of fauna and flora, resulting in 7 species selected to carry out conservation and environmental education activities. Likewise, the strategy contemplates the management of criteria for disaster scenarios in protected areas, the legal and technical diagnosis of the protected areas of the DDV of the Pipeline, a conservation strategy through eco-reserves, the registration of biological information in the SIB and voluntary plantings.</p> <p>On the other hand, the compensation measures are in accordance with the guidelines established in the Biotic Component Compensation Manual of the Ministry of Environment and Sustainable Development, in accordance with the provisions of Resolutions 1517 of 2012 and 0256 of 2018. Compensation factors are determined based on the affected biome, taking into account criteria of representativeness, rarity, remanence and the rate of transformation. Likewise, the Company's compensation actions respond to the criteria indicated by the corresponding environmental authorities, in accordance with the activities carried out and the legal commitments signed.</p>
ODL	<p>ODL has an Environmental Management Plan-PMA applied to all operation and maintenance activities carried out in 2023, which has 51 management measures distributed in the biotic, abiotic and socioeconomic components; that minimize and mitigate the impacts generated, and compliance with the requirements given by the environmental authorities.</p> <p>Within its practices and policies, it has mechanisms, areas and resources aimed at protecting the environment. To this end, it has environmental management plans within its operations, which have actions to protect endangered species, ecologically sensitive areas, as well as having contingency plans to mitigate or reduce the risk in case of adverse events.</p>
OBC	<p>On the other hand, the environmental management of OBC was developed within a preventive framework, in accordance with the actions established in the environmental management plan (EMP), follow-up and monitoring plan (PSM) and evaluating the possible environmental impacts that may arise. In this sense, the indicator of environmental incidents and barrels spilled due to operational causes remains at zero.</p>
ODC	<p>By means of Resolution No. 01424 of August 26, 2020, in the first article, the National Environmental Licensing Authority "ANLA" establishes the environmental management zoning for the development of the different activities of the project, in the sense of including exclusion areas, intervention areas with restrictions and areas susceptible to intervention, Resolution 136 of February 3, 1989, modified by Resolution 171 of March 2, 1990, is modified by means of follow-up, in the sense of accepting the following files of the Environmental Management Plan in the operations of stations and the Hydrocarbon Transport System (STH).</p> <p>The Company reviewed, adjusted, and approved its Comprehensive Policy in December 2023, in order to accommodate the different international standards. Among others, it has the following guidelines:</p> <ul style="list-style-type: none"> • Identify gaps in management, as well as implement actions and measures necessary to overcome them, applying the principles of continuous improvement. • Identify and manage hazards and risks that may impact operational continuity, the environment, and the surrounding area. <p>The Company's strategic and operational risks are updated and reviewed every year. A guide for comprehensive risk management is available.</p> <p>Which includes guidelines such as:</p> <ul style="list-style-type: none"> • Manage actions focused on environmental protection and pollution prevention. • Implement measures to ensure the integrity of the asset for safe operation. <p>Likewise, for the past three years, the Company has been implementing a voluntary planting project in order to conserve and strengthen the biodiversity of certain areas of the pipeline. In total, more than 14,000 trees have been planted and maintained.</p>

Progasur	Progasur has environmental management plans and programs, which define the guidelines and guidelines for the management of the environment and the surroundings, in order to prevent, mitigate, control and/or compensate for the possible impacts caused to the environment, during the execution of activities in the different environmental components.
	The Company has a Comprehensive HSEQ Management Policy, as a reference framework for the prevention of HSE and/or operational events, the conservation and protection of the environment through the identification, forecasting, mitigation and control of environmental aspects and impacts.
	The Company has environmental management plans and files, which tend to the strategic formulation of management measures for the purpose of prevention, mitigation, correction and/or compensation of possible adverse effects that may be generated by the development of activities. Additionally, the guidelines described in the ISO 14001:2015 standard are taken into account.
	Progasur, through the implementation of the Risk Management Plan (PGRD), advances social management strategies with the participation of the community in the area of influence, within a framework for the harmonious coexistence between the community, the environment and the gas transport infrastructure.

EM-EP-160a.2
EM-MD-160a.4

(1) Number and (2) aggregate volume of hydrocarbon spills; (5) volume recovered

Oil & Gas Exploration & Production															
Metric	1						2						5		
Unit	Number of operational spills			Number of spills from other causes			BBLS for Operational Causes			BBLS for other causes			bbls		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Ecopetrol S.A.	5	3	1	18	12	6	157.56	63.70	6.82	378	78	371.74	0	0	6.82
Hocol	0	2	0	1	0	0	0	10.10	0	1.20	0	0	1	10.10	0
Ecopetrol Permian	1	0	0		0		4	0	0		0		4	0	0
Ecopetrol America	0			0			0			0			0		
Ecopetrol Brasil	Not applicable			Not applicable			Not applicable			Not applicable			Not applicable		

Ecopetrol: During 2023, in the exploration and production segment in the Company's direct operation, there was 1 incident of operational origin, greater than 1 barrel, affecting the environment with a volume of 6.82 barrels and 6 incidents greater than 1 barrel originated by third parties with a spilled volume of 371.74 barrels. The reported amount of volume recovered in this report is 6.82 barrels of hydrocarbon corresponding to the incident of operational origin greater than 1 barrel.

The decrease in the number of incidents and volume spilled by incidents of operational origin greater than one barrel in Exploration and Production correspond mainly to the implementation of mechanical integrity and process safety strategies that have allowed a significant reduction in the volume of spilled hydrocarbon that has impacted the environment, of 89.3% compared to the volume spilled in 2022 (6.82 bbls Vs 63.7 bbls) and a 94.1% reduction in spilled volume, comparing the results of 2023 versus the average of the last 3 years (6.82 bbls Vs 115.6 bbls).

Hocol: Although there were three incidents due to operational causes with a volume greater than one barrel in 2023, they are not considered in the metric, since they were contained within impermeable structures and/or filling material of the platform, they did not cause an impact on the environment. For this reason, the value is reported as zero. In this regard, it is pertinent to mention that cleaning and control measures were applied to avoid any negative impact on the environment.

Transport & Logistics															
Metric	1						2						5		
Unit	Number of operational spills			Number of spills from other causes			BBLS for Operational Causes			BBLS for other causes			Recovered BBLs		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Cenit	1	2	5	261	291	368	2	63	1,683	6,127	8,458	10,317	6,129	521	12,000
Ocensa	3	0	0	0	0	0	15.90	0	0	0	0	0	15.90	0	0
ODL	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1
OBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Progasur	Not applicable			Not applicable			Not applicable			Not applicable			Not applicable		

Cenit: The amount of hydrocarbons reported is estimated from the conversion of 1,908m³ to bbls, the data reported is due to the volume reported in the reports to the Environmental Authority. The PK 201+700 event of the Caño Limón - Coveñas Pipeline transport system is under investigation and to date the cause of the loss of containment has not been confirmed. Cause that will allow to establish that the volume of 3,478 BLS is associated with an event from another source.

Ocensa: There were no oil spills in 2023.

ODL: During the year 2023 there was an event with loss of containment in the LAC unit of the mixing area of the Rubiales-EBR pumping station, an event that was punctual since there was no spread to other operational areas, it affected 24m² of soil.

OBC: During the year 2023, there have been no events with loss of containment that affect natural resources.

ODC: In 2023, there were no events due to oil spills, whether operational, natural or by third parties.

EM-EP-160a.3

Percentage of (1) proved reserves in or near sites with protected conservation status or endangered species habitat

Oil & Gas Exploration & Production			
Metric	1		
Unit	%		
Year	2021	2022	2023
Ecopetrol S.A.	0.32	0.29	1.55
Hocol	0.02	0.02	0.02
Ecopetrol Permian	0	0	0
Ecopetrol America	0	0	0
Ecopetrol Brasil	0	0	0

For the purposes of this metric, only information associated with proven reserves is disclosed.

Ecopetrol S.A.: The methodology used to calculate this metric for the purposes of this report used the overlap of the protected areas with the area of the polygon of the production fields; which differs from the one used for the 2023 integrated management report, in which the overlap of protected areas with licensed areas was used, which may include more than one field of production.

The variation evidenced in 2023 corresponds to the increase in reserves in protected areas and the increase in protected areas as updated by the World Database on Protected Areas (WDPA) and located on Protected Planet in November 2023.

Hocol: To verify if there is overlap between the fields of operation and the protected areas, the areas defined in the environmental license of the projects are used. It should be noted that there is no infrastructure within these protected areas and the buffer of 5 km in the contour of the polygons of the protected areas is taken taking into account the indications given by the consultant the previous year.

Reserve units are in millions of barrels of oil equivalent (MBPE).

Ecopetrol Brasil: Currently, the Company is pre-operational and, therefore, does not operate/drill in protected or sensitive sites for the protection of biodiversity.

EM-MD-160a.2

(1) Percentage of land owned, leased, or exploited within protected conservation status areas or habitats of endangered species

Transport & Logistics			
Metric	1		
Unit	Percentage		
Year	2021	2022	2023
Cenit	8.47	8.47	8.47
Ocensa	1.88	2.66	2.84
ODL	0.78	0.48	0
OBC	0	0	0
ODC	0	0	0
Progasur	0	0	0

Ocensa: According to the CTM12 National Single Origin, strategic ecosystems have been identified, corresponding to 2.67% of the total areas of operation, within which are the Páramo de Mamapacha and Bijagual, Pantanillo, La Zambra, Serranía de las Quinchas, Ciénaga de Barbacoas, Ciénaga de Chiqueros, San Bartolo.

EM-MD-160a.3

(1) Terrestrial acreage disturbed;
(2) percentage of impacted area restored

Transport & Logistics						
Metric	1			2		
Unit	has			%		
Year	2021	2022	2023	2021	2022	2023
Cenit	0.08	0.05	0.26	100	100	100
Ocensa	0.05	0	0	100	0	0
ODL	1.10	1.50	1.50	100	100	100
OBC	2.70	4.20	1.50	100	100	100
ODC	0	0	0	0	0	0
Progasur	55.90	0	0	100	0	0

Cenit: During 2023, the Company recovered larger areas compared to those altered. In this sense, 294 hectares have been recovered, of which 48% correspond to voluntary investments and interventions carried out by forest exploitation permits.

Ocensa: For 2023 there is no report of alteration of areas of operation. The operation of the pipeline does not generate significant impacts on ecosystems. The impacts on the environment that may occur are managed and mitigated through the implementation of environmental management and control instruments to minimize the probability of negative effects on the environment.

ODL: The reforestation of 96.3 hectares as compensation for the logging carried out in the El Viento Cusiana Pipeline. On the other hand, within the same property, the purchase of 21.07 hectares was made as compensation for the affectation of fauna and flora of the Jaguey station; Likewise, the reforestation of the Villa Lorena property with an area of 63.7 hectares is the result of the compensation for forest use for the construction of the Rubiales - Monterrey Pipeline in the Casanare sector. The 2023 information is subject to updating by consolidation of the ICA (Environmental Compliance Report) that is in the process of being prepared for submission to the Competent Authority.

ODC: The maintenance of the infrastructure is carried out as part of the operation, which begins at the Vasconia Plant and ends at the Coveñas Plant, and the interventions on the right of way are carried out in order to ensure the least impact on the soil and natural resources in accordance with the environmental management measures established in the MAP.

During the 2023 term, there were no events due to loss of containment operationally or damages by third parties that caused damage to natural surfaces, so no recovered and/or restored area is reported. Restoration is the sum of the actions that are carried out after the intervention on the land in order to return to the previous state before the development of the Company's activities.

Progasur: Restoration is considered as the sum of the actions that are carried out after the intervention on the land in order to return to the previous state before the development of the Company's activities.

- Approach and agreements with the community so that the restoration is effective.
- A 100% right-of-way tour in which the integrity of the pipeline, environmental conditions and ground stability are checked.
- Follow-up to the alarms generated by the IDEAM.
- Pay attention to the news or situations reported by the community regarding the stability of the terrain.

IF-EN-160a.1 <i>Number of incidents of non-compliance with environmental permits, standards, and regulations</i>			
Engineering & Construction Services			
Metric	1		
Unit	Number		
Year	2021	2022	2023
ISA INTERVIAL	1	6	0

IF-EN160a.2 <i>Discussion of processes to assess and manage environmental risks associated with project design, siting, and construction</i>			
Engineering & Construction Services			
Metric	1		
Unit	Discussion and analysis		
Year	2023		
ISA INTERVIAL	There were no projects with social or environmental impacts.		

business model and innovation chapter

Product Specifications & Clean Fuel Blends

EM-RM-410a.2 <i>Total addressable market and market share of advanced biofuels and associated infrastructure</i>	
Refining & Marketing	
Refinería de Barrancabermeja	As of 2023, refineries do not have infrastructure for the production of biofuels. Initiatives are currently being developed to provide refineries with the infrastructure for the production of SAF (sustainable aviation fuel) and HVO (renewable diesel).
Refinería de Cartagena	The management of biofuels (B2E) in the Ecopetrol Group is carried out through Ecodiesel.

EM-RM-410a.3 <i>Renewable Fuel Volumes: (1) Produced (2) Purchased</i>		
Refining & Marketing		
Metric	1	2
Unit	Bbls	Bbls
year	2023	2023
Refinería de Barrancabermeja	0	0
Refinería de Cartagena	0	0

The production management of biofuels in the Ecopetrol Group is carried out through Ecodiesel, for more details you can consult the RR-BI-000 metrics. A, RR-BI-000. B and RR-BI-000.C.

Product Design for Use-Phase Efficiency

RT-CH-410a.1 <i>Revenues from products designed for use-phase resource efficiency</i>			
Chemicals			
Metric	1		
Unit	COP \$	COP \$	COP \$
Year	2021	2022	2023
Esentia	\$ 4,313,000,000	\$ 323,966,682,966	\$ 539,954,163,912

Information obtained from the sales report of the financial area, taking the referenced products and the average TRM for 2023.

The possible increase is associated with the increase in the application of these products by our customers, as well as the increase in the TRM rate.

Lifecycle Emissions Balance

RR-BI-410a.1 <i>Lifecycle greenhouse gas (GHG) emissions by biofuel type</i>			
Biofuels			
Metric	1		
Unit	gCO ₂ e/MJ		
Year	2021	2022	2023
Ecodiesel	26.88	29.58	31.06

Lifecycle Impacts of Buildings & Infrastructure

IF-EN-410a.1 *Number of (1) commissioned projects certified to a third-party multi-attribute sustainability standard and (2) active projects seeking such certification*

Engineering & Construction Services						
Metric	1			2		
Unit	Number of projects			Number of projects		
Year	2021	2022	2023	2021	2022	2023
ISA INTERVIAL	0			0		

IF-EN-410a.2 *Analysis of the process to incorporate operational-phase energy and water efficiency considerations into project planning and design*

Engineering & Construction Services	
Metric	1
Unit	Discussion and analysis
Year	2023
ISA INTERVIAL	<p>In terms of energy efficiency, the Company develops an intrapreneurship program, Intervial Innova +, which seeks solution ideas focused on energy efficiency, the challenge to be developed is: How could we reduce the Company's electricity and energy consumption to achieve the carbon footprint goals of around a reduction of 65 tCO₂e by 2024?</p> <p>Regarding water efficiency, the Company implemented a sustainable landscaping project with native plants and low water consumption.</p>

Safety & Environmental Stewardship of Chemicals

RT-CH-410b.1 *(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances; (2) Percentage of such products that have undergone a hazard assessment*

Chemicals	
Esenttia	The chemical materials produced at Esenttia are not considered hazardous materials for health and the environment, so there is no need to assess their hazard characteristics.

RT-CH-410b.2

Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact

Chemicals	
Esenttia	<p>Esenttia has a Manual for the Preparation, Updating of Inventory and Qualitative Evaluation of Chemical Substances, documented under the code PP-HSE-MAP-014, which defines the guidelines for preparing and updating the inventory of chemical substances used in each of the company's areas and jobs; which covers all chemical substances used in the organization, either by direct personnel in its own processes or by contractor companies. It includes substances found in storage warehouses and other areas.</p> <p>It considers all chemicals used in any activity that may generate an event associated with exposure to that chemical and is not limited to hazardous substances. For the development of the evaluation of chemical substances, the following steps are carried out:</p> <ol style="list-style-type: none"> 1. Request the list of chemical substances. 2. Include the substances in the inventory database. 3. Review Data Data Sheets (SDS – MSDS). 4. Complete the required information in the inventory. 5. Classify substances according to their level of potential toxicity. 6. Qualitative risk assessment. 7. Quantitative evaluation. 8. Prioritize interventions. 9. Impact assessment. 10. Review of the process and opportunities for improvement. <p>Esenttia manages through the Chemical Safety Manual, aligned with Resolution 0773 of 2021, and documented under the code ESE-HSE-MAP-003, the identification of work processes and activities where hazardous chemical substances are handled and stored, indicating through processes and procedures the safe way to identify the hazards of these chemical substances, its handling in a safe way, as well as its fixed and temporary storage. It covers everything from when a chemical substance is requested, either as a raw material, services, or research, to when it becomes waste and needs to be disposed of in accordance with the company's environmental management system.</p> <p>This manual provides the elements, general procedures, and tools to be used at any stage of the hazardous chemical chain from its application, entry, storage, handling and when it becomes hazardous waste. Once the chemicals are evaluated and according to the classification, carcinogens, mutagenic, teratogenic, and persistent environmental products are discarded, so that, according to the hierarchy of controls, it would be necessary to replace or eliminate them with one that offers less damage to health or the environment.</p>

Genetically Modified Organisms

RT-CH-410c.1 Percentage of products by revenue that contain genetically modified organisms (GMOs)

Chemicals	
Esenttia	Esenttia does not have products containing genetically modified organisms.

Reserves Valuation & Capital Expenditures

EM-EP-420a.1 (1) Sensitivity of hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions.

Oil & Gas Exploration & Production							
Metric	1						
Product	Crude & NGL	Gas Natural	Total Crude & Gas	Crude & NGL	Gas Natural	Total Crude & Gas	
Unit	MMbbls	BSCF	Mmboe	MMbbls	Bscf	Mmboe	
Year	2022			2023			
Ecopetrol Group	Bookings as of December 31	1,515	2,828	2,011	1,471	2,346	1,883
	Sensitivity Scenario	1,478	2,807	1,971	1,466	2,359	1,880
	Difference (mmb)	-37	-21	-40	-5	13	-3
	Difference (%)	-2.00	-1.00	-2.00	-0.40	0.60	-0.16

The above table provides information on the sensitivity analysis carried out on the Group's oil and gas reserves as of December 31, 2023, and 2022, considering ICE Brent crude oil prices, which reasonably reflect management's view on oil prices given prevailing market conditions and portfolio costs.

Assumptions for reserve sensitivity analysis:

- The baseline scenario on which our sensitivity analysis is performed corresponds to 99.98% of our oil, NGL and natural gas reserves, as of December 31, 2023.
- The sensitivity analysis assumes a constant ICE Brent price of \$83.4 USD per barrel in 2024, \$72.9 USD per barrel in 2025, \$75.7 USD per barrel in 2026, and between \$79.7 USD and \$77.3 USD per barrel in the period 2027-2040.

EM-EP-420a.2 Estimated carbon dioxide emissions embedded in proved hydrocarbon reserves

Oil & Gas Exploration & Production			
Metric	1		
Unit	TonCO ₂ eq		
Year	2021	2022	2023
Ecopetrol S.A.	686,267,563	700,617,243	666,483,174
Hocol	42,674,573	38,296,086	30,653,496
Ecopetrol Permian	76,972,634	79,148,966	72,655,961
Ecopetrol America	11,414,188	8,564,000	8,987,946
Ecopetrol Brasil	Not applicable		

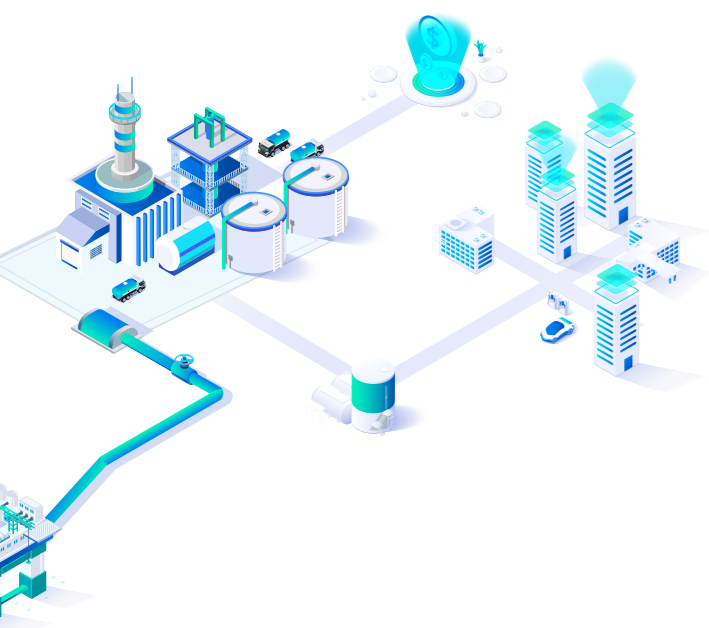
EM-EP-420a.3 (1) Amount invested in renewable energy, (2) revenue generated by renewable energy sales

Oil & Gas Exploration & Production						
Metric	1			2		
Unit	COP \$			COP \$		
Year	2021	2022	2023	2021	2022	2023
Ecopetrol S.A.	15,446,900,800	66,505,384,201	115,557,860,564	0	0	0
Hocol	608,611,040	903,599,279	0	0	0	0
Ecopetrol Permian	0	0	0	0	0	0
Ecopetrol America	0	0	0	0	0	0
Ecopetrol Brasil	0	0	0	0	0	0

Ecopetrol S.A.: The main reason for the variation presented was that most of the execution of the La Cira project took place during 2023.

EM-EP-420a.4 Discussion of how price and demand for hydrocarbons and/or climate regulation influence the capital expenditure strategy for the exploration, acquisition, and development of assets

Oil & Gas Exploration & Production	
Metric	1
Unit	Discussion and analysis
Year	2023
Ecopetrol S.A.	In September 2023, the Ecopetrol Group reaffirmed its commitment to sustainable growth in the current global environmental and hydrocarbon context, maintaining and enhancing its strategy to 2040 – Energy that transforms, which is open for public consultation on Ecopetrol’s website.
Hocol	The strategy maintains its 4 strategic pillars, allowing Ecopetrol to continue positioning itself as an integrated energy group that leverages the region’s growth: (i) Grow with the Energy Transition, (ii) Generate Value with Sustainability®, (iii) Cutting-edge Knowledge and (iv) Competitive Returns. In the same way, the focus on generating sustainable value for all its stakeholders is maintained, consolidating an agile and dynamic organization that adapts in a timely manner to the changes faced by the energy industry. In this sense, the investment strategy for the coming years is based on organic and inorganic growth scenarios, with the aim of producing low-emission hydrocarbons.
Ecopetrol Permian	Likewise, within the 2024 Investment Plan, whose amount ranges between \$23 and \$27 billion COP, it was established to allocate 42% to energy transition, low emissions and decarbonization projects and natural gas supply, seeking to generate possible competitive advantages with “carbon neutral” products through national policies such as the National Tradable Quota Program and the carbon tax that, although in Colombia it applies to fossil fuels, it is not ruled out that it will be extended to other products owned by the Group.
Ecopetrol America	In line with the 2040 Strategy, nearly 3.7 trillion COP will also be allocated to Sustainable Sustainability® projects and activities, mainly in the areas of territorial development, climate change, science, technology and innovation.
Ecopetrol Brasil	According to the Plan, in the next three years, the Ecopetrol Group will generate more than \$7 billion COP in business efficiencies, savings and cost control. Likewise, in 2024, competitive returns will be ensured at Brent levels of US\$75 per barrel, with a ROACE of around 9%, an EBITDA margin of approximately 38% and transfers to the Nation of more than \$38 billion COP.



Sourcing & Environmental Impacts of Feedstock Production

RR-BI-430a.1 Discussion of strategy to manage risks associated with environmental impacts of feedstock production

Biofuels	
Metric	1
Unit	Discussion and analysis
Year	2023
	<p>Environmental Impact Management Strategy:</p> <ol style="list-style-type: none"> 1. Life Cycle Assessment (ISO 14040): Ecodiesel uses this methodology to evaluate the environmental performance of its products throughout the entire production chain. 2. Regulatory Risk Management: ISO 31000: Ecodiesel uses this international standard to identify, assess, and manage regulatory risks associated with the production of raw materials. The risk-based approach allows the company to proactively address emerging uncertainties and challenges. 3. Mitigation Strategies: The company develops and implements relevant actions and strategies to ensure the provision of reliable and sustainable products, complying with regulatory restrictions, customer requirements and internal company conditions. 4. Risks associated with the production of raw materials. <ul style="list-style-type: none"> • Raw Material Shortages: Ecodiesel faces risks of shortages due to public order issues, such as social or political conflicts that may affect the availability of raw materials. • Impact by Climatic Phenomena: The company is exposed to risks related to extreme weather events or natural disasters that may negatively impact the production and supply of raw materials.
Ecodiesel	<p>Risks and opportunities:</p> <ol style="list-style-type: none"> 1. Natural Risk Assessment Development of Contingency Plans Geographic Diversification for the commercialization of CPOs. 2. Phytosanitary Monitoring, Sustainable Agricultural Practices, Crop Breeding, Research and Development. 3. Explore and establish new suppliers and the costs involved. 4. Water Management Research & Development Water Use Improvements. 5. Evaluate and Develop Logistics Contingency Plans (suppliers). 6. Social and Political Risk Assessment. 7. Conduct Periodic Evaluations and Adjust Strategies. 8. Water Management / Renewable Energy / Waste Management / Sustainable Transport Policies / Participation in Climate Initiatives. 9. Implement spaces for discussion and analysis on challenges and challenges of the production chain to encourage the required improvements.

RR-BI-430a.2 Percentage of biofuel production third-party certified to an environmental sustainability standard

Biofuels			
Metric	1		
Unit	%		
Year	2021	2022	2023
Ecodiesel	61.82	54.01	60.36

Ecodiesel: During the 2022 period, a third-party supplier of raw materials was not certified to continue under the sustainability standards of the ISCC International Sustainability and Carbon Certification supply chain, which generated a decrease in sustainably sourced raw material in the production of Biofuel. The ISCC is expected to be maintained as it meets the criteria of the Renewable Energy Directive, which certifies Palm Biodiesel, Refined, Bleached – Deodorized (RBD) from Palma. For 2023, sustainability criteria were considered such as: ISCC International Sustainability and Carbon Certification (Renewable Energy Directive), which the raw material meets to be sustainable. Certified products are refined palm oil, palm biodiesel and crude glycerin.

Leadership and governance chapter

Business Ethics and Transparency

EM-EP 510a.1 Percentage of proved reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index

Oil & Gas Exploration & Production	
Metric	1
Unit	%
Year	2021-2023
Ecopetrol S.A.	0
Hocol	
Ecopetrol Permian	
Ecopetrol America	
Ecopetrol Brasil	

For the purposes of this metric, only information associated with proven reserves is disclosed.

IF-EN-510a.1

(1) Number of active projects and (2) backlog in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index

Engineering & Construction Services				
Metric	1		2	
Unit	Number		COP	
Year	2021-2022	2022-2023	2021-2022	2022-2023
ISA INTERVAL	0	0	0	0

EM-EP-510a.2 Description of the management system (EM-EP) and policies and practices (IF-EN) for the prevention of corruption, bribery, and unfair competition practices throughout the value chain.

Oil & Gas Exploration & Production	
Metric	1
Unit	Discussion and analysis
Year	2023
Ecopetrol S.A.	<p>Ecopetrol conducts due diligence processes before establishing a link with a counterparty (customers, suppliers, contractors, subcontractors, and joint venture (JV) partners). This obligation is enshrined in the Code of Ethics and Conduct. In addition, the ML/FT/FPADM Risk Prevention Manual establishes the procedure for the knowledge of counterparties, in which due diligence actions and warning signs are defined. At the same time, the Guide for the Prevention of Compliance Risks in the New Business Process at Ecopetrol S.A., establishes the guidelines for the performance of due diligence on new businesses carried out by the Company, such as: mergers, acquisitions in any capacity, investments, operating agreements or joint bidding, divestments, among others.</p> <p>Within the comprehensive policy of Ethics and Transparency, Ecopetrol established the fundamental principles that govern the organization and, in this sense, established several guidelines for the management, among others:</p> <ul style="list-style-type: none"> Conflict of interest: Corresponds to the actions of public servants in matters in which they have a particular and direct interest in their regulation, management, control or decision, or their spouse, permanent partner, or any of their relatives within the fourth degree of consanguinity, second degree of affinity or first degree of civil relationship, or their de facto or de jure partner or partners. in accordance with the provisions of Article 40 of Law 734 of 2002. We have express and rigid regulations on conflicts of interest and internal procedures for reporting and decision-making. In accordance with these provisions, it is forbidden to seek privileges, obtain undue personal benefits, as well as carry out actions based on favoritism, nepotism or clientelism. Information and communication: We declare information as a key asset for management and decision-making. We communicate and disclose relevant information to our stakeholders, through an appropriate treatment of it, complying with current regulations in terms of quality, security, intellectual property, and privacy. <p>On the other hand, Ecopetrol signs contractual clauses with its counterparties, which establish as one of its obligations of ethics and transparency, the right to carry out an administrative, financial, operational or compliance audit on the counterparty, and on any third party that provides services in relation to the object of the contract, as well as to review the information that Ecopetrol S.A. deems pertinent to verify compliance with anti-bribery laws. Ecopetrol S.A.'s Code of Ethics and Conduct, and the Company's ethics and compliance guidelines. Likewise, the third parties with whom the Company establishes business relations sign contractual clauses and formats by virtue of which they undertake to comply with national and international regulations and benchmarks in matters of ethics and compliance, and to know and respect the Code of Ethics and Conduct of Ecopetrol S.A.</p> <p>Finally, the Company provides due diligence training to its workers, contractors, allies, suppliers, and partners (including partnership contracts).</p>

Hocol	<p>Hocol carries out all actions aimed at managing the risks of corruption, bribery, transnational bribery, free economic competition, LA/FT/FPDAM, within the framework of its business ethics program, which defines among others the following activities:</p> <ul style="list-style-type: none"> • Prevention: Training and communications aimed at all levels of the company and related third parties such as customers, partners, allies, suppliers, and contractors. • Periodic risk management cycles where potential risks are evaluated, and the controls defined to mitigate them. Procedure for getting to know counterparties through due diligence carried out by Hocol's Sourcing area. • Detection and Response: Hocol's ethics channel for dealing with queries and complaints in relation to acts related to fraud, corruption, money laundering, bribery, transnational bribery, financing of terrorism, financing of the proliferation of weapons of mass destruction, actions that threaten free economic competition and all those behaviors that go against the provisions of the Company's code of ethics and conduct. • Permanent monitoring of all counterparties, operations and processes of the Company that have risks associated with corruption, bribery, transnational bribery, free economic competition and ML/FT/FPADM. • Continuous improvement: Regular updates on standards, guides, procedures, manuals, instructions, in accordance with national and international standards applicable to companies regarding the management of risks of corruption, bribery, transnational bribery, free economic competition LA/FT/FPDAM. • Participation in initiatives such as EITI and GLOBAL COMPACT that generate best practices in relation to corporate ethics and transparency programs.
Ecopetrol Permian Ecopetrol America	<p>The two companies maintain their operations aligned with the Code of Ethics and Conduct, which was adopted by Ecopetrol America's Board of Directors on February 4, 2021.</p> <p>Code of Ethics and Conduct: Ecopetrol America has established a clear and comprehensive Code of Ethics and Conduct that outlines expected behavior and sets the tone for a corruption-free environment.</p> <p>Risk Assessment: Ecopetrol America's Compliance Department conducts periodic risk assessments to identify areas of vulnerability. This includes assessing risks associated with business partners, suppliers, and other stakeholders.</p> <p>Due Diligence: Ecopetrol America has put in place due diligence processes to screen all transaction partners to ensure they comply with anti-corruption rules.</p> <p>Training and awareness-raising: Ecopetrol America provides regular training sessions to its employees and stakeholders on anti-corruption policies, legislation, and ethical business practices to foster a culture of awareness and integrity.</p> <p>Whistleblower protection: An ethics hotline has been established to report potential incidents of corruption or bribery. The hotline ensures whistleblower protection to encourage employees to report without fear of retaliation.</p> <p>Third-party control: Regular controls and audits are carried out on the activities of third parties, such as suppliers and distributors, to ensure compliance with anti-corruption policies and mitigate potential risks.</p> <p>Internal Controls: Ecopetrol America has implemented robust internal controls and financial oversight mechanisms to detect and prevent corrupt practices. This includes segregation of duties, regular financial audits, and transaction monitoring.</p> <p>Legal Compliance: Ecopetrol America stays informed about relevant national and international anti-corruption laws and regulations. Additionally, it adapts policies to meet legal requirements in different jurisdictions.</p>

	<p>Contractual guarantees: Anti-corruption clauses are included in contracts.</p> <p>Continuous improvement: Anti-corruption policies and procedures are regularly reviewed and updated based on evolving risks, legal requirements, and best practices.</p> <p>Transparency and reporting: Stakeholders are regularly informed about efforts and progress in the fight against corruption.</p>
Ecopetrol Brasil	<p>Ecopetrol Brasil is aligned with the principles and procedures of the Ecopetrol Group to operate safely, responsibly, and reliably; respecting and valuing staff and contractors; working with partners (JVs) and joint venture providers; protecting the value of projects; and working with governments and communities, including commitment to human rights. The Anti-Bribery Code, Ethics, and Compliance apply to all employees, officers, and members of the Board of Directors. Ecopetrol Óleo e Gas do Brasil makes available to contractors the codes and procedures on anti-bribery, ethics and compliance, and invites contractors and their employees to act in a manner consistent with the code and appropriate action is taken when it is deemed that they have not met expectations or their contractual obligations.</p> <p>Ecopetrol Brasil regularly provides its employees with training and communications on how to apply the principles of the anti-bribery code, ethics, and compliance in order to align the general principles and seek transparency. Ecopetrol Óleo e Gas do Brasil complies with international and national laws and regulations on regulation and ethics in Brazil, in addition to being aligned with the business and principles of ethics and compliance of the Ecopetrol Group.</p> <p>Finally, an ethics hotline channel is available to facilitate and collaborate on compliance matters and to investigate and remedy any inappropriate situation not aligned with the Company's codes and principles.</p>

IF-EN-510a.2	<i>Total amount of monetary losses as a result of legal proceedings associated with charges of (1) bribery or corruption and (2) anticompetitive practices.</i>			
Engineering & Construction Services				
Metric	1		2	
Unit	COP		COP	
Year	2021-2022	2022-2023	2021-2022	2022-2023
ISA INTERVIAL	0	0	0	0

IF-EN-510a.3	<i>Description of policies and practices for the prevention of (1) bribery and corruption and (2) unfair competition practices in project bidding processes</i>
Engineering & Construction Services	
Metric	1
Unit	Discussion and analysis
Year	2023
ISA INTERVIAL	<p>ISA INTERVIAL considers that ethics is the central axis of its actions, which is why the Corporate Integrity & Ethics Model - Law 20.393 - Compliance was structured, which allows the management of events of risk of bribery, corruption and unfair competition, among others, promoting the ethical behavior of its administrators, workers and stakeholders, as the main management measure. ISA's Anti-Corruption and Anti-Bribery Management Guide, and the annexes specifically applicable to ISA INTERVIAL, set out the ethical criteria that directors and employees must follow for the management of: conflicts of interest, sponsorships, invitation and participation in events, gifts and hospitality, social management and donations, improper payments to facilitate procedures, government relations, Anti-corruption due diligence on suppliers and new businesses.</p> <p>The Company developed and implemented continuous analytical monitoring for compliance due diligence, which allowed the identification and management of local and international compliance risks, through third-party monitoring on more than 1,500 sanctions lists, adverse news and connects with SAP information, purchase orders, contracts and sanctions lists of the Government of Chile. This is done to make informed decisions by the Corporate Integrity and Ethics Committee.</p> <p>Training was carried out for ISA INTERVIAL's Sustainability teams in social management and donations, gifts, and hospitality, making employees aware of the obligations, prohibitions and sanctions related to Law 20,393 through the clauses incorporated in employment contracts.</p> <p>Finally, training is carried out on an ongoing basis for ISA INTERVIAL's administrators and collaborators to complete the annual declaration of conflict of interest. The Compliance Officer, together with the immediate superior, analyzes the pertinent measures when a conflict of interest is evident.</p>

Professional Integrity and Pricing Integrity & Transparency

EM-MD-520a.1	<i>Total amount of monetary losses as a result of legal proceedings related to professional integrity (SV-PS), federal pipeline and storage regulations (EM-MD), and price fixing or manipulation (EM-RM).</i>
EM-RM-520a.1	
Transport & Logistics	
Metric	1
Unit	Monetary unit
Year	2021- 2023
Cenit	
Ocensa	
ODL	0
OBC	
ODC	
Progasur	

Refining & Marketing	
Metric	1
Unit	Monetary unit
Year	2021- 2023
Refinería de Barrancabermeja	0
Refinería de Cartagena	
SV-PS-510a.1	<i>Description of the approach to ensuring professional integrity</i>
Professional & Business Services	
Metric	1
Unit	Discussion and analysis
Year	2023
XM	<p>Conflict of Interest: XM has a conflict-of-interest declaration scheme when staff come in, annually, or when they show up. Conflicts between workers or close family members and suppliers, market agents, competitors or third parties must be reported, in accordance with the established criteria. The chief leads the analysis, with the support of the compliance and legal officer, measures are established to manage them, and the results are presented to the Ethics Committee. Monitoring tools are available through data analytics and the information processed is effectively managed and protected.</p> <p>Data Accuracy: XM strengthens the maintenance and presentation of accurate data and develops a data governance and quality program, which establishes requirements, standards, and best practices that apply to the handling of information to have accurate, reliable, and securely and efficiently handled information, in accordance with regulation. Regarding the protection of confidential information, there is an information security management system (ISMS) based on the international standard ISO 27001:2013, audited annually and certified by ICONTEC since 2015. The ISMS provides guidelines for the classification of business information and technology controls for its protection throughout the information lifecycle.</p> <p>Corruption: Automated tools were implemented to strengthen the monitoring and reporting of compliance with some aspects established in the Business Ethics and Compliance Program. XM has an externally staffed ethics hotline available to its stakeholders to consult, report or denounce particular situations and possible breaches of the Code of Ethics or the integrity of the organization. The Guide to the Management of Ethical Issues seeks to establish whistleblower protection mechanisms and regulate other aspects of reporting to the ethics hotline.</p>
US Trading	The Companies have adopted the Code of Ethics and Conduct of the Ecopetrol Group and the modifications or updates made to it, in accordance with the guidelines of Ecopetrol S.A., and it is adopted by the Board of Directors and/or Board of Directors.
Trading Asia	<p>These documents are given to each employee at the time of entry, who sign confirming receipt and understanding of the code of ethics and conduct.</p> <p>Additionally, as part of the process of securing and updating information, employees must complete compliance and internal control courses on an annual basis, including Conflicts of Interest and Transparency Pact, and fill out the forms confirming the accuracy of the answers provided.</p> <p>Suspected violations of these codes can be reported through the Group's Ethics Hotline, which receives reports anonymously and is available to the general public on the Ecopetrol S.A. website.</p>

SV-PS-510a.2 <i>Total amount of monetary losses as a result of legal proceedings related to professional integrity</i>		
Professional & Business Services		
Metric	1	
Unit	Monetary unit	
Year	2021-2022	2023
XM	0	0
US Trading	Not applicable	0
Trading Asia	Unavailable	0

Management of the Legal and Regulatory Environment

EM-EP-530a.1
EM-RM-530a.1
RR-BI-530a.2
RT-CH-530a.1 *Analysis of corporate positions related to government regulations and/or policies that address environmental and social factors affecting the industry*

Oil & Gas Exploration & Production	
Metric	1
Unit	Discussion and analysis
Year	2023
Ecopetrol Group	<p>In Colombia, the Ministry of Environment and Sustainable Development is the rector of the environmental management policy and renewable natural resources in the country, in charge of defining the policies and regulations that apply to most of the companies of the Ecopetrol Group.</p> <p>Ecopetrol S.A. has defined joint work spaces with this ministry and, in general, with the members of the National Environmental System, with the aim of advancing in the review, analysis and participation in consultation of regulations and public policy to manage the challenges of the energy transition and environmental, climate and social issues, with the purpose of achieving a balance between operations and the environment through the implementation of management measures for the prevention, mitigation, correction and compensation of impacts, in favor of the development and socioeconomic well-being of the country, it is pertinent to clarify that the final definition of the normative content is the responsibility of the authority that has the legislative initiative reviewed and analyzed.</p> <p>Likewise, in order to permanently monitor the socio-environmental legal requirements in force and applicable in Colombia, the Group Companies register the inclusion of socio-environmental regulations and make their corresponding disclosure to the responsible areas, managing their environmental legal compliance.</p> <p>Regarding exploration and production activities, the works, projects and activities that are developed throughout the national territory, have environmental licenses and permits to operate, which define the activities and strategies that can be developed, along with the management measures to prevent, mitigate, correct and compensate for the environmental and social impacts previously identified by the performance of the activities.</p> <p>Currently, the National Government has an initiative to modify Decree 1076 of 2015 (Single Regulatory Decree of the environmental sector), which seeks, among other aspects, to modify the environmental licensing process. In addition, the Constitutional Court is currently reviewing the constitutionality of the law that approved the inclusion of the Escazú Agreement in the national order, which seeks access to environmental information, public participation in decision-making processes and access to justice in environmental matters, which may require more time and resources in the planning and development of the projects, works and activities of the Group Companies.</p>

In terms of climate change, at the national level, Ecopetrol S.A. and its subsidiaries identify early the challenges to comply with regulatory and management requirements associated with greenhouse gas emissions and adaptation to climate change, in order to integrate them into the Group's climate action plan. At the international level, it permanently monitors the discussions associated with the energy transition and decarbonisation, actively participating in different spaces that allow it to identify the challenges and mechanisms for aligning its climate ambition.

In order to keep the Ecopetrol Group at the forefront of the world in its decarbonization and energy transition plan, Ecopetrol S.A. has joined global initiatives such as the methane reduction initiative of the Climate and Clean Air Coalition (CCAC) led by the United Nations and the "Zero Routine Flaring by 2030" initiative led by the World Bank. that seeks to bring routine burns to zero. Likewise, the Company is part of IPIECA, an international organization that promotes spaces for the exchange of knowledge, analysis, and construction of guidelines in sustainability and climate change.

In terms of nature, since 2021, Ecopetrol S.A. has been part of the working group on nature-related financial disclosures (TNFD), contributing to the construction of a framework for disclosure and management of risks and opportunities associated with nature. In this global group, made up of 40 organizations from different sectors, Ecopetrol S.A. stands out for being the only company in the hydrocarbons sector and for leading the group in charge of developing sectoral guides for the energy sector. Participating in this initiative allows Ecopetrol S.A. to anticipate possible national and international regulations associated with the management and disclosure of risks associated with nature.

Likewise, with the aim of contributing to the commitments associated with the fulfillment of the goals of the Kunming-Montreal Global Biodiversity Framework approved in 2022, Ecopetrol S.A., together with ANDI, participates in the process of updating Colombia's National Biodiversity Strategy and Action Plan (NBSAP) led by the Ministry of Environment and Sustainable Development.

In terms of the generation of social value, the Ecopetrol Group has been contributing to territorial development through strategic, relevant and impactful investment, leveraging sustainability, inclusion and territorial peace, through the value chain, in line with the commitments of the local, regional and national government and the Sustainable Development Goals - SDGs; as well as through the management of alliances and the identification of business models that involve community participation.

The social investment intervention covers various lines, such as: Access to public services, Inclusive rural development, Education, sports and health, Entrepreneurship and business development, Institutional and community strengthening; and Public and Community Infrastructure, which have been integrated within the framework of the Just and Equitable Energy Transition, aligning with government policies and business strategy. From an environmental point of view, the 2024 regulatory agenda, published by the Ministry of Environment and Sustainable Development, has not meant an impact or generation of risk towards the scope of the projects contained in the portfolio.

It is important to highlight that, for the definition of sustainability indicators and goals, the Group Companies take into account the national and international public policy and regulatory framework, insofar as the largest shareholder of the Companies is the Colombian State.

In the same way, all normative and regulatory aspects have mapped the risk of non-compliance with the applicable regulation and are monitored for its management, highlighting mechanisms such as the Integrated Risk Management System (SRI) in Hocol S.A., whose main objective is the creation and protection of value.

Likewise, within the Strategic or Business Risks, those risks that may affect the fulfillment of the strategy, strategic objectives and/or balanced management board are contemplated; one of them is the uncertainty in the face of regulatory changes that negatively affect the strategy applied to each of the Group's companies.

In terms of international markets, Ecopetrol S.A. operates through subsidiaries in the United States and Brazil. Each of the companies is in charge of monitoring and complying with the socio-environmental regulations of each country.

Thus, in the case of Ecopetrol America and the Permian, oil and gas activity in Texas is regulated primarily by the Texas Railroad Commission and the Texas Commission on Environmental Quality. The Texas legislature creates the laws that affect the Texas oil and gas industry. These companies have forged a fruitful relationship with operating partners to manage the risks associated with this legal and regulatory environment. The regulatory risks and opportunities of any proposed activity are assessed by diligent professionals before the activity can proceed.

Thus, the overall strategy established for the Group's companies located in the United States to manage the risks and opportunities associated with the legal and regulatory environment is to establish the best relationships with the operating partner, especially among the drilling and exploration personnel of the respective company, as well as its middle and senior managers. Operators hold frequent partner meetings to discuss planned operations and best reservoir development strategies.

From Brazil, Ecopetrol Óleo e Gas do Brasil actively participates, through the government authorities (Ministry of Mines and Energy - MME, National Agency of Petroleum, Natural Gas and Biofuels - ANP, IBAMA, among others) in the discussions involving the main issues of the industry, including changes in the legislation and regulatory framework, as well as hearings and public consultations of the ANP.

Regarding refining and petrochemical activities, the Group's refineries are incorporated into (i) the Colombian Low Carbon Development Strategy - EDCBC led by the Ministry of Environment and Sustainable Development (MADS), which is being implemented with mitigation and adaptation actions, (ii) Colombia's Long-Term Climate Strategy - E2050, proposed as an instrument of State policy to strengthen the country's resilience and guide the transformation towards a low-carbon economy and (iii) the Alliance for Carbon Neutrality, which involves the participation of the private sector.

At the sectoral level, refineries have the Comprehensive Climate Change Management Plan for the Mines and Energy sector, which defines specific actions in mitigation, adaptation, governance, and knowledge to contribute to national goals and greenhouse gas reduction targets.

The management of water resources and biodiversity is aligned with government guidelines and the program for the efficient use and saving of water issued by Law 373 of 1997.

Regarding activities **associated with chemical substances**, the Group, through Esenttia, worked in synergy with the Ministry of Environment and Sustainable Development through working groups to advance in the regulatory process of the Law that bans single-use plastics approved in 2022. This regulation establishes two-time frames (2 and 8 years) to carry out the substitution of the materials of the so-called single-use containers and packaging. The Company has analysed the volumes of polyethylene and polypropylene that customers use to produce these applications, while at the same time proposing strategies to approach customers with the so-called sustainable alternatives that are defined in the standard. As an important event in 2023 to highlight at this point, the Company made the first batch of polypropylene made from pyrolysis oil, which translates into an advance in the start-up of the recycled polyolefins plant, it also marketed more than 500 tons of recycled polyethylene and polypropylene, which it has been producing with allied companies, before the plant in Tocancipá began operating. Work has also been done on the commercialization of biodegradable resins, understanding that they are products of greater value, require a different chain of use than synthetic resins and need different processing conditions, so it is necessary to accompany customers on many fronts, in addition to achieving validation by the environmental authorities against these sustainable alternatives. In addition, the Company has worked with the recycling value chain, which also plays a fundamental role within the strategy and also to be able to manage the additional attributes of the inclusion of recycled resins, which results in plastic credits and reduction of carbon emissions, with a view to obtaining an additional benefit for our customers that allows them not to incur the tax on single-use plastic.

In 2023, the chemical risk program was also continued, complying with the requirements established in Resolution 0773 of 2021, Globally Harmonized System (GHS), through the implementation of the work plan to guarantee the classification and labeling of chemical substances, as well as the maintenance and maintenance of the system, the communication of risks and the Safety Data Sheets (SDS).

Esenttia does not contain chemicals that are harmful or affect health, much less cause occupational diseases. However, under its Occupational Hygiene Program, measurements are taken on employees who come to work or handle chemical substances, ensuring that work accidents, occupational diseases or disagreements are avoided by employees, carrying out training, periodic inspections and even a specific chemical spill drill to ensure preparedness for an emergency of this type.

Finally, in **biofuels activities**, it should be added that Ecodiesel has identified the risks of (i) changes in environmental legislation that may affect the production and commercialization of palm biodiesel, especially if additional restrictions on deforestation or stricter regulations on the use of agricultural land are imposed, (ii) energy and agricultural policy instability, which would affect the economic viability of palm biodiesel and investment in the sector and (iii) Uncertainty about tax incentives.

This particular identification of risks to biofuel generation activities has also contributed to the Group's identification of opportunities such as (i) government incentives, (ii) potential growth of the growing market, and (iii) the existence of international certifications and standards met by Ecodiesel such as the Roundtable Certification on Sustainable Palm Oil and International Sustainability and Carbon Certification.

RR-BI-530a.1 Amount of grants received through government programs

Biofuels	
Metric	1
Unit	COP
Year	2021-2023
Ecodiesel	0

Critical Incident Risk Management / Operational Safety, Emergency Preparedness & Response

EM-EP-540a.1 (EM-EP) Process safety event rate for loss of primary containment of major consequence						
Oil & Gas Exploration & Production						
Metric	1			2		
Unit	Rate			Rate		
Year	2021	2022	2023	2021	2022	2023
Ecopetrol S.A.	0.009	0.004	0.007			
Hocol	0	0	0			
Ecopetrol Permian	0	0	0			
Ecopetrol America	0	0	19.2			
Ecopetrol Brasil	Not applicable	Not applicable	Not applicable			

EM-MD-540a.1 (1) Number of reportable pipeline incidents, (2) significant percentage						
Transport & Logistics						
Metric	1			2		
Unit	Number			Percentage		
Year	2021	2022	2023	2021	2022	2023
Cenit	12.0	8.0	8.0	16.7	12.5	37.5
Ocensa	2	0	1		0	
ODL		0			0	
OBC		0			0	
ODC		0			0	
Progasur	0	0	2	0	0	50

Ocensa: For 2023, one (1) reportable incident is reported in the pipeline, corresponding to a “sink product leak” at the La Granjita station.

EM-RM-540a.1 Process Safety Event (PSE) rates for Loss of Primary Containment (LOPC) of (1) greater consequence (Tier 1) and (2) lesser consequence (Tier 2)						
Refining & Marketing						
Metric	1			2		
Unit	Rate			Rate		
Year	2021	2022	2023	2021	2022	2023
Refinería de Barrancabermeja	0.10	0	0	0.21	0.07	0.07
Refinería de Cartagena		0		0.07	0.06	0.04

EM-RM-540a.2 Threat Indicator Rate for Security Systems (Level 3)						
Refining & Marketing						
Metric	1			2		
Unit	Rate			Rate		
Year	2021	2022	2023	2021	2022	2023
Refinería de Barrancabermeja						
Refinería de Cartagena						

RT-CH-540a.1 (1) Number of Process Safety Incidents (PSIC), RR-BI-540a.1 (2) Total Process Safety Incident Rate (PSTIR), (3) Process Safety Incident Severity Rate (PSISR)									
Chemicals Biofuels									
Metric	1			2			3		
Unit	Number			Rate			Rate		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023
Esenttia		0			0			0	
Ecodiesel	Unavailable	0	0	Unavailable	0	0	Unavailable	0	0

EM-MD-540a.2 Percentage of (1) natural gas and (2) hazardous liquid pipelines inspected							
Transport & Logistics							
Metric	1			2			
Unit	%			%			
Year	2021	2022	2023	2021	2022	2023	
Cenit				35.83	50.25	49.90	
Ocensa				64.55	35.45	38.52	
ODL		Not applicable			100	100	0
OBC				100	100	0	
ODC				100	100	100	
Progasur	100	100	100	Not applicable			

Cenit: For the assessment of pipeline integrity, in-line inspection with instrumented vehicles (ILI) is used with the following technologies:

- Axial Magnetic Flux (MFL): metal loss, external and internal corrosion
- Straight beam ultrasound (metal loss)
- Angular Beam Ultrasound for Axial Crack Detection
- Angular Beam Ultrasound for Circumferential Cracks
- Geometry for Pipe Deformation Detection Inertial - XYZ positioning to identify areas with deformation by external forces and pipe movement.
- MFL for material characterization identifies and characterizes the material specification of each pipeline that makes up the pipeline and polyduct.
- MFL with Emphasis on Illicit TAP Valve Detection (Seizing Area)

Ocensa: The inspections carried out are not continuous, but individually scheduled and contracted inspections of these sectors are carried out using specific technologies (ultrasound cracks, inertial - geometry, ultrasound metal loss and cracks). During 2023, a 31% inspection cycle was completed in segments 0 and 2 of the pipeline.

ODL/OBC: According to the annual risk-based integrity plan (PAI), inspections of the ODL and OBC pipelines were not planned for 2023.

ODC: The Company implements ILI (In-Line Inspection) techniques where the entire wall thickness is inspected for the detection of corrosion, cracks or other defects; it is one of the most important inputs since it defines the geometry of the pipe, thanks to its inertial tracking system defines with very good quality.

RT-CH-540a.2		Number of Transport Incidents	
Chemicals			
Metric	1		
Unit	Number		
Year	2021-2023		
Esenttia	0		

EM-EP-540a.2 Description of management systems used to identify and mitigate catastrophic and tail-end risks

Oil & Gas Exploration & Production	
Metric	1
Unit	Discussion and analysis
Year	2023
Ecopetrol S.A.	<p>At Ecopetrol Group, process safety strives to achieve the best operational performance by intervening in the greatest risk of technological origin through the application of measures and actions necessary for the prevention and mitigation of the release of hazardous substances or energy. The impact of these measures is the reduction of operational and occupational incidents with the potential for major accidents or disasters, providing an effective management framework for the Ecopetrol Group's operations and demonstrating commitment to the first principle of the Cultural Declaration, Life First.</p> <p>Within the Generating Value with Sustainability pillar of Ecopetrol's 2040+ Strategy "Energy that Transforms", Process Safety is classified as a material element. The Ecopetrol Group's ambition is to become a benchmark in industrial and process safety worldwide, adopting best practices and developing operations under tolerable levels of process safety risk.</p> <p>To achieve this, the Company is working on four (4) fronts:</p> <ul style="list-style-type: none"> • Coherence, commitment, and visible leadership in process safety. • Risk-based process safety management. • Trend analysis and learning from experience. • Emerging risk management.
Hocol	<p>The Company prioritizes people's lives, the impact on the environment and the integrity of its assets throughout the life cycle, having management tools, good engineering practices, and strengthening operational discipline. The Company's Process Safety Management Manual is a management tool, whose rigorous application becomes a "Line of Defense", identifying hazards and managing risks that have the potential to release energy or hazardous material. The Manual is structured in 4 fundamental pillars and 12 management elements.</p> <p>The Manual, applied in an integrated manner, allows the safe conduct of our operations, establishing rules (norms, guides, procedures, practices) that delimit and define acceptable behavior.</p> <p>2023 features, among other activities:</p> <ul style="list-style-type: none"> • Participation in spaces organized by the CCPS (U.S. Chemical Center for Process Safety) and the Ecopetrol Group, ensuring alignment of Hocol S.A.'s process safety management with national and international best practices. • Process Safety Leadership Workshop for Steering Committee Members. • Incorporation of proactive indicators in process safety, allowing the identification of gaps and level of maturity of the organization (operating procedures, pre-commissioning safety reviews, mechanical integrity management, change management, incident investigation, planning and response to operational emergencies). • Definition and updating of new practices to ensure the continuity of operations, directing, and mainly influencing people's behavior in a reasonable way. Between 2020 and 2023, 22 were incorporated. • Incorporation of process safety guidelines for drilling and completion areas.

Ecopetrol Permian	<p>The following management systems are some examples that have been implemented by the operating partner:</p> <ul style="list-style-type: none"> • HAZOPS/What IF made prior to construction. • PSSR/Commissioning prior to commissioning of the installation. • MOC process for any changes. • Daily JSA (Occupational Safety Analysis). • RCFA - Failure Root Cause Analysis. • Permission to work. • Control Training & Certification • Automation with alarms and response calls • Pre JSA. • Training and certification in well control.
Ecopetrol America	<p>Ecopetrol America LLC's workforce is office staff and therefore a Management System is not required. However, certain aspects of an HSE Management System are used to ensure a safe workplace for all employees. For all Joint Venture operations, the Company ensures that the operator has the required HSE Management System in place prior to the commencement of operations.</p>
Ecopetrol Brasil	<p>Taking into account its non-operational characteristics and specific issues in Brazil, the Company has a mapping of its business risks, with its mitigation actions identified, in line with the Ecopetrol Group's guidelines regarding business risks.</p> <p>Currently, there is no catastrophic and final mapped risk in the Company with high impact on human health, local community, and environmental impacts.</p>



EM-MD-540a.4 <i>Description of the management systems used to embed a culture of safety and emergency preparedness throughout the value chain and throughout the project lifecycle.</i>	
Transport & Logistics	
Metric	Discussion and analysis
Unit	1
Year	2023
Cenit	<p>Cenit has an emergency preparedness and response strategy based on regulations, risk and consequence analysis, lessons learned and results of the implementation of the process, which includes elements to ensure emergency response, mitigation of consequences and compliance with legal requirements. It includes action before, during, and after an emergency. Preparedness is focused on response capacity in terms of sufficient quantity and quality of technical and human resources, and the definition of procedures for response in coordination with external parties (State, communities, and industry), according to the emergency scenarios of each facility. The answer is the application of the defined procedures, making use of the available resources, so that their effect is as small as possible, and the consequences are reduced as much as possible.</p> <p>All these guidelines are defined in the SOS-ED-010- Standard for Preparedness and Response to Operational Emergencies, which are executed through the PRE-Annual Plan and the execution, monitoring, and evaluation of the response to the events that materialize.</p> <p>The Company's Disaster Risk Management Plan (DRMP), in compliance with legislation, includes the identification, prevention and management of incidents that may be catastrophic, and is not only limited to the identification and reduction of risks, but also emphasizes proactive measures to prevent the materialization of these disaster-susceptible scenarios.</p> <p>It also includes the review and updating of security protocols, monitoring strategies, promotion of safe practices in all operational phases, and the prioritization and execution of risk-based activities, actions aimed at preserving the integrity of the infrastructure.</p>
Ocensa	<p>The Security and Emergency Management System in the Value Chain contemplates permanent maintenance and strengthening initiatives from 3 areas to prepare a timely response: Organization and Coordination, Training and Training, and Equipment and Facilities.</p> <p>The interactions between these spheres and the stakeholders with the potential to involve them in emergency response are recognized through:</p> <ul style="list-style-type: none"> • Standards and guidelines: Ocensa's security and emergency management system is fully compliant with the national regulatory framework and aligns with ISO 22300:2021, ISO 22301:2019, ISO 22320:2013, BS 11200 and NFPA 1600 technical standards. • Organization and coordination: Planning instruments for emergency response are developed, such as continuity plan, emergency and contingency plan, specific risk analysis, disaster scenario procedures, mutual aid agreements, local emergency response plans, and protocols. • Training and coaching: Annual cycles of workshops are held to promote a culture of safety and emergency preparedness, where the strategies of the emergency plans for each risk scenario are practiced. • Equipment and facilities: They seek to maintain and improve the availability of elements and infrastructure for emergency response in stations and offshore operations, including inspection, maintenance, and renewal routines of specialized equipment, as well as the validation of control point sheets. • Socialization of the system: We socialized with the Community Action Boards and fishermen's associations of AID the emergency plans, the WFP, and the disaster management plan of Ocensa. • Joint management of the workforce and management: The response instances to attend to any eventuality are consolidated with the Support Team, the Local Command, and the Executive Committee, together with the participation of collaborators.

ODL/OBC	<p>Companies have a Process Safety Management System, which is integrated into the Process Safety and Major Accidents policy, this System is defined for the entire life cycle of the assets.</p> <p>The following are the elements that make up the System:</p> <ol style="list-style-type: none"> 1. Operational culture and discipline. 2. Worker participation. 3. Process safety information. 4. Hazard identification and risk analysis and assessment. 5. Operation and maintenance procedures. 6. Training and skills assurance. 7. Mechanical integrity and asset reliability. 8. Change management. 9. Preparation for the operation. 10. Work permits. 11. Contractor management. 12. Emergency preparedness and response. 13. Investigation of major incidents and accidents. 14. Performance indicators. 15. Compliance audits. 16. Management review. <p>Regarding emergency responses, companies consider the following elements:</p> <ul style="list-style-type: none"> • Contingency planning and drills: Develop detailed contingency plans and conduct emergency drills to prepare personnel for critical situations, allowing for the identification of opportunities for improvement. • Training and education: We have an emergency preparedness training plan in place to make staff aware of risks, safety protocols, and emergency response procedures. • Supply chain integration: By extending these standards to suppliers and subcontractors, it ensures that the entire value chain complies with established safety regulations and practices, based on NFPA (The National Fire Protection Association) inputs and applicable standards.
ODC	<p>The Company has an emergency management process that ensures regulatory compliance with disaster risk management processes, through knowledge, risk reduction, disaster management, and monitoring and control.</p> <p>Likewise, the process makes it possible to identify, analyze and mitigate threats and risks that may affect and negatively impact people, the environment and business continuity, to ensure a timely response to an emergency or contingency.</p>

Progasur	<p>The Company has a risk and disaster management plan, in which the processes of knowledge and risk reduction are carried out, as well as disaster management, based on the analysis of the hazards of natural, anthropic, socio-natural, and operational origin that are possible and/or credible in the infrastructure.</p> <p>The main objective of this study is to define and record the knowledge, reduction, and mitigation actions required for the management of the risk associated with the operation and conditions of the Gas Pipelines.</p> <p>In the same way, Progasur defines preventive and corrective activities that allow us to react efficiently and safely to an eventuality that compromises the normal development of activities, the safety of personnel or the provision of service and business continuity.</p>
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EM-RM-540a.3 Discussion of measurement of Operating Discipline and Management System Performance through Tier 4 Indicators	
Refining & Marketing	
Metric	1
Unit	Discussion and analysis
Year	2023
Refinería de Barrancabermeja	<p>The Refinería de Barrancabermeja and the Refinería de Cartagena monitor the dynamics related to government regulations and policies with a dynamic and comprehensive risk management approach and carry out the management and monitoring of environmental legal compliance and adhere to the process safety policies of the Ecopetrol Group.</p> <p>In terms of climate change and air quality management, the refineries are incorporated into: (i) the Colombian Low Carbon Development Strategy - EDCBC led by the Ministry of Environment and Sustainable Development (MADS), which is being implemented with mitigation and adaptation actions, (ii) Colombia's Long-Term Climate Strategy - E2050, proposed as a State policy instrument to strengthen the country's resilience and guide the transformation towards a low-carbon economy, (iii) the Alliance for Carbon Neutrality, which involves the participation of the private sector.</p> <p>At the sectoral level, there is a Comprehensive Climate Change Management Plan for the Mines and Energy sector, which defines specific actions in mitigation, adaptation, governance, and knowledge to contribute to national goals and GHG reduction targets.</p>
Refinería de Cartagena	<p>The management of water resources and biodiversity is aligned with government guidelines and the Program for the Efficient Use and Saving of Water issued by Law 373 of 1997.</p> <p>Within the organization's Management System, the process of hazard identification, risk assessment and evaluation are defined to control the risks inherent to a process, area, or activity, establishing the necessary measures to eliminate or mitigate the probability of occurrence of negative events that generate losses for companies.</p> <p>Finally, both refineries have environmental permits for the use of resources by the Regional Autonomous Corporation of each of the departments where they operate, as well as an Environmental Management Plan where the mechanisms to manage the risks and opportunities associated with each legal and regulatory aspect are defined.</p>

Integrity of Gas Delivery Infrastructure

IF-GU-540a.1	Gas Distributors		
	1	2	3
	2021-2023		
Alcanos			
Gases del Oriente		0	
Metrogas			

Number of
(1) reportable pipeline incidents,
(2) Corrective Action Orders (CAO), and
(3) Notices of Probable Violation (NOPV)

IF-GU-540a.2	Gas Distributors					
	1			2		
	Percent by Length			Percent by Length		
	2021	2022	2023	2021	2022	2023
Alcanos		100			0	
Gases del Oriente		0			0	
Metrogas		100			0	

Percentage of distribution pipeline that is
(1) cast and/or wrought iron and
(2) unprotected steel

Gases del Oriente: The steel pipes in their entirety in the distribution system of Gases del Oriente are lined with coal tar in some sections, with epoxy coating "Fusion Bonded Epoxy" (FBE or dual FBE) and additionally the system has a cathodic protection system by impressed current. The Company does not have puddled cast iron or unprotected steel pipe.

IF-GU-540a.3	Gas Distributors					
	1			2		
	Percent by Length			Percent by Length		
	2021	2022	2023	2021	2022	2023
Alcanos				70	30	58
Gases del Oriente	Not applicable			100	100	100
Metrogas				28	31	26

Percentage of gas (1) transmission and (2) distribution pipelines inspected

The companies do not have transmission pipelines, considering that they are distributors and marketers of natural gas.

IF-GU-540a.4		Efforts to manage the integrity of gas supply infrastructure.
Gas Distributors		
Metric	1	
Year	2023	
Alcanos	<p>The Company has policies aimed at ensuring the security of the infrastructure by being above the standards established in the NTC3728, which recommends carrying out inspections of secondary networks at least every 5 years.</p> <p>The Company has established a policy for conducting tracking and patrolling activities considering the age of our distribution infrastructure. Therefore, for networks older than 20 years, inspections are carried out every 3 years, for networks between 10 and 20 years, inspections are carried out every 2 years and for networks with an age of less than 10 years, inspections are carried out every 2 years.</p>	
Gases del Oriente	<p>The Company conducts training in maintenance of the technical operation and maintenance (O&M) team, training of operational personnel through SENA, training by suppliers, participation in the Sustainable Gas working group that involves all national distribution companies, where good practices in the execution of O&M processes are shared, as well as regulatory issues. Carrying out network monitoring activities and indirect integrity studies.</p> <p>Formation of an emergency brigade by the fire brigade. Carrying out an annual drill for fuel gas rupture, conducting an annual national drill for earthquakes, internal and holding training, training in process safety oriented to the PPAM.</p> <p>In distribution, the Company carries out a process of recertification of operators, such as CNG operators, gas technology, certification in labor competence in internal installations and in thermofusion for polyethylene pipes.</p> <p>Network patrolling activities are carried out for right-of-way inspection, re-monitoring of networks to locate and repair leaks, training with utility companies to prevent and mitigate interventions on the network; training with law enforcement agencies; Participation in the Departmental Risk Management Committee.</p> <p>To avoid fugitive emissions, the Company has a preventive and corrective activity that evaluates the airtightness of the networks, such as the monitoring of networks. To control deliberate emissions, controlled burns are carried out at venting points.</p> <p>In places of high consequence, the location of pipelines and other facilities is identified with signage, where the number of the emergency line and the name of the Company are noted.</p> <p>There is an operation and maintenance program, focused on preserving the integrity of the assets, which has budgetary approval from the interested parties.</p>	

Metrogas	The Company executes studies of CIPS, PCM, corrosion coupons, internal cleaning, and monitoring of the primary Natural Gas network.
	<ul style="list-style-type: none"> PCM: Evaluate the integrity of the casing of a steel pipe in the natural gas network, using the PCM or Pipeline Current Mapper technique. CIPS: Closed Interval Potential Inspection; This involves interpreting above-ground potential (voltage) measurements of ground pipes along the entire length of the line.
	Five-year recertification of natural gas storage equipment, compressed gas, line thickness measurement in compression and decompression stations.
	Socialization with risk organizations, delivery of planimetry and contingency plan for emergencies, participation in drills, participation before risk management organizations. Along with auditing, technical training to maintain the safety of the asset.
	Relationship with the different public service companies, as well as outsourced companies, providing information on the location of the assets.
	Managing Human Health and Safety Risks involves drills per year to engage the community and risk management agencies.
Emergency hotlines and call-centers, attend 24 hours a day to any emergency that may arise, with timely attention within the established times.	
Likewise, the Company carries out the necessary predictive maintenance studies and corrective measures to mitigate possible damage caused to the infrastructure and integrity of the networks and in order to increase the useful life of the asset.	

Grid Resiliency

IF-EU-550a.1	<i>Number of incidents of non-compliance with physical and/or cybersecurity standards or regulations</i>		
Electric utilities			
Metric			
Unit	Number		
Year	2021-2023		
ISA	0		
ISA CTEEP			
ISA REP			
ISAINTERCOLOMBIA			
ISA INTERCHILE			
ISA TRANSELCA			

Social capital chapter

Security, Human Rights and Rights of Indigenous People

EM-EP-210a.1	<i>Percentage of (1) proved reserves in or near areas of conflict</i>		
Oil & Gas Exploration & Production			
Metric	1		
Unit	%		
Year	2021- 2023		
Ecopetrol S.A.	There are no proven reserves in or near conflict zones.		
Hocol			
Ecopetrol Permian			
Ecopetrol America			
Ecopetrol Brasil			

For the purposes of this metric, only information associated with proven reserves is disclosed.

The calculation was made based on information on the armed conflict reported by UPSALA (<https://www.pcr.uu.se/>) and the locations where the company has reserves.

EM-EP-210a.2	<i>Percentage of reserves (1) proved in or near Indigenous land</i>		
Oil & Gas Exploration & Production			
Metric	1		
Unit	%		
Year	2021	2022	2023
Ecopetrol S.A.	Unavailable	3.68	4.09
Hocol	57.00	57.28	57.56
Ecopetrol Permian	0		
Ecopetrol America	0		
Ecopetrol Brasil	Not applicable		

For the purposes of this metric, only information associated with proven reserves is disclosed.

Ecopetrol S.A.: The calculations for the year 2022 have been restated as a result of a review of the precision of geographical limitation with respect to the area of influence over the Unuma Community of Campo Rubiales.

EM-EP-210a.3	
<i>Discussion of engagement processes and due diligence practices with respect to human rights, Indigenous rights, and operation in areas of conflict.</i>	
Oil & Gas Exploration & Production	
Metric	1
Unit	Discussion and analysis
Year	2023
Ecopetrol S.A.	<p>Within the framework of its corporate and technical activities, during 2023 Ecopetrol S.A. respected and always complied with the provisions established by ILO Convention 169 (ratified in Colombia through Law 21 of 1991). The activities carried out by the Company are oriented towards respect for the human, social, economic, cultural, and territorial rights of ethnic communities.</p> <p>For relations with ethnic communities and the development of activities in their territory, the Company has corporate instruments such as the Guide on Human Rights and Business (GEE-G-035), the Guide for Relations with Ethnic Communities (GDE-G-006) and the Procedure for Conducting Prior Consultations (GDE-P-008), through which the processes of relations with ethnic communities are guided and organized. Taking as a reference the determinations made in international and national instruments for the protection of human rights.</p> <p>The prior consultations carried out by the Company involved a participatory process on the part of the ethnic communities, under the verification of the National Government. During these processes, formal agreements were established with the communities consulted, which include mechanisms for complaints and monitoring of the development of the projects, as well as preventive and compensation measures.</p> <p>Ecopetrol S.A. during 2023 has 8 projects with prior consultation processes (1 in pre-consultation and opening, 1 protocolized, 5 in follow-up and 1 closed).</p> <p>With regard to free, prior and informed consent, in accordance with the jurisprudence of the Constitutional Court, it applies in the following cases: (i) transfer or relocation of the indigenous people; (ii) storage or deposit of hazardous or toxic materials in their territories; (iii) measures that involve a high social, cultural and environmental impact that puts their livelihoods at risk.</p> <p>Within the framework of its human rights due diligence, Ecopetrol carries out risk assessment exercises in which it identifies, prevents and mitigates risks and impacts associated with this matter, both in its direct operations and in associated operations and in its supply chain. In these cases, it applies a differential approach in which it considers, among other aspects, the presence of ethnic populations (indigenous and Afro-descendants).</p>

Hocol	<p>The Company recognizes the guarantee of Indigenous peoples, Afro-Colombians, and ethnic minorities to be consulted regarding projects, works or activities that may directly affect them as established in ILO Convention 169. Hocol has suitable mechanisms that allow it to optimally manage the petitions, complaints and claims presented on its activities, which results in the prevention of conflicts and improvement of the relationship with stakeholders.</p> <p>Hocol has a commitment to respect human rights, adopted at the highest level of the Company, contained in its Code of Ethics and Conduct. Respecting human rights implies acting with due diligence to avoid negative impacts on human rights and ensuring respect for them within the framework of business operations and activities. This includes compliance with decent work regulations, fair labour practices, prohibitions of forced or child labour, and measures to prevent all forms of discrimination. Hocol S.A. has voluntarily subscribed to the United Nations Global Compact, seeks to make transformative contributions to the advancement of the Sustainable Development Goals and achieve international standards of corporate due diligence based on the United Nations Guiding Principles on Business and Human Rights (UNGP).</p> <p>The Company identifies security and public order risks for its areas of operation. On the understanding that security, understood as the maintenance of order, peace, and the enjoyment of rights, is an end of the State and its provision is inherent to its social purpose, by the security forces, matters inherent to security are handled through agreements with the security forces, physical and electronic security schemes; procedures and protocols.</p>
Ecopetrol Permian	<p>The companies are not operators, nor do they claim to be operating partners, near or within Indigenous communities. The company complies with all local, state, and federal laws, including laws related to human rights. Human rights policies and procedures can be found in the following documents: Code of Ethics and Conduct, which refers to human rights, labor rights, and non-discrimination standards. Code of Ethics and Conduct, in reference to the reporting of any violation of the policies and rules contained therein. Likewise, the Employee Handbook refers to the rules of non-discrimination and the procedures for complaint and disciplinary action by the Companies in the event of violation of the policies contained therein. Likewise, the Company does not operate within conflict areas.</p>
Ecopetrol America	
Ecopetrol Brasil	<p>The Company does not operate in conflict zones or near Indigenous communities.</p>



Community Relations

EM-EP-210b.1 RT-CH-210a.1	Analysis of the process of managing risks and opportunities associated with community rights and interests.	
Metric	1	
Unit	Discussion and analysis	
Year	2023	
	Oil & Gas Exploration & Production	
Ecopetrol S.A.	<p>Ecopetrol S.A. carries out the technical, environmental, and social studies required to operate in a sustainable and balanced manner in the territories, complying with current legal regulations in which the identification of impact and management measures for its control are prepared jointly with its stakeholders Society, Community and Local State. mitigation or compensation. The foregoing becomes mandatory actions for the execution of its operational activities and extends to its contractors and allies.</p> <p>Among the significant impacts, the following are identified as correlational: economic expectations at the local and regional level, which potentially generate changes in population dynamics and these, when not managed in a timely manner, can generate conflicts. Positive impacts are also considered, such as the formalization of direct and indirect jobs, the revitalization of the local economy and the territorial strengthening generated by the management of royalty resources.</p> <p>In the territorial diagnoses, the places, and practices of cultural importance of each region are identified, which are inputs to define the zoning and socioeconomic and cultural management measures of the environmental studies and that are fundamental for the performance of the Company in the development of its operations and projects.</p>	
Hocol	<p>Hocol S.A., through the management of its business risks embodied in the RAM matrix, regarding the environment, i.e. ethnic and non-ethnic communities, local, regional and national authorities, has identified the following risk: Environmental incidents that make it impossible to maintain the Company's operation. The foregoing, given that the Company operates in territories that require an understanding of the geographical, social, political, cultural, environmental, economic and public order dynamics, as well as the relationships with the company's operations and projects, focusing the actions to mitigate this risk on the relationship and timely information in the territory (socializations, informative meetings, etc.). monitoring and closure), fulfillment of commitments with the communities in the area of influence of the operations, continuous relationship with the communities, local authorities and owners of the different territorial entities and permanent presence in the territory, analysis of the impact of Colombian regulations, monitoring and management of the contractors that carry out activities in the territory.</p> <p>In addition, the Company monitors the processes of contracting labor, goods, and services in accordance with current regulations, attention and follow-up of concerns, complaints and claims of stakeholders, management of early warnings and prompt response in accordance with the procedure for the management of alerts and avenues of fact. management, follow-up and compliance with agreements formalized within the framework of the processes of prior consultations with ethnic communities, management, monitoring and compliance with programs for the benefit of communities (PBC) and strategic social investment for the improvement of the quality of life of the areas of operation and compliance with environmental licenses and application of the programs established in the environmental management plans.</p>	

	<p>Hocol S.A. also identified the following risks related to social management:</p> <ul style="list-style-type: none"> • C36 R1 - Mobilizing Communities Against the Company. • C36 R2 - Mobilizing ethnic communities against Hocol or the hydrocarbon industry. • C36 R3 - Events of fraud, corruption, bribery, money laundering and terrorist financing in the Social Management process (Social investment). • C36 R4 - Impossibility of implementing social investment projects. • C41 R2 - Select and/or maintain business relationships with suppliers, contractors and/or partners that may affect the Company's reputation.
Ecopetrol Permian	The companies are not operators; however, they abide by the standards of risk management and opportunities related to the rights and interests of the community found in the Code of Ethics and Conduct.
Ecopetrol America	
Ecopetrol Brasil	Not applicable

Chemicals	
Metric	1
Unit	Discussion and analysis
Year	2023
Esenttia	<p>During 2023, Esenttia led more than 48 strategic engagement days in the communities of Cartagena, 60% more than in 2022 based on Social Dialogue, with the aim of contributing to the design and prioritization of community initiatives through a participatory popular planning exercise in the communities. Thanks to the participation of stakeholders and especially communities and local governments, relationships of trust and mutual benefit have been built in the territory in which we operate, allowing us to create joint solutions to the needs of the territory, through the relationship and development of programs in the communities. maximizing opportunities in the environment through citizen participation and commitment management, institutional and community strengthening, social dialogue and consensus, and territorial planning.</p> <p>One of the main stakeholders targeted for social investment are the employees of contractor companies, whose investment is supported by the need to closely align social initiatives with the corporate culture and objectives, as well as by capacity building and improving the quality of life of the most vulnerable population. This is developed from consultations of expectations and socioeconomic diagnoses that allow the identification of needs and vulnerability to address them directly. Given the above, housing and education programs are currently being developed with this interest group.</p> <p>Likewise, Esenttia developed a Social Investment worth \$11,387 million COP in its four strategic lines Economic Development, Education, Health and Housing and Environment, to mitigate the risks associated with the relationship with the communities of Cartagena and especially with the neighbors of its areas of direct influence.</p>

EM-EP-210b.2 (1) Number and (2) duration of non-technical delays						
Oil & Gas Exploration & Production						
Metric	1			2		
Unit	Number of delays			Days		
Year	2021	2022	2023	2021	2022	2023
Ecopetrol S.A.	1,217	664	1,346	3,753	970	2,620
Hocol	2	4	2	84	70	40
Ecopetrol Permian		0			0	
Ecopetrol America		0			0	
Ecopetrol Brasil	Not applicable			Not applicable		

Ecopetrol S.A.: The increase in the number of disruptions is mainly due to the significant increase in blockades by different community actors during 2023.

Data Security

SV-PS-230a.1 Description of approach to identifying and addressing data security risks	
Metric	1
Unit	Discussion and analysis
Year	2023
Professional & Business Services	
XM	<p>XM has an information security management system (ISMS) based on the international standard ISO 27001:2013 and certified by ICONTEC since 2015. The ISMS covers the business processes (core and transversal) to provide services for the operation of interconnected electricity systems and the administration of energy markets.</p> <p>In addition, cyber risk management at XM is guided by the adoption of the NERC CIP standards for industrial cybersecurity and the implementation of the defense model according to NIST*, a model that establishes management mechanisms before, during and after a cyberattack. The self-assessment against these benchmarks has made it easier to establish the objectives of XM's Comprehensive Cybersecurity Program, which aims to:</p> <ol style="list-style-type: none"> 1. Develop organizational capabilities in cyber risk management based on monitoring, detection, response, and recovery from security events. 2. Managing the safety culture in the organization. 3. Continuity management for business operations. <p>The treatment of risks associated with information security is managed through constant actions that address people, technology, processes, and infrastructure, in order to have resilient processes and people with safe behaviors in the management of information managed by XM. Likewise, the Company develops tactical plans in the lines of passive and active defense in cybersecurity, with the Digital Security Operations Center (SOC) being a fundamental pillar for active monitoring, management of technical vulnerabilities, incident response and cyber risk management. In the area of people, it develops the culture of information security through annual awareness and training programs, social engineering tests, and culture measurement to identify gaps and establish plans.</p>

US Trading	<p>In companies, the management of data is subject to the recommendations of Ecopetrol S.A., which through the Cybersecurity and Cyber Defense Management carries out risk analysis to identify situations that may materialize and affect the integrity and security of business information. As a result of this exercise, measures are identified on processes, people, and infrastructure to mitigate and manage the effects. The required steps are outlined below:</p> <ol style="list-style-type: none"> 1. Information flows: Definition of the work plan and criteria for identifying findings, which includes: making initial contact with the area by email to validate the relevance and validity of the process information uploaded to the repository, requesting updated processes in case of finding differences, identifying critical assets and actors in the information flow (information repositories, documents generated, officials, third parties, interested parties, etc.) and hold work sessions with those responsible for the area.
Trading Asia	<ol style="list-style-type: none"> 2. Databases: There is a three-year schedule where the order in which the risk analyses will be carried out on the databases is determined, this schedule is shared with the personal data leaders of the different vice presidencies. With this programming, analyses are carried out by identifying findings related to processes, people, and technology.

SV-PS-230a.2 Description of policies and practices relating to collection, usage, and retention of customer information.	
Metric	1
Unit	Discussion and analysis
Year	2023
Professional & Business Services	
XM	<p>XM adopts the applicable guidelines for all personal information recorded in the databases of the controller of personal data. Therefore, the guidelines described in Institutional Guide #139 - Adoption of the Personal Data Processing Policy Manual are mandatory and complied with by the person responsible for the processing of personal data, which includes administrators and workers, who must observe them.</p> <p>Additionally, XM has a personal data protection program that focuses on aspects such as:</p> <ul style="list-style-type: none"> • Framework for action and guidelines. • Defined roles and responsibilities. • Development of a corporate culture of personal data protection, commitment of senior management and all XM staff. • Training and awareness-raising. • Attention channels for processing petitions, complaints, and claims or for any matter related to personal data and on the website, in the button for personal data PQRs. • CO risk management (Compliance) that includes the aspect of Personal Data Protection. • Contractual clauses in relation to the Protection of Personal Data, e.g., with employees and suppliers. • Personal Data Authorizations with Agents, Candidates, and Vendors.

US Trading	For the company, data management is under the protection of the parent company, Ecopetrol S.A. The policy applied to customer databases is based on the design of secure and reliable systems, with a focus on analyzing risks and responding to threats that affect security objectives that are more privacy-oriented:
Trading Asia	<ol style="list-style-type: none"> Regarding data collection, the processing of Ecopetrol S.A. obeys a legitimate purpose in accordance with the Constitution and the Law, which must be informed to the Owner; In a clear and sufficient manner, therefore, data may not be collected without a specific purpose. Confidentiality, preventing unauthorized access to the systems. Integrity, protecting them from unauthorized modifications of information. Availability, ensuring that data and systems are available when needed. <p>In the identification of any damage to people, organizations and the public, the Headquarters has a Guide for the Management of Incidents in the processing of personal data, where it considers the loss of customers or users.</p>

SV-PS-230a.3 (1) Number of data breaches,
(2) percentage involving confidential business information (CBI) or personally identifiable information (PII) of customers,
(3) number of customers affected.

Professional & Business Services									
Metric	1			2			3		
Unit	Number of leaks			%			Number of customers affected		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023
XM	0	1	0	50	33	0	0	0	0
US Trading	Unavailable		0	Unavailable		0	Unavailable		
Trading Asia	Unavailable		0	Unavailable		0	Unavailable		

Energy Affordability

IF-GU-240a.1 Average retail gas rate for customers
(1) residential,
(2) commercial,
(3) industrial,
(4) transportation services only,
(5) other.

Gas Distributors															
Metric	1			2			3			4			5		
Unit	COP \$			COP \$			COP \$			COP \$			COP \$		
Year	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
Alcanos	66,667.31	83,000.33	87,065.03	57,264.39	73,117.55	77,326.29	42,326.50	52,596.88	56,334.11	43,836.83	43,596.44	39,377.44	54,912.53	40,504.08	41,344.00
Gases del Oriente	71,078.00	86,416.49	99,076.41	53,010	64,263.90	76,485.48	30,729	38,518.16	38,322.03	0	0	0	Not applicable	Not applicable	Not applicable
Metrogas	51,323.97	64,606.35	73,410.52	42,792.26	53,592.04	57,623.67	41,009.25	44,881.22	43,983.41	0	0	0	15,104.01	31,814.58	32,701.42

Alcanos: For the fields Total income directly from the pooled gas supplied - Other customers and Quantity of gas supplied - Other customers, the information corresponding to the official customers and secondary market customers that the Company served at the end of 2023 is listed.

Gases del Oriente: The variable charge has increased due to variations in the CPI, IPP and TRM. Having a higher volume sold in each segment, favoring the total revenue per segment. In addition, the increase in gas supply prices grew due to the price indexations that are carried out annually.

IF-GU-240a.2 Typical monthly gas bill for residential customers for (1) 50 MMBTU and (2) 100 MMBTU of gas supplied per year.

Gas Distributors				
Metric	1			2
Unit	COP \$			COP \$
Year	2021	2022	2023	2021-2023
Alcanos	29,708.00	31,533.06	36,425.00	Not applicable
Gases del Oriente	37,589.85	41,173.41	45,747.00	
Metrogas	26,826.15	31,741.28	34,670.43	

Alcanos: For the calculation of the monthly rate for residential users, the formula established in CREG resolution 137 of 2013 for users of stratum 3, 4, 5 and 6 is considered. Similarly, for users of stratum 1 and 2, the update of rates is carried out in accordance with the provisions of the tariff option defined in resolution CREG 048 of 2020.

Gases del Oriente: The variation of the typical monthly bill is equivalent to the increase in the variable charge, also affected by the per capita consumption of each segment. The number of customers served during the specified term with supply of 50 MMBTU and 100 MMBTU is classified. The Company only has residential customers in the 50 MMBTU range. The value of gas sales revenue for the residential segment is taken and divided by the number of months of the current term (12 months) and divided by the number of customers previously determined.

Metrogas: 1. Segmentation of the number of residential customers served during the current term is carried out with a supply of 50 MMBTU and 100 MMBTU. In the case of Metrogas, all users are classified in the first range.

2. From the financial information, the value of the revenue from gas sales in the residential segment is taken and divided into the number of months that make up the current term (12).

3. Divide the result of point 2 into the result of point 1.

IF-GU-240a.3							
(1) Number of gas supply shut-offs of residential customers for nonpayment, (2) percentage of services restored within 30 days (3) analysis of the effect of policies, programs and regulations on the number and duration of residential customer.							
Gas Distributors							
Metric	1			2			3
Unit	Number			%			Discussion and analysis
Year	2021	2022	2023	2021	2022	2023	2023
Alcanos	162,554	183,297	189,117	76.3	89.4	81.8	<p>All public service companies are governed by Law 142 of 1994, which establishes the general guidelines for the suspension, termination of the contract and restoration of public services, specifically articles: 130, 140, 141 and 142. In line with the provisions of the law, each company has specific conditions in its policies, programs and regulations regarding the number and duration of residential customer outages:</p> <p>Alcanos de Colombia S.A. E.S.P</p> <p>The Company has a uniform conditions agreement that formalizes the contractual relationship between two parties: the customer and the company, according to which the company may suspend the public service of fuel gas through networks due to the breach of the contract when there is non-payment of at least one (1) billing period, not exceeding two (2) billing periods or any of the concepts charged in the invoice for previously authorized services by the user, who is directly related to the service, unless there is a claim or appeal filed, in which case the suspension will proceed for the non-payment of the amounts that are not the subject of a claim. The suspension will not proceed due to debts of the user with third parties other than Alcanos.</p>

Gases del Oriente	33,673	17,505	25,110.00	66.99	58.25	78,268	<p>Gases del Oriente S.A.E.S.P</p> <p>According to the internal policies of Gases del Oriente S.A., to reconnect the service of a user in arrears, the user must have normalized their debt, which is:</p> <ul style="list-style-type: none"> If the user is residential and is between arrears 1 and 5, they must pay at least 50% of the value of their bill balance. Starting at 6 arrears, the user must pay off 100% of the value of his invoice or make a refinance that complies with the portfolio policy. If the user is commercial or industrial and is between arrears 1 and 5, a minimum of 60% of the value of their invoice balance must be paid. Starting at 6 arrears, the user must pay off 100% of the value of his invoice or make a refinance that complies with the portfolio policy. Once the debt is normalized, the reconnection of the service must be guaranteed within 24 business hours.
Metrogas	24,814	28,550	33,011	76.7	95.8	621	<p>Metrogas de Colombia S.A E.S.P.</p> <p>The policies established by Metrogas indicate the conditions for the suspension and reconnection of the service (including times, use, technical conditions, among others). In relation to the reconnection of the service, it must comply with the following:</p> <ul style="list-style-type: none"> Full bill payment. Payment agreement (minimum payment 51%) Compliance with technical and safety conditions (Certificate of conformity and/or validation of the technical area). <p>The Company has established for all its users that the suspension of the service occurs with the non-timely payment of a single service bill.</p>



IF-GU-240a.4		<i>Discussion of impact of external factors on customer affordability of gas, including the economic conditions of the service territory.</i>	
Gas Distributors			
Metric	1		
Unit	Discussion and analysis		
Year	2023		
Alcanos	<p>Among the factors that can generate increases in the rate are, on the one hand, the national stoppages of prolonged duration and high intensity, on the other hand, the effects on the road infrastructure, which are directly related to the transport of CNG, caused by winter waves, which has a frequency between 1 and 2 times a year with approximate durations of 3 months, To this end, the Company has different contingency plans through different logistics models using alternative ways to mitigate risk; in addition to interruptions in the National Natural Gas Transport System, this risk is mitigated with permanent monitoring of the natural gas market manager, looking for alternative sources of supply and permanent control in daily nominations; Another factor to take into account are the effects of macroeconomic variables such as the TRM, the PPI and the CPI, finally there may be changes in the sources of supply due to the decline of the wells and generate the need to import gas.</p>		
Gases del Oriente	<p>According to the area of influence where about 70% of the users connected to the Gas Distribution System of the East S.A. E.S.P. are concentrated, represented in Cúcuta and its Metropolitan area, the greatest impact is in:</p> <ol style="list-style-type: none"> 1. The non-connection to the national transport system or to alternative sources of supply that provide stability of operation and compliance with uninterrupted delivery of the service to regulated users in the next 3 years. 2. Informality is the main economic activity in the area, which exceeds 62.8%. 3. Elevated levels of unemployment reached up to 23.3%, which places Cúcuta among the first places nationwide. 4. Expansion zones limited by the existence of non-legalized neighborhoods or sectors, to which the service cannot be supplied. <p>On the other hand, there is the impact of the construction sector in 2023 with a reduction in sales of about 76% of construction projects in the region, affected by the granting of subsidies for VIS and VIP projects.</p>		

Metrogas	External factors include those that directly affect gas fees:
	Macroeconomic variables that index distribution and marketing charges.
	<ol style="list-style-type: none"> 1. The Consumer Price Index (CPI) and the Producer Price Index (PPI) are included in the formulas for the monthly update of the tariff components used to calculate the unit cost of providing the service (fixed and variable), mainly the distribution charge, which in Metrogas' main market has an average share of 28% in the tariff to the end user. 2. The exchange rate at the end of each month directly affects the result of the average cost of supply and transportation, components that are part of the unit cost of providing the service (variable), which represent on average 75% of the rate to the end user. 3. The region's GDP compared to the national total reflects the dynamics and behavior of the local economy.
	Regulatory opportunities impacting gas affordability for customers.
	<ol style="list-style-type: none"> 1. Transitory tariff option defined by the Energy and Gas Regulatory Commission CREG in resolution 048 of 2020. 2. Subsistence consumption subsidy scheme (0 to 20 m³) for residential users in strata 1 and 2.

Structural Integrity & Safety

IF-EN-250a.1		<i>Amount of defect-related and safety-related rework costs.</i>		
Engineering & Construction Services				
Metric	1			
Unit	COP \$			
Year	2021	2022	2023	
ISA INTERVIAL	0	135,004,866	0	

IF-EN-250a.2		<i>Total amount of monetary losses because of legal proceedings associated with defect- and safety-related incidents.</i>		
Engineering & Construction Services				
Metric	1			
Unit	COP \$			
Year	2021- 2023			
ISA INTERVIAL	0			

Human capital chapter

Workforce Health & Safety

Oil & Gas Exploration & Production														
Metric	Unit	1			2			3			4			
		Rate			Rate			Rate			Hours			
Year		2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	
Ecopetrol S.A.	a	0.09	0.07	0.02	0	0	0.04	Unavailable	Unavailable	Unavailable	16.35	15.75		
	b	0.11	0.08	0.05		0					7.21	6.90		
	c	Not applicable										Not applicable		
	total	0.11	0.08	0.05	0	0	0.004					12.82	9.66	
Hocol	a	0			0			0			6.69	7.62	6.22	
	b	0.24	0.18	0.10	0			0.04	0	0	13.71	52.60		
	c	Not applicable						Unavailable			Not applicable			
	total	0.19	0.15	0.09	0			0.03	0	0	6.69	13.0	46.1	
Ecopetrol Permian	a										2.73	5.95	7.26	
	b	0			0			0			0			
	c										0			
	total	0			0			0			2.73	5.95	7.26	
Ecopetrol America	a										0.26	0.22	0.27	
	b	0			0			0			0	0.22	0	
	c										0			
	total	0			0			0			0.26	0.22	0.27	
Ecopetrol Brasil	a				6.76						0.08	0.63	1.51	
	b	Unavailable	0			Unavailable			0	0	0	0.21	1.26	3.11
	c				0			Unavailable			0	3.67	56	
	total				4,518			0			0.12	0.84	2.04	

Ecopetrol S.A.: We do not measure near misses of direct or indirect personnel.

Hocol: For the calculation of training hours in 2023 for contractor partners, the capture of information through the monthly report continued to be strengthened. The number and averages of training hours increased, due to better capture of contractors' person-hour information.

Ecopetrol Brasil: The Company follows the principles and culture of health, safety, and emergency management of Ecopetrol S.A. as it applies to the pre-operational office. In 2023, Ecopetrol Brasil has emphasized health and safety aspects, as well as developed trainings, health talks and workshops on the subject for its employees and contractors.

Refining & Marketing										
Metric	Unit	1			2			3		
		Rate			Rate			Rate		
Year		2021	2022	2023	2021	2022	2023	2021	2022	2023
Refinería de Barrancabermeja	a	0.35	0.31	0.51	0	0	0	Unavailable	Unavailable	Unavailable
	b	0.10	0	0						
	total	0.1	0.14	0.20						
Refinería de Cartagena	a	0			0	0	0	Unavailable	Unavailable	Unavailable
	b	0.30	0.06	0.17						
	total	0.29	0.06	0.16						

Refineries do not measure or report near misses.

Chemicals										
Metric	Unit	1			2			3		
		Rate			Rate			Rate		
Year		2021	2022	2023	2021	2022	2023	2021	2022	2023
Esenttia	a	0	0.18	0	0	0	0	0	0	0
	b	0								
	total	0	0.05	0						

Electric utilities										
Metric	Unit	1			2			3		
		Rate			Rate			Rate		
Year		2021	2022	2023	2021	2022	2023	2021	2022	2023
ISA	Total	Unavailable	0	0	Unavailable	0	0	0		
ISA CTEEP	Total	0.78	0.71	0.68	0.09	0.02	0	Unavailable		
ISA REP	Total	1.19	1.09	0.75	0			0.5	0.86	0.75
ISA INTERCOLOMBIA	Total	3.75	3.37	6.39	0			0.04	0	0
ISA INTERCHILE	Total	2.12	0.54	0	0			Unavailable	0	0
ISA TRANSELCA	Total	0.57	0	0	0			0.43	0.81	1.66

ISA CTEEP: In 2023, an 81% reduction was achieved in the Accident Frequency rate considering own and third-party workers. Six (6) accidents occurred during the year, but none of them were fatal.

ISA Transelca: The Company has a cell phone application for personnel to report near misses, dangerous conditions, or unsafe acts. Additionally, in accordance with the procedure for reporting and investigating accidents (accidents and near misses), the classification process, the investigative committee, and the process of analysis of causes are defined.

Engineering & Construction Services							
Metric		1			2		
Unit		Rate			Rate		
Year		2021	2022	2023	2021	2022	2023
ISA INTERVIAL	a	0.82	0.55	0		0	
	b	0.99	1.14	0.49	0	0.05	0

EM-EP-320a.2 Discussion of management systems used to integrate a culture of safety throughout the exploration and production lifecycle.

Oil & Gas Exploration & Production	
Metric	1
Unit	Discussion and analysis
Year	2023
Ecopetrol S.A.	<p>Ecopetrol S.A. implements the HSE Management System, which aims to establish the necessary elements under which the Company adequately manages risks; in order to protect life, promote the care of the environment, defining the mandatory basic requirements of the HSE Management System that is based on the international standards ISO 14001:2015 and ISO 45001:2018. Additionally, the commitment within the Integral Policy of Ecopetrol S.A. is evidenced, through the cultural principles of life first and passionate about excellence. The HSE Management System is governed by the HSE Vice-Presidency of Ecopetrol S.A. and covers the processes of exploration and production of oil and gas, production of refined products and petrochemicals, commercialization of hydrocarbons and administrative and/or business support processes. Similarly, the HSE Management System applies to employees and contractors who are involved in all the Company's processes and seeks to promote leadership and commitment by setting objectives, implementing best practices, and monitoring and improvement, where opportunities for improvement are identified and prioritized and action plans are implemented to achieve the expected results. ensuring continuous improvement in the performance of the System, with indicators such as the TRIF (Recordable Injury Index), an indicator in which we are an international benchmark.</p> <p>Through the HSE Management System, processes are established, implemented, and maintained for the consultation and participation of workers at all levels and areas in all the company's operations through workers' representatives. Ecopetrol S.A. is currently ISO 14001 (v. 2015) and ISO 45001 certified by Icontec.</p>
Hocol	<p>During the life cycle of the exploration and production assets developed by Hocol, strict compliance with Colombian regulations related to occupational health and safety issues is maintained. The main axis of the Integrated Management System of Operational Excellence - SIGEO is identified as the strengthening of leadership, associated with clean and safe operations based on the rigor in the Operational Discipline on all work fronts, which allows for an early identification of hazards, acts, and substandard conditions, as well as their timely treatment. The company evaluates the performance of workers in OSH-related issues by verifying the accompaniment, support, contribution and assurance to operations and work fronts, with tours of the leadership team, managerial and cross-inspections and supervision to verify compliance with the provisions of rules, guides and procedures, safety standards, such as the use of SIGEO tools. All this is intended to maintain a permanent surveillance of the safety and health conditions of workers, verify the work environments while allowing information to be collected to determine if the measures of prevention and control of hazards and risks are applied and effective. Analysing the results of indicators, industrial safety programmes and epidemiological surveillance, as well as analysing the results of audits carried out on the management system, is essential to identify the company's global needs in terms of occupational health and safety focused on continuous improvement.</p>
Ecopetrol Permian	<p>At Ecopetrol Permian, different management systems are implemented. One of them corresponds to safety observations in which field personnel are encouraged to identify unsafe work situations, which are subsequently recorded in a system to define prevention and improvement actions. In addition, safety training is provided to all employees/contractors who work/visit the field area (including training on Hydrogen Sulfide H2S). On the other hand, monthly safety meetings are held, and quarterly observations are submitted to the HSE Board.</p>

Ecopetrol America	Ecopetrol America is not an operating partner, so it does not have a specific HSE Management System. Currently, the development of this system is being carried out and current measures are being implemented, such as risk analysis, proper notification of incidents, rules, and procedures.
Ecopetrol Brasil	The company is aligned with the principles and procedures of the Ecopetrol Group to operate safely, responsibly, and reliably; The Company analyzes and evaluates the exploration activities under the Exploratory Process corresponding to the Vice Presidency of Exploration of Ecopetrol S.A., which process applies to the entire Ecopetrol Group. Regarding development and production activities, these are analyzed under the DBR Process (Brazil Development Opportunity Management Process) created by the Company.

EM-RM-320a.2

Discussions on management systems to integrate a culture of safety.

Refining & Marketing	
Metric	1
Unit	Discussion and analysis
Year	2023
Refinería de Barrancabermeja	<p>Ecopetrol S.A. implements the HSE Management System, which aims to establish the necessary elements under which the Company adequately manages risks; in order to protect life, promote the care of the environment, defining the mandatory basic requirements of the HSE Management System that is based on the international standards ISO 14001:2015 and ISO 45001:2018. Additionally, the commitment within the Comprehensive Policy of Ecopetrol S.A. is evidenced, through the principles of Commitment to Life and Operational Excellence.</p> <p>The HSE Management System is governed by the HSE Vice-Presidency of Ecopetrol S.A. and covers the processes of exploration and production of oil and gas, production of refined products and petrochemicals, commercialization of hydrocarbons and administrative and/or business support processes. Similarly, the HSE Management System applies to employees and contractors who are involved in all the Company's processes and seeks to promote leadership and commitment by setting objectives, implementing best practices, and monitoring and improvement, where opportunities for improvement are identified and prioritized and action plans are implemented to achieve the expected results. ensuring continuous improvement in the performance of the System, with indicators such as the TRIF.</p>
Refinería de Cartagena	<p>Through the HSE Management System, processes are established, implemented, and maintained for the consultation and participation of workers at all levels and areas in all the Company's operations through workers' representatives. Ecopetrol S.A. is currently ISO 14001 and ISO 45001 certified by Icontec.</p>

RT-CH-320a.2

Description of efforts to assess, monitor, and reduce exposure of workers and contract workers to long-term (chronic) health risks.

Chemicals	
Metric	1
Unit	Discussion and analysis
Year	2023
Esenttia	<p>At Esenttia, employees are not subject to prolonged exposure to long-term health risks. The organization has a chemical hazard program that classifies chemical contaminants that do not carry a risk of affecting health. Through the implementation of industrial safety programs, it is possible to comply with applicable and voluntary regulations, we have a matrix of hazards and risks of all Esenttia processes. All health and safety programs are audited annually under ISO 45001 and the minimum standards of the SGRL.</p>

Workforce Diversity & Engagement

SV-PS-330a.1		<i>Percentage of gender and racial / ethnic group representation for (1) executive management and (2) all other employees.</i>					
Professional & Business Services							
Metric		1			2		
Unit		%			%		
Year		2021	2022	2023	2021	2022	2023
XM	Women	57.14	60.00	60.00	33.33	34.00	34.09
	Men	42.86	40.00	40.00	66.67	66.00	65.91
	Asian		0			0	
	Afrocolombiano		0			0	
	Hispano/Latino		100			100	
US Trading	Women	Unavailable		0	Unavailable		0
	Men						
	Asian	100			100		
	Hispano/Latino	0			0		
		100			67		
Trading Asia	Women			0		33	43
	Men	Unavailable		100	Unavailable	67	57
	Asian			0		67	72
	Hispano/Latino		0	100		33	14

SV-PS-330a.2		<i>(1) Voluntary and (2) involuntary employee turnover rate.</i>					
Professional & Business Services							
Metric		1			2		
Unit		%			%		
Year		2021	2022	2023	2021	2022	2023
XM		10.00	7.51	6.50	5.00	3.00	4.34
US Trading		Unavailable		0	Unavailable		0
Trading Asia		Unavailable	0	1	Unavailable	0	0

XM: In 2023, a reduced climate assessment is conducted with Korn Ferry, which contributes to the dynamics of the teams. Likewise, the Organizational Climate Survey is conducted annually and a reduced survey that complements the Psychosocial Risk Survey.

U.S. Trading: For 2023, the Company did not advance surveys associated with the replacement rates of all employees.

Trading Asia: During the reporting period, the Company conducted the first Cultural Pulse survey.

SV-PS-330a.3 *Employee engagement expressed as a percentage*

Professional & Business Services			
Metric	1		
Unit	%		
Year	2021	2022	2023
XM	89.00	98.73	96.00
Trading US	Unavailable	Unavailable	0
Trading Asia	Unavailable	0	100

XM: In 2023, a reduced climate assessment is carried out with Korn Ferry; in its constant search to provide spaces for participation to its employees and to maintain a work environment that facilitates the achievement of organizational goals, which contributes to the dynamics of the teams, it conducts the Organizational Climate survey annually, for the year 2023, a reduced survey was carried out that will complement the Psychosocial Risk Survey carried out this year.

US Trading: For the year 2022, no information was recorded due to the fact that Ecopetrol US Trading began operations in October 2023. Additionally, for 2023, the company did not conduct surveys that would allow it to answer this question.

Trading Asia: During the reporting period, the company conducted the first “cultural pulse” survey.

Consolidation of metrics that do not apply

Metric	Description	Reason the metric Doesn't apply
Transport & Logistics		
EM-MD-540a.3	(1) Number of accidental emissions and (2) non-accidental emissions (NAR) in rail transport	The subsidiary companies of the Ecopetrol Group do not have rail transport.
Refining & Marketing & Gas Distributors		
EM-RM-150a.2	(1) Number of Underground Storage Tanks (UST) (2) Number of UST releases requiring cleanup (3) Percentage in states with UST financial guarantee funds	The Refinería de Cartagena and the Refinería de Barrancabermeja do not have underground storage tanks.
IF-GU-420a.2	Gas savings for customers thanks to efficiency measures, by market Million British Thermal Units (MMBtu)	Gas distribution companies do not conduct direct actions by companies to promote savings and efficiency in customers.
Engineering & Construction Services		
IF-EN-410b.1	Amount of arrears in (1) hydrocarbon-related projects and (2) renewable energy projects	Companies in this sector do not have hydrocarbon and renewable energy projects.
IF-EN-410b.2	Amount of backlog cancellations associated with hydrocarbon-related projects	
IF-EN-410b.3	Order book amount for non-energy projects related to climate change mitigation	
Electric utilities		
IF-EU-000.A	(1) Residential, (2) commercial, and (3) industrial customers served	Their operations are within the power transmission sector of the value chain and are not involved in generation or distribution activities.
IF-EU-000.B	Electricity supplied to (1) residential customers, (2) commercial customers, (3) industrial customers, (4) all other retail customers, and (5) wholesale customers	
IF-EU-000.D	(1) Total electricity generated, (2) percentage by main energy source, (3) percentage in regulated markets	
IF-EU-000.E	Total Electricity Purchased in Bulk	
IF-EU-140a.1	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with high or extremely high initial water stress	
IF-EU-140a.2	Number of non-conformance incidents related to water quantity or quality permits, standards, and regulations	Considering the nature of the business of ISA and its subsidiaries, these metrics are not reported because, for the transmission of energy, water extraction is not required and, therefore, there are no incidents or associated risks.
IF-EU-140a.3	Description of water management risks and analysis of strategies and practices to mitigate them	

Metric	Description	Reason the metric Doesn't apply
IF-EU-150a.2	Total number of coal combustion waste reservoirs (CCRs), broken down by hazard potential classification and structural integrity assessment	ISA and its subsidiaries have operations in the transmission segment of the value chain and are not involved in generation or distribution activities.
IF-EU-240a.1	Average retail electric rate for (1) residential, (2) commercial, and (3) industrial customers.	
IF-EU-240a.2	Typical monthly residential customers' electricity bill for (1) 500 kWh and (2) 1000 kWh of electricity supplied each month.	
IF-EU-240a.3	Number of residential customer power shutoffs due to non-payment, percentage reconnected within 30 days.	
IF-EU-240a.4	Analysis of the effect of external factors on the affordability of electricity for customers, including the economic conditions of the service territory.	
IF-EU-420a.1	Percentage of utility revenues that come from rate structures that (1) are decoupled and (2) contain a Loss of Revenue Adjustment Mechanism (LRAM)	
IF-EU-420a.2	Percentage of electrical load supplied with smart grid technology	
IF-EU-420a.3	Electricity savings by customers, thanks to efficiency measures, for each market	
IF-EU-540a.1	Total number of nuclear power units, broken down by the U.S. Nuclear Regulatory Commission (NRC) "Equity Matrix" column.	
IF-EU-540a.2	Description of initiatives to manage nuclear safety and emergency preparedness.	
IF-EU-550a.2	1) Average System Outage Duration Index (SAIDI), (2) Average System Outage Frequency Index (SAIFI), and (3) Average Customer Outage Duration Index (CAIDI), which includes the days on which major events occur	

Glossary

Acronym	Definition
Bbls-e	Barrels equivalent
CAP	Hazardous Air Pollutants
CO2	Carbon dioxide
VOC/VOC	Volatile Organic Compounds
CPO	Crude palm oil
FCC	Catalytic Cracking
SDS/SDS	Safety Data Sheets
gCO ₂ e/MJ	Grams of carbon dioxide equivalent per megajoule of energy
GHG	Greenhouse gases
GHS	Globally harmonised system
GJ	Billion Joules
H ₂	Hydrogen
H ₂ S	Sulfurhydric acid
Has	Hectares
Haps	Polycyclic aromatic hydrocarbons
Hg	Mercury
HVO	Renewable Diesel
ktonCO ₂ e	Kilotonnes of CO ₂ equivalent
Mbbl	Millions of barrels of oil
Mgal	Millions of gallons
MMBtu	One million British thermal unit
MMscf	Millions of standard cubic feet
MP / PM	Particulate matter
MtCO ₂ e	Million tonnes of CO ₂ equivalent
MW	Megawatts
NMFR	Near-Miss Frequency Rate
Nox	Nitrogen oxides
Pb	Lead

Acronym	Definition
PJ	Petajoules
PM10	Particulate matter smaller than ten microns
SAF	Sustainable Aviation Fuel
Sox	Sulphur oxides
tCO ₂ e	Tonnes of CO ₂ equivalent
TRIF	Frequency of Total Recordable Injuries
TRIR	Total Recordable Incident Rate
WDPA	World Database on Protected Areas
µg m ³	Micrograms/cubic meter

SASB Metrics summary 2023

Chapter	Topic	Metric	Description (Metric Summary)	Companies											
				Ecopetrol S.A. Hocol Ecopetrol Permian Ecopetrol America Ecopetrol Brasil	Cenit Ocensa OBC ODL ODC Progasur	Refinería de Barrancabermeja Refinería de Cartagena	Esenttia	Ecodiesel	Alcanos Gases de Oriente Metrogas	ISA ISA CTEEP ISA REP ISA INTERCOLOMBIA ISA INTERCHILE ISA TRANSELCA	ISA Intervial	XM Ecopetrol US Trading Ecopetrol Trading Asia Pte Ltd			
Sector - Subsector				EM-EP	EM-MD	EM-RM	RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS			
Segment				Exploration & Production	Transport & Logistics	Refining	Chemicals	Biofuels	Gas Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services			
				Upstream	Midstream	Downstream				Electric	Infrastructure	Services			
Environmental	Greenhouse gas emissions	110a.1	EM-EP and EM-MD: Global gross scope 1 emissions, percentage of methane, percentage covered by regulations limiting IF-EU emissions: (1) Global Gross Scope 1 emissions, percentage covered under (2) emission limitation regulations and (3) emissions reporting regulations. EM-RM and RT-CH: Global gross scope 1 emissions, percentage covered by regulations limiting emissions	X	X	X	X			X					
		110a.2	EM-EP and EM-MD: Amount of global gross Scope 1 emissions from: (1) burned hydrocarbons, (2) other combustions, (3) process emissions, (4) other emissions emitted, and (5) fugitive EM-RM and RT-CH emissions: Analysis of short- and long-term strategy to manage Scope 1 emissions, emission reduction targets and analysis of results in these two IF-EU objectives: Greenhouse Gas (GHG) emissions associated with energy supply	X	X	X	X			X					
		110a.3	EM-EP and IF-EU: Discussion of the long- and short-term strategy or plan to manage Scope 1 emissions, emission reduction targets, and an analysis of performance against these targets.	X							X				

Chapter	Topic	Metric	Description (Metric Summary)	Companies										
				Ecopetrol S.A. Hocol Ecopetrol Permian Ecopetrol America Ecopetrol Brasil	Cenit Ocensa OBC ODL ODC Progasur	Refinería de Barrancabermeja Refinería de Cartagena		Esenttia	Ecodiesel	Alcanos Gases de Oriente Metrogas	ISA ISA CTEEP ISA REP ISA INTERCOLOMBIA ISA INTERCHILE ISA TRANSELCA	ISA Intervial	XM Ecopetrol US Trading Ecopetrol Trading Asia Pte Ltd	
				EM-EP	EM-MD	EM-RM		RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS	
Sector - Subsector				Exploration & Production	Transport & Logistics	Refining		Chemicals	Biofuels	Gas Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services	
Segment				Upstream	Midstream	Downstream				Electric	Infrastructure	Services		
	Air Quality	120a.1	EM-EP and EM-MD: Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) volatile organic compounds (VOCs), and (4) Particulate matter (PM10) EM-RM: Air emissions of pollutants (1) NOx (excluding N2O), (2) SOx, (3) Particulate matter (PM10), (4) H2S, and (5) Volatile Organic Compounds (VOCs). IF-EU: Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) Particulate matter (PM10), (4) lead (Pb) and (5) mercury (Hg); percentage of each near or within densely populated areas. RR-BI and RT-CH: Air emissions of pollutants: (1) NOx (excluding N2O), (2) SOx, (3) Volatile Organic Compounds (VOCs), (4) Particulate Matter (PM10) and (5) Hazardous Air Pollutants (PAHs)	X	X	X		X	X		X			
		120a.2	EM-RM: Number of refineries in or near densely populated areas RR-BI: Number of incidents of non-compliance with air quality permits, standards and regulations			X			X					
	Energy Management	130a.1	RT-CH: (1) Total energy consumed, (2) percentage of power grid, (3) percentage of renewable energy, and (4) total self-generated energy					X						
	Water Management	140a.1	EM-RM, IF-EU and EM-EP: (1) Total water withdrawn(2) Total water consumed(3) Percentage of water withdrawn and consumed in regions with high or extremely high initial water stress RT-CH: (1) Total water withdrawn, (2) total water consumed and percentage of each in regions with high or extremely high initial water stress RR-BI: (1) Total water withdrawn, (2) total water consumed, (3) percentage of each in regions with high or extremely high initial water stress	X		X		X	X		Not applicable			

Chapter	Topic	Metric	Description (Metric Summary)	Companies									
				Ecopetrol S.A. Hocol Ecopetrol Permian Ecopetrol America Ecopetrol Brasil	Cenit Ocensa OBC ODL ODC Progasur	Refinería de Barrancabermeja Refinería de Cartagena		Esenttia	Ecodiesel	Alcanos Gases de Oriente Metrogas	ISA ISA CTEEP ISA REP ISA INTERCOLOMBIA ISA INTERCHILE ISA TRANSELCA	ISA Intervial	XM Ecopetrol US Trading Ecopetrol Trading Asia Pte Ltd
				EM-EP	EM-MD	EM-RM		RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS
Sector - Subsector				Exploration & Production	Transport & Logistics	Refining		Chemicals	Biofuels	Gas Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services
Segment				Upstream	Midstream	Downstream				Electric	Infrastructure	Services	
		140a.2	EM-EP: Volume of water withdrawn and returned; (1) percent poured, (2) injected, (3) recycled; Hydrocarbon content in discharge waters EM-RM, RT-CH and IF-EU: number of non-compliance incidents associated with water quality permits, standards and regulations RR-BI: Description of risks in water management and analysis of strategies and practices for their mitigation	X		X		X	X		Not applicable		
		140a.3	EM-EP: Percentage of hydraulic fractured wells for which there is public disclosure of all fracturing fluid chemicals used. IF-EU: Analysis of risks in water management, together with their strategies and practices to mitigate them RR-BI: Number of incidents of non-compliance associated with permits, standards and regulations on water quality RT-CH: Description of risks in water management and analysis of strategies and practices for their mitigation	X				X	X		Not applicable		
		140a.4	EM-EP: Percentage of hydraulic fracturing points where groundwater or surface water quality deteriorated compared to a baseline	X									
	Hazardous and Chemical Waste Management	150a.1	EM-RM and RT-CH: Amount of (1) hazardous waste generated and (2) percentage recycled IF-EU: Amount of residual coal (CCR) generated and percentage recycled			X		X			X		
		150a.2	EM-RM: (1) Number of Underground Storage Tanks (UST), (2) Number of UST releases requiring cleanup, and (3) percentage in states with UST financial guarantee funds. IF-EU: Total number of impacts from residual combustion coal (CCR), disaggregated by potential hazard classification and structural integrity			X					X		
	Ecological and Biodiversity Effects	160a.1	EM-EP and EM-MD: Description of Environmental Management Policies and Practices for Active Operations. IF-EN: Number of incidents of non-compliance with environmental permits, standards and regulations.	X	X						X		

Chapter	Topic	Metric	Description (Metric Summary)	Companies												
				Ecopetrol S.A. Hocol Ecopetrol Permian Ecopetrol America Ecopetrol Brasil	Cenit Ocensa OBC ODL ODC Progasur	Refinería de Barrancabermeja Refinería de Cartagena			Esenttia	Ecodiesel	Alcanos Gases de Oriente Metrogas	ISA ISA CTEEP ISA REP ISA INTERCOLOMBIA ISA INTERCHILE ISA TRANSELCA	ISA Intervial	XM Ecopetrol US Trading Ecopetrol Trading Asia Pte Ltd		
Sector - Subsector				EM-EP	EM-MD	EM-RM			RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS		
				Exploration & Production	Transport & Logistics	Refining			Chemicals	Biofuels	Gas Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services		
Segment				Upstream	Midstream	Downstream						Electric	Infrastructure	Services		
	Energy Affordability	240a.1	IF-GU: Average Retail Gas Rate for Customers(1) Residential, (2) Commercial, (3) Industrial, (4) Transportation-Only Services IF-EU: Average Retail Electric Rate for (1) Residential, (2) Commercial, and (3) Industrial Customers								X	X				
		240a.2	IF-GU: Typical monthly gas bill for residential customers for (1) 50 MMBTU and (2) 100 MMBTU of gas supplied per year IF-EU: Typical monthly residential customer electricity bill for (1) 500 kWh and (2) 1,000 kWh of electricity supplied per month									X	X			
		240a.3	IF-GU: (1) Number of residential customer gas shutoffs due to non-payment, (2) percentage of services restored in 30 days IF-EU: Number of power disconnections for residential customers due to non-payment, percentage reconnected in 30 days										X	X		
		240a.4	IF-GU: Analysis of the effect of external factors on the affordability of gas for customers, including the economic conditions of the service territory. IF-EU: Analysis of the effect of external factors on the affordability of electricity for customers, including the economic conditions of the service territory.										X	X		
	Structural Integrity and Safety	250a.1	IF-EN: Amount of defect-related and safety-related rework costs													
		250a.2	IF-EN: Amount of monetary losses as a result of legal proceedings associated with security defects											X		
Human Capital	Workforce Health & Safety	320a.1	EM-EP and EM-RM: (1) Total Recordable Incident Rate (TRIR), (2) fatality rate, (3) near-miss frequency rate, and (4) average hours of health, safety, and emergency response training for (a) full-time employees, (b) contract employees, and (c) short-term employees. IF-EU: (1) Total Recordable Incident Rate (TRIR), (2) Fatality Rate, and (3) Near-Miss Frequency Rate. IF-EN and RT-CH: (1) Total Recordable Incident Rate (TRIR) and (2) fatality rate for (a) full-time employees and (b) contract employees.	X		X			X			X	X			

Chapter	Topic	Metric	Description (Metric Summary)	Companies										
				Ecopetrol S.A. Hocol Ecopetrol Permian Ecopetrol America Ecopetrol Brasil	Cenit Ocensa OBC ODL ODC Progasur	Refinería de Barrancabermeja Refinería de Cartagena		Esenttia	Ecodiesel	Alcanos Gases de Oriente Metrogas	ISA ISA CTEEP ISA REP ISA INTERCOLOMBIA ISA INTERCHILE ISA TRANSELCA	ISA Intervial	XM Ecopetrol US Trading Ecopetrol Trading Asia Pte Ltd	
Sector - Subsector				EM-EP	EM-MD	EM-RM		RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS	
				Exploration & Production	Transport & Logistics	Refining		Chemicals	Biofuels	Gas Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services	
Segment				Upstream	Midstream	Downstream					Electric	Infrastructure	Services	
		320a.2	EM-EP and EM-RM: Discussion of management systems used to integrate a safety culture across the value chain and project lifecycle RT-CH: Description of efforts to manage, monitor and reduce long-term (chronic) health risk exposure of employees and contract workers	X		X		X						
		330a.1	SV-PS: Percentage of Gender and Racial/Ethnic Representative Groups for (1) Executive Management and (2) Other Employees										X	
		330a.2	SV-PS: Employee turnover rate (1) voluntary and (2) non-voluntary										X	
		330a.3	SV-PS: Employee Engagement Percentage										X	
Business model and innovation	Product design for efficiency in the use phase	410a.1	RT-CH: Revenue from products designed for efficiency in the use phase					X						
	Life Cycle Emissions Balance	410a.1	IB-RR: Lifecycle GHG emissions, by biofuel type						X					
	Product Specifications & Clean Fuel Blends	410a.2	EM-RM: Total Market Addressable to Market Share in Advanced Biofuels and Associated Infrastructure			X								
		410a.3	EM-RM: Volumes of renewable fuels for fuel blending: (1) net quantity produced, (2) net quantity purchased.			X								
	Life Cycle Effects of Buildings and Infrastructure	410a.1	IF-EN: Number of (1) projects certified in multi-attribute sustainability standards by third parties and (2) active projects aspiring to certification										X	
		410a.2	IF-EN: Analysis of the process of incorporation in the planning and design of measures for energy efficiency in water and energy in the operational phases										X	
	Chemicals management to protect safety and the environment	410b.1	RT-CH: (1) Percentage of products containing substances in categories 1 and 2 of hazardous to health and the environment in the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), (2) percentage of such products that have undergone a hazard assessment						X					
		410b.2	RT-CH: Analysis of the strategy of (1) management of chemicals of concern and (2) development of alternatives with reduced human and/or environmental impact						X					

Chapter	Topic	Metric	Description (Metric Summary)	Companies										
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				EM-EP	EM-MD	EM-RM		RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS	
Sector - Subsector				Exploration & Production	Transport & Logistics	Refining		Chemicals	Biofuels	Gas Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services	
Segment				Upstream	Midstream	Downstream				Electric	Infrastructure	Services		
Integrity and Transparency in Pricing	510a.2	EM-EP: Description of the Management System, Policies and Practices for the Prevention of Corruption and Bribery in the Value Chain IF-EN: Total monetary losses as a result of legal proceedings related to charges of (1) bribery or corruption and (2) anti-competitive practices	X								X			
	510a.3	IF-EN: description of policies and practices for the prevention of (1) bribery and corruption, along with (2) anti-competitive behavior in the bidding process.									X			
	510a.1	SV-PS: Description of the Approach to Ensuring Professional Integrity										X		
	510a.2	SV-PS: Total amount of monetary losses as a result of legal proceedings related to professional integrity										X		
	520a.1	EM-MD and EM-RM: Total amount of monetary losses as a result of legal proceedings associated with price fixing or manipulation		X	X									
Management of the legal and regulatory environment	530a.1	EM-RM, RT-CH and EM-EP: Analysis of corporate positions related to government regulations and/or policies that address environmental and social factors affecting the industry HR: Amount of subsidies awarded by government programs	X		X		X	X						
	530a.2	IR-BI: analysis of corporate governance positions on proposed regulations or policies that address environmental and social factors affecting the industry						X						
Safety, Emergency Preparedness and Response	540a.1	EM-EP: Process Safety Event (PSE) Rates by Primary Containment Loss (LOPC) of Highest Consequence (Level 1) EM-RM: Process Safety Event (PSE) Rates by Loss of Primary Containment (LOPC) of Highest Consequence (Level 1) and Lowest Consequence (Level 2). EM-MD: Number of Pipeline Incidents, Percent of Significance RR-BI and RT-CH: Number of Process Safety Incidents (PSIC), Total Process Safety Incident Rate (PSTIR) and Process Safety Incident Severity Rate (PSISR)	X	X	X		X	X						

Chapter	Topic	Metric	Description (Metric Summary)	Companies									
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				EM-EP	EM-MD	EM-RM		RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS
Sector - Subsector				Exploration & Production	Transport & Logistics	Refining		Chemicals	Biofuels	Gas Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services
Segment				Upstream	Midstream	Downstream				Electric	Infrastructure	Services	
		540a.2	EM-RM: Safety Systems Challenges Indicator Rate (Level 3) EM-MD: Percentage of Inspections on (1) Natural Gas and (2) Hazardous Chemical Pipelines EM-EP: Description of Management Systems Used to Identify and Mitigate Catastrophic and Ultimate Risks RT-CH: Number of Transportation Incidents	X	X	X		X	X				
		540a.3	EM-RM: Analysis of the measurement of operational discipline and performance of the management system through level 4 indicators Analysis of the management systems used to embed a culture of safety and emergency preparedness across the value chain and throughout the project lifecycle			X							
	Integrity of gas supply infrastructures	540a.1	IF-GU: Number of (1) reportable pipeline incidents, (2) corrective actions received, and (3) pipeline safety status violations						X				
		540a.2	EM-MD: Percentage of Transmission Pipelines, (1) Gas Distribution Pipelines Inspected, and (2) Hazardous Liquids Inspected IF-GU: Percentage of Distribution in Pipelines That Are (1) Cast or Wrought Iron and (2) Unprotected Steel		X				X				
		540a.3	EM-MD: Number of (1) Accidental Releases and (2) Non-Accidental Releases (NARS) from Rail Transportation IF-GU: Percentage of (1) Transportation and (2) Distribution Pipelines Inspected						X				
		540a.4	EM-MD: Discussion of the management systems used to embed a culture of safety and remediation for emergencies throughout the value chain and during project life cycles. IF-GU: Description of integrity management efforts in gas distribution structures, including safety and emissions risks.						X				
	Nuclear Safety and Emergency Management	540a.1	IF-EU: Total number of nuclear power units, broken down by results of the most recent independent safety review.							X			
		540a.2	IF-EU: Analysis of Efforts in Nuclear Safety Management and Emergency Preparedness							X			

Chapter	Topic	Metric	Description (Metric Summary)	Companies									
				Ecopetrol S.A. Hocol Ecopetrol Permian Ecopetrol America Ecopetrol Brasil	Cenit Ocensa OBC ODL ODC Progasur	Refinería de Barrancabermeja Refinería de Cartagena		Esenttia	Ecodiesel	Alcanos Gases de Oriente Metrogas	ISA ISA CTEEP ISA REP ISA INTERCOLOMBIA ISA INTERCHILE ISA TRANSELCA	ISA Intervial	XM Ecopetrol US Trading Ecopetrol Trading Asia Pte Ltd
Sector - Subsector				EM-EP	EM-MD	EM-RM		RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS
				Exploration & Production	Transport & Logistics	Refining		Chemicals	Biofuels	Gas Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services
Segment				Upstream	Midstream	Downstream					Electric	Infrastructure	Services
	Network Resiliency	550a.1	IF-EU: Number of incidents of non-compliance with physical and cyber security standards or regulations								X		
		550a.2	IF-EU: (1) Average Outage Duration Index (SAIDI), (2) Outage Frequency Index (SAIFI) and (3) Average Duration of Outages to Consumers or Customers (CAIDI), including Major Incident Days								X		
Parámetros de actividad		000.A	Activity Parameters	X	X	X		X	X	X	Not applicable	X	X
		000.B	Activity Parameters	X		X			X	X	Not applicable	X	X
		000.C	Activity Parameters	X					X	X	X	X	
		000.D	Activity Parameters	X	X				X		Not applicable		
		000.E	Activity Parameters								Not applicable		

In Ecopetrol S.A.'s SASB 2023 report, metrics are grouped by subject matter for the development of each material issue. The information of the subsidiaries is classified by sector and segment. Considering that several sectors and/or segments can develop metrics for the same subject, they will be grouped for a better understanding of the chapter.

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