SUSTAINABILITY ACCONTING STANDARDS BOARD (SASB) METRICS REPORT

2022

ecopetrol

ECOPETROL GROUP
A DIVERSIFIED ENERGY GROUP

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MESSAGE FROM THE PRESIDENT OF ECOPETROL S.A.

I am very pleased to share with you our third report prepared under the Sustainability Accounting Standards Board (SASB), a globally recognized requirement in terms of sustainability disclosures.

This report is an essential component in the efforts carried out by the organization to inform the market and our stakeholders effectively and transparently about our progress in the fields of TESG and energy transition.

During 2022, the Ecopetrol Group presented its long-term strategy to 2040, entitled 'Energy that Transforms', which is framed within four (4) pillars which are (i) grow with the energy transition; (ii) generate value through TESG; (iii) cutting-edge knowledge; and (iv) competitive returns. This strategy aims for the Group to continue growing, adapting to the changes that the global energy industry is experiencing, and reacting actively and decisively to the challenges associated with climate change and energy transition. Accordingly, TESG plays a lead role in this long-term outlook.

Today, the Ecopetrol Group has a renewed vision structured under three clear lines of business, seeking to guarantee the generation of value for all our stakeholders. Namely, i) hydrocarbons; ii) low-emission solutions; and iii) transmission, toll roads and telecommunications. I would like to highlight that the strategic directive given to us by our Board of Directors on TESG has challenged the Company to place itself at the forefront of major global and local concerns.

The operational, financial and TESG results visualize the work we carried out in 2022 and are reflected in the achievements obtained in each of the business lines. In regard to TESG, we would like to highlight:

In the environmental dimension, by yearend we had accomplished emission reductions totaling 416,672 tCO2e, a figure that surpassed by 59% the goal established for this period.

Also, during 2022, the carbon credit trading desk was created to manage the needs of the Group at both the national and global levels in terms of emissions offsets. Likewise, 5.8 million barrels were traded through carbon offset shipments.

In water management, we register positive progress with a 77.5% reuse in relation to the total water required to operate during the year.

Finally, in 4Q22 Ecopetrol became the first company in the mining-energy sector in Latin America to verify its water footprint in four assets, thereby emphasizing our commitment and advancing further our ambition to be water neutral by 2045.

Based on the foregoing, this report includes metrics related to the environment, social capital, human capital, innovation and the business model, leadership, and governance for 27 Ecopetrol Group companies within the sectors of Extraction and Processing of Minerals, Resource Transformation, Renewable Resources and Alternative Energies, and Infrastructure and Services, achieving a 98% coverage in the reported metrics, exceeding our 2021 result (89%).

OUR COMMITMENT TO ALL THE STAKEHOLDERS OF THE ECOPETROL GROUP IS TO CONTINUE WITH THIS EXERCISE OF TRANSPARENCY IN THE DISCLOSURE OF INFORMATION, WHICH EVINCES THE PROGRESS TO FULFILL THE 2040 STRATEGY AND ENERGY TRANSITION BY REDUCING OUR IMPACT ON THE ENVIRONMENT AND THE CLIMATE.

Alberto Consuegra
Interim President - CEO

SCOPE OF THE REPORT BY SECTOR AND SASB STANDARD

ecopetrol

Oil & Gas Exploration and Production

ecopetrol AMERICA

hocol

ecopetrol

ecopetrol PERMIAN

ecopetrol BRASIL

Oil and Gas Midstream

cenit

OCENSA

Oleoducto de Colombia

ODL Oleoducto de los Llanos Orientales S.A.

bicentenario petróleo por Colombia

ProGasur

Oil & Gas Refining

ecopetrol Refineria de Barrancabermeja

Refineria de Cartagena

Chemical

esenttia Polipropileno, Polietileno & Masterbatch

Biofuels

ecodiesel colombia s.a.

Gas Distributors

Alcanos de Colombia

MetroGas

Gases del Oriente Gases del Oriente S.A. E.S.P.

Electric Companies

isa

isa CTEEP

isa REP

isa INTERCOLOMBIA

isa INTERCHILE

isa TRANSELCA

Engineering & Construction Services

isa INTERVIAL

Professional & Commercial Services

xm

ecopetrol TRADING ASIA

SASB METRICS REPORT 2022

ACTIVITY METRICS CHAPTER

Topic:	Activity metrics							
EM-EP-000.A	Production of: (1) Oil (2) Natural gas (3) Synthetic oil (4) Synthetic gas							
Oil and Gas Exploration and Production								
Metric	1		2		3		4	
Unit	Mbbl/day		Mscf/day		Mbbl/day		MMscf/day	
Year	2021	2022	2021	2022	2021	2022	2021	2022
Ecopetrol S.A.	485.91	492.80	601.14	640.29	0.00	0.00	0.00	0.00
Hocol	18.10	17.10	110.50	112.69	0.00	0.00	0.00	0.00
Ecopetrol Permian	13.48	23.84	14.52	35.77	3.21	7.68	0.00	0.00
Ecopetrol America	9.45	8.10	8.33	6.89	0.00	0.00	0.00	0.00
Ecopetrol Brasil	Not applicable							

- **Ecopetrol S.A:** The sales of Liquefied Natural Gas – LNG for Ecopetrol S.A. represent less than 3.3% of the consolidated production that is presented in this report.
- **Ecopetrol Permian:** The reported synthetic oil corresponds to LNG.
- **Ecopetrol Brasil:** Nowadays, the Ecopetrol Brasil affiliate only has projects in exploratory stage, therefore, it has no associated production.

EM-EP-000. B	Number of offshore sites	
Metric	1	
Unit	Number	
Year	2021	2022
Ecopetrol S.A.	2	2
Hocol	2	2
Ecopetrol Permian	0	0
Ecopetrol America	3	3
Ecopetrol Brasil	0	0

- **Hocol and Ecopetrol S.A.:** Both maritime installations correspond to the fields Chuchupa A and Chuchupa B that are in the Guajira department, where Ecopetrol S.A. has a 57% share and Hocol S.A. holds 43%.
- **Ecopetrol America:** The platforms are listed as follows, with the corresponding participation of Ecopetrol America: Plataforma Marco Polo (GC-608) – operated by Occidental, processes the production of the K2 field with a 20.8% share. Platform Petronious (VK-786) – operated by Chevron, processes the production of Dalmation field, with a 30% share. Platform Gulfstar-1 (MC-724) – operated by Hess, processes the production of the Esox field with a 21.43% share and the production of field Gunflint with a 31.5% share.

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

- **General:** Types of onshore sites:
  - Oil Type: Corresponds to the fields that have oil or petroleum wells.
  - Gas Type: Corresponds to the fields that have gas wells.
  - Well definition: It refers to any ground drilling designed with the goal of finding and extracting fuel fluid, whether oil or gaseous hydrocarbons.
  - Field definition: It refers to an area with a given number of wells from which hydrocarbons are extracted from the subsurface.

- **Ecopetrol S.A.:** The production fields of 2022 are less than those reported on 2021 due to:

  a. Withdrawal of the asset in association with CEGOC on August of 2022 that covered the Casanare, Estero, Garcero, Orocúe and Corocora fields.
  b. Unification of the Palermo and Santa Clara fields (Palermo, Huila).
  c. Unification of the Tempranillo and Tempranillo Norte fields (Aipe, Huila).
  152 sites correspond to developing fields and 4 to exploratory areas: Recetor West (Aguazul, Casanare), Flamencos (Convenio Magdalena Medio), El Niño (Melgar, Tolima) and Lorito (Guamal, Meta).

- **Hocol:** The number of onshore sites correspond to the active fields operated by Hocol.

- **Ecopetrol Permian (2021):** Number of onshore sites: Active wells: 96; non-productive wells: 8; drilling phase wells: 4; completion phase wells: 6. This report does not include wells operated by the Company since they are not considered materially relevant for Ecopetrol.

- **(2022):** Active wells: 201; Non-productive wells: 11; drilling phase wells: 6 Midland / 3 Delaware; Wells that have not finished drilling: 6; completion phase wells: 4.

Topic:	Activity metrics					
EM-MD-000.A	Total metric ton-kilometers of: (1) Natural gas (2) crude oil (3) refined petroleum products transported, by mode of transport					
O&G Transport and Logistics (Midstream)						
Metric	1		2		3	
Unit	ton/day		Mbbls/day Oil pipelines		Mbbls/day Multipurpose pipelines	
Year	2021	2022	2021	2022	2021	2022
Cenit S.A.S.	0	0	268.26	299.60	277.19	298.12
Oleoducto Central S.A.S. - Ocensa	0	0	537.35	538.48	0.00	0.00
Oleoducto de los Llanos Orientales S.A. - ODL	0	0	196.20	213.05	0.00	0.00
Oleoducto Bicentenario S.A.S. - OBC	0	0	20.80	7.98	0.00	0.00
Oleoducto de Colombia S.A. - ODC	0	0	187.23	191.62	0.00	0.00
Promotora de Gases del Sur S.A. E.S.P. - Progasur	4,701	5,489	0.00	0.00	0.00	0.00

- **General:** The units proposed by SASB are "tons transported per kilometer ". However, most of the subsector companies use "thousands of barrels transported per day" as a reference unit for the transport of hydrocarbons.
- **Ocensa:** The transported crude oil barrels correspond to Segment II. The values reported on December are calculated based on the best estimate available on the closing date.
- **OBC:** The lesser volume transported in 2022 vs. 2021, is because in 2021, 19 reversion cycles were performed, versus only one in 2022. This volume is not included because it is a planned operation.
- **Progasur:** This is a natural gas transportation company whose activity consists of operating gas pipelines. Its activity is transporting gas from the production fields to the distribution systems.

Topic:	Activity metrics	
EM-RM-000.A	(1) Refining throughput of crude oil and other feedstocks	
Refining and Marketing		
Metric	1	
Unit	Barrels of oil equivalent (bbls-e)	
Year	2021	2022
Refinería de Cartagena	52,097,679	51,092,982
Refinería de Barrancabermeja	77,016,503	79,467,952

- **Refinería de Cartagena:** The volumes of only processed crudes were reported, without including other materials that are reprocessed in some moments in the crude units, such as SLOP. The information of 2021 was calculated due to corrections and adjustments applied in the methodology to improve the information quality.

RT-CH-000.A	(1) Production by reportable segment	
	Chemicals	
Metric	**1**	
Unit	**Metric tons (ton)**	
Year	**2021**	**2022**
Esenttia S.A.	499,759	467,765

- **Esenttia S.A.:** The reduction in the production was mainly due to the following three factors: 1) the plant stopped for 40 days for enlarging it; 2) restriction in the raw material supply and 3) plant operation was slow due to high levels of inventory.

RR-BI-000.A	(1) Biofuels production capacity	
	Biofuels	
Metric	**1**	
Unit	**Millions of gallons (Mgal)**	
Year	**2021**	**2022**
Ecodiesel Colombia S.A.	40.22	41.76

- **Ecodiesel Colombia S.A.:** Increase in the biodiesel production due to the implementation of improvements and the optimization of processes.

IF-GU-000.A	Number of: (1) residential, (2) commercial, and (3) industrial customers served, (4) Others							
Gas Distributors								
Metric	**1**		**2**		**3**		**4**	
Unit	**Number**		**Number**		**Number**		**Number**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
Alcanos de Colombia S.A E.S.P.	945,922	995,121	11,490	12,096	220	228	509	545
Gases del Oriente S.A E.S.P.	203,470	219,042	1,553	1,917	9	10	0	0
Metrogas de Colombia S.A E.S.P.	145,497	153,794	1,819	2,046	19	20	34	35

EM-RM-000.B	Refining operative capacity	
Refining and Marketing		
Metric	**1**	
Unit	**Mbbls/day**	
Year	**2021**	**2022**
Refinería de Cartagena	0.15	0.21
Refinería de Barrancabermeja	0.21	0.25

- **Refinería de Cartagena:** Based on capacity, today the operative capacity is 0.160 Mbbls/day (millions of barrels per day) in unit U-100 + 0.80 Mbbls/day by unit U-001 for a total amount of 0.24 Mbbls/day. For 2023, unit U-001 will be included with a maximum capacity of 0.80 Mbbls/day for a total annual capacity of 0.240 Mbbls/day.

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**		**2021**	**2022**	**2021-2022**	**2021-2022**
Ecodiesel	0.00		40.22	41.76	0.00	0.00

- **Ecodiesel:** The existing production system and technology can only produce advanced biofuels. The production of cellulosic biofuel would need a modification of the technology and different raw materials from the supply chain.

IF-GU-000.B	Amount of natural gas delivered to: (1) residential customers, (2) commercial customers, (3) industrial customers, (4) transferred to a third party and (5) others									
	Gas Distributors									
Metric	1		2		3		4		5	
Unit	MMBtu		MMBtu		MMBtu		MMBtu		MMBtu	
Year	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022
Alcanos	4,421	4,537	711,105	730,462	401,521	369,914	2,347,259	2,111,157	38,605	38,700
Gases del Oriente	1,245,351	1,212,377	110,020	158,357	330,825	431,592	0	0	0	0
Metrogas	900,844	906,713	172,620	201,269	66,510	67,783	48,949	39,740	12,026	3,700

- **Alcanos:** There was an increase in the natural gas supplied to third parties during 2022 because it includes the supplied to the secondary market. Consequently, the information for year 2021 was restated.

RR-BI-000.C	Amount of feedstock consumed in production	
	Biofuels	
Metric	1	
Unit	Metric Ton	
Year	2021	2022
Ecodiesel	133,127	135,146

- **Ecodiesel:** Consumed raw material associated with crude palm oil (CPO) and palm fatty acid distillate (PFAD).

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	2021	2022
Alcanos	Not applicable	14,251	14,831
Gases del Oriente		3,084	3,123
Metrogas		1,835	1,873

- **General:** The companies are solely and exclusively devoted to natural gas distribution and commercialization.

Topic:	Activity metrics	
IF-EN-000.A	Number of active projects	
	Engineering and Construction Services	
Metric	1	
Unit	Number	
Year	2021	2022
ISA Intervial	11	4

- **The number of active projects are:**
  Loa route: roadway construction.
  De los Ríos route: 1 contract with 21 construction sites.
  Araucanía route: 1 contract with 58 construction sites. Began on October of 2021, 98% progress + 1 contract with 10 construction sites. Began on April of 2022, 58.94% progress.

IF-EN-000.B	Number of commissioned projects	
	Engineering and Construction Services	
Metric	1	
Unit	Number	
Year	2021	2022
ISA Intervial	4	4

- **The number of commissioned projects are:**
  Maipo route: Section III + Free Flow Quintas.
  De los Ríos route: 1 contract with 4 construction sites.
  Del Bosque route: 1 contract with 45 construction sites.

IF-EN-000.C	Total revenue contractually expected	
	Engineering and Construction Services	
Metric	**1**	
Unit	**Reporting Currency (COP)**	
Year	**2021**	**2022**
ISA Intervial	$ 904,029,000,000	$ 2,868,846,000

- The variation from the previous year is due to several changes, including the completion of sections in the Maipo route, a decrease in anticipated construction sites in the De los Ríos route and increases in the anticipated construction sites for the Araucanía route and the Del Loa route.

Topic:	**Activity metrics**					
SV-PS-000.A	Number of employees by: (1) full-time and part-time, (2) temporary, and (3) contract					
	Professional and Commercial Services					
Metric	**1**		**2**		**3**	
Unit	**Number**		**Number**		**Number**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
XM	267	333	28	53	295	333
Trading Asia	Not available	4	Not available	0	Not available	4

- **Trading Asia:** No information was recorded for 2021 because Trading Asia began operations in July of the same year, and began reporting its metrics as of 2022.

SV-PS-000.B	(1) Employee hours worked, (2) percentage billable hours			
	Professional and Commercial Services			
Metric	**1**		**2**	
Unit	**Hours**		**%**	
Year	**2021**	**2022**	**2021**	**2022**
XM	762	671	Not applicable	Not applicable
Trading Asia	Not available	5,048	Not available	Not applicable

Topic:	Activity metrics
IF-EU-000.A	Number of: (1) residential, (2) commercial, and (3) industrial customers served
IF-EU-000.B	Total electricity delivered to: (1) residential, (2) commercial, (3) industrial, (4) all other retail customers, and (5) wholesale customers
IF-EU-000.D	Total electricity generated, percentage by major energy source, percentage in regulated markets
IF-EU-000.E	Total wholesale electricity purchased
	Electric Utilities
ISA	Not applicable: These disclosures do not apply to the companies reporting in this subsector, because their operations are in the transmission segment of the value chain and they do not participate in generation or distribution activities.
ISA CTEEP	
ISA REP	
ISA Intercolombia	
ISA Interchile	
ISA Transelca	

IF-EU-000.C	Length of the transmission and distribution lines	
	Electric Utilities	
Metric	**1**	
Unit	**Km**	
Year	**2021**	**2022**
ISA	Not applicable	Not applicable
ISA CTEEP	16,003	16,003
ISA REP	11,836	11,838
ISA Intercolombia	11,640	11,982
ISA Interchile	1,954	1,954
ISA Transelca	1,588	1,588

- **ISA:** Unlike its subsidiary companies, ISA does not operate infrastructure and for this disclosure report its focus will be on the operations of its transmission subsidiaries.
- **ISA CTEEP:** In 2021, CTEEP restated this number by eliminating the transmission line kilometers of companies over which it does not have total control (100% control) and took into account only ISA CTEEP and subsidiaries that are operated 100% by ISA. For 2022, there is no variation in the length of the transmission lines versus the previous year.

ENVIRONMENT
CHAPTER

Topic:	Greenhouse Gas Emissions (GHG)
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 methane, (3) Percentage covered under emissions-limiting regulations

Oil and Gas Exploration and Production

Metric	1 [1]		2 [1]		3 [2]	
Unit	tonCO2e		%		%	
Year	2021	2022	2021	2022	2021	2022
Ecopetrol S.A.	8,279,742	8,034,284	33.10	33.24	Not applicable	Not applicable
Hocol	271,213	250,397	3.09	3.04	Not applicable	Not applicable
Ecopetrol Permian	26,531	36,210	9.00	7.70	100.00	100.00
Ecopetrol America	35,804	39,290	22.00	31.91	Not applicable	Not applicable
Ecopetrol Brasil	Not applicable					

- [1] **Ecopetrol S.A.:** The inventory of Greenhouse Gas emissions of Ecopetrol is preformed using the ISO 14064-1 methodology and the GHG Protocol. This approach corresponds to an operational control that covers 100% of the emissions generated in Colombia in the facilities where the company has operative control. All the information management associated with the GHG emissions and its assessment is carried out thorough SAP- Environmental Compliance (EC) tool.

  Following the recommendation of the ISO 14064-1 methodology and the GHG Protocol, the emissions for the baseline year should be calculated every time a company has important changes such as acquisitions, disinvestments, and mergers, as well as significant changes in the methodology for estimating emissions. This recalculation is performed not only for the baseline year, but also for the historical series to achieve consistency on the reported information. Consequently, the emission for the baseline year (2019) and the historical series have been recalculated considering the following:

  - The bottom up and top down methane measurements were performed in the production segment as part of the company's plan to improve detection, quantification and plugging of fugitive emissions and vents. 95% of the company's installations were assessed after the adjustment and structuring of own emission factors and the change in methodology for estimating emissions. These adjustments represent an emission increase of approximately 2.4 million tons of CO_2e per year.
  - The reversal in the Nare asset in the production segment increased GHG emissions by approximately 0.9Mt of CO_2e.
  - The inventory update according to the NTC ISO 14064 - Version 2020 standard include the transport emissions in Scope 1 (these emissions were being reported in Scope 3).
  - The 2021 (recalculated) and 2022 information only includes the operations of Ecopetrol S.A. in the upstream segment (meaning they don't include the emissions associated with the Refinería de Barrancabermeja nor the operative assets in the Refinería de Cartagena).

- **Hocol:** All the inventory amounts of Scope 1 emissions are presented on this report will be verified and certified in 2023, and therefore the reported values could be subject to changes. For calculating the emissions, the specifications used as reference are the Greenhouse Gas Protocol of the World Resources Institute (WRI), the World Business Council for Sustainable Development (WBCSD) and the Colombian Technical Standard NTC-ISO 14064-1. Regarding the productive activity, the principal consumption information concerns:

  - Natural gas: the GHG CO2 emission factors were calculated based on the characteristics of the gases of each field, using the methodology provided by the Mining and Energy Planning Unit (UPME) of Colombia's Ministry of Mines and Energy. For other GHG emissions (CH4 and N2O), the methodology of the Intergovernmental Panel on Climate Change (IPCC) were used.
  - Fuels such as diesel fuel (ACPM) and gasoline: the emission factors from the UPME unit of the Ministry of Mines and Energy in Colombia were used.

- **Ecopetrol Permian:** The 2021 and 2022 numbers are for Ecopetrol Permian's production operations and facilities.

- **Ecopetrol America:** The 2022 emissions were calculated by using the Welligence Energy Analytics calculator, which provides a precise methodology. The 2021 data was restated using this same methodology.

- [2] **For Ecopetrol S.A. and Hocol:** the percentage covered under emissions-limiting regulations does not apply, as there is no regulation currently in force associated to such emissions (or to methane emissions) in Colombia.

- **For Ecopetrol America:** The regulatory limit established in EPA 40 CFR 98, subpart W, applies only to owners and/or operators.

O&G Transport and Logistics (Midstream)				
Metric	1		2	
Unit	tonCO2e		%	
Year	2021	2022	2021	2022
Cenit	125,335	124,360	0.05	0.05
Ocensa	299,766	292,868	1.60	1.64
ODL	1,406	2,074	0.032	0.04
OBC	646	337	0.021	0.027
ODC	23,383	23,257	0.10	0.08
Progasur	146	166	0	0

- **Cenit:** The variations in Scope 1 emissions in the Cenit emission inventories of 2019, 2020 and 2021 are due to the Carbon Neutrality certification process, which requires that the Company verify the emission inventory through a third party once a year. When verifying the emissions of 2021 and 2022, it was demonstrated and validated (with direct detection and gas chromatography in the installations of Pozos Colorados and Monterrey) that the methane emissions in the inventory's fugitive emission sources were insubstantial (not representative), demonstrating that the representative emissions were of Volatile Organic Compounds; therefore, the entity that verifies the inventory (Ruby Canyon Environmental) in its verification report of 2021, recommended the elimination of fugitive emissions included in Scope 1 from Cenit's inventories. Consequently, the Company recalculated the 2019, 2020 and 2021 inventories, which exhibit a reduction in their amounts.

- **Ocensa:** To calculate the GHG emissions, the company used as reference the corporate report of the GHG Protocol and standard ISO 14064-1:2006. The emission factors methodology was used, considering the preliminary activity data of the area of operations, which is obtained from direct consumption measurements. The fuel emission factors have been taken from the Mining and Energy Planning Unit (UPME) of Colombia's Ministry of Mines and Energy (FECOC, 2016) and from the IPCC. Likewise, the emission factor that used for electricity corresponds to 2021, considering that this factor has not been updated for 2022. Additionally, all the global warming potentials of the AR6 Report of IPCC were considered.

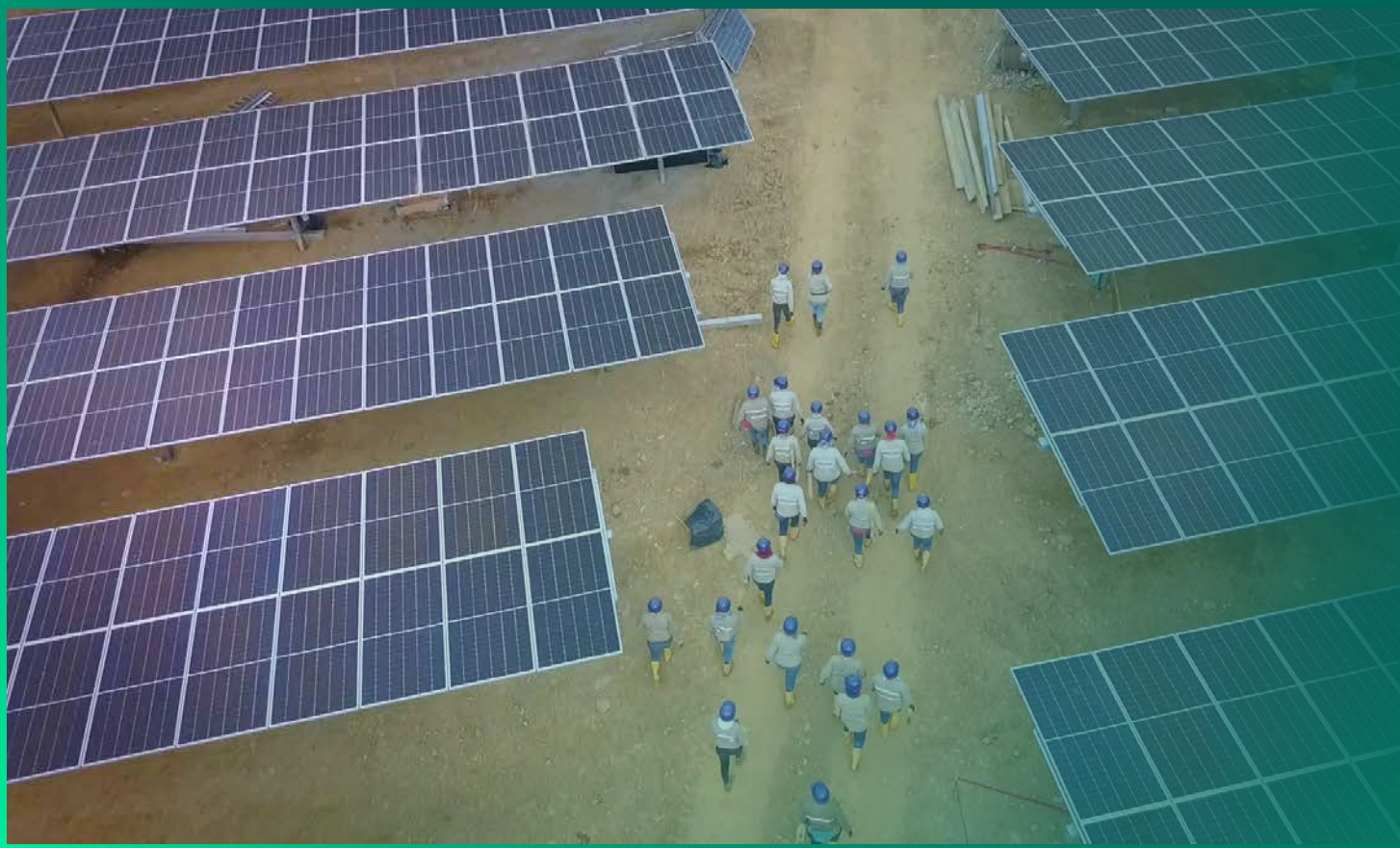
- **ODL/OBC:** The estimate methodology was updated for the GHG emissions inventory for ODL and OBC, and therefore the 2021information was recalculated using the methodologies and calculation tools that Ecopetrol S.A. has used to estimate and report in its annual emission inventory through its Atmospheric Emissions Management System (SIGEA). To present the GHG emissions inventory report, the methodological reference was the standard NTC ISO 14064-1:2020 that was recently updated, as well as the GHG Protocol Standard. It should be clarified that ODL was previously performing its inventory under the NTC ISO 14064-1:2006 methodology.
  The inventory is developed bottom up, the information is added by grouping the emissions by source typology, by type of GHG and by installation. The calculations are made using the SAP EC tool. For ODL, the difference in Scope 1 emissions for years 2021 and 2022 is mainly due to greater emissions associated with the replenishing of refrigerants. In OBC, the reduction of Scope 1 emissions is mainly due to the decrease of emissions associated with mobile sources.

- **ODC:** The methodologies of the 2009 Compendium of the American Petroleum Institute (API) were applied. The Oleoducto de Colombia (ODC) verified its inventory under operational control and with a rational approach in 2022 for the years 2019, 2021 and 2021. As a result, there were variations compared to what was reported on previous years, considering the verification and adjustments of the emission sources.

- **Progasur:** Considering the different emission sources and the molar compositions of the gases that are transported (according to the production and transportation information), the events of containment loss of the volumes released into the atmosphere are decisive in reporting the information requested for these metrics.

Refining and Marketing / Chemicals			
Metric	**1 [1]**		**3 [2]**
Unit	**tonCO2e**		**%**
Year	**2021**	**2022**	**2021-2022**
Refinería de Barrancabermeja	3,078,816	3,130,281	Not applicable
Refinería de Cartagena	2,077,536	2,145,034	
Esenttia	60,983	65,536	

- **(1) Cartagena and Barrancabermeja Refineries:**
  The atmospheric emissions inventory of Ecopetrol S.A. for Scope 1 and 2 emissions is structured under an operational control approach (Barrancabermeja and Cartagena Refineries). Following the recommendation of the ISO 14064-1 methodology and the GHG Protocol, the emissions for the baseline year should be calculated every time a company has important changes such as acquisitions, disinvestments, and mergers, as well as significant changes in the methodology for estimating emissions. This recalculation is performed not only for the baseline year, but also for the historical series to achieve consistency on the reported information. Consequently, the emission for the baseline year (2019) and the historical series have been recalculated considering the following::
  - The inventory update according to the standard NTC ISO 14064 - Version 2020 include the transport emissions in Scope 1 (these emissions were being reported in Scope 3).
- (2) Currently, Colombia does not have any environmental regulation GHG emissions limit to determine the percentage covered under emissions-limiting regulations. For this reason, this point is not applicable.



IF-EU-110a.1	(1) Gross global Scope 1 emissions, percentage covered under (2) emissions-limiting regulations, and (3) emissions-reporting regulations

Electric Utilities				
Metric	**1 [1]**		**2 [2]**	**3 [2]**
Unit	**tonCO2e**		**%**	**%**
Year	**2021**	**2022**	**2021-2022**	**2022-2021**
ISA	0	0		
ISA CTEEP	21,903	15,622		
ISA REP	3,198	299	Not applicable	
ISA Intercolombia	2,548	2,200	Not applicable	
ISA Interchile	916	8,021		
ISA Transelca	3,141	2,241		

- (1) **ISA:** The consumption of fuels, extinguishers or refrigerants is not reported because Intercolombia holds the operational control.

  ISA CTEEP: In 2022 the SF6 leaks were reduced by 31%, compared to 2021. This means a decrease of approximately 6,000 tons of CO_2e, where SF6 is the main source of Scope 1 emissions. In 2022, preventive maintenance for the components of gas-insulated high-voltage electrical substations (GIS or Gas Insulated Switchgear) was reinforced. Also, solutions such as clamps for leak containment were developed, and the use of the machine to regenerate SF6 gas in the ironclad substations continued, which reduces emissions and provides lower downtime gains and tighter control of asset performance. Other initiatives were the installation of devices for leak containment without requiring the shut-off of the equipment. All these actions helped to reduce SF6 leaks throughout the year.

  ISA REP: The decrease in the amounts reported is attributed to the reduction of SF6 leaks.
  ISA Intercolombia: The reported reduction is the result of implementing maintenance plans that decreased SF6 leaks.
  ISA Interchile: The increase of own emissions is due to the positive impact of SF6 leak reductions. Conversely, the emissions of CH4 and N20 tons are the emissions generated by the use of vehicles owned by Interchile.

- (2) The GHG Inventory for ISA and its affiliates was performed using the ISO 14064 and the GHG Protocol methodology.

- (3) It is not applicable, because in Brazil, Colombia, and Chile there is no regulation that limits the GHG emissions for the energy transmission business.

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 and Gas Exploration and Production

Metric	1		2		3		4		5	
Unit	**tonCO2e**		**tonCO2e**		**tonCO2e**		**tonCO2e**		**tonCO2e**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
Ecopetrol S.A.	905,422	953,120	4,536,020	4,274,772	2,439,135	2,430,017	0	0	399,165	376,375
Hocol	52,691	51,229	210,171	187,045	0	0	3,137	7,464	5,214	4,659
Ecopetrol Permian	18,823	10,249	6,841	24,038	0	0	82	154,5	785	1,768
Ecopetrol America	3,811	3,152	24,068	23,602	0	0	7,224	11,766	702	770
Ecopetrol Brasil	Not applicable									

- **Ecopetrol S.A.:** The CO2 emissions from the combustion and flaring processes are estimated from mass balance, considering the composition of the fuels that are used. In relation to the methane emissions associated with the flaring process, the model used is mass balance, which additionally to the burnt gas composition, considers the flare's efficiency. For estimating fugitive emissions and vents from the production segment, own emission factors were established based on bottom up and top-down measurements taken in the field. For the other methane sources, the generic industry emission factors are used. In the process emission category, the emissions that are associated with gas treatment, tank vents and well vents are included.
- **Hocol:** : There is an increase of 238% on the emissions associated with venting in 2022, compared to what is reported in 2021. This corresponds to an improvement in the measuring methodology in the La Hocha field, with a camera of optical gas imaging (OGI). This methodology will continue to be implemented in the other operation fields to measure the Company's emissions more reliably. Additionally, in the 2022 reporting of additional combustion volumes that are associated with operative activities and previously were considered as Scope 3 were included.
- **Ecopetrol Permian:** The production circuit is closed, and the estimate of venting emissions is related to the spontaneous crude oil losses in the storage tanks, assuming an efficiency of 95% for the Vapor Recover Units, which is the reason why the number is low. The hydrocarbon emissions due to venting and other combustions were estimated by calculating balance masses according to the API methodology (2009). For the fugitive emissions, emission factors were used.
- **Ecopetrol America:** Information from 2021 was recalculated using the Welligence Energy Analytics calculator.

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 and Gas Exploration and Production |O&G Transport and Logistics (Midstream) | Refining & Marketing | Chemicals | Electric Utilities

Métrica	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions.
Unit	**Discussion and analysis**
Year	**2022**

Ecopetrol S.A.

Hocol

Ecopetrol Permian

Ecopetrol America

Ecopetrol Brasil

Cenit

Ocensa

ODL

OBC

ODC

Progasur

Refinería de Barrancabermeja

Refinería de Cartagena

The Ecopetrol Business Group defined its corporate strategy as "Energy that Transforms", encompassing a 2040 horizon that fully responds to the current environmental, social and governance challenges and mentioning its focus on the generation of sustainable value for all its stakeholders. One of the strategy's pillars is to Generate Value through TESG which intends to accelerate and prioritize decarbonization and energy efficiency. In 2021, the Business Group was a regional benchmark for committing to reach net zero emissions by 2050. This commitment also includes reducing by 25% Scope 1 and 2 emission by 2030 and 50% of Scope 1, 2 and 3 emissions by 2050 using a 2019.baseline To achieve this, a decarbonization plan was established, which includes: (i) managing the GHG emissions inventory; (ii) implementing and investing in technologies for reducing emissions; (iii) a strategic review of the asset portfolio; and (iv) offsetting residual emissions. The GHG emission inventory compiled using the ISO 14064-1 methodology and the GHG Protocol, was verified by Ruby Canyon Environmental for the period 2017-2020.
The GHG emission reduction plan for the Ecopetrol Group is carried out by identifying and implementing the operative initiatives that are associated with energy efficiency, renewable energies, reduction flaring and fugitive emissions, methane venting and the development of emerging technologies that have low emissions. Since the goal was established, emission have decreased by 91,913 tCO2e (period 2020-2022).

Energy efficiency is calculated with an optimization goal for electric energy demand of 10% by 2040. In 2022, it reached 5.5% compared to 2018levels. In renewable energies, the goal is to reach a capacity of 1000 MW in nonconventional energy sources by 2030. Of these the company has been able to incorporate 208 MW of nonconventional renewable energies into its portfolio.

Ecopetrol S.A. committed to eliminate routine gas flaring by 2030 which aligns with the "Zero Routine Flaring" initiative headed by the World Bank. In the 2017-2022period, flaring was reduced from14,166 TCF (thousand cubic feet) to 10,120 TCF.

Additionally, Ecopetrol S.A. is a participant in the Climate and Clean Air Coalition – CCAC) and the Oil and Gas Methane Partnership (OGMP 2.0). These initiatives are led by United Nations to reduce methane emissions and entailed acquiring commitments associated to improving the identification and quantification levels of methane emissions. To do this, it used different technologies such as infrared cameras and flow meters (bottom-up focus), as well as satellite image analysis and flights with methane sensors (top-down focus) with which nearly 95% of the company's direct operations have been covered. To date, more than 1,700 leaks have been sealed.

Regarding the development of emerging technologies such as green hydrogen (H2), and Carbon Capture, Usage and Storage (CCUS), a goal was set to produce 1MtCO2 of green, blue, and white hydrogen by 2040. Likewise, it began the design of a roadmap and work plan for characterizing the subsurface for technological alternatives related to EOR-CO2 (Enhanced Oil Recovery), dedicated geological storage and in depressurized reservoirs.

Additionally, the development of a small-scale PEM electrolysis -type pilot has been carried out to evaluate the technical, environmental, and financial viability of generating green/electrolytic hydrogen in the Refinería de Cartagena. The PEM electrolyzers use a proton exchange membrane and an ionic solid polymer electrolyte. This technology has experienced a rapid developmental progress rapidly due to its compact and flexible design, as well as its resistance to high voltages.

Regarding the asset portfolio's strategic review, the company defined the implementation of an internal carbon price as a mandatory variable for economic evaluations in decision-making for current and future investments, which begins with 20 US7tCO2e in 2022 and increases to 40 US/tCO2e from 2030.

To offset residual emissions that cannot be avoided or reduced in its operations, the company implemented the Natural Climate Solutions Portfolio. Today, five projects are being developed with a cumulative potential of approximately 8 tCO2e by 2030.

Aligned with the Business Group's goals, some important advances have taken place in each of its subsidiaries: Hocol, subsidiary in the upstream segment, defined a goal of reducing Scope 1 and 2 emissions by approximately 40% by 2025 versus 2021. It will also eliminate the routine gas flaring and methane emissions by 2024 and will increase their energy efficiency by 10% by 2025. To achieve this, in 2022 the company advanced in the development of an energy quality study in Espinal and energy efficiency in the Ocelote field, in the monitoring of top-down methane emissions with aero transported technology covering 80% of the operations. It also began measuring bottom-up the terrain with optical gas imaging cameras (OGI) at the La Hocha field. The goal is that in 2023 all of Hocol's operations will have methane measurements and energy quality studies completed.

Esenttia	The midstream segment (Cenit, ODL, ODC, OBC and Ocensa) achieved in 2022 the Carbon Neutral certification awarded by ICONTEC. This was leveraged through the GHG emissions Management Plan that includes short, medium and long term reduction goals and identifies reduction opportunities in a timeline between 2022 and 2025.
ISA	Furthermore, Ocensa set a target to reduce 51% of its Scope 1 and 2 emissions by 2030 versus the 2019 baseline, complete the installation of 12 MW of renewable sources, advance in the development of projects for using renewable energy in pumping stations and in the maritime terminal, and certify the Energy Management System.
ISA CTEEP	In the downstream segment, in 2022 Esenttia was awarded the Carbon Neutral by ICONTEC. The Company's plan includes implementing an energy efficiency program in its masterbatch plant and aligning the self-supporting electric power generation system through solar panels in the warehouse with the energy matrix and operations of the steam turbine project.
ISA REP	ISA and its companies have specific goals, which include a program focused on reducing their own consumptions and emissions by implementing eco-efficiency actions in water and energy consumption and a sustainable mobility programs. Their comprehensive objective is to reduce emissions by 102,500 tCO2e by 2030. Regarding Scope 1 emissions of the GHG inventory, 80% corresponds to fugitive SF6emissions, and therefore the goal is to continue complying with the international IEC IEC62271-203standard (0.5% of leaks over the whole installed inventory). And, striving for continuous improvement, they are aiming to surpass the standard by 2030 by 15% for all the energy transport companies, to be achieved by implementing leak prevention, reduction, and correction programs.
ISA Intercolombia	To contribute to combat the challenges of the energetic transition, ISA aims to help the planet by avoiding the emission of 1.9 million tons of CO_2e by decarbonizing the energy matrixes with new energy businesses. Additionally, the company is leading one of the most acknowledged voluntary initiatives to reduce emissions in the region: the *Conexión Jaguar* (Jaguar Connection) program. It seeks to avoid emitting 9 million tons of CO_2e to the atmosphere by conserving and restoring ecosystems in Latin America. This way, the comprehensive goal of ISA and its companies is to reduce by almost 11 million tons its CO_2e emissions by 2030 and contribute to the priorities set by the national governments to reach the objectives of the Sustainable Development Goals.
ISA Interchile	
ISA Transelca	Ecopetrol Oleo e Gas do Brasil manages its GHG emissions through energy efficiency measures in its joint operations with its partners. In the Gato do Mato project in the Santos basin (offshore Brazil), the company aims to optimize the energy consumption of its projects, minimizing gas flaring, and complying with the applicable local demands. Ecopetrol Permian LLC and Ecopetrol America LLC, established reduction actions that are aligned with the Business Group's goals.

IF-EU-110a.2	Greenhouse gas (GHG) emissions associated with power deliveries	
	Electric Utilities	
Metric		
Unit	**tonCO2e**	
Year	**2021**	**2022**
ISA	Not applicable: These disclosures do not apply to the companies reporting in this subsector, because their operations are in the transmission segment of the value chain and they do not participate in generation or distribution activities.	
ISA CTEEP		
ISA REP		
ISA Intercolombia		
ISA Interchile		
ISA Transelca		

IF-EU-110a.4	(1) Number of customers served in markets subject to renewable portfolio standards (RPS) and (2) percentage fulfillment of RPS target by market
	Electric Utilities
ISA	Not applicable: These disclosures do not apply to the companies reporting in this subsector, because their operations are in the transmission segment of the value chain and they do not participate in generation or distribution activities.
ISA CTEEP	
ISA REP	
ISA Intercolombia	
ISA Interchile	
ISA Transelca	

Topic:	Air Quality							
EM-EP-120a.1 EM-MD-120a.1	Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) volatile organic compounds (VOCs), and (4) particulate matter (PM10)							
Oil and Gas Exploration and Production								
Metric	**1**		**2**		**3**		**4**	
Unit	**ton NOx**		**ton SOx**		**ton COV**		**ton PM10**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2022**	**2022**
Ecopetrol S.A.	23,226	23,297	3,871	3,733	90,188	97,584	783	847
Hocol	Not available							
Ecopetrol Permian								
Ecopetrol America								
Ecopetrol Brasil	Not applicable							

- **Ecopetrol S.A.:** Air pollutant emissions are calculated using mass balances for emissions of sulphur oxides (SOx) in combustion systems and using emission factors for the remaining pollutants: particulate matter (PM), nitrogen oxides (NOx) and volatile organic compounds (VOCs). The emission factors used to calculate the pollutant emission criteria (NOx and PM) and VOCs are obtained mainly from the document AP-42 from the U.S. Environmental Protection Agency (EPA).
  The emission factors used in the particulate matter emissions report include total particulate matter, without size distinction.
  The inventory of NOx, SOx, particulate matter, and VOC emissions has internal review processes that result in adjusting the emission outcomes of previous years. As a result of this process, the following adjustments were made for the emissions data provided for 2021:
  - Adjustments in the emission factors of VOCs in light of a new system of industrial wastewater treatment that began operations in 2021. The installation of these new technology resulted in an approximate reduction of 10% for estimated emissions versus the value initially reported for that year.
  - The NOx, SOx and particulate matter-PM emissions report for 2021 had a slight variation due to adjustments in the consumption report used for estimating emissions. It resulted in a variance of less than 1% for these emissions versus the value included in the previous report.
  - Regarding the emissions reported in 2022 compared with those of 2021, the main variations were seen in:
  - Emissions of the Volatile Organic Compounds (VOCs) increased mainly because of the higher production levels in the Castilla field, which increased the volume of industrial wastewater in its treatment systems.
  - Particulate Matter increased mainly due to the Asociación Nare fields, which were introduced into Ecopetrol's emission inventory in 2022.

- **Hocol:** There is no information to complete the information on air emissions produced by mobile and stationary sources because the existing boilers on the field are not operative since November of 2019 and the electric generators, because of their capacity, do not require isokinetic studies because their capacity is below 1MW. However, organization intends to quantify air emission based on the fuel consumptions and apply the emission factor methodology (Ef).

O&G Transport and Logistics (Midstream)								
Metric	**1**		**2**		**3**		**4**	
Unit	**ton NOx**		**ton SOx**		**ton VOC**		**ton PM10**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
Cenit	1,543.00	1,345.62	122.31	100.08	1,338.91	1,010.78	33.53	28.04
Ocensa	2,457.54	2,380.00	671.57	651.00	64.02	62.00	79.80	77.00
ODL	10.89	9.45	0.45	0.24	528.03	488.60	0.34	0.30
OBC	0.69	0.03	0.14	0.00	17.38	17.50	0.05	0.00
ODC	337.60	333.70	297.00	300.80	84.50	81.20	10.60	10.50
Progasur	0.98	1.10	0.01	0.01	0.42	0.44	0.06	0.07

The atmospheric pollutant emissions calculations for the Transportation and Logistics segment are done employing the methodology aforementioned adopted by Ecopetrol. This entails, Air pollutant emissions are calculated using mass balances for emissions of sulphur oxides (SOx) in combustion systems and using emission factors for the remaining pollutants: particulate matter (PM), nitrogen oxides (NOx) and volatile organic compounds (VOCs). The emission factors used to calculate the pollutant emission criteria (NOx and PM) and VOCs are obtained mainly from the document AP-42 from the U.S. Environmental Protection Agency (EPA). For the Volatile Organic Compounds in storage tanks the methodology adopted was API MPMS Chapter 19 (Evaporation Loss Measurement). The emission factors used in the particulate matter emissions report include total particulate matter, without size distinction.

- **Cenit:** There was a NOx, SOx and Particulate Matter emission reduction resulting from the energy efficiency initiatives and the inclusion of renewable energies that reduced the consumption of fossil fuels in operations. Likewise, volatile organic compound emissions decreased due to the reduction of fugitive emissions and the optimization of the operations in tanks.
- **Ocensa:** Considering that the fuel consumption was not sorted according to equipment type and that air pollutants hinge on the technology of the equipment that uses the fuel, considering the data available the most conservative emission factors values are used to avoid underestimating these.
- **ODL/OBC:** Due to an update on the inventory information, the 2021 data was restated. The 2022 data provided is the best estimate that is available at the time of this report.
- **ODC:** Small adjustments were made for certain crude consumptions in Caucasia after reviewing the information provided by the operation after their internal verification (as of December 2021, the information they initially provided was 3,946 barrels and evidence noted of 3,819 barrels. This adjustment resulted in a 127 barrel reduction thereof). This adjustment resulted in the reduction of NOx emissions. Additionally, because of the Ruby Canyon Environmental verification, the fugitive emissions estimate was cancelled.
- **Progasur:** The air pollutant emission estimate is based a yearly measurement of the kilometers the rented vehicles traveled for the Company's operations 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 and Marketing

Metric	**1**		**2**		**3**		**4**		**5**	
Unit	**ton NOx**		**ton SOx**		**ton PM10**		**ton H2S**		**ton VOC**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
Refinería de Barrancabermeja	3,251	3,389	8,618	8,292	371	374	0	0	17,605	17,226
Refinería de Cartagena	1,955	2,057	1,958	2,972	233	323	0	0	9,147	8,393

RT-CH-120a.1	Air emissions of the following pollutants: (1) NOX (excluding N2O), (2) SOX, (3) volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs)

Chemicals

Metric	**1**		**2**	**3**	**4**
Unit	**µg/m³ NOx**		**µg/m³ SOx**	**ton VOC**	**ton HAPs**
Year	**2021**	**2022**	**2021-2022**	**2021-2022**	**2021-2022**
Esenttia	676.82	490.76	0.00	0.00	0.00

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/m³**		**mg/m³**		**mg/m³**		**mg/m³**		**mg/m³**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
Ecodiesel	64.70	83.10	1.10	4.70	Not available		6.70	5.90	Not available	

- **Barrancabermeja and Cartagena Refineries:** The emission factors used in the particulate matter emissions (PM10) include total particulate matter, without size distinction. H2S emissions were not included in the report, since there are no fixed sources for emitting this compound. In the processes where it is necessary to manage possible H2S emissions, the currents are treated through thermal oxidation systems to convert the traces of H2S into SOx before it is emitted to the atmosphere.
  Air pollutant emissions are calculated using mass balances for emissions of sulphur oxides (SOx) in combustion systems, and using emission factors for the remaining pollutants: particulate matter (PM), nitrogen oxides (NOx) and volatile organic compounds (VOCs). The emission factors used to calculate the pollutant emission criteria (NOx and PM) and VOCs are obtained mainly from the document AP-42 from the U.S. Environmental Protection Agency (EPA).

  The NOx, SOx, particulate matter, and VOC emissions inventory undergoes an internal review process that resulted adjustments to the emission results of previous years. As a result, the following adjustments were made to the emission data for 2021:

  - Advancements were incorporating to update the methodology for estimating the VOC emissions in hydrocarbon storage tanks, particularly in the refineries where a new tool is being used to quantify these emissions more precisely. Based thereon, the calculations for the VOC emission in the storage tanks were updated for 2019-2021, to provide a methodological uniformity for the reporting of these years.
  - The NOx, SOx and particulate matter-PM emission report for 2021 had a slight variation compared to the value reported in the previous year, due to adjustments in the final consumptions report that was used to estimate the emissions, which generated a minor variation of 5% in the reported values.

  Regarding the refineries' emissions in 2022 versus 2021, the main differences occurred in the Refinería de Cartagena, where in 2022 there was an increase in particulate matter and SOx emissions compared to 2021 due to the greater operational availability of the unit, less maintenance, and a greater refining margins during the year.
  The Refinería de Cartagena had a particulate matter and SOx emission increase in 2022 compared to 2021, due to higher throughputs in the refinery's Catalytic Cracking Unit.

- **Esenttia:** Regarding NOx emissions, in 2021 the Splitter of Esenttia's Masterbatch was unified with Esenttia S.A. For this reason, the emissions of the three cogenerators and the Distral reboiler were all being included within the Esenttia. S.A. report.

  For 2022 the report has been separated and is reported as follows: Esenttia Masterbatch has one cogenerator (from the Splitter), and Esenttia S.A. has two cogenerators and the Distral boiler, which resulted in a decrease of reported emissions.

  The expressed value is the NOx concentration at a certain moment in time, expressed in µg/m³ units. The Company has no constant flow measuring equipment to measure the metric tons emitted. For this reason, it is evaluating possible empirical calculation methods. The available measuring methodology is:
  - Method 1 – Determine cross-sectional sampling points.
  - Method 2 – Determine the velocity and the volumetric flow rate.
  - Method 3 – Gas analysis to determine the molecular weight.
  - Method 3B – Gas analysis to determine the correction factor of the emission rate or the air excess.
  - Method 7 – Determine the nitrogen oxide emissions in fixed sources.

- **Ecodiesel:** The information is available only in concentration measurement units (mg/m³), according to the methodology established by Resolution 909 of 2008 of the Ministry of the Environment, Housing and Regional Development (MADS) and according to the type of fuel is considered in Article 8 thereof.

  The significant increase in emissions is due to the production increase, which generated more consumption of diesel fuel (ACPM) in the boiler. Ecodiesel currently does not carry out no non-metallic VOCs measurements or HAVs since these pollutants are not associated with its production chain.

IF-EU-120a.1	Air emissions of the following pollutants: (1) NOx (excluding N20), (2) SOx, (3) particulate matter (PM10), (4) lead (Pb), and (5) mercury (Hg); [6] percentage of each in or near areas of dense population

Electric Utilities

Metric	1		2		3		4		5	
Unit	**ton NOx**		**ton SOx**		**ton PM10**		**ton Pb**		**ton Hg**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
ISA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ISA CTEEP	18.23	18.79	1.37	1.41	0.55	0,57				
ISA REP	2.54	2.54	0.19	0.19	0.08	0,08				
ISA Intercolombia	0.92	1.07	0.07	0.08	0.03	0,03	Not applicable		Not applicable	
ISA Interchile	0.25	0.20	0.0046	0.02	0.00018	0,00				
ISA Transelca	0.45	0.69	0.03	0.05	0.05	0,08				

- **ISA:** Because ISA does not use diesel fuel (ACPM) it does not generate emissions of other pollutants.
- **ISA REP:** the information of NOx, SOx and PM10 are the best estimate available to date. This information will be verified in 2023. Peru's fuel quality standards result in insignificant Pb and Hg emissions, and therefore, these are not calculated.
- **General:** There are no lead (Pb) or Mercury (Hg) emissions because the fuel that is commercialized in Colombia reported in the GHG inventory is diesel fuel (ACPM) B10, which does not include said metals on its technical information sheet. Therefore, the Group's companies have no Pb or Hg emissions in their combustion process.

EM-RM-120a.2	Number of refineries in or near areas of dense populations.

Refining and Marketing

Metric	1	
Unit	**Number of refineries**	
Year	**2021**	**2022**
Refinería de Barrancabermeja	1	1
Refinería de Cartagena	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**
Ecodiesel	0

Topic:			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	2021	2022	2021	2022	2021	2022
Esenttia	1,442,703	1,348,200	61.18	49.30	0.22	0.22	264,650	325,180

- **Esenttia:** Energy consumption diminishes in certain month, according to the commercial requirements of maintaining a high inventory and the plant expansion project which have forced the plants to reduce their operations rate. Therefore, the energy consumption has been below that estimated for the year.

  The self-generated energy was stated for 2021 based on the information provided by Esenttia S.A.

  Additionally, Esenttia incorporated initiatives to reduce energy consumption and improve its energy efficiency by continuously operating the steam turbine, which increased the internal plant generation capacity, boosting the efficiency of the plant's natural gas use.

Topic:			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 and Gas Exploration and Production								
Metric	1		2		3		4	
Unit	Mil m³		Mil m³		%		%	
Year	2021	2022	2021	2022	2021	2022	2021	2022
Ecopetrol S.A.	11,561	9,607	10,052.00	8,695.00	1.00	1.78	0.00	0.22
Hocol	182.20	194.64	146.20	53.30	0.00	5.81	0.00	21.22
Ecopetrol Permian	Not available	10.30	Not available	10.30	0.00	0.00	0.00	0.00
Ecopetrol America	Not applicable							
Ecopetrol Brasil	Not applicable							

- **Ecopetrol S.A.:** In 2022, the Upstream segment collected 9.6 million m3 of fresh water, which represents a reduction of 17% versus 2021. This reduction was achieved mainly due to: the start of operations of the reinjection plant in Casabe that reduced 4.3 million m3; less underground water collection in the Tibú field (0.6 million m3) because of public order conditions that affected its normal operation; less superficial collection in La Cira Infantas (0.54 millions m3) which required less collected water for injection due to an increase of the BSW in their wells. Conversely, the 2022 volumes include Tren Nare, operated by Ecopetrol since November of 2021, which meant an additional collection of 3.28 million m3 per year, over and above the baseline; without this effect, the reduction versus 2021 would have been 45%.
  Regarding consumption, the baseline information was updated according to the sustainability metric EM-EP-140a.1 standard. Thus, consumption is calculated as collected water minus the discharge associated to the water collection. The consumption of fresh water happens mainly because of the injection of water collected for recovery purposes.
  The areas with hydric stress are identified as those where the relationship between demand and supply from the basin's superficial water is greater than 40%. This condition is present in the assets Llanito, Lisama, Coordinación Neiva, Tello, Río Ceibas and Yaguará.

- **Hocol:** The percentage of collected water in regions that are classified in the National Water Study of 2018 as "high, very high and critical water usage index" corresponds to 5.81% of the Hocol operations compared to the total water that is extracted from superficial and underground sources; 79.5% is sourced from underground sources.

- **Ecopetrol America:** Since it is offshore, it does not extract water for its production process. The water that it uses is immaterial because it is only for human consumption on the platform and for cleaning jobs.

Chemicals | Biofuels								
Metric	**1**		**2**		**3**		**4**	
Unit	**Mil m³**		**Mil m³**		**%**		**%**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
Esenttia	1,018	1,442	868	1,255	100	100	100	100
Ecodiesel	73,187	81,191	65,714	70,149	0	0	0	0

- **Esenttia:** This year, there was an increase in water consumption due to the operational start-up of the new steam turbine and its cooling tower. According to the sediment situation in the Canal del Dique, Essentia has identified the following strategies for their future water supply:
  1. Treat discharges to reduce environmental interest substances to permissible levels.
  2. Collect sea water.
  3. Receive water treated by third parties.
- **Ecodiesel:** The consumed water is supplied by Ecopetrol and increased 9.85% versus 2021. This can be explained with the increase in biodiesel production.

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 and Marketing								
Metric	**1**		**2**		**3**		**4**	
Unit	**Mil m³**		**%**		**%**		**%**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
Refinería de Barrancabermeja	21,506	20,721	56	61	18.50	12.85	41.09	31.90
Cartagena Refinery	6,970	7,699	69	53	100.00	100.00	100.00	100.00

- **General:** The areas with hydric stress are identified as those where the relationship between demand and supply from the basin's superficial water is greater than 40%.
- **Refinería de Barrancabermeja:** The collection site on the San Silvestre marshland is under hydric stress.
- **Refinería de Cartagena:** It has an increase in water consumption and extraction that is related to the operational start and stabilization of the Interconexión de Planta de Crudo de Cartagena – IPCC, which increases the crude oil throughput. The Dolores marshland is under hydric stress because it supplies the Empresa de Acueducto de Cartagena ACUACAR, that provides 100% of the raw water supply to the Refinería de Cartagena. On the other hand, because the discharges are made in a different basin from where the water is extracted, it is considered that extraction is equal to consumption. The percentage of recycled water decreased because there was a lower volume of reuse due to the plant stoppages during the first half of the year, particularly the U-111, and the greater consumption of water due to the entrance into operation of the IPCC.

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 and Gas Exploration and Production

Metric	1		2		3		4		5	
Unit	**Mil m³**		**%**		**%**		**%**		**ton**	**ton**
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
Ecopetrol S.A.	388,370	430,551	11.80	14.94	63.40	57.95	24.80	27.50	101.80	127.00
Hocol	19,865	21,535	1.42	0.93	79.21	77.82	19.37	20.53	1.67	1.49
Ecopetrol Permian	1,510	3,197	0.00	0.00	57.20	59.90	42.75	40.10	0.00	0.00
Ecopetrol America	11.00	46.30	100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.23
Ecopetrol Brasil	Not applicable									

- **Ecopetrol S.A and Hocol:**
  The reported volumes correspond only to production water because there is no fracking and therefore no flowback is generated.

- **Ecopetrol S.A.:** The volume of produced water injected includes the water that is injected for final disposal. The volume of recycled production water includes the reinjection for enhanced oil recovery (EOR), the recirculation /reusage in other activities such as drilling, road irrigation, steam generation, etc., and the reusage for agroforestry in the Ecoreserva ASA La Guarupaya.
  The weighted average concentration of Total Petroleum Hydrocarbons (TPH) in the discharges from the E&P assets of Ecopetrol S.A. is 1.97 mg/L, well below the limit established by national regulations of 1 mg/L. The sum of the volumes of produced water destinations is slightly higher than the total water produced (0.4%). This is because in the production water treatment systems might include other additional streams of water such as rainwater and/or wastewater that are the byproduct of the industrial use of collected water.
  The hydrocarbon throughput increased in discharges compared to the previous year, because the Castilla discharge was temporarily closed during the first semester of 2021.

- **Hocol:** In 2022, the total amount of extracted water associated with the productive process was only 0.93% of the water that does return to the reservoir through injection or reinjection, and after being treated is disposed of at the ground level. This complies with the company's regulation of reducing the ground-level discharges. It is important to state that the ground-level discharge volume decrease versus 2021 is associated with the operative closure of Cicuco field during the first semester of 2022.

- **Ecopetrol America:** The increase had three main causes: first, the operations of the Funflint 984-2 well restarted which it had been out of commission in 2021 and began production again on July 2022; second, the stimulation of the Funflint 984-4 well in July produced more water as of July 2022; and third, the stimulation of the Esox well in March of 2022, which also increased water production.

EM-EP-140a.3	Percentage of hydraulically fractured wells for which there is public disclosure of all fracturing fluid chemicals used

Oil and Gas Exploration and Production

Metric	1	
Unit	**%**	
Year	**2021**	**2022**
Ecopetrol S.A.	Not applicable	
Hocol		
Ecopetrol Permian	100	100
Ecopetrol America	Not applicable	
Ecopetrol Brasil		

EM-EP-140a.4	Percentage of hydraulic fracturing sites where ground or surface water quality deteriorated compared to a baseline	
Oil and Gas Exploration and Production		
Metric	**1**	
Unit	**%**	
Year	**2021**	**2022**
Ecopetrol S.A.	Not applicable	
Hocol		
Ecopetrol Permian	0	0
Ecopetrol America	Not applicable	
Ecopetrol Brasil		

- To date, Ecopetrol Permian is the only company of the Ecopetrol Group that performs hydraulic fracturing activities.

EM-RM-140a.2 RT-CH-140a.2 IF-EU-140a.2 RR-BI-140a.3	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	
Refining and Marketing / Chemicals | Biofuels		
Metric	**1**	
Unit	**Number**	
Year	**2021**	**2022**
Refinería de Barrancabermeja	0	0
Refinería de Cartagena	0	0
Esenttia	1	0
Ecodiesel	0	0

- **Esenttia:** During 2022, Essentia had no incidents related with water quality permits, standards, and regulations. There were no incidents of non-compliance related to discharges.

  In 2021, the reported noncompliance was due to the results in the samples of the wastewater for the Industrial and Domestic Wastewater Treatment Plant for these metrics: Chemical Oxygen Demand (COD) and Biochemical Oxygen Demand (BOD). These were corrected according to the samples tested in December of 2021.

RT-CH-140a.3 **RR-BI-140a.2**	Description of water management risks and discussion of strategies and practices to mitigate those risks
Chemicals | Biofuels	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Esenttia	In Esenttia the risks related to water management are: - No availability of the resource due to a failure in the provider's raw water supply system. - There is only one raw and drinking water provider that is Cartagena's water Company. - El Niño triggers draughts and shortages that lead to the exclusive use of water for the population. - Failure in Esenttia's internal system for processing raw water. The strategies that have been used to mitigate the risks are: - Have a 24 hour autonomy and an operation plan that can stop minor processes and temporarily halt equipment purges. - Have a water provider with a tanker truck that can supply the operation for a limited time, while the main provider (ACUACAR) reestablishes continuous service. - Esenttia has reviewed potential scenarios with ACUACAR, and the provider has a pumping plan from the Canal del Dique to maintain the level of the Dolores marshland stable. - Periodical revisions of the supply pipes have been conducted and two raw water treatment plants are available to ensure operational flexibility. - Alignment with Ecopetrol's Water Neutral Strategy by 2045. - Use of alternative water sources (desalinization). - Consolidate the water management strategy and increase operational water reuse. Potential effects of water management risks on the operations include weather factors such as El Niño, which could generate water shortages. As a prevention strategy, the different stakeholders (Aguas de Cartagena and other companies) get together to take contingency measures, thus enabling Essentia's supply, and consequently mitigating the risk of shortages. To date, this has not happened in over 30 years. On the other hand, strategies or short- and long-term plans, management goals, good practices, or compensations developed by Essentia include: Short term: - Establish water management guidelines for 2023 that are aligned with Ecopetrol's strategy. - Calculate and certify the 2020 Water Footprint. - Guarantee water management efficiency, through plans for reusing UF reject wastewater. Medium term: - Consolidate the water management strategy and increase operational water reuse. - Maximize cooling tower concentration cycles, through optimization operational plans aimed at closing the gap between the outlet temperature and the design temperature. - Seek synergies with the Refinería de Cartagena to use discharge water. - Reduce internal consumption, correct leaks, and make improvements to steam trap operations. Long term: - Develop a conceptual analysis of the applicability /justification of changing the technology used in wastewater management. - Use alternative water sources (desalinization). - Achieve water neutrality by 2045.
Ecodiesel	Ecodiesel does not extract or consume water in its activities. Its industrial service needs are supplied by a third party. Consequently, the risks are as follows: - Risk of water shortage in productive activities. - Draught risk. - Water contamination risk. In its activities Ecodiesel does not discharge Non-Domestic Wastewater, since a third party provides that service. However, the following risks are associated with non-domestic wastewater discharge: - Failure to comply with legal regulations for industrial wastewater treatment. - Materialization of environmental incidents in bodies of water. Additionally, another risk is the increase in water consumption due to failures in controlling the productive process. On the other hand, strategies or short- and long-term plans, management goals, good practices, or compensations developed by Ecodiesel include: - Optimization of industrial wastewater treatment processes. - Control and reduction of loses. - Water reuse, have several available technologies to efficiently remove the hazardous or undesired pollutants from the wastewater supply. - Implement Water Footprint Management - ISO 14046.

IF-EU-140a.1	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely high baseline water stress
IF-EU-140a.2	Number of incidents of non-compliance associated with water or water quality permits, standards, and regulations
IF-EU-140a.3	Description of risks in water management and discussion of strategies and practices to mitigate them

Electric Utilities	
ISA	Not applicable: These disclosures do not apply to the companies reporting in this subsector, because their operations are in the transmission segment of the value chain and they do not participate in generation or distribution activities.
ISA CTEEP	
ISA REP	
ISA Intercolombia	
ISA Interchile	
ISA Transelca	

Topic:	**Waste management**
EM-RM-150a.1 **RT-CH-150a.1**	Amount of (1) hazardous waste generated (2) recycled percentage

Refining and Marketing / Chemicals				
Metric	**1**		**2**	
Unit	**ton**		**%**	
Year	**2021**	**2022**	**2021**	**2022**
Refinería de Barrancabermeja	12,437	24,273	49.09	80.30
Refinería de Cartagena	2,418	3,008	24.40	10.27
Esenttia	198	210	36.60	27.84

- **Refinería de Barrancabermeja:** In 2022 the generation of hazardous waste increased by 11,836 Tons, due to scheduled maintenance activities in pools and tanks. Notably, 80% of the hazardous waste volume was used, increasing by 31 percentage points compared to that used in 2021. It is important to note that the information from 2021 for the recycled percentage was subject to recalculation and is updated on the chart.
- **Refinería de Cartagena:** The differences in information between 2021 and 2022 are due to an increase in the generation of oily sludge resulting from maintenance activities, which couldn't be used because of its characteristics. This can be seen in the recycling data. 100% of the oily sludge is redirected as an input current in the coke unit. This better practice has been in place since 2020. it is important to note that the information from 2021 for the recycled percentage was subject to recalculation and is updated on the chart.
- **Esenttia:** In 2022 a higher amount of unusable hazardous waste was generated and was earmarked for final disposition due to the installation of insulation for the fourth propylene storage sphere. The hazardous waste is generated for activities relating to the execution of new projects, removal of equipment and operation materials, disassembly jobs, maintenance during plant shutdowns, and expansion of administrative areas.

EM-RM-150a.2	(1) Number of underground storage tanks (UST) (2) Number of UST released for cleanup (3) percentage in States where UST Financial Guarantee Funds are available
Refining and Marketing	
Refinería de Barrancabermeja	Not applicable: None of the refineries have underground storage tanks.
Refinería de Cartagena	

IF-EU-150a.2	Total number of waste reservoirs generated by coal combustion (RCC), broken down by risk potential classification and by structural integrity assessment
Electric Utilities	
ISA	Not applicable: These disclosures do not apply to the companies reporting in this subsector, because their operations are in the transmission segment of the value chain and they do not participate in generation or distribution activities.
ISA CTEEP	
ISA REP	
ISA Intercolombia	
ISA Interchile	
ISA Transelca	

Topic:	Biodiversity impacts
EM-EP-160a.1 EM-MD-160a.1	1) Description of environmental management policies and practices for active operations
	Oil and Gas Exploration and Production
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecopetrol S.A.	The goal of Ecopetrol's Environmental Strategy [1], approved by the HSE Vice-presidency in 2021, is to draft guidelines for Ecopetrol's environmental management, including a vision, principles, objectives, as well as identifying the pillars and strategic environmental levers. This strategy is articulated within the 2040 Strategy "Energy that Transforms" and will be implemented as part the HSE's Management System, according to the guidelines established by the ISO 14001 regulation. The main objectives of this strategy are the following: - Compliance with Environmental legislation. - Identification and systematic management of the potential environmental impacts and risks associated with Ecopetrol S.A.'s activities, focusing on continuous improvement and the implementation of the mitigation hierarchy. - Continuous improvement based on the definition of strategic pillars and levers. - Fostering an environmentally friendly culture in employees, contractors, and the Ecopetrol Group. - Generation of long-term environmental value in the operations area. - Facilitate compliance with the corporate environmental goals on the path to energy transition. The Environmental Strategy is aligned with Ecopetrol's Risk Management System (SRI for its acronym in Spanish)), insofar as it promotes the prevention of potential risks that affect natural resources and the biota and prepares and responds to potential emergencies that can generate environmental risks. This Strategy applies to all of Ecopetrol S.A.'s projects and activities and can be adopted by all the companies belonging to the Ecopetrol Group. The Environmental Strategy is framed within the following basic principles: - Protecting the environment is a corporate responsibility that is promoted through business culture. - Compliance with Environmental legislation is the foundation for environmental management. - The mitigation hierarchy is the foundation for the planning of projects and operations from an environmental standpoint. - Continuous improvement is the path to environmental performance excellence. - Achieving corporate goals by approaching environmental challenges intelligently. - The path to a net and positive environmental impact. The Environmental Strategy established eight Strategic Pillars, that are described below: - Environmental planning and compliance: The knowledge and prior diagnosis of environmental aspects and determinants, as well as the specific regulation for the areas where Ecopetrol S.A. develops projects and operations, help identify potential environmental impacts and essential opportunities for creating and planning measures that focus mainly on the implementation of the mitigation hierarchy, contributing to the successful development of operations, the viability of new projects and the sustainable development of the territories where it operates. - Management and obtaining of environmental authorizations: Ecopetrol follows the national regulations associated with citizen participation in the territories where it expects to develop its operations and projects. In this manner, it informs the scope of its activities, as well as the environmental and social impacts that can occur, and can subsequently develop environmental management measures in conjunction with the different social stakeholders in its projects and areas of influence. Likewise, during the execution, it permanently establishes communication mechanisms with authorities, communities, associations, and other interested parties to understand and respond to concerns associated with the environmental management of its projects and operations. Through its Citizen Participation Office, the Company addresses petitions, complaints, claims and requests, and thus, meets the stakeholders' requirements, within the times established by Colombian law. - It is important to note that the Colombian state, through ANLA, as part of the National Environmental System, is responsible for evaluating and authorizing projects, works or activities in the hydrocarbon sector. To comply with the legal and environmental terms of a project, Ecopetrol must file an Environmental License request or an Environmental License modification with the authority. This is "a process used for planning and managing projects that ensures that human and economic activities are adjusted to the ecologic and resource restrictions and thus constitute a key mechanism to the promotion of sustainable development in the Nation" (ANLA, 2020) [2]. - The process of environmental licensing starts when the interested party files an Environmental Impact Assessment, where the environmental and social impacts with and without the project are identified, and can be classified into indirect, synergic, and cumulative. In addition, the project undergoes an assessment and valuation using methodologies according to its nature, by justifying the assessment of each impact, whether negative or positive. Moreover, the Environmental Impact Assessment includes environmental management programs that comprise detailed descriptions of all the actions, measures, and activities, which, as a result of the environmental assessment, are directed towards the prevention, mitigation, correction, and compensation of the identified environmental and social impacts caused from the development of a project, work, or activity.

Oil and Gas Exploration and Production	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**

- Regarding environmental legal compliance, based on the HSE Management System there are corporate guidelines are established, and the Environmental Legal Compliance Index is measured annually to monitor compliance therewith.

- Climate action: Ecopetrol is committed to reducing its carbon footprint, thus contributing to keeping the increase in global temperature to less than 1.5ºC. To this end, it endeavors to carry out low-carbon emissions operations that are resilient to the effects of climate change, by adequately managing climate-related risks and opportunities.

- Path towards water neutrality: Ecopetrol has stated its commitment to becoming a water neutral company by 2045. This goal has been defined as the balance between the water needed to operate and the direct water footprint, utilizing measures to reduce it as much as economically and technically possible and offsetting 100% of the remaining water required to operate, through projects executed in the hydric basin where it operates. To achieve this, Ecopetrol has committed to the reduction of 66% of fresh water collection for industrial use, compared to the baseline year (2019), to eliminate industrial wastewater discharges to bodies of fresh water, and to offset the remaining 34% of water consumption with initiatives that contribute to the improvement of water availability in the hydrographic basins where it operates.

- Integrated Waste Management: Ecopetrol adopts operative and organizational measures to reduce the generated waste (to levels where it is economically and technically feasible), regarding quantity and hazardousness, based on three (3) fundamental aspects: a) reduction in the source or origin; b) material recovery by using residues, through the implementation of the Multi-R concept or 9Rs of circular economy; and c) new technologies.

- Biodiversity and ecosystem services: The purpose of the biodiversity strategic pillar is to adequately mange biodiversity and ecosystem services-related risks and opportunities, addressing expectations from stakeholders and ensuring it keeps its license to operate. This pillar has four main axes: i) Mitigation hierarchy: Its purpose is to prevent, avoid and mitigate the impacts on biodiversity and offset residual impacts. Ecopetrol S.A. does not have, nor plans on having exploration, production or refining activities in areas that have great value for biodiversity categories I to IV according to the International Union for Conservation of Nature (IUCN), or in areas that have been declared a World Heritage Site by UNESCO; ii) Nature based solution: it intends to maintain biodiversity and ecosystem services in strategic areas, identifying synergies between nature, society and the local economy, to address climate change challenges (Natural Climate Solutions), the management of water resources and biodiversity; iii) Generate knowledge: create new information about biodiversity and ecosystem services to strengthen the decision-making process; and iv) Biodiversity culture: strengthen the value of biodiversity and ecosystem services within the Company.

- Circular Economy: Circular Economy has been defined as a "System of production and consumption that promotes efficiency in the use of materials, water and energy, taking into account the ability to recover the ecosystems, the circular use of material flows by implementing technological innovation, alliances and collaboration between actors, and the stimulus of business models that respond to the fundamentals of sustainable development" (National Circular Economy Strategy -ENEC, Ministry of the Environment and Sustainable Development- MADS, and the Ministry of Trade, 2019). In this sense, circular economy is adopted as an enabler that contributes to complying with the goals associated with energy transition, with a zero net carbon emissions goal , with diminishing the water footprint, with closing the material and waste cycle, with diversifying new businesses, with ensuring long term competitivity and sustainability for the company, and simultaneously, aim at conserving natural resources and society's wellbeing.

- Clean Air for the Environment: The clean air for the environment pillar focuses on monitoring and managing the company's contribution to reducing the emissions of atmospheric pollutants and/or in improving the air quality through specific initiatives aimed at reducing the polluting emissions, decarbonization-related benefits, energy transition, and clean fuels. The main objectives are as follows:
Reduce emissions of criteria air pollutants to global standards and contribute to the air quality improvement in order to protect the environment.
A Verified Atmospheric Emissions Inventory in the assets operated by Ecopetrol.
Contribute to achieving and sustaining the air quality level in the operations' areas of influence to comply with the goals set in the WHO Air Quality Guidelines.

Prevention and remediation: the prevention and remediation of environmental affectations that were caused by operational and process safety incidents focuses on prevention, incorporating proactive risk management and the analysis of the potential materialization of environmental risks that are typical of the company's different businesses. Five strategic lines have been proposed to address this:

Oil and Gas Exploration and Production	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
	- Proactive risk management. - Incorporation of technology in environmental management information. - Continuous improvement analysis. - Remediation and improved conditions. - Impact on culture. The environmental strategy and related commitments are communicated on an ongoing basis to all stakeholders, according to their needs and expectations. To this end, the Company discloses its strategy and commitments through its webpage, externa and internal communication, the partners and environmental authorities relations plan and other pertinent mechanisms. To find more information about the environmental strategy, consult Ecopetrol's webpage, TESG / Environmental section. [1] Previously, the environmental guidelines were included in the Environmental Strategy. With the aim to continuously improve, it was decided to draft an independent Environmental Strategy, that promoted the strengthening of the environmental management within the organization. This strategy can be applied to all of Ecopetrol S.A.'s projects and activities and can be adopted in turn by all companies belonging to the Ecopetrol Group. [2] https://www.anla.gov.co/01_anla/tramites-y-servicios/servicios/licencia-ambiental#:~:text=Licencia%20Ambiental&text=Es%20un%20proceso%20utilizado%20para,para%20promover%20el%20desarrollo%20sostenible.
Hocol	Hocol's TESG strategy focuses on protecting nature's wealth, through its participation in the social development of the territories, environmental management and guaranteeing a sustainable operation. This serves as the foundation for the company's environmental direction, including strategies and specific short, medium, and long term goals, defined in the Climate Change, Water Management, Circular Economy, and Natural Wealth Protection roadmaps. Moreover, Hocol has implemented an Environmental Management System (EMS) across all asset lifecycles, which enables it to develop the company's environmental component and establishes mechanisms for managing the aspects and environmental impacts of the company's operations and projects. Currently, Hocol is certified under ISO 14001, which includes hydrocarbon exploration in its new opportunities, prospect management, new discoveries, development, and abandonment stages, and the production and transport processes in the Ocelote – Guarrojo and Arrecife fields and in the Ocelote – Palmeras Pipeline. Hocol is aligned with the policies and practices defined in Standard 1 (ISO 14001) to the extent that it has developed and constantly updates its risk map, which includes environmental and social risks and whose management leverages reaching the suggested goals established in the TESG strategy. Likewise, Hocol follows strategic guidelines for the identification and management of environmental impacts; in addition to establishing mechanisms for managing environmental aspects and impacts over the resources in the different project stages. The environmental aspects and impacts are evaluated, and managed primarily through environmental management plans, which are verified by the environmental authorities as part of the company's good practices and environmental and social commitment. Hocol has defined specific strategies and short, medium, and long term goals relating to Climate Change, Water Management, Circular Economy, and Natural Wealth Protection. Compliance thereof is achieved through the different plans that are continuously evaluated and monitored against the corresponding roadmaps. Hocol has implemented an Occupational Safety and Health Management System, as stipulated in Decree 1072 of 2015, which is implemented, evaluated, and improved on an ongoing basis. The Company's policies and practices are aligned with Standard 6 (ISO 14001), given that the TESG framework includes a pillar that aims at protecting and conserving biodiversity through strategies for the restoration and conservation of ecosystems; providing assistance in the protection of representative species; education and culture programs, the transfer and management of knowledge; reforestation, follow up and monitoring through actions that are an integral part of the Biodiversity and Reforestation axes.

Oil and Gas Exploration and Production	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecopetrol Permian	Since Ecopetrol Permian and Ecopetrol 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 corresponding operator for each location where the operations take place.
Ecopetrol America	
Ecopetrol Brasil	Not applicable

O&G Transport and Logistics (Midstream)	
Metrics	**1**
Unit	**Discussion and analysis**
Year	**2022**
Cenit	Durante este año Cenit ha propendido por cumplir la normatividad ambiental vigente, identificar y gestionar lDuring this year, Cenit sought to comply with current environmental regulations, identify and manage the potential impacts and environmental risks of the operation, and encourage sustainable development in the areas of influence. It aimed to define its stance regarding climate, the circular economy, biodiversity, and ecosystem regeneration, establishing itself as a carbon-neutral company and thus paving the way to become an innovative and environmentally responsible business. Therefore, the company is working on the following matters: 1) environmental feasibility of projects and operation; 2) compliance with environmental regulations; 3) addressing affectations due to environmental incidents; 4) circular economy; 5) biodiversity; 6) water management; and 7) decarbonization. CENIT, within the framework of sustainable development, ensures its operations and projects are socio-environmentally viable through the design and implementation of socio-environmental management measures that allow it to prevent, control, mitigate and compensate for potential impacts that might be generated by the operation. Based on the environmental strategic guidelines of the Ecopetrol Business Group, CENIT implements five (5) environment-focused strategic lines that contribute to the development and well-being of its surroundings: comprehensive water management, biodiversity, climate change, circular economy, and environmental authorizations. The implementation of these strategic lines results in an efficient, balanced operation that encourages economic growth, care for the environment and social welfare. CENIT applies a mitigation hierarchy to prevent, avoid, reduce, control, recover and offset possible impacts on the biotic environment. This planning process contributes to creating natural capital in terms of biodiversity gains in the areas of influence of the transport systems, seeking in some cases to generate non-oil income for the local communities in the areas where it operates. The nature of the significant biodiversity impacts is related to the transformation and fragmentation of the habitat, reduction in the number of trees of the exploited forest species and alterations in ecological processes. During 2022, recovery activities were conducted in an area of 421 hectares which were mandatory investments required by the environmental authorities for unavoidable impacts, and 75 hectares of voluntary investments made by the company within the framework of its Socio-Environmental Investment Program.

O&G Transport and Logistics (Midstream)	
Metrics	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ocensa	Ocensa has a Comprehensive Responsibility, Diversity and Inclusion Policy, Environmental Licenses, Environmental Management Plan (PMA for its Spanish acronym), Environmental Management System (EMS), Environmental Matters and Impacts Matrix, Life Cycle Matrix, Environment Management System Handbook, and programs focused on biodiversity, climate change, integrated water and waste management and circular economy. It also implements environmental performance measurements, an Environmental Control Program, Prevention and Monitoring Program, Business Risk Matrix, ESG 2030 strategic framework with an environmental focus, and has ongoing engagement with environmental authorities. Additionally, all corporate activities are framed within the Environmental Management System (EMS) certified by SGS Colombia under ISO 14001: 2015 and has the following corporate certifications: ICONTEC Water Footprint 2020 and 2021, GHG 2021 ICONTEC, Carbon Neutral 2021 ICONTEC. Ocensa, through the Business Risk Matrix, includes in its assessment potential impacts on workers, the environment and communities that may be affected by the organization's activities. This includes in the socio-environmental sphere issues such as diversity and inclusion, labor standards, human rights (due diligence), relations with communities, relations with indigenous communities, handling of complaints, cultural heritage, land acquisition, social investment, employment generation, protected areas, and biodiversity, among others. Likewise, issues associated with improving financial results were addressed, such as income transparency, business ethics, crisis management, and endorsing consistent and sustainable performance in environmental and social matters. Within the framework of the Circular Economy, Ocensa has guidelines related to the life cycle of products in the goods and services procurement processes in order to make more efficient the use of resources, regardless of the contractual relationship. Ocensa has an Occupational Health and Safety Management System that complies not only with Colombian regulations but is also certified under the International Standard ISO 45001 Version 2018. The latter seeks to achieve and maintain a healthy and safe environment for all workers, regardless of their contractual relationship, through commitments defined in the comprehensive responsibility policy to establish the roles and responsibilities to achieve the OHS objectives and goals; recognize, assess and control hazards and risks; define and develop programs that encourage a strong culture of prevention; measure performance, identify non-conforming situations and ensure their effective correction in order to identify ways to achieve continuous improvement. The remuneration measures are aligned with the biotic component of the Remuneration Manual of the Ministry of Environment and Sustainable Development in accordance with Resolutions 1517 of 2012 and 0256 of 2018. The remuneration factors are calculated according to the biome where the affectation occurs, in addition to the criteria of representativeness, uncommonness, remanence and the transformation rate. Because the pipeline extends from Cusiana to Coveñas and operates through different types of habitats, the PMA has programs for prevention, mitigation and control regarding fauna and flora management, the removal of vegetation cover and stripping, forest exploitation, protection and conservation of habitats, vegetation, support for research projects on endangered and/or vulnerable species, wildlife environmental education, plant offsets, recovery of areas and ecological restoration, border restoration and offsets for landscape damage. The offsets requested by the environmental authorities are carried out with native species of each region and the use of exotic species. There is an environmental control program, which includes activities focused on the prevention and mitigation of impacts. The activities consist of soil management, water resources, air resources, abiotic environment offsets, civil maintenance of the oil pipeline, and mechanical operation and maintenance. Another program is prevention and monitoring, which includes activities for measuring and monitoring environmental elements. Programs for the protection and conservation of habitats, revegetation, and conservation of plant and fauna species in critical danger, protected species or those that are not registered within the national inventory or that are cataloged as possible unidentified species and offsets for the biotic environment.

O&G Transport and Logistics (Midstream)	
Metrics	**1**
Unit	**Discussion and analysis**
Year	**2022**
ODL	Environmental management was carried out within a preventive framework, in accordance with the actions established in the environmental management plan (PMA for its Spanish acronym), follow-up and monitoring plan (PSM) and assessment of the possible environmental impacts that could arise. The indicator for the year presented zero (0) environmental incidents and barrels spilled due to operational causes. Likewise, environmental matters are monitored, including the generation of solid waste, water catchments, wastewater disposal, water treatment, emission controls, and the monitoring of water, air, and soil resources in order to perform all operation in a sustainable way. Management in voluntary conservation of biodiversity and mitigation of climate change: Correspondingly, the stakeholders in the areas of operation that are directly or indirectly involved in the operation have the *Línea SER* help line mechanism through which the different areas of the organization address requests, opportunities and claims received and answered based on six principles: visibility, accessibility, diligent response, objectivity, confidentiality and responsibility. ODL and OBC, at the end of 2022, created the Environmental Transition area in order to encourage environmental sustainability in the organizations, including climate change in planning and decision-making in order to respond to the work requirements together with the development of actions that allow the company to be timely and resilient in the face of the climate changes; to create projects that contribute to the fulfillment of the corporate objectives of the Ecopetrol Group and continue to be competitive and profitable in the transition process towards a decarbonized economy; and maintain a focus on generating sustainable value for all its stakeholders.
OBC	Aligned with the sustainability strategy to uphold a low-carbon emissions operation and reduce the vulnerability of the infrastructure to climate change, the decarbonization plan constructed evidences the commitment of senior management to reduce GHG emissions and contribute to the fulfillment of the nation's goals, as well as counteract the effects of climate change. The strategy contains as its main priorities: - Climate action (mitigation and adaptation to climate change) - Circular economy - Biodiversity - Water resource management The companies have set a target to reduce by 25% Scope 1 and 2 emissions using 2019 outputs as the baseline. To date, 4,722 tCO2e have been eliminated by optimizing pumping and installing photovoltaic systems in the pipeline valves. At ODL/OBC, it is understood that the main effects of climate change are manifested through affectations to the availability, quality and quantity of water, which is why water management is essential for sustainable development. ODL/OBC is currently developing the baseline of its water footprint for each of its facilities in order to identify initiatives that allow the companies to attain its goal of water neutrality ODL/OBC, within its practices and policies, have mechanisms, areas and resources to protect the environment, including environmental management plans within their operations that include actions to protect endangered species and ecologically sensitive areas, as well as contingency plans to mitigate or reduce risk of adverse events.

O&G Transport and Logistics (Midstream)	
Metrics	**1**
Unit	**Discussion and analysis**
Year	**2022**
ODC	Through Resolution No. 01424 of August 26, 2020, in its first Article, the National Environmental Licenses Authority (ANLA for its Spanish acronym) established the *Sociedad Oleoducto de Colombia S.A.* (ODC) to manage the environmental zoning for the development of different activities which included exclusion areas, intervention areas with restrictions and areas susceptible to intervention. Additionally, in its second article modified Resolution 136 of February 3, 1989, modified by Resolution 171 of March 2, 1990, to encompass the Environmental Management Plan for the operation of the stations and the Hydrocarbon Transportation System (STH). Oleoducto de Colombia S.A. provides crude oil transport and specialized services, ensuring the care and protection of life, the environment and the integrity of the operation, complying with the legal framework that regulates its economic activity and other applicable regulations. This is expressed through its corporate commitment to: - Identify management gaps, as well as implement actions and measures necessary to overcome these by applying the principles of continuous improvement. Operational excellence is a necessary condition for the construction of safe and environmentally sustainable environments. - Promote the development of clean technologies that contribute to reducing climate change effects in operations, encouraging the sustainable use of natural resources and leveraging the carbon neutral strategy. - Identify and manage the existence of hazards and risks that may affect the achievement of objectives and business continuity, including reputational risks, applying appropriate controls to mitigate these and prevent work accidents, occupational diseases, major accidents, emergencies, crises and disasters, and thereby contribute to eliminating hazards and reducing risks. - Provide safe and healthy working conditions, establish programs aimed at promoting a culture of prevention and self-care, seeking the physical and mental well-being of all workers, contractors, and subcontractors. - Maintain open channels of communication to allow the dialogue and participation of workers, communities and relevant actors in the territory in all matters of interest thereto and their representatives, encouraging transparency in information and timely communication. - Manage actions focused on environmental protection and pollution prevention, maintaining a continuous identification and monitoring of environmental impacts and the implementation of mitigation plans and controls. - Sponsor development and innovation in the company's processes that allow the growth and adaptation of businesses to changing environments, based on the digital transformation and responsibility with the environment, society and corporate governance.
Progasur	Progasur S.A. ESP has environmental management plans and programs in place, which define the guidelines and directives for environmental management seeking to prevent, mitigate, control and/or offset possible impacts caused to the environment during the execution of activities regarding 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 records, which endorse the formulation of management measures to prevent, mitigate, correct and/or offset of possible adverse effects that may result in the development of its activities. Additionally, the guidelines described in the ISO 14001:2015 standard are taken into account. Progasur S.A. ESP, through the implementation of the Risk Management Plan (PGRD for its Spanish acronym), performs social management strategies with the participation of the community of the area of influence within a framework for a harmonious coexistence between the community, the environment and the gas transport infrastructure. Progasur has environmental management plans and programs that define the guidelines and directives for its environmental management, to prevent, mitigate, control and/or offset possible impacts caused to the environment during the execution of activities regarding the different environmental components.

EM-EP-160a.2 **EM-MD-160a.4**	(1) Number and (2) aggregate volume of hydrocarbon spills; (3) volume in Arctic: (4) volume impacting shorelines with ESI rankings 8-10; and (5) volume recovered

Oil and Gas Exploration and Production

Metrics	**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**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
Ecopetrol S.A.	5	3	18	12	158	64	378	78	Not available	Not available
Hocol	0	2	1	0	0	10	1	0	1	10
Ecopetrol Permian	1	0	0	0	4	0	0	0	4	0
Ecopetrol America	0	0	0	0	0	0	0	0	0	0
Ecopetrol Brasil	Not applicable									

- **Ecopetrol S.A.:** The volume of spills due to operational causes is 45.6% less than the limit established for this period and 60% of the barrels spilled in 2021. This result is the best performance over the last five (5) years, attained through the systematic execution of integrity and reliability plans. For 2022, 88.7 km of pipeline in the Upstream Vice Presidency was replaced in the implementation of the integrity plans for approximately USD $27.7 million. Efforts will continue to intensify process integrity and safety, risk assessment with environmental sensitivity, improve and standardize the methodologies for calculating spilled barrels and strengthen organizational culture, to encourage further progress in defining actions aimed at the prevention and mitigation of incidents affecting the environment.
- **Hocol:** To address such incidents, the company activates specific emergency and contingency plans for each area; carries out control, containment, collection and cleaning actions in the areas affected by the oil spill; and carries out environmental monitoring based on physicochemical parameter assessment to verify the non-existence of hydrocarbon traces in soil and water resources.
  It is worth noting that although there were three incidents generated by third parties (damage), these are not included in the metric since the volume of hydrocarbons spilled was less than 1 Bbl, according to the criteria established for the indicator.
- **Metrics (3) and (4):** The Ecopetrol Group does not have operations in the Arctic or on shorelines with an EMI (ISMA) of 8 to 10.

O&G Transport and Logistics (Midstream)										
Metrics	1				2				5	
Unit	**Number of operational spills**		**Number of spills from other causes**		**bbls for operational causes**		**bbls for other causes**		**bbls volume recovered**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
Cenit	1	2	64	57	2	62	6,127	2,987	6,129	521
Ocensa	3	0	0	0	16	0	0	0	16	0
ODL	0	0	0	0	0	0	0	0	0	0
CBO	0	0	0	0	0	0	0	0	0	0
ODC	0	0	0	0	0	0	0	0	0	0
Progasur	Not applicable									

- **Cenit (2021):** Figures restated to include only spills with a volume greater than 1 barrel.
- **Cenit (2022):** The volume recovered is being compiled to submit a final report to the environmental authority.
- **Metric (3) and (4):** The Ecopetrol Group does not have operations in the Arctic or on shorelines with an EMI (ISMA) of 8 to 10.

EM-EP-160a.3	Percentage of (1) proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat

Oil and Gas Exploration and Production				
Metrics	**1**		**2**	
Unit	**%**		**%**	
Year	**2021**	**2022**	**2021**	**2022**
Ecopetrol S.A.	0.32	0.29	0.03	0.74
Hocol	0.02	0.02	0.00	0.00
Ecopetrol Permian	0.00	0.00	0.00	0.00
Ecopetrol America	0.00	0.00	0.00	0.00
Ecopetrol Brasil	0.00	0.00	0.00	0.00

- **Grupo Ecopetrol:** It does not have operations in protected areas in UICN categories I to IV. For 2021 and 2022, the metric was calculated based on the map provided by SASB "Explore the World's Protected Areas (protectedplanet.net)" which includes the total land and maritime protected areas. Hocol, in order to verify if there is an overlap between the fields of operation and the protected areas, updated the methodology using the areas defined in the environmental license of the projects.

EM-MD-160a.2	Percentage of land owned, leased, and/or operated within areas of protected conservation status or endangered species habitat

O&G Transport and Logistics (Midstream)		
Metrics	**1**	
Unit	**Percentage**	
Year	**2021**	**2022**
Cenit	8.47	8.47
Ocensa	1.88	2.66
ODL	0.78	0.48
OBC	0.00	0.00
ODC	0.00	0.00
Progasur	0.00	0.00

- **Cenit:** Some of Cenit's operations are in areas within the sustainable use areas of the integrated management areas, natural parks or civil society reserves:
  Sites with protected conservation status: Civil Society Natural Reserve (RNSC) Los Chagualos, District Regional Integrated Management (DRMI) Paramo Rabanal, National Natural Park (PNN) Serranía de los Yariguíes, National Natural Park (PNN) Serranía de los Yariguíes Predio La Goiconda, National Natural Park (PNN) Serranía de los Yariguí.
- **Ocensa:** According to the National Single Origin CTM12, a total of 0.64 km2 were identified as strategic ecosystems, equal to 2.67% of the total operational areas, among which are: Páramo de Mamapacha and Bijagual, Pantanillo, La Zambera, Serranía de las Quinchas, Ciénaga de Barbacoas, Ciénaga de Chiqueros, San Bartolo.
- **ODL/OBC:** For the two companies, the estimate was made by combining the areas occupied by the stations and the right-of-way of each system. In the case of ODL, the area of the stations was included: Rubiales, Corocora and Jagüey pumping stations; while for Bicentenario: Araguaney and Banadía. The estimate was made using the MAGNA-SIRGAS spatial reference system (SRS) single national origin regulated by Resolution No. 471 of 05/14/2020 issued by the Agustín Codazzi Geographic Institute (IGAC), which is why variations may be seen concerning what was reported in previous periods (which were estimated using the SRS MAGNA-SIRGAS provided by Bogota), due to the change of metrics in the estimating system, mainly the scale factor used.

EM-MD-160a.3	(1) Terrestrial acreage disturbed; (2) percentage of impacted area restored

O&G Transport and Logistics (Midstream)				
Metrics	**1**		**2**	
Unit	**ha**		**%**	
Year	**2021**	**2022**	**2021**	**2022**
Cenit	0.08	0.05	100	100
Ocensa	0.05	0.00	100	0
ODL	1.10	1.50	100	100
OBC	2.70	4.20	100	100
ODC	0.00	0.00	0	0
Progasur	55.90	0.00	100	0

- **Cenit:** As in the 2021 report, the figure provided includes operational environmental events. Likewise, it is the same as the information officially reported to the Environmental Authority through the initial environmental incidents reports and therefore may vary according to the completion of the recovery activities.
- **Ocensa:** For 2022 there was no alteration reported in the areas of operation; there was no degradation or destruction of ecosystems from the operation of the pipeline. The environmental impacts that may occur are managed and mitigated through the implementation of environmental control instruments to minimize the probability of negative effects on the environment.
- **ODL/OBC:** 2021 data was updated. For OBC, the differences are due to a greater area intervened by civil and mechanical works in the right-of-way versus the previous year.
- **ODC:** Durante el 2021 y 2022, no se presentaron eventos por pérdida de contención o daños por terceros, como tampoco derrames operativos.
- **Progasur:** During 2022, no hectares of land were altered or restored by the company.

IF-EN-160a.1	Number of incidents of non-compliance with environmental permits, standards, and regulations

	Engineering and Construction Services	
Metrics	**1**	
Unit	**Number**	
Year	**2021**	**2022**
Intervial ISA	1	6

- For 2022, the following incidents of non-compliance associated with permits, standards and environmental regulations occurred:
  Ruta del Loa: concession areas with active permits received observations which were addressed by employing some changes of use under the requirements of National Assets.
  Ruta del Maipo: disposal of waste in an unauthorized site.
  Ruta de la Araucanía: a sanitary decision of two treatment plants is pending; during 2023, we will work to obtain a favorable resolution. Additionally, the sanitary authorization of the non-hazardous waste storage warehouses in two service areas that was pending has finally been received**.**
- **2021:** A non-conformity identified in the external audit process related to sub-standard waste storage and management was noted and immediate corrective actions, cause evaluation and action plan were carried out. The deviation was corrected and verified by the auditor and received their favorable opinion.

IF-EN160a.2	Discussion of processes to assess and manage environmental risks associated with project design, siting, and construction

	Engineering and Construction Services
Metrics	**1**
Unit	**Discussion and analysis**
Year	**2022**
Intervial ISA	Project management approaches to prevent environmental and/or social repercussions are addressed through a comprehensive process that includes various action lines: 1. The first and most important is that for tendering projects, the following aspects must be considered: 1.1 The guidelines establish that the Change of Ownership for projects with an Environmental Qualification Resolution (RCA) implies having the resources to implement the mitigation, compensation and environmental monitoring measures included in the respective project Environmental Impact Assessment. 1.2 To fulfill the provisions of the RCA of the Environmental Impact Assessment, the respective environmental monitoring reports must be made, verifying if the environmental metrics are in line with the legislation in terms of noise, air, water, and waste, among others. The foregoing will be uploaded on the website of the Superintendence of the Environment (SMA), the body in charge of Environmental Control in Chile. 1.3 Regarding the social issue, the organization has a cadaster of possible sites of interest, monitors whether socialization meetings have been held with communities and/or sector groups, and if Convention 169 on indigenous peoples, among others, applies. 2. Beyond Environmental Legislation, all of ISA Intervial's routes, including the corporate headquarters, are ISO 14001 certified. This implies multiple responsibilities for all processes that carry out environmental management, administering the environmental aspects and impact identified. All legal environmental responsibilities are included in a compliance matrix. 3. Additionally, there are risk management models wherein environmental and climate change risks elements are analyzed and evaluated.

SHARE CAPITAL CHAPTER

Topic:	Security, Human Rights and Rights of Indigenous Peoples			
EM-EP-210a.1	Percentage of (1) proved and (2) probable reserves in or near areas of conflict			
	Oil and Gas Exploration and Production			
Metrics	**1**		**2**	
Unit	**%**		**%**	
Year	**2021**	**2022**	**2021**	**2022**
Ecopetrol S.A.	There are no proved and probable reserves in or near areas of conflict.			
Hocol				
Ecopetrol Permian				
Ecopetrol America				
Ecopetrol Brazil	Not applicable			

- **General:** The calculation was made based on the 2021 information regarding the armed conflict of (last reported) on the UPSALA website (https://www.pcr.uu.se/) and the locations where the company has reserves.

EM-EP-210a.2	Percentage of (1) proved and (2) probable reserves in or near indigenous land			
	Oil and Gas Exploration and Production			
Metrics	**1**		**2**	
Unit	**%**		**%**	
Year	**2021**	**2022**	**2021**	**2022**
Ecopetrol S.A.	23.77	20.29	26.31	15.52
Hocol	57.00	57.28	5.00	15.39
Ecopetrol Permian	0.00	0.00	0.00	0.00
Ecopetrol America	0.00	0.00	0.00	0.00
Ecopetrol Brazil	Not applicable			

- **General:** For 2021 and 2022, the metric was calculated based on the map of the National Land Agency "https://data-agenciadetierras.opendata.arcgis.com/" which includes all indigenous reservations.
- **Hocol:** In 2021 and 2022, there was an indigenous presence in the Chuchupa, Ballena, Guarrojo and Ortega fields. The Guarrojo field contains Ocelote, Guarrojo and Pintado, and the Ortega block contains Ortega, Pacande, Toldado and Toy.
  The percentage increase in 2022 is due to the increase in probable hydrocarbon reserves in the Ortega, Pacande, Toy and Toldado fields, not because a change in the area of indigenous land.

EM-EP-210a.3	Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict
Oil and Gas Exploration and Production	
Metrics	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecopetrol S.A.	Within the framework of its corporate and technical activities, during 2022 Ecopetrol respected and complied at all times 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 toward the respect for the human, social, economic, cultural and territorial rights of ethnic communities. Any operation or activity carried out by the company concerning indigenous communities must respect the rights contained in ILO Convention 169, the international framework for the protection of the rights of indigenous communities, the Political Constitution of Colombia, the national regulations in force on the matter and the jurisprudential provisions established by the Constitutional Court. Additionally, the operations of the company and its operations in different regions of the country comply with international and national regulations regarding prior consultation, thus promoting intercultural dialogue, positive engagement and due diligence. Regarding the relationship with indigenous communities and the development of activities in their territory, the company has corporate instruments in place such as the Guidelines on Human Rights and Business (SRC-G-002), the Guidelines for Engagement with Ethnic Communities (GDE-G- 006) and the Procedure for Conducting Prior Consultations (GDE-P-008), that guide the relationship processes with ethnic communities, using as reference the decisions of international and national human rights protection instruments. In the Colombian legal framework, the figure of prior consultation is primarily a fundamental right and a legal mechanism that allows ethnic communities to participate in any project, work or activity likely to affect them directly. Moreover, prior, free and informed consent following the jurisprudence of the Constitutional Court applies exceptionally in the following cases: i) transfer or relocation of the indigenous or tribal people from their place of settlement; ii) storage or deposit of hazardous or toxic materials in their territories; iii) measures that imply a high social, cultural and environmental impact that places their subsistence at risk. There have not been instances in the operational and technical activities carried out by Ecopetrol where these exceptions have occurred. In light of the abovementioned, Ecopetrol, within the framework of the fundamental right to prior consultation, during 2022 formalized two (2) prior consultation processes for one (1) project, guaranteeing the direct participation of the communities. The prior consultation stages carried out by the company implied a participatory process with the ethnic communities, under the oversight of the Directorate of the National Prior Consultation Authority (DANCP). In terms of the planning and development of future projects, twenty (20) administrative procedures were requested before the DANCP to determine whether a prior consultation in the areas to be intervened is necessary. Ecopetrol, committed to the ethnic communities where it carries out its activities, has several communication channels available to allow the communities to present any claims, concerns, suggestions or complaints regarding the operations or activities carried out, which will be addressed in a timely and effective manner by the areas related to the issue in question. The service channels provided by Ecopetrol are: i) personalized service offices in several municipalities of the country; ii) itinerant service points implemented in different areas of influence of its operations; iii) email; iv) corporate call center; v) online form to submit requests, complaints or claims; vi) customer care offices; vii) service brigades carried out by quarterly or semi-annual demand in municipalities where there is no permanent presence of the company; and viii) *teleiguanas* which are phone booths located in the Caribbean, Casanare, Central, Huila, Magdalena Medio, Meta, Occidente, Oriente and Nariño-Putumayo regions, that are connected directly to the company's call center. The communication channels described above aim to provide timely and thorough resolution to the requests, complaints, claims, suggestions and compliments (PQRS for its Spanish acronym) presented by the communities and, in turn, are a mechanism to identify opportunities for improvement in the organization's processes. They also provide finding alternative resolutions to situations of discontent. As a result of the prior consultation processes carried out with the ethnic communities, Ecopetrol has established several agreements aimed at mitigating, correcting, compensating or preventing the impacts generated by the project, seeking to safeguard the collective rights and ethnic and cultural integrity of these communities. Said agreements are the result of a process of intercultural dialogue with the ethnic communities, verified phase by phase by the Directorate of the National Authority for Prior Consultation (DANCP). The DANCP also follow-up regarding compliance with the agreements during the operational phase of the project, as well as conducting periodic monitoring and the final project completion when the agreements have been fully fulfilled. In this regard, in 2022 Ecopetrol: 1. Executed two (2) prior consultations for one (1) project, reaching agreements with the two ethnic communities.

EM-EP-210a.3	Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict
Oil and Gas Exploration and Production	
Metrics	**1**
Unit	**Discussion and analysis**
Year	**2022**
	2. Conducted follow-up to agreements of one (1) prior consultation of one (1) project. 3. Closed seven (7) prior consultations for three (3) projects. Five (5) of these consultations were closed due to non-execution of the projects (the minutes of prior consultation include an agreement whereby compliance therewith is activated with project execution), and two (2) prior consultations completed for fulfilling both agreements. Ecopetrol manages Human Rights risks and impacts through the Human Rights Risk Management Cycle Guidelines which stems from the Human Rights Guidelines. The company defines key considerations for the identification and assessment of human rights risks derived from business activity, supply chain or other contractual or commercial relationships, and establishes action plans for their prevention, mitigation or remediation. This occurs at the strategic, tactical, and operational levels. Due diligence at Ecopetrol is consistent with the highest standards, with special consideration given to the provisions of the United Nations Guiding Principles, the OECD Guidelines and the ILO Conventions. This process includes consultation with the different stakeholders and the severity and probability variables are taken into account. In the supply chain, there are guidelines for pre-contractual enlistment to ensure the suitability of suppliers before their contracting and there are contractual clauses on Human Rights and contractor performance evaluation mechanisms that include criteria associated with Human Rights. Additionally, Ecopetrol implements the international standard of Voluntary Principles on security and human rights through three action lines: analysis of security and human rights risks in all areas of operation that identify the impacts of human rights on security management in the territories, transparent relationship with the public force through collaboration agreements and contracts with private surveillance companies that introduce due diligence practices in security and human rights as contractual obligations. Ecopetrol has a robust system for receiving, monitoring and responding to PQRS, which are received through the Citizen Participation Offices (OPC). This system is nourished with the cases received in the Ethics Line in which complaints, ethical dilemmas and consultations can be established. Given that some of the areas where Ecopetrol operates are affected by conflicts, a situation that increases the risk that the company, its suppliers, associates and other actors with whom it maintains relations will be involved in human rights abuses, Ecopetrol will intensify its enforcement actions, due diligence and will promote the same in its value chain.
Hocol	Hocol respects the right to ethnic and cultural diversity. It 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 optimal management of petitions, complaints and claims presented due to its activities, which allows for the prevention of conflicts and improvement of the relationship with interest groups. Hocol commits 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 their respect within the framework of business operations and activities. This includes compliance with decent work regulations, fair labor practices, prohibitions on forced or child labor and adopting measures to prevent all forms of discrimination. Hocol has voluntarily signed the United Nations Global Compact, seeking to make transformative contributions for the advancement of the SDGs and achieve international standards of business due diligence using as reference the United Nations Guiding Principles on Business and Human Rights (UNGP). The company carries out an identification of security and public order risks in its areas of operation under the understanding that security includes maintaining order, peace and the enjoyment of rights, which is the objective of the State and its provision is inherent to its social purpose. Security is managed through agreements with law enforcement, physical and electronic security arrangements, procedures and protocols.
Permian Ecopetrol **Ecopetrol America**	The company is not an operator, nor does it intend to operate near or within indigenous communities. The company complies with all local, state and federal laws, including laws related to human rights. The policies and procedures regarding human rights are found in the following documents: Code of Ethics and Conduct, pp. 6, 14 - 15, 19 and 23 regarding human rights, labor rights and non-discrimination standards and pp. 15 and 16 regarding reporting any violation of the policies and standards contained therein; Employee Handbook pg. 10 regarding the non-discrimination policy, pp. 14 and 20 regarding the procedures for reporting and disciplinary action for violations of the policies contained therein. The company does not operate within conflict areas.
Ecopetrol Brazil	Not applicable

Topic:	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
Year	2022
Unit	Discussion and analysis
	Oil and Gas Exploration and Production
Ecopetrol S.A.	Ecopetrol carries out the technical, environmental, and social studies required to operate in a sustainable and balanced manner within the territories where it operates. The aforementioned complying with current legal regulations and working jointly with its stakeholders - Society, Community, and Local State – to identify impacts and measures to control, mitigate or offset the latter. These are mandatory activities for the execution of its operational activities and extend to its contractors and associates. The following significant impacts are identified as interdependent: economic expectations at the local and regional level, which generate potential changes in population dynamics and, if not managed promptly, may create conflicts. Positive impacts are also identified, such as the formalization of direct and indirect jobs, the activation of the local economy, and territorial strengthening through the management of royalty resources. The territorial diagnoses identify the places and practices which are culturally relevant in each region and are the inputs employed to define zoning and the socioeconomic and cultural management measures for the environmental studies, which are critical for the company in developing its operations and projects. The company implements an Environmental Management Strategy that includes the importance of considering stakeholder rights (Society, Community, and State). Likewise, guidelines exist that direct the all-inclusive management of social impacts, from their identification or occurrence up to their conclusion. In order to identify impacts, ample and adequate spaces for citizen participation are provided, encouraging a respectful and representative relationship that favors active listening and provides access to information in a transparent, comprehensive, and timely manner, adapted to the language and culture of each situation and following recommendations issued by the National Environmental Licensing Authority (ANLA). The company has Regional Environment Management units with adequate and appropriate professionals situated in the territories to implement these management actions directed at the Company's stakeholders - Society, Community, and State. At the contractual and administrative levels, environmental clauses are implemented that extend these actions to contractors and associates for their compliance and execution, when applicable. Interdisciplinary work among the different management, business, transversal, and support areas ensures compliance and follow-up of the established actions, along with the timely preparation of the respective reports to the corresponding authorities and control entities. The Company collaborates with state institutions to manage impacts at both the local and the national government levels. Likewise, it encourages the involvement of various associations, industry representatives, and community and state guarantors, supporting the right to citizen participation and peaceful conflict resolution. The social impacts generated by Ecopetrol's business activities are described in the Integrated Sustainable Management Report 2022 (Section GRI 413-2, 11-15-3; WEF 28E; SASB EM-EP- 210b.1; SFC XVII / Impacts associated with business activity and management measures / Table 113: Operations Impacting Local Communities and Management Measures).

Metric	1
Year	2022
Unit	Discussion and analysis
	Oil and Gas Exploration and Production
Hocol	Hocol, through its business risks management reflected in the RAM matrix, has identified the following risk concerning the environment, namely ethnic and non-ethnic communities and local, regional, and national authorities: "Environmental incidents that make it impossible to continue the company's operations". Hocol operates in territories that require an understanding of the geographic, social, political, cultural, environmental, economic, and public order dynamics, and their association with the company's operations and projects. Hocol focuses its actions to mitigate this risk by maintaining a close relationship and providing timely information within the territory (socialization, explanatory meetings, monitoring, and closure); complying with its commitments to the communities in the area of influence of its operations; maintaining an ongoing relationship with the communities, local authorities and heads of the various territorial entities with a permanent presence in the territory; continuous analysis of the impact of Colombian regulations; and follow-up and supervision of contractors that perform activities in the area. Additionally, Hocol monitors the contracting for labor, goods, and services to ensure these comply with current regulations. It addresses and tracks concerns, complaints, and claims from stakeholders, addresses early alerts and provides timely follow-up consistent with the procedure for handling alerts and de facto situations; administers, monitors, and adheres to formal agreements within the prior consultation processes with ethnic communities for the programs to benefit of communities (PBC); performs strategic social investment to improve the quality of life in the areas where it operates. Furthermore, Hocol obeys environmental licenses and fulfills the programs established in the environmental management plans. Hocol also identified the following social management-related risks: C36 R1 - Mobilization of communities against Hocol. C36 R2 - Ethnic communities mobilized against Hocol or the hydrocarbon industry. C36 R3 - Events of fraud, corruption, bribery, money laundering, and financing of terrorism in the social management process (social investment). C36 R4 - Impossibility to execute social investment projects. C41 R2 – The selection of and/or continuing business relationships with suppliers, contractors, and/or associates that may affect the company's reputation.
Ecopetrol Permian	These companies are not operators; however, they abide by the standards for managing risks and opportunities regarding community rights and interests found in the Code of Ethics and Conduct, pages 14-15, 19.
Ecopetrol America	
Ecopetrol Brasil	Not applicable

Chemicals	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Esenttia	At Esenttia, a participatory process to manage the risks and opportunities associated with community interests is established following the Environment and Community Relationship Strategy that allows the company to manage the social impacts of the operation, by seeking to create and maintain constructive and dependable mutually beneficial relationships; and to prevent, mitigate and improve environmental situations through value-generating actions. Esenttia lead over 30 relationship workshops based on social dialogue in communities such as Pasacaballos and Tierra Bomba, Bocachica, Caño del Oro, and Punta Arena, to design and prioritize community initiatives through a participatory planning exercise. This creates relationships of trust in this territory and helps to strengthen the leadership and networks of local social actors under the principles of sustainability and circular economy, helping avoid situations of social risk. The initiatives Esenttia has undertaken to mitigate community-related risks and address community concerns include: - Popular participation: The strategic relationship workshops in the communities of Tierra Bomba and Pasacaballos Island, based on social dialogue, creating a relationship of trust with this territory by encouraging the strengthening of the leadership and networks of local social actors, invigorating such exercises in the area with the inhabitants playing a central role, all carried out under the principles of sustainability and circular economy. - Seeds for Democracy: Strengthened the leadership skills of 25 middle school youth and community leaders, seeking to promote the exercise of active citizenship, participation in society, renewal, and consolidation of democratic leadership, and the construction of public policies within the framework of the social rule of law in the community of Tierra Bomba. - Public Leadership School: The fourth cohort of the Public Leadership School was held in alliance with Colectivo Traso, with the participation of 20 community leaders, seeking to further local development and the transformation of the territory. - The hiring of local labor: A rider to the contracts with in-house contractors was designed and implemented to strengthen the hiring of local labor from Government Community Unit No. 11 and the Pasacaballos district. - When new projects are carried out, an environmental impact study (EIA for its Spanish acronym) is conducted and environmental management plans are modified. Likewise, during 2022, Esenttia conducted activities including baseline diagnostics in order to have reference information to measure social impact after a one-year intervention period, and launched new projects including *Empoderamiento Femenino* (female empowerment), Finally, Esenttia has declared in its Sustainability Strategy a value promise for each of its stakeholder groups. Specifically, with its suppliers and contractors it has undertaken to address supply chain sustainability, develop best practices and supplier and contractor capabilities, thus augmenting business growth. Likewise, it will focus on social investment geared towards the community of workers and in-house contractors in vulnerable conditions.

EM-EP-210b.2	(1) Number and (2) duration of non-technical delays

Oil and Gas Exploration and Production				
Metric	**1**		**2**	
Unit	**Number of delays**		**Days**	
Year	**2021**	**2022**	**2021**	**2022**
Ecopetrol S.A.	1,217	664	3,753	970
Hocol	2	4	84	70
Ecopetrol Permian	0	0	0	0
Ecopetrol America	0	0	0	0
Ecopetrol Brasil	Not applicable			

- **Ecopetrol S.A. (2021):** During the year, several non-operational affectations impacted the execution of approximately 92 projects. The social outbreak that occurred in Colombia, known as the "national strike", acerbated the restrictions imposed by the Colombian Ministry of Health to contain the spread of COVID-19, such as limiting capacities and new quarantines, in addition to the obstructions caused by the Llanos Orientales highway collapses due to rains and the delayed impact of the project suspensions in 2020 resulting from the general decline of crude prices, limiting on-site project activities and greatly impacting their supply chain.
- **(2022):** Includes projects executed by the Upstream Projects Vice Presidency, which suffered disruptions due to non-technical issues that impacted 82 projects. These interruptions were mainly caused by blockades in the areas of execution, external activities that altered the public order, and affectations from the rainy season.
- **Hocol (2021):** During 2021, two (2) incidents affected operations in the production fields, which took place in Ocelote in the municipality of Puerto Gaitán (Meta) and Ortega Tetuán in the municipalities of Ortega and San Luis (Tolima).
- **(2022):** During 2022, four de facto situations affected operations - three in the municipality of Purificación and one in Pueblo Nuevo – resulting from heightened expectations and demands in labor contracting, social investment, plans to benefit the communities (PBC for its Spanish acronym) and road maintenance.

Topic:	Data Security
SV-PS-230a.1	Description of approach to identifying and addressing data security risks
Metric	1
Unit	Discussion and analysis
Year	2022
	Professional and Commercial Services
XM	XM employs an Information Security Management System (ISMS) based on the international standard ISO 27001:2013 and certified by the Colombian Institute of Technical Standards (ICONTEC) since 2015. The ISMS covers business processes (core and transversal), providing operation services for interconnected electricity systems and energy market management. Additionally, cyber risk management at XM is guided by the adoption of the NERC CIP (North America Electric Reliability Corporation - Critical Infrastructure Protection) standards for industrial cybersecurity and the implementation of the defense model following the NIST (National Institute of Standards and Technology) model that establishes management mechanisms before, during and after a cyberattack. Through a self-assessment against these benchmarks, the objectives of XM's Integral Cybersecurity Program were established, seeking to: 1. Develop organizational cyber risk management capabilities for the monitoring, detection, response, and post-recovery of security events. 2. Institute a security culture in the organization. 3. Implant continuity management for business operations. Information security risks are managed through continuous actions in the PTP triad (People-Technologies-Processes), to provide resilient processes and ensure people practice safe behaviors in managing the information handled by XM. Likewise, XM develops tactical plans for both passive and active cybersecurity defense lines, as the digital Security Operations Center (SOC) is a fundamental cornerstone for active monitoring and management of technical vulnerabilities, incident response, and cyber risk management. In relation to people, an information security culture has been instituted through annual awareness and training programs, technical tests, and culture measurement to identify gaps and establish risk action plans.
Trading Asia	Trading Asia handles data according to the guidelines of the parent company, Ecopetrol S.A. through the Cybersecurity and Cyberdefense Management area, which conducts risk assessments to identify situations that may materialize and affect information security. As a result of the risk assessments, the Management identifies process, people, and technology measures to reduce risks and effects. The risk assessment is conducted as follows: 1. For information flows: Define work plan and criteria for identifying findings, including: initial contact with the area by e-mail to corroborate the relevance and validity of process information loaded in the repositories; request updated processes if differences are found; identify critical assets and actors in the flow of information (information repositories, documents generated, workers, third parties, information stakeholders, etc.) and hold work sessions with those responsible for the area. 2. For databases: A three-year plan exists that includes determining the sequence for performing a risk analysis on the databases registered with the SIC. This schedule is shared with the overseers of personal data in the different vice presidencies, and assessments are performed based on this plan to identify processes, people, and technology-related findings.

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	**2022**
Professional and Commercial Services	
XM	It is important to highlight that XM is not an end-user company, so its personal information databases mainly include the data of workers, national authorities, suppliers, and energy market agents. As confirmation of Senior Management's commitment to an organizational culture that respects personal data protection, guidelines have been established regarding the use of personal information stored in the databases by the person responsible for the processing of personal data. Therefore, adherence to the guidelines in the Institutional Handbook #139 - Adoption of the Personal Data Processing Policy Handbook is mandatory and strict compliance by the people responsible for the processing of personal information is required, including managers and workers. Additionally, XM has a personal data protection program that includes: 1. Guidelines and actions frameworks. 2. Defined roles and responsibilities. 3. Development of a corporate culture of personal data protection, ensuring the commitment of senior management and all XM personnel. 4. Training and awareness. 5. Service channels for processing requests, complaints and claims or for any matter related to personal data; on the web page there is a button for processing personal data requests, complaints and claims. 6. Compliance risk management covering all aspects of personal data protection. 7. Contractual clauses relating to personal data protection; for example, regarding those of workers and suppliers. 8. Authorization for the use of personal data used with agents, applicants and suppliers. This policy and program and the business' policies and handbooks are published in the XM Portal - (www.xm.com.co): https://www.xm.com.co/nuestra-empresa/marco-de-actuacion/politicas-y-manuales
Trading Asia	In Trading Asia, data management falls under the umbrella of the parent company, Ecopetrol S.A. The policy that applies to customer databases is founded on the design of secure and reliable systems, with a focus on analyzing risks and addressing threats that affect the security and privacy objectives: 1. For data collection, Ecopetrol's policy obeys legitimate purposes under the Constitution and the Law, including informing the owner of the data, clearly and with sufficient information. Therefore, data may not be collected without a specific purpose. 2. Confidentiality is paramount, avoiding unauthorized access to the systems. 3. Data integrity is maintained, protecting them from unauthorized modifications of the information. 4. Availability is key, ensuring that data and systems are available when needed. To identify any damage to individuals, organizations and the general public, the Head Office follows the guidelines for handling incidents in the processing of personal data, which includes lost customers or users.

SV-PS-230a.3	1) Number of data breaches; 2) percentage involving customers' confidential business information (CBI); or personally identifiable information (PII), 3) number of customers affected					
Professional and Commercial Services						
Metric	**1**		**2**		**3**	
Unit	**Number of breaches**		**%**		**Number of customers affected**	
Year	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
XM	4	3	50	33	0	1
Trading Asia	Not Available	0	Not Available	0	Not Available	0

- **XM:** For 2022, a total of 3 personal data-related requests were reported, and 1 incident where personal information was leaked. The company implemented the corresponding measures to correct the situation.
- **Trading Asia:** No information was recorded for 2021 because Trading Asia began operations in July of the same year and began reporting its metrics as of 2022.

Topic:	Energy Affordability
IF-GU-240a.1	Average retail gas rate for (1) residential, (2) commercial, (3) industrial customers, and (4) transportation services only

Gas Distributors

Metric	1		2		3		4		5	
Unit	COP $		COP $		COP $		COP $		COP $	
Year	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022
Alcanos	66,667	83,000	57,264	73,118	42,327	52,597	43,837	43,596	54,913	40,504
Gases del Oriente	71,078	86,417	53,010	64,264	30,729	38,518	0	0	N/A	N/A
Metrogas	51,324	64,606	42,792	53,592	41,009	44,881	0	0	15,104	31,815

- **Alcanos - Gases del Oriente - Metrogas:** The increase in the average retail gas rate resulted from the behavior of macroeconomic variables in the rate calculation, including the official exchange rate (TRM for its Spanish acronym), Consumer Price Index (CPI) and Producer Price Index (PPI), which increased the variable rate income transferred to the end user.

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	Reporting Currency (COP)		Reporting Currency (COP)
Year	2021	2022	2021-2022
Alcanos	29,708	31,533	Not Applicable
Gases del Oriente	37,590	41,173	
Metrogas	26,102	31,741	

- **General:** The subsidiaries' customers classify only in the 50 MMBtu range.
- **Metrogas:** The increase results from the transportation by pipeline price indexation and supply indexation following regulations. Additionally, the official foreign exchange rate (TMR) increased from Dec. 2021 to Dec. 2022 by 20.08%.

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**	**2021**	**2022**	**2022**
Alcanos	162,554	183,297	76.26	89.44	All public utilities are governed by Law 142 of 1994, which establishes the general guidelines for contract suspension, termination and restoration of public utility services, specifically in its Articles 130, 140, 141, and 142. Consistent with the provisions of the Law, each company has specific stipulations in its policies, programs and regulations regarding the number and duration of supply cuts for residential customers: Alcanos de Colombia S.A.E.S.P. Alcanos de Colombia has a uniform conditions contract that formalizes the contractual relationship between the two parties - customer and company - and states that the company may suspend the public utility provision of gas through networks if there is a contractual breach of lack of payment for at minimum one (1) billing period, without exceeding two (2) billing periods or for any of the items billed in the invoice of services that were previously authorized by the user and directly related to the service. This is unless a claim or appeal has been filed, in which case the suspension will proceed for nonpayment of the amount not included in the claim. There will be no suspension for any money the user owes third parties other than Alcanos. Further information is available at: (available only in Spanish) https://alcanosesp.com/sites/default/files/pdfterminos_11.pdf
Gases del Oriente	33,673	17,505	66.99	58.25	Gases del Oriente S.A. E.S.P. According to Gases del Oriente's internal policies, in order to restore the service of a user in arrears, they must have regularized their amount owed, namely: - In the case of a residential user, in the past due cycles 1 to 5, they must pay at least 50% of the invoice balance; as of past due cycles 6 onwards, they must pay 100% of the invoice amount or seek a refinancing that complies with the past due payables policy. - In the case of a commercial or industrial customer, within past due cycles 1 to 5, they must pay at least 60% of the invoice balance. From past due cycles 6 onwards, 100% of the invoice balance must be paid or seek a refinancing that complies with the past due payables policy. - Once the amount owed has been regularized, service restoration should be guaranteed within the following 24 business hours. Further information is available at: (available only in Spanish) https://www.gasesdeloriente.com.co/web/webfiles/contrato_conidiciones_uniformes.pdf
Metrogas	24,814	28,550	79.71	95.78	Metrogas de Colombia S.A.E.S.P. Metrogas has policies in place that include the conditions for service suspension and reconnection, including timeframes, uses, and technical conditions, among others. To reconnect the service, the following criteria must be met: - Full payment of invoice or payment agreement (minimum payment of 51%). - Compliance with technical and safety conditions (Certificate of conformity and/or confirmation by the technical area). Metrogas de Colombia has a uniform conditions contract for the provision of service formalizing the contractual relationship between two parties- customer (user) and company. This document states for all users that the service will be suspended due to the non-timely payment of a single invoice for said service. Further information is available at: (available only in Spanish). https://metrogasesp.com/wp-content/uploads/2023/01/CCU_2021.pdf

- **Gases del Oriente:** The information for 2021 was restated, as this year there was a strong negative impact due to the termination of the temporary consumer protection decrees issued by the National Government during the pandemic and the regularization of past due account receivables.
- **Metrogas:** The increase in the number of gas supply cuts due to nonpayment is due to the new uniform conditions contract policy Metrogas de Colombia S.A. ESP implemented since 2022, which establishes the conditions for service suspension and restoration.

IF-GU-240a.4	Discussion of impact of external factors on customer affordability of gas, including the economic conditions of the service territory.
	Gas Distributors
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Alcanos	Among the factors that can generate rate increases are, on the one hand, high-intensity prolonged national work strikes with a frequency of 3 strikes per year with a duration of between 1 and 2 months, and, on the other hand, winter weather situations on affecting road infrastructure, which directly affects the transport of compressed natural gas - CNG and occurs between 1 and 2 times a year with an approximate duration of 3 months. Other factors to consider are the effects of macroeconomic variables such as the foreign exchange rate (TMR), the PPI, and the CPI. Finally, any changes in the supply sources because of reservoir declines and the need to import gas. Regarding the inability of users to pay, factors such as the economic crisis generated by the pandemic and the application of CREG Resolution 048 of 2020, generated accrued account due balances from users of socio-economic strata 1 and 2. This situation was reported to the Energy and Gas Regulatory Commission (CREG for its Spanish acronym) and will be reflected in the 2023 regulatory agenda. Other factors include the tax reform that generates risks of recovery of the past due accounts receivables, which for 2021 reached 8.3% and for 2022 at 6.7%.
Gases del Oriente	In the principal area of influence, which covers about 70% of the users connected to the distribution system of Gases del Oriente S.A. E.S.P., mainly in Cúcuta and its metropolitan area, the greatest negative influences are from: 1. The lack of connectivity to the national transportation system or alternative sources of supply that provide stability to the operation and allow it to provide uninterrupted delivery of the service to regulated users. 2. Informal employment is the main economic activity in the area. 3. High levels of unemployment; Cúcuta ranks among the cities with the highest unemployment rates nationally. 4. A low number of manufacturing companies in the region which potentially could generate a large number of jobs. 5. Expansion is limited by neighborhoods or sectors that are not formalized and thus cannot be serviced. However, there is an opportunity for growth given the growth of construction projects in the area resulting from the economic reactivation of the construction sector driven by the National Government with subsidies for public housing projects and non-public housing projects. In addition, agreements can be reached with official entities such as the Special Development Quota Fund to encourage service connection to low-income users in the municipalities served and in rural areas around the areas of influence.
Metrogas	External factors include those that directly affect gas rates - such as regulations that impact gas affordability for customers- and macroeconomic variables. Among the aforementioned regulations are the transitory rate option defined by the CREG in Resolution 048 of 2020 and the subsistence consumption subsidy regime (0 to 20 m3) for residential users of strata 1 and 2. The macroeconomic variables that index the distribution and commercialization charges include the CPI and the IPP contemplated in the formula for the monthly rate component update of the rate used to calculate the unit cost of providing the service (fixed and variable). Especially the distribution charge (D), which in the primary Metrogas market represents about 20% of the final user rate. Additionally, the exchange rate at the end of each month directly affects the average cost of supply (G) and transportation (T) components that are part of the unit cost of providing the service (variable) and represent an average of 75% of the final user rate, while the Gross Domestic Product - GDP of the region versus the national total reflect the dynamics and behavior of the local economy.

IF-EU-240a.1	Average retail electric rate for (1) residential, (2) commercial, and (3) industrial customers
IF-EU-240a.2	Typical monthly electricity bill for residential customers for (1) 500 kWh and (2) 1000 kWh of electricity delivered per month.
IF-EU-240a.3	Number of residential customers disconnected for non-payment; percentage reconnected before 30 days
IF-EU-240a.4	Discussion of impact of external factors on customer affordability of electricity, including the economic conditions of the service territory
	Electric Utilities
ISA	Not Applicable: These disclosures do not apply to the companies reporting in this sub-sector, because their operations are in the transmission segment of the value chain and they do not participate in generation or distribution activities.
ISA CTEEP	
ISA REP	
ISA Intercolombia	
ISA Interchile	
ISA Transelca	

Topic:	**Structural Integrity and Safety**	
IF-EN-250a.1	Amount of defect- and safety-related rework costs	
	Engineering and Construction Services	
Metric	**1**	
Unit	**Reporting Currency (COP)**	
Year	**2021**	**2022**
ISA Intervial	0	135,004,866

- **2022:** The root causes for the rework were corrective measures and financial effects.
  Reason for rework: On February 24, while performing survey work, beam No. 1 of span No. 3 fell from a height of 6.12 meters, where 4 Ferrovial co-llaborators were located. One of the collaborators freed himself from the lifeline and the other three which were anchored thereto fell with the beam, resulting in 2 fatalities and 1 serious injury; the latter has since recovered.
  Corrective action: Improved the stability of mounted beams, beam memory alloy bracing system, a sequential procedure for hanging slabs, checklist of elements supplied by the hanging slab supplier, operational measures to review procedures, and approval was given to strengthen the Route's organizational structure with the presence of an OHS Manager.

IF-EN-250a.2	Total amount of monetary losses as a result of legal proceedings associated with defect- and safety-related incidents	
	Structural Integrity & Safety	
Metric	**1**	
Unit	**Reporting Currency (COP)**	
Year	**2021**	**2022**
ISA Intervial	0	0

HUMAN CAPITAL CHAPTER

Topic:	Workforce Health and Safety
EM-EP-320a.1 EM-RM-320a.1 RT-CH-320a.1 IF-EU-320a.1 IF-EN-320a.1	(1) Total recordable incident rate (TRIR) (2) Rate of work-related fatalities (3) Near miss frequency rate (NMFR), and (4) Average hours of health, safety and emergency response training for (a) full-time workers, (b) contract workers, and (c) short-term workers

Oil and Gas Exploration and Production

Metric		1		2		3		4	
Unit		Rate		Rate		Rate		Hours	
Year		2021	2022	2021	2022	2021	2022	2021	2022
Ecopetrol S.A.	a	0.09	0.07	0.00	0.00	Not available	Not available	Not available	16.35
	b	0.11	0.08	0.00	0.00				7.21
	c	Not applicable	Not applicable	Not applicable	Not applicable				Not applicable
	total	0.11	0.08	0.00	0.00				12.82
Hocol	a	0.00	0.00	0.00	0.00	Not available	0.00	6.69	7.62
	b	0.24	0.18	0.00	0.00		0.04	0.00	13.71
	c	Not applicable	Not applicable	Not applicable	Not applicable		Not applicable	Not applicable	Not applicable
	total	0.19	0.15	0.00	0.00		0.03	6.69	13.01
Ecopetrol Permian	a	0.00	0.00	0.00	0.00	0.00	0.00	2.73	5.95
	b	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	c	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	total	0.00	0.00	0.00	0.00	0.00	0.00	2.73	5.95
Ecopetrol America	a	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.22
	b	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
	c	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	total	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.22
Ecopetrol Brasil	a	Not available	0.00	Not available	0.00	Not available	0.00	0.08	0.63
	b		0.00		0.00		0.00	0.21	1.26
	c		0.00		0.00		0.00	0.00	3.67
	total		0.00		0.00		0.00	0.12	0.84

- **General:** The 2021 TRIR figures are re-restated to include the rate for the number of fatalities, injuries, and occupational sicknesses, using as a base 200,000 workers.
- **Ecopetrol S.A.:** Near misses for direct or indirect personnel are not recorded.
- **Hocol:** The Incident Management Standard was updated to include the reporting of near misses as an incident or chain of incidents that could result in an accident (OSHA). There was no real impact of any kind. Near misses will be reported in the ODIC scorecard, if the near miss is HIPO the investigation will be performed according to said standard.
- **Ecopetrol Brasil:** Follows the health, safety and emergency management principles and culture instilled by the parent company for thein the pre-operative office. In 2022, Ecopetrol Brasil carried out training and workshops regarding this subject for its workers and contractors.

Refining and Marketing							
Metric		1		2		3	
Unit		Rate		Rate		Rate	
Year		2021	2022	2021	2022	2021	2022
Refinería de Barrancabermeja	a	0.35	0.31	0.00	0.00	Not available	
	b	0.10	0.00	0.00	0.00		
	total	0.21	0.14	0.00	0.00		
Refinería de Cartagena	a	0.00	0.00	0.00	0.00	Not available	
	b	0.30	0.06	0.00	0.00		
	total	0.29	0.06	0.00	0.00		

- **General:** The 2021 TRIR figures are re-restated to include the rate for the number of fatalities, injuries, and occupational sicknesses, using as a base 200,000 workers.
  - The refineries do not record near misses.

Chemicals					
Metric		1		2	
Unit		Rate		Rate	
Year		2021	2022	2021	2022
Esenttia	a	0.00	0.18	0.00	0.00
	b	0.00	0.00	0.00	0.00
	total	0.00	0.05	0.00	0.00

- **General:** The 2021 TRIR figures are re-restated to include the rate for the number of fatalities, injuries, and occupational sicknesses, using as a base 200,000 workers.
- **Esenttia:** There was an increase in man-hours due to the execution of large projects such as the expansion of Plant 2 and the construction of a new storage area. Additionally, there was a case of occupational illness, which increased the TRIR.

Electric Utilities							
Metric		**1**		**2**		**3**	
Unit		**Rate**		**Rate**		**Rate**	
Year		**2021**	**2022**	**2021**	**2022**	**2021**	**2022**
ISA	total	Not available	0.00	Not available	0.00	Not available	
ISA CTEEP	total	0.78	0.71	0.09	0.02	Not available	
ISA REP	total	1.19	1.09	0.00	0.00	0.50	0.86
ISA Intercolombia	total	3.75	3.37	0.00	0.00	0.04	0.00
ISA Interchile	total	2.12	0.54	0.00	0.00	Not available	0.00
ISA Transelca	total	0.57	0.00	0.00	0.00	0.43	0.81

- **General:** The 2021 TRIR figures are re-restated to include the rate for the number of fatalities, injuries, and occupational sicknesses, using as a base 200,000 workers.
- **ISA:** There is no near misses information available for 2022. During 2022, near-miss monitoring mechanisms were implemented and will be reported as of 2023.
- **ISA CTEEP:** CTEEP achieved a 39% decrease in the Accident Frequency Rate which includes both direct and subcontracted workers. Among the 30 accidents that occurred, one of these resulted in the death of an employee at the Registry Substation. After investigating the accident, a series of preventive actions were implemented in the company's activities and facilities to avert a repetition of the event. These included measures involving increasing safety at assets with electrified parts. The number of near misses is not available for this year, but there is information on unsafe behaviors and work scenarios with unsafe conditions. During 2022, near-miss monitoring mechanisms were implemented and will be reported as of 2023.
- **ISA REP:** Has a process for reporting near misses related to:
  1. Immediately communicate to the work supervisor responsible for the area any accident, incident, or hazardous incident suffered or witnessed.
  2. Appointing a person responsible for the investigation of any hazardous incident or accident.
  3. Recording and sending preliminary information through the Preliminary Report of Work Accident, Incident or Hazardous Incident to the Work Safety Specialist and Analyst.
- **ISA Intercolombia:** There is a procedure in place to identify, classify, report, analyze and implement improvements on accidents, incidents and near misses; this is carried out through the improvement database that includes the recording of the situation, its prioritizing, analysis planning, event analysis, conception of action plans and implementation of the measures defined to address the situation.
- **ISA Interchile:** During 2023, the procedure for how to act in the event of an occupational accident, commuting accident or occupational disease will be updated, and will include near misses.

Engineering and Construction Services					
Metric		**1**		**2**	
Unit		**Rate**		**Rate**	
Year		**2021**	**2022**	**2021**	**2022**
ISA Intervial	a	0.82	0.55	0.00	0.00
	b	0.99	1.14	0.00	0.05

- **General:** The 2021 TRIR figures are re-restated to include the rate for the number of fatalities, injuries, and occupational sicknesses, using as a base 200,000 workers.
- **ISA Intervial:** There was one accident that resulted in a fatality, which led to an increase in the fatality rate.

EM-EP-320a.2	Discussion of management systems used to integrate a culture of safety throughout the exploration and production lifecycle
	Oil and Gas Exploration and Production
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecopetrol S.A.	Ecopetrol S.A. has in place the HSE Management System which seeks to establish the necessary elements for the company to adequately manage risks, protect life, encourage care for the environment, and establish the basic mandatory requirements of the HSE Management System. The HSE Management System is based on current national regulations (Decree 1072 of 2015) and international standards (ISO 45001 and ISO14001). It entails carrying out a logical and staged process, based on continuous improvement and includes cultural, leadership, policy, organizational, planning, implementation, evaluation, and audit and improvement actions to anticipate, recognize, evaluate and control risks that may affect safety, occupational health and the environment. The HSE Management System includes a Contractor Management element, which establishes that all suppliers, contractors and subcontractors that provide services must follow policy and guidelines on safety, occupational health and environment. The company has permanent monitoring mechanisms in place to ensure that contractors' workers are knowledgeable, that their equipment is suitable for the service provided, and that their work is performed following the contractual requirements. Similarly, the company values dialogue, communication and consultation with stakeholders for building trust. Consequently, it has suitable mechanisms in place to constantly interact therewith, considering their needs and expectations. The HSE Management System covers the company's oil exploration and production processes.
Hocol	During the life cycle of Hocol's exploration and production assets, strict compliance with Colombian regulations on occupational health and safety issues is upheld. The main axis of the Integrated Management System of Operational Excellence (SIGEO for its Spanish acronym) is the strengthening of leadership associated with clean and safe operations based on rigorous Operational Discipline in all work fronts to identify early any substandard conditions or action and ensure timely treatment. The company evaluates the performance of workers on occupational safety and health (OSH) related issues to verify assistance, support, contribution and assurance regarding operations and work fronts through visits from the leadership team; managerial and cross-sectional and supervisory inspections; compliance with the provisions of norms, handbooks and procedures; and implementation of safety standards such as the use of SIGEO tools. All this is intended to provide ongoing oversight regarding the safety and health conditions of workers, verifying the work environments while collecting information to determine whether the measures for the prevention and control of hazards and risks are applied and effective. In addition, the results of indicators, industrial safety and epidemiological surveillance programs, as well as the results of audits carried out on the management system, are analyzed to identify the company's overall needs in occupational health and safety, all aiming towards continuous improvement.
Ecopetrol Permian	At Ecopetrol Permian LLC, the following are examples of management systems implemented by the operator. One is safety observations, where field personnel is encouraged to point out unsafe working conditions or situations, which are then recorded in a system and actions taken and/or improvements made to the process. In addition, safety training is conducted for all workers/contractors working/visiting the field (including training on Hydrogen Sulfide - H2S, etc.), as well as holding monthly safety meetings, quarterly observations, quarterly HSE board meetings, and contract support system monitoring.
Ecopetrol America	Ecopetrol America LLC is not a registered operator and currently has no specific HSE Management System in place. A system is being developed and, although it has not yet been implemented, certain elements such as risk analysis, incident reporting, standards and procedures, etc. are currently in force.
Ecopetrol Brasil	Ecopetrol Brasil follows the principles and procedures of the Ecopetrol Group to operate in a safe, responsible and reliable manner. It analyzes and evaluates the exploratory activities following the Exploration Process under the direction of the Vice Presidency of Exploration of Ecopetrol S.A., which applies to the entire Ecopetrol Group. Its development and production activities are reviewed under the DBR Process (Brazilian Development Opportunities Management Process) created by Ecopetrol Brasil.

EM-RM-320a.2	Discussion of management systems used to integrate a culture of safety.
Refining and Marketing	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Refinería de Barrancabermeja	Because the Refinería de Cartagena and Refinería de Barrancabermeja are operators of Ecopetrol S.A., they employ the HSE Management System which seeks to establish the necessary elements for the company to adequately manage risks, protect life, encourage care for the environment, and establishes the basic mandatory requirements of the HSE Management System. This system was established based on current national regulations (Decree 1072 of 2015) and international standards (ISO 45001 and ISO14001). The HSE Management System entails carrying out a logical and staged process, based on continuous improvement and includes cultural, leadership, policy, organizational, planning, implementation, evaluation, and audit and improvement actions to anticipate, recognize, evaluate, and control risks that may affect safety, occupational health and the environment.
Refinería de Cartagena	

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	**2022**
Esenttia	Esenttia's workers are not subject to prolonged exposure to long-term health risks. The organization has a chemical risk program, "Program for the strategic management of occupational exposure to hygiene risks", which typifies chemical contaminants that do not carry the risk of affecting employee health, even in the long term. Esenttia applies the corresponding safety management systems through the implementation of industrial safety programs that comply with applicable and voluntary regulations, as well as a hazards and risks matrix for all processes. All safety and health programs are audited annually under ISO 45001 and the minimum standards of the General Occupational Hazard System (SGRL for its Spanish acronym).

Topic:		Workforce Diversity and Engagement			
SV-PS-330a.1		Percentage of gender and racial / ethnic group representation for (1) executive management and (2) all other employee			
		Professional and Commercial Services			
Metric		1		2	
Unit		%		%	
Year		2021	2022	2021	2022
XM	Women	57.14	60.00	33.33	34.00
	Men	42.86	40.00	66.67	66.00
	Asian	0.00	0.00	0.00	0.00
	Afro- Colombian	0.00	0.00	0.00	0.00
	Hispanic/Latino	100.00	100.00	100.00	100.00
Trading Asia	Women	Not available	0.00	Not available	33.00
	Men		100.00		67.00
	Asian		0.00		67.00
	Hispanic/Latino		0.00		33.00

- **General:** The companies do not have workers in the Afro-Colombian, white, and other racial/ethnic group categories.
- **Trading Asia:** No information was recorded for 2021 because Trading Asia began operations in July of the same year and began reporting its metrics as of 2022.

SV-PS-330a.2	(1) Voluntary and (2) involuntary employee turnover rate			
	Professional and Commercial Services			
Metric	1		2	
Unit	%		%	
Year	2021	2022	2021	2022
XM	10	8	5	3
Trading Asia	Not available	0	Not available	0

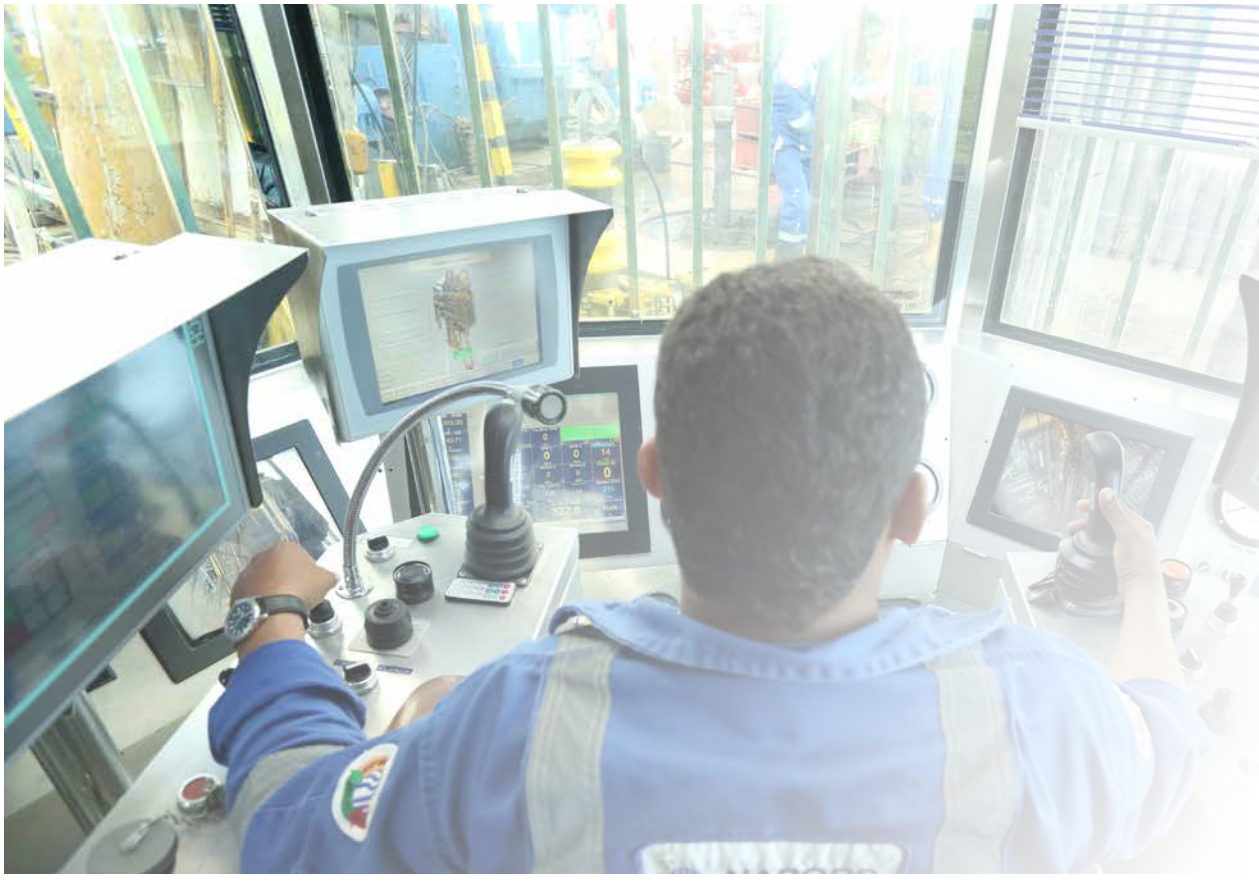
- **Trading Asia:** No information was recorded for 2021 because Trading Asia began operations in July of the same year and began reporting its metrics as of 2022.

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

Professional and Commercial Services		
Metric	**1**	
Unit	**%**	
Year	**2021**	**2022**
XM	89	99
Trading Asia	Not available	0

- **Trading Asia:** No information was recorded for 2021 because Trading Asia began operations in July of the same year and began reporting its metrics as of 2022. Additionally, for 2022, the company has not conducted employee surveys that could provide the information to address this standard.

Topic:	**Product Specifications and Clean Fuel Blends**



BUSINESS MODEL AND INNOVATION CHAPTER

EM-RM-410a.1	Percentage of Renewable Volume Obligation (RVO) met through: (1) production of renewable fuels; (2) purchase of "separated" renewable identification numbers (RINs), and (3) purchase of "separated" RVOs.
	Refining and Marketing
Refinería de Barrancabermeja	Not applicable: Neither of the refineries has a renewable volume obligation because there is no associated regulation applied in Colombia.
Refinería de Cartagena	

EM-RM-410a.2	Total addressable market and share of market for advanced biofuels and associated infrastructure
	Refining and Marketing
Refinería de Barrancabermeja	Not applicable: Neither the Cartagena nor the Refinería de Barrancabermeja has a biofuel production infrastructure; they purchase biofuels from third parties.
Refinería de Cartagena	

Topic:	**Products Designed for Use-Phase Efficiency**	
RT-CH-410a.1	Revenues from products designed for use-phase resource efficiency	
	Chemicals	
Metric	**1**	
Unit	**Reporting Currency (COP)**	
Year	**2021**	**2022**
Esenttia	4,313,000,000	323,966,682,966

- **Esenttia:** In 2022, Essentia had a greater number of end-customer orders for use-phase efficient products.

Topic:	Lifecycle Emissions Balance	
RR-BI-410a.1	Lifecycle greenhouse gas (GHG) emissions by biofuel type	
	Biofuels	
Metric	1	
Unit	gCO2e/MJ	
Year	2021	2022
Ecodiesel	26.88	29.58

- **Ecodiesel:** The number provided is for emissions related to advanced biofuel production, calculated according to ISO 14040 methodology "Product lifecycle analysis throughout the supply chain".

Topic:	Lifecycle Impacts of Buildings and 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 and Construction Services	
Metric	1	2
Unit	Number of projects	
Year	2021-2022	2021-2022
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 and Construction Services
Metric	1
Unit	Discussion and analysis
Year	2022
ISA Intervial	In the project design phase, the new business area is dedicated to reviewing bids based on the background provided by the Ministry of Public Works (MOP), which determines and includes the reference engineering over which the company has decisive powers. Additionally, every project awarded must be processed by the Environmental Evaluation Service (SEA for its Spanish acronym), which must grant its approval through an Environmental Qualification Resolution (RCA). Once approved, the project can begin construction work which includes, among its activities, monitoring nearby water flows and compliance with related regulations. Regarding energy efficiency, the bids include recommendations on the use of clean energies that have not been included in the bid due to initial excess costs; the bid assessment is expected to consider these activities in awarding the bids and therefore invest in good projects without a loss of competitiveness. Concerning the operational phase, internal campaigns and communications are carried out on the importance of conscious water use, urging workers to use the resource correctly. There are no current projects developed specifically on this matter. Regarding energy efficiency, there are projects currently in the pilot stage that aim to generate clean energy from moving cars and the reuse of old solar panels as sound insulators that, with the right connectivity and equipment, can generate solar energy. Both projects aim to power to the same road and thus reduce consumption from the network.

Topic:	Safety and 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	
Metric	**1**	**2**
Unit	**%**	**%**
Year	**2021 -2022**	**2021 -2022**
Esenttia	0	0

- **Esenttia:** The chemicals produced at Esenttia are not considered hazardous materials for health or the environment; therefore, there is no need to evaluate their hazardous characteristics. There is a safety data sheet (SDS) for polypropylene, which corroborates that it does not pose toxicological risks to human health.

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
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Esenttia	At Esenttia, the chemicals used in the production process have all requisite classification information under the Globally Harmonized System (GHS) guidelines. This information is verified through Safety Data Sheets (SDS) during the procurement process, where it is corroborated to ensure all safety and health aspects are considered for their safe handling. Esenttia has a chemical risk program in place that identifies all substances used by company workers in their activities, as well as a handbook, procedures in place, use of SDSs and personal protection equipment, and workers trained in the safe handling of chemicals. To safeguard the worker's health when handling chemicals, occupational health programs include hygiene measurements and occupational medical examinations; these preventive measures are carried out to identify best practices for risk intervention. Chemical materials used as raw materials for production are identified as hazardous through SDSs and labeled following GHS standards. In general, chemical risk management is conducted according to the guidelines established by Esenttia's occupational safety and health (OSH) management system, always aiming to exercise controls at the source as the first-line management and control option.

Topic:	Climate Impacts of Business Mix
IF-EN-410b.1	Amount of backlog for (1) hydrocarbon-related projects and (2) renewable energy projects
IF-EN-410b.2	Amount of backlog cancellations associated with hydrocarbon-related projects
IF-EN-410b.3	Amount of backlog for non-energy projects associated with climate change mitigation
	Engineering and Construction Services
Year	**2021** **2022**
ISA Intervial	Not applicable: These disclosures do not apply to the company reporting in this subsector, because it does not have hydrocarbon and renewable energy projects.

Topic:	Genetically Modified Organisms (GMOs)
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.

Topic:	End-Use Efficiency
IF-GU-420a.1 IF-EU-420a.1	Percentage of gas utility (IF-GU)/electric utility (IF-EU) revenues from rate structures that (1) are decoupled or (2) contain a lost revenue adjustment mechanism (LRAM).
	Gas Distributors
Alcanos	Not applicable, as in Colombia there are no decoupled rate structures or lost revenue adjustment mechanisms for gas services.
Gases del Oriente	
Metrogas	

IF-GU-420a.2	Customer gas savings from efficiency measures by market (millions of British thermal units (MMBtu))
	Gas Distributors
Alcanos	Gas distribution companies do not perform any direct actions to encourage savings and efficiency among customers.
Gases del Oriente	
Metrogas	

IF-EU-420a.1	Percentage of electric utility revenues from rate structures that (1) are decoupled or (2) contain a lost revenue adjustment mechanism (LRAM).
IF-EU-420a.2	Percentage of electric load served by smart grid technology
IF-EU-420a.3	Customer electricity savings from efficiency measures, by market
	Electric Utilities
ISA	Not Applicable: These disclosures do not apply to the companies reporting in this subsector, because their operations are in the transmission segment of the value chain and they do not participate in generation or distribution activities.
ISA CTEEP	
ISA REP	
ISA Intercolombia	
ISA Interchile	
ISA Transelca	

Topic:	Reserves Valuation & Capital Expenditures
EM-EP-420a.1	Sensitivity of hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions.

Oil and Gas Exploration and Production

Metric		1		
Product		Crude oil and LGN	Natural Gas	Total Oil and Gas
Unit		MMbbls	Bscf	Mmboe
Year			2022	
Ecopetrol Group	Reserves as of December 31, 2021	1,205	2,544	1,651
	Sensitivity scenario	1,170	2,530	1,614
	Difference (MMbbls)	-35	-14	-37
	Difference (%)	-2.99	-0.55	-2.29

- **Assumptions:**

- A Brent price of USD$ 76 per barrel was assumed for 2022, between USD$ 62 and USD$ 68 per barrel from 2023 to 2030, between USD$ 60 and USD$ 63 thereafter plus portfolio management costs.
- The base scenario for the sensitivity analysis performed is 82% of the crude oil, natural gas and liquefied natural gas reserves filed in Form 20-F for the 2021 annual report.
- Other variables such as OpEx, CapEx and portfolio costs remain unchanged for analysis purposes.

- **Analysis:**

The sensitivity scenario falls below the reference price both in the Stated Policies Scenario (STEPS) and within the range of the Announced Pledges Scenario (APS) published by the International Energy Agency (IEA), showing a minimal impact on the total reserves of the Business Group and reflecting an operational resilience in both scenarios. The Group continues working towards the Net Zero Emissions by 2050 Scenario (NZE), which is more challenging for the Oil & Gas industry and, for the Business Group, could impact some assets that have an operational breakeven close to the high price range of this scenario.

EM-EP-420a.2	Estimated carbon dioxide emissions embedded in proved hydrocarbon reserves	
	Oil and Gas Exploration and Production	
Metric	**1**	
Unit	**tons CO_2e**	
Year	**2021**	**2022**
Ecopetrol S.A.	686,267,563	700,617,243
Hocol	42,674,573	38,296,086
Ecopetrol Permian	76,972,634	79,148,966
Ecopetrol America	11,414,188	8,564,000
Ecopetrol Brasil	Not applicable	

- **General:** Default data for calorific values and emission factors listed in tables 1.2 and 1.4 of Volume 2: Energy, Chapter 1 of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories were used in the computation. The 2021 data for Ecopetrol S.A. and Ecopetrol America were restated using this methodology.

EM-EP-420a.3	1) Amount invested in renewable energy, and 2) revenue generated by renewable energy sales			
	Oil and Gas Exploration and Production			
Metric	**1**		**2**	
Unit	**Reporting Currency (COP)**			
Year	**2021**	**2022**	**2021**	**2022**
Ecopetrol S.A.	15,446,900,800	66,505,384,201	0	0
Hocol	742,400,000	2,127,962,625	0	0
Ecopetrol Permian	0	0	0	0
Ecopetrol America	0	0	0	0
Ecopetrol Brasil	0	0	0	0

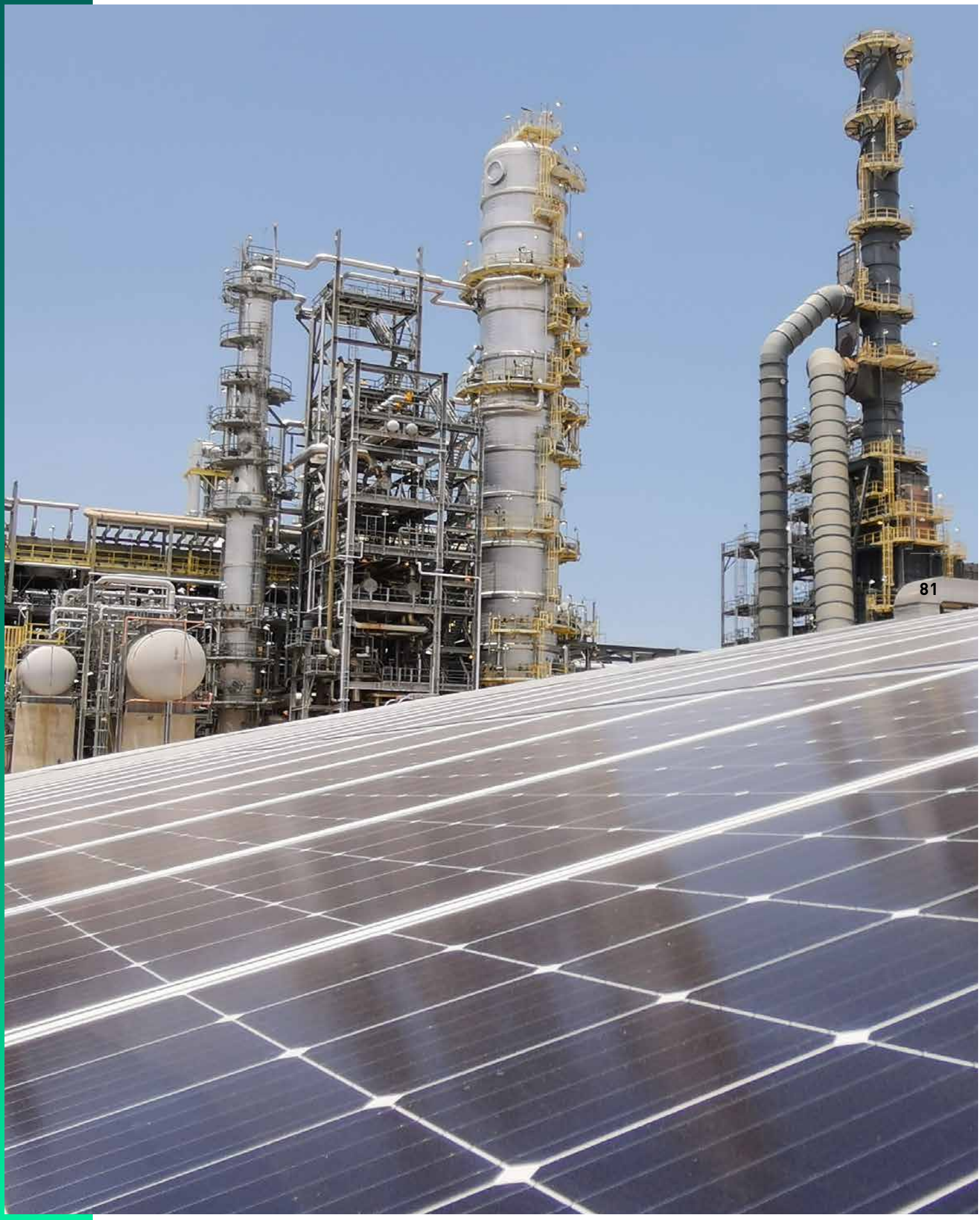
- **Ecopetrol S.A.:** The increase in this metric comes from investments in solar energy, mainly in the Cira Infantas solar farm, and in geothermal energy in projects in the maturity stages.
- **Hocol:** The money invested in 2022 in renewable energy projects was allocated to:
  - Construction of 100 kW solar farm in the Guajira asset.
  - Solar panels in chemical injection pumps.
  - Studies to power up and connect to the national grid an asset in Huila.
  - Preparation of technical Scope for a 14 MW solar farm at the Ocelote asset.

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 and Gas Exploration and Production	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecopetrol S.A. **Hocol** **Ecopetrol Permian** **Ecopetrol America** **Ecopetrol Brasil**	On February 7, 2022, the Ecopetrol Group presented its 2040 Strategy "Energy that transforms" that thoroughly addresses current environmental, social, and governance challenges while continuing to focus on generating sustainable value for all its stakeholders. It seeks to consolidate an agile and dynamic organization that quickly adapts to the changes faced by the energy industry. "Energy that Transforms" positions Ecopetrol as an integrated energy group that participates in all links of the hydrocarbon chain (exploration, production, transportation, refining, and marketing) and in linear infrastructure, both in energy transmission and road concessions, and expects to continue diversifying into businesses that allow it to continue reducing its carbon footprint and fulfill its goal of being a net zero carbon emissions company by 2050 (scopes 1 and 2). The strategy is founded on four strategic pillars: (i) Grow with the Energy Transition, (ii) Generate Value through TESG, (iii) Cutting-edge Knowledge, and (iv) Competitive Returns. The first pillar aims to uphold its competitiveness throughout the integrated hydrocarbon chain and increase the gas supply, offshore exploration, improved recovery, and strengthen the traditional business with front-line technology and innovation to provide sustainable processes and maximize the value of reserves and future barrels. For 2023, the projected investment plan is for between COP$ 25.3 and COP 29.8 billion, continuing to contribute to the profitable growth of the upstream segment and foresees the following relevant topics to safeguard the financial sustainability of the segment: - Investments will allow reaching organic production levels in 2023 of between 720 and 725 thousand barrels of oil equivalent per day (76% oil and 24% gas and white products) and will focus on enhanced recovery technologies to maximize existing resources in the reservoirs and protect the base curve to compensate for the natural decline of the fields. - Also, between 2023 and 2025, 1,600 development wells will be drilled, 574 of them in 2023. In addition, 25 exploratory wells will be drilled in 2023, located in the Llanos Orientales, Middle Magdalena Valley, Piedemonte and Caribe Costa Afuera basins. Another fundamental pillar of the 2040 Strategy is Generate Value through TESG, and therefore the plan considers investments of close to COP 2.3 trillion mainly in projects associated with: i) decarbonization (COP 896 billion); ii) integrated water management (COP 900 billion); iii) fuel quality (COP 288 billion); and iv) investments associated with other topics such as research, circular economy, process and industrial health and safety (COP 207 billion). Nearly 23% of the plan is aimed at cementing diversification in new low-emission businesses, which includes investments in hydrogen production, renewable energies, carbon capture and electricity transmission, leveraging diversification at the Ecopetrol Group scale. Additionally, COP 472 billion of social investment is planned, seeking to reinforce the commitment to the local development in the regions where it operates, including in 2023, among others, preservation of 240 kilometers of tertiary roads, education for 90,000 students, providing 16,000 inhabitants with access to drinking water and the connection of 13,000 new residential gas users, among others.

Topic:	Sourcing and 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	2022
	Environmental impacts are managed through the life cycle analysis methodology (ISO 14040), whereby environmental performance is assessed via the multiple impacts throughout the chain. The production of palm oil mill effluent (POME) has a significant environmental impact, and can be reduced by implementing biogas capture projects, using biomass as boiler fuel or in the composting process. Regulatory risks are assessed through the ISO 31000 methodology, whereby risks around the raw materials are identified and evaluated.
Ecodiesel	Through a risk-based approach, Ecodiesel addresses the identification, analysis, assessment and treatment of uncertainties arising from feedstock production in order to plan and implement relevant actions and strategies that can result in more reliable and sustainable products, considering regulatory restrictions applicable to the business, customer requirements and company conditions. The risks associated with the feedstock production are: 1. Feedstock shortages due to public order situations 2. Effects of climatic and natural phenomena

RR-BI-430a.2	Percentage of biofuel production third-party certified to an environmental sustainability standard.	
	Biofuels	
Metric	1	
Unit	%	
Year	2021	2022
Ecodiesel	61.82	54.01

- **Ecodiesel:** In 2022, a third raw material supplier lost their certification under the International Sustainability and Carbon Certification (ISCC) system, which reduced the procurement of sustainably sourced raw materials to produce biofuel. It expects to retain its ISCC certification as it meets the Renewable Energy Directive sustainability criteria, for Palm Biodiesel (Refined, Bleached & Deodorized (RBD) Palm Oil).



LEADERSHIP AND GOVERNANCE CHAPTER

Topic:	Business Ethics And Transparency			
EM-EP 510a.1	Percentage of (1) proved and (2) probable reserves in countries that have the20 lowest rankings in Transparency International's Corruption Perception Index			
	Oil and Gas Exploration and Production			
Metric	**1**		**2**	
Unit	**%**		**%**	
Year	**2021**	**2022**	**2021**	**2022**
Ecopetrol S.A.	0	0	0	0
Hocol	0	0	0	0
Ecopetrol Permian	0	0	0	0
Ecopetrol America	0	0	0	0
Ecopetrol Brasil	0	0	0	0

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 and Construction Services	
Metric	**1**	**2**
Unit	**Number**	**Reporting Currency (COP)**
Year	**2021 -2022**	**2021 -2022**
ISA Intervial	0	0

EM-EP-510a.2 **IF-EN-510a.3**	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 and Gas Exploration and Production
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecopetrol S.A.	Ecopetrol performs due diligence before establishing a relationship with a counterparty (customers, suppliers, contractors, subcontractors, and joint venture (JV) partners), which is a requirement included in the Code of Ethics and Conduct. Additionally, the manual that details the Policy for the Prevention of Risks of Money Laundering, Financing of Terrorism and Financing of the Proliferation of Weapons of Mass Destruction (ML/FT/FPADM), establishes the procedure to duly know the counterparties, including establishing due diligence actions and warning signs. In turn, the program for preventing compliance risks in new businesses processes of Ecopetrol S.A. establishes the guidelines for the performance of due diligence on new businesses sought by Ecopetrol, such as: mergers, acquisitions under any title, investments, operation agreements, or joint bidding, and disinvestments, among others. Additionally, Ecopetrol includes contractual clauses with counterparties, that establish the obligations of ethics and transparency as well as the right to perform administrative, financial, operational, or compliance audits on the counterparty and on any third party that provides services concerning the purpose of the contract (suppliers or subcontractors), along with the right to review the information that Ecopetrol deems relevant to verify compliance with anti-bribery laws, Ecopetrol's Code of Ethics and Conduct, and Ecopetrol's ethics and compliance guidelines. Likewise, third parties with whom Ecopetrol enters into commercial relationships sign contractual clauses and additional forms through which they commit to comply with national and international regulations and ethics and compliance benchmarks, and to know and respect Ecopetrol's Code of Ethics and Conduct. Ecopetrol provided training to 100% of its workers, ethical mentors, Board of Directors and members of senior management, contractors, allies, suppliers and partners (including JVs) on transparency and ethics issues.

EM-EP-510a.2 **IF-EN-510a.3**	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 and Gas Exploration and Production	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Hocol	Hocol carries out multiple actions aimed at managing risks of corruption, bribery, transnational bribery, free economic competition and ML/FT/FPDAM, within the framework of its business ethics program, which defines the following activities, among others: - Prevention: Training and communications for all levels of the company and related third parties such as customers, partners, allies, suppliers and contractors. Periodic risk management cycles to evaluate potential risks and define the controls to mitigate them. Procedure to collect knowledge of counterparties through due diligence carried out by Hocol's procurement area. - Detection and Response: Hocol's ethics channel addresses queries and complaints regarding acts related to fraud, corruption, money laundering, bribery, transnational bribery, financing of terrorism, financing the proliferation of weapons of mass destruction, actions that threaten free economic competition and all those behaviors that go against what is established in the company's code of ethics and conduct. - Constant monitoring of all counterparties, operations and processes of the company that pose risks associated with corruption, bribery, transnational bribery, free economic competition and LAFT/FPADM. - Continuous improvement: Periodic updates on standards, guidelines, procedures, handbooks, manuals, and guidelines according to national and international standards applicable to companies for managing the risks of corruption, bribery, transnational bribery, free economic competition, and LAFT/FPDAM. - Participating in initiatives such as EITI and PACTO GLOBAL that ensure best practices regarding business ethics and transparency programs.
Ecopetrol Permian	Both companies ensure that their operations align with the Code of Ethics and Conduct adopted by the Board of Directors of Ecopetrol USA Inc. on February 4, 2021. The Code includes anti-corruption, anti-fraud and anti-money laundering (AML/FT) policies. In addition, it establishes guidelines for preventive monitoring of restrictive lists/databases, relevant news from subsidiaries not included in the restrictive lists and politically exposed persons. It also establishes procedures for ensuring workers and third-party intermediaries are cognizant of the policies to avoid potential conflicts of interest or payments to restricted or high-risk jurisdictions.
Ecopetrol America	
Ecopetrol Brasil	Ecopetrol Brasil principles and procedures are aligned with the Ecopetrol Group's regarding operating in a safe, responsible and reliable manner; respecting and valuing its personnel and contractors; working with joint venture partners (JVs) and suppliers; protecting the value of its projects; and working with governments and communities, including its commitment to protect human rights. Its anti-bribery, ethics and compliance code applies to all workers, officers and members of the Board of Directors. Ecopetrol Brasil makes its anti-bribery, ethics and compliance codes and procedures available to contractors and invites its contractors and their workers to act in a manner consistent with its code, and it takes appropriate action when they believe contractors have not met their expectations or contractual obligations. Ecopetrol Brasil periodically provides its workers with training and communications on how to apply the principles of the anti-bribery, ethics and compliance code to ensure compliance with general principles and seek greater transparency. Ecopetrol Brasil complies with international and national laws and regulations regarding directives and ethics and additionally is aligned with the Ecopetrol Group's business and ethics and compliance principles. The company has a specific "Ethics Line" channel to facilitate collaborative efforts regarding compliance and investigate and remedy any inappropriate situation that is not aligned with its codes and principles.

IF-EN-510a.2	Total amount of monetary losses as a result of legal proceedings associated with charges of (1) bribery or corruption and (2) anticompetitive practices.	
	Engineering and Construction Services	
Metric	**1**	**2**
Unit	**Reporting Currency (COP)**	
Year	**2021 -2022**	**2021 -2022**
ISA Intervial	0	0

IF-EN-510a.3	Description of policies and practices for prevention of (1) bribery and corruption, and (2) anti-competitive behavior in the project bidding processes
	Engineering and Construction Services
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
ISA Intervial	Committed to ethics as the central axis of the company's actions, the Corporate Integrity & Ethics Model - Law 20.393 - Compliance was structured to manage the risk of any events of bribery, corruption, and unfair competition, among others, promoting ethical behavior among its managers, workers and stakeholders as the foremost management measure. ISA's Anti-Corruption and Anti-Bribery Management Guidelines, and the annexes for its detailed application in ISA INTERVIAL, set out the ethical criteria to be followed by managers and workers to handle any conflicts of interest, sponsorships, invitations and participation in events, gifts and hospitality, social management and donations, improper payments to facilitate procedures, government relations, anti-corruption due diligence in suppliers and new businesses. The company developed and implemented continuous analytical monitoring for compliance due diligence, which allows it to identify and manage local and international compliance risks by monitoring third parties in more than 1,500 sanction lists/databases and adverse news and links it with SAP information, purchase orders, contracts and sanction lists compiled by the Government of Chile. The above allows the Corporate Integrity & Ethics Committee to make informed decisions. ISA INTERVIAL's sustainability teams were trained in social management and donations, gifts and hospitality, and workers are made aware of the obligations, prohibitions, and sanctions related to Law 20,393 through the clauses included in their employment contracts. ISA INTERVIAL's managers and workers are required to complete annually a conflict of interest declaration. The Compliance Officer, together with their immediate supervisor, analyzes the pertinent measures to be taken when a conflict of interest arises.

Topic:	Professional Integrity, Competitive Behavior and Price Transparency
EM-MD-520a.1 EM-RM-520a.1 SV -PS-510a.2	Total amount of monetary losses as a result of legal proceedings associated with professional integrity (SV-PS); federal pipeline and storage regulations (EM-MD), and price fixing or price manipulation (EM-RM)

O&G Transport and Logistics (Midstream)		
Metric	1	
Unit	Reporting Currency	
Year	2021	2022
Cenit	0	0
Ocensa	0	0
ODL	0	0
OBC	0	0
ODC	0	0
Progasur	0	0

Refining and Marketing		
Metric	1	
Unit	Reporting currency	
Year	2021	2022
Barrancabermeja Refinery	0	0
Refinería de Cartagena	0	0

SV-PS-510a.1	Description of approach to ensuring professional integrity
	Metric
Unit	Discussion and analysis
Year	2022
XM	Culture: Dissemination and training activities were carried out; 98% of workers completed the virtual ethics course; criteria for fraud risk, ABC of Conflict of Interest and criteria for participation in campaigns and presidential elections were distributed; 98% of workers renewed their ethics commitment; XM declared zero tolerance regarding illegal and unethical actions. Conflict of interest: Administrators and workers must report at the time of hiring and at least once a year, the existence or inexistence of any conflicts of interest. In 2022, 98% of workers completed this declaration. The members of the Board of Directors complete the respective declaration of conflicts of interest and independence before their appointment or at least once a year, the existence or not of conflicts of interest, in 2022 98% of the workers did so. The members of the board of directors made the respective declaration of conflicts of interest and independence before their appointment. Ethics Line: In 2022, the ethics line received and addressed 6 cases, 4 of these relating to gifts and presents, negotiation of shares and complaints about inclusion issues. Data accuracy: In 2022, the data governance and quality program continued, which establishes requirements, standards, and best practices for information management to provide accurate, reliable, secure, and efficient information following the regulations in force. Confidentiality and information policies were strengthened, especially those under the services of the National Dispatch Center (CND for its Spanish acronym), Administrator of the Commercial Exchange System (ASIC) and Account Liquidator and Administrator (LAC); and the company reviews the mechanisms to provide equal and impartial treatment to all market agents and interest groups. Since 2015, XM has in place an Information Security Management System (ISMS) based on the international standard ISO 27001:2013 and certified by ICONTEC. The ISMS provides guidelines for classifying information and technological controls to protect data during the information life cycle. Internal and external audits are carried out annually. Voluntary Actions: Jointly with the National Council for the Operation of the Electricity Sector, the company developed the Collective Action for Ethics and Transparency in the Sector, in collaboration with 34 companies, participated in the 10th Ethics Forum and the Business Transparency Measurement (MTE).

SV-PS-510a.1	Description of approach to ensuring professional integrity
	Metric
Unit	**Discussion and analysis**
Year	**2022**
Trading Asia	Trading Asia has adopted the Code of Ethics and Conduct of the Ecopetrol Business Group along with modifications or updates thereto, following the guidelines of Ecopetrol S.A. The Code of ethics is adopted by the Governing Council and/or the Board of Directors. These documents are provided to each employee upon hiring, and they must sign to confirm their receipt and understanding of the Code of Ethics and Conduct. Additionally, as part of the information assurance and updating process, employees must annually complete compliance and internal control courses, including "Conflicts of Interest" and "Transparency Pact" and complete the forms to verify the accuracy of the answers provided. Potential violations of these codes can be reported through the ethics hotline. The ethics hotline is available to the general public on Ecopetrol's website and reports can be made anonymously.

Topic:	**Management of the Legal and Regulatory Environment**
EM-EP-530a.1 **EM-RM-530a.1** **RT-CH-530a.1**	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry.
	Oil and Gas Exploration and Production
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecopetrol S.A.	The Ecopetrol Business Group jointly structures its climate change strategy under the public policy of the Colombian Government and contributes to the construction of technical and regulatory guidelines to strengthen the country's institutional capacity regarding climate change. The following are the most relevant government regulations or policy proposals that address environmental and social factors and could potentially affect the Upstream segment: - During 2022, regarding its operations in Colombia, the organization worked actively with the Colombian Petroleum Association (ACP), the International Petroleum Industry Environmental Conservation Association (IPIECA), Icontec, Invias, and universities such as La Universidad Industrial de Santander and Los Andes, in the execution of agreements, projects or regulatory processes concerning the circular economy; it also worked jointly with the Ministry of Environment and Sustainable Development, and a sectoral agreement has prioritized this issue and is undergoing the review processes to align it with the National Development Plan (2022 - 2026). - The company has participated in the socialization of the web application of the National Inventory of Chemicals for Industrial Use - INSQUI.X and the HSE team of Ecopetrol S.A. has endorsed the implementation of the globally harmonized system plan, through the updating of chemical product safety data sheets and worker training. - From the economic and fiscal standpoint, Law 2277/2023 (Tax Reform) was issued in 2022, which eliminated as of January 1, 2023, the possibility to deduct royalties paid to the State, and eliminated the 25% tax discount for investments in research and technological development and the 50% ICA discount. - Ecopetrol's operation in Colombia obtains tax benefits derived from Decree 2205 of 2017 which regulates tax benefits for environmental control conservation and improvement and provides direct environmental benefits. Regarding global initiatives, the company is a signatory of the Climate and Clean Air Coalition (CCAC) led by the United Nations, IPIECA, and the Zero Routine Flaring by 2030 initiative led by the World Bank.
Hocol	

Oil and Gas Exploration and Production	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecopetrol Permian	Ecopetrol Permian is a non-operator in its onshore activities and therefore relies on the operator to conduct its operations in compliance with all existing rules and regulations on environmental or social factors affecting the oil and gas industry. In running its operations, the operator must abide by all local, state and federal rules and regulations and must adjust to changes in the legal and regulatory environment. Texas oil and gas activity is regulated primarily by the Railroad Commission of Texas (RRC) and the Texas Commission on Environmental Quality. The Texas legislature creates the laws that affect the Texas oil and gas industry. Texas' courts interpret those laws and regulations in various counties and districts, which carries the inherent risk of constantly changing case law. In addition, it has forged a fruitful relationship with an experienced operator that is well-versed in managing the risks inherent to the changing legal landscape. The risks and opportunities associated with any proposed activity are assessed by diligent professionals before the activity can proceed. Ecopetrol Permian's overall strategy as a non-operator for managing the risks and opportunities associated with the legal and regulatory environment is to continue to maintain relationships with knowledgeable operators who are committed to industry best practices in conjunction with legal best practices. The company enjoys the highest level of guidance from its legal counsel, land experts and other professionals to navigate the legal and regulatory environment. Finally, the U.S. legal system guarantees the independence of the judiciary and thus protects the rights and guarantees of individuals, businesses and government entities.
Ecopetrol America	Ecopetrol America is a non-operator in all its operations in the Gulf of Mexico (GOM) and depends on the operator to carry out all operations following all rules and regulations on environmental or social factors in force for the GOM. The main government agency that oversees operations in the GOM is the Bureau of Safety and Environmental Enforcement (BSEE). The obligation of operators to comply with these rules and regulations is also contained in the operating agreement. On February 27, 2022, a federal judge handed down a ruling that poses a threat to GOM oil companies. The judge ruled concerning the Lease sale 257 of the GOM, which took place in November 2021, declaring the federal agency erred in its determination of the environmental impact thereof. The court stated that it will vacate the federal agency's decision regarding the environmental impact of the sale and held that it will annul the record of decision for Lease 25's sale, and actions taken on the basis thereof, and return it to the agency for further proceedings. The operator must design its wells not only according to the safety standards required by the BSEE but also to acceptable industry standards to satisfy their non-operating co-owners. Well plans and schematics are part of each well proposal and pre-drill meetings are held with co-owners to discuss operational, safety and environmental aspects of the planned wells. The new reporting requirements include that non-operators report their share of greenhouse gas emissions. Ecopetrol America's general strategy to manage the risks and opportunities associated with the legal and regulatory environment is to establish "best relationships" with the operator, especially among the drilling and exploitation personnel of the respective company, as well as its mid-level and senior managers. Operators hold frequent partner meetings to discuss planned operations and the best field development strategies.

Oil and Gas Exploration and Production	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecopetrol Brasil	Ecopetrol Brasil periodically monitors the rules and laws of the Exploration and Production (E&P) activities legal, regulatory and environmental framework in Brazil that apply to this subsidiary to manage the main legal risks. In addition, meetings are held with government authorities to discuss relevant issues concerning the company's activities in Brazil. Ecopetrol Brasil actively participates, through government authorities - Ministry of Mines and Energy (MME), National Agency for Petroleum, Natural Gas and Biofuels (ANP), IBAMA, among others- in discussions involving the main issues relevant to the oil industry, and exploration and production, including changes in legislation and the regulatory framework, as well as hearings and public consultations of the ANP. Ecopetrol is associated with IBP (Instituto Brasileiro de Petróleo e Gás), an important Brazilian forum for the exploration and production industry. Ecopetrol Brasil participates in the monthly meetings of the Committees on topics relevant to the industry.

Refining and Marketing / Chemicals	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Refinería de Barrancabermeja	The refineries monitor activities in government regulations and policies with a risk management perspective and perform environmental legal compliance management and monitoring. Concerning climate change and air quality management, the refineries are part of: (i) the Colombian Low Carbon Development Strategy (EDCBC for its Spanish acronym) led by the Ministry of Environment and Sustainable Development (MADS), which includes actions for mitigation and adaptation; (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 Carbon Neutrality Alliance, which involves the participation of the private sector. At the sectoral level, there is an Integrated Climate Change Management Plan for the Mines and Energy sector (PIGCCme), which defines specific actions in mitigation, adaptation, governance and knowledge to contribute to national goals and GHG reduction targets. Water resource and biodiversity management are consistent with government guidelines and the "Program for Efficient Use and Saving of Water" issued by Law 373 of 1997 of the MADS.
Refinería de Cartagena	Within the organization's Management System, the hazard identification, risk assessment and evaluation process are defined to control the intrinsic risks of a process, area or activity, establishing the necessary measures to eliminate or mitigate the probability of the occurrence of negative events that generate losses to the organization. Finally, each company has environmental permits for the use of resources granted by the Autonomous Corporation of the region in which it operates, as well as an Environmental Management Plan that establishes the mechanisms for managing the risks and opportunities associated with each legal and regulatory.

	Refining and Marketing / Chemicals
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Esenttia	In 2022, Colombia issued a law regulating single-use plastics. This law establishes two timeframes (2 and 8 years) for the substitution of single-use packaging materials. As a company, it has analyzed the volumes of polyethylene and polypropylene that customers use to produce these, and developed strategies to approach customers with the so-called "sustainable alternatives" defined in the regulation. Furthermore, this has led the company to hasten the conversation about the inclusion of recycled materials in single-use packaging formulations. In this regard, the company is moving forward with the start-up of the recycled polyolefin plant and the path toward obtaining a letter of no objection from the U.S. Food and Drug Administration (FDA) to get some of these accepted for food contact applications. Alternatively, the company is also working on the commercialization of biodegradable resins, understanding these are higher value products that require a different chain of use than synthetic resins and need different processing conditions and must define a customer base for their implementation, as well as acquire certification from environmental authorities for these "sustainable alternatives". In addition, Essentia has been working with the recycling value chain, which also plays a fundamental role within the strategy and to also to be able to handle additional attributes for the inclusion of recycled resins, which also results in plastic credits and reduction of carbon emissions which are part of the actions to be pursued by customers who today manufacture single-use containers and packaging and allows them not to be subject to the single-use plastic tax. Regarding chemicals, in 2022 Esenttia continued the chemical risk program, complying with the requirements of Resolution 0773 of 2021, Globally Harmonized System (GHS) by implementing a work plan that ensures the classification and labeling of chemicals, as well as system updating and support and risk communication and safety data sheets (SDS). It is important to emphasize that Esenttia does not employ chemicals that are harmful or that affect health, much less cause occupational diseases. However, under the Occupational Hygiene Program, workers who come to work or handle chemicals are evaluated, guaranteeing the avoidance of work accidents and occupational illnesses, and training, periodic inspections, and even specific chemical spill drills are implemented to ensure preparedness for such an emergency. The HSE information system (PPS for its Spanish acronym) has the digital record custody of the SDSs, and each one is assigned a QR code to facilitate access and consultation by workers and contractors and the printed SDSs are placed on billboards to facilitate physical consultation in the plant near the places where the substances may be stored.

RR-BI-530a.1	Amount of subsidies received through government programs
	Biofuels
Metric	**1**
Unit	**Reporting Currency (COP)**
Year	**2021-2022**
Ecodiesel	No subsidies were received through government programs.

RR-BI-530a.2	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry
	Biofuels
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecodiesel	Concerning corporate positions related to government regulations or policy proposals that address environmental and social factors affecting the sector, Ecodiesel has identified and evaluated the following risks in the Biofuel sector: - Palm oil price established by the price Stabilization Fund may be very high and the Biodiesel price frozen to avoid a fiscal deficit of the Fuels stabilization fund given the existing gap between diesel fuel (ACPM) and Biodiesel. - A decrease in the blend % due to the lack of Biodiesel supply. - A decrease in the blend % due to an increase in the price of biodiesel would result in an increase in the diesel fuel (ACPM) price that would not be economically viable. - The removal of the VAT exemption for biofuels (Taxes). - Loss of tax benefits (price regulation fund). - Blends risks. - Production of other renewable fuels to replace biodiesel. - Elimination of the free zone exception for companies in the biofuels sector. Nevertheless, the following opportunities for the biofuel sector have been identified: - Diversification to new markets in oleo chemicals, advanced and second-generation biofuels, sustainable aviation fuel (SAF), and hydro-treated vegetable oil (HVO). - Biodiesel exports. - New technologies that generate process efficiencies. - Government support to promote the growth of the biofuel sector and crop expansion. - Government support for SAF and HVO palm oil production. Ecodiesel has implemented a risk management system, wherein risks are identified, evaluated and addressed to mitigate risks.

Topic:	Critical Incident Risk Management / Operational Safety, Emergency Preparedness and Response

EM-EP-540a.1 (EM-EP) Process safety event rate for loss of primary containment of major consequence.

Oil and Gas Exploration and Production		
Metric	**1**	
Unit	**Rate**	
Year	**2021**	**2022**
Ecopetrol S.A.	0.009	0.004
Hocol	0.000	
Ecopetrol Permian	0.000	
Ecopetrol America	0.000	
Ecopetrol Brasil	Not applicable	

- **Ecopetrol S.A.:** Figures for 2021 were restated using 200,000 as a base for the calculation.

EM-MD-540a.1 (1) Number of reportable pipeline incidents, (2) percentage significant

O&G Transport and Logistics (Midstream)				
Metric	**1**		**2**	
Unit	**Number**		**Percentage**	
Year	**2021**	**2022**	**2021**	**2022**
Cenit	12	8	16.7	12.5
Ocensa	2	0	0.0	0.0
ODL	0	0	0.0	0.0
OBC	0	0	0.0	0.0
ODC	0	0	0.0	0.0
Progasur	0	0	0.0	0.0

- **Cenit:** The reportable incidents included:
  Arrival of OGR Olefins to refined dump (Galán); product containers loss from TK dump to dam, (Villeta); oil spill in cut and splice drainage activities, (San Miguel - Orito: OSO); oil spill in engine room, (Villeta); motor gasoline containers loss of by ZSV-3306, (Sebastopol); loss of product containers in the u main skid valve, (Galán); containers loss in the vacuum truck pump line, (Mansilla); leakage resulting from dent, (Orito - Tumaco: OTA).
  In 2021, the information was reported under the API74 standard and in 2022 the figures were reported following the CFR49 methodology, so data for 2021 was restated employing the latter methodology.

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 and Marketing			
Metric	1		2	
Unit	Rate		Rate	
Year	2021	2022	2021	2022
Refinería de Barrancabermeja	0.10	0.00	0.21	0,07
Refinería de Cartagena	0.00	0.00	0.07	0,06

- **General:** Figures for 2021 were restated using 200,000 as a base for the calculation.

EM-RM-540a.2	Security Systems Threat Indicator Rate (level 3)	
	Refining and Marketing	
Metric	1	
Unit	Rate	
Year	2021	2022
Refinería de Barrancabermeja	Not available	
Refinería de Cartagena		

RT-CH-540a.1 RR-BI-540a.1	Number of (1) Process Safety Incidents Count (PSIC), (2) Process Safety Total Incident Rate (PSTIR), and (3) Process Safety Incident Severity Rate (PSISR)					
	Chemicals - Biofuels					
Metric	1		2		3	
Unit	Number		Rate		Rate	
Year	2021	2022	2021	2022	2021	2022
Esenttia	0		0		0	
Ecodiesel	Not available	0	Not available	0	Not available	0

- **Esenttia:** There were no level 1 and 2 process safety incidents.

EM-MD-540a.2	Percentage of (1) natural gas and (2) hazardous liquid pipelines inspected			
	O&G Transport and Logistics (Midstream)			
Metric	1		2	
Unit	%		%	
Year	2021	2022	2021	2022
Cenit	Not applicable		35.83	50.25
Ocensa			64.55	35.45
ODL			100.00	100.00
OBC			100.00	100.00
ODC			100.00	100.00
Progasur	100	100	Not applicable	

- **Cenit:** To assess the integrity of the pipeline, inline inspection (ILI) tools are used employing the following technologies: Axial Magnetic Flux Flow (MFL), Ultrasonic Straight-Beam, Angle-bean for axial cracks, and Circumferential for circumferential cracks, and Inertial Geometry Pig for XYZ data.
- **Ocensa:** Has divided its four segments into eight sectors. The inspections performed are not continuous but rather it conducts individually scheduled and contracted inspections of these sectors using specific technologies. During 2022 , an inspection cycle of 65% of the pipeline was completed using ultrasound technology to identify specific anomalies. In 2022, the remaining 35% of the pipeline was inspected.
- **ODL/BIC:** The pipeline is inspected using inline inspection (ILI) technology and direct inspection following the maintenance plan.
- **ODC:** E100% of the pipeline is inspected every year. For pipeline inspections, ODC implements two techniques: 1) inspections using the ILI tool (which identifies loss of thickness and initial mapping); and 2) inspections using PaP (which detects cathodic protection).
- **Progasur:** The company inspects 100% of its network and restated the 2021 data with the new information available.

EM-MD-540a.3	Number of (1) accident releases and (2) non-accident releases (NARs) from rail transportation.			
	O&G Transport and Logistics (Midstream)			
Metric	1		2	
Unit	Number		Number	
Year	2021	2022	2021	2022
Cenit	Not applicable because the subsidiaries do not have or use rail transportation.			
Ocensa				
ODL				
OBC				
ODC				
Progasur				

RT-CH-540a.2	Number of transport incidents
	Chemicals
Metric	1
Unit	Number
Year	2021-2022
Esenttia	0

EM-EP-540a.2	Description of management systems used to identify and mitigate catastrophic and tail-end risks
	Oil and Gas Exploration and Production
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecopetrol S.A.	In the Ecopetrol Group, process safety seeks to achieve the best operational performance by intervening in the primary technologically instigated risk by applying the necessary measures and actions to prevent and mitigate the release of hazardous substances or energy. The effect of these measures is seen in the reduction of operational and occupational incidents that potentially could cause a major accident or disaster, providing an effective management framework for Ecopetrol's operations and demonstrating the commitment to the first principle of the Cultural Declaration: Life First. Process safety is emphasized within the TESG pillar of Ecopetrol's 2040 Strategy. Ecopetrol's goal is to become a benchmark in industrial safety worldwide, adopting best practices and developing operations under tolerable process safety risk levels. To achieve this, the company focuses its work on four (4) fronts: - Consistency, commitment, and visible leadership in process safety. - Risk-based process safety management. - Trend analysis and learning from experience. - Management of emerging risks. Additionally, Ecopetrol S.A.'s HSE management system has as a sub-element the integral management of emergencies and disaster management, where the organization defines, implements, controls and upholds objectives, processes, strategies, plans, programs and action protocols necessary to avoid and minimize any potential adverse effects in the event of emergencies or disasters on people, the environment and infrastructure.
Hocol	Hocol prioritizes the lives of people, its environmental impact and the integrity of its assets throughout the life cycle by providing management tools, best engineering practices, and strengthening operational discipline. Hocol's Process Safety Management Manual (MGSPH for its Spanish acronym) is a management tool whose rigorous application becomes a "Line of Defense", identifying hazards and managing risks that could potentially release energy or hazardous material. The MGSPH is structured into 4 fundamental pillars and 12 management elements and applied comprehensively, anticipates the safe conduct of operations, establishing "rules" (standards, guidelines, procedures, practices) that delimit and define acceptable behavior. Additionally, in 2022 the following activities were carried out, among others: • Definition and updating of 6 practices to address and influence people's behavior in a reasonable manner, totaling 15 between 2020 and 2022. • Definition of process safety requirements for the execution of projects. • Execution of 16 risk studies under HAZOP methodology to identify scenarios that could jeopardize the safety of people and business continuity. • Updating instrumentation piping diagrams (P&ID) of 6 production facilities, reaching a total of 16 as of 2021. • Validation of more than 8,500 alarms in 4 production facilities under ISO 18.2 standard. • Completed 1st Process Safety Workshop with allies, combining efforts and management in process safety and offering a work plan for 2023. The proactive participation of contractor partners in risk management is practiced during risk workshops and decision-making to bring all risk levels to the lowest rationally possible point.

EM-EP-540a.2	Description of management systems used to identify and mitigate catastrophic and tail-end risks
	Oil and Gas Exploration and Production
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Ecopetrol Permian	The following are some examples of management systems implemented by the operator: - HAZOPS: A systematic assessment tool used to identify and address potential hazards in industrial processes before an incident occurs that could affect the safety of people or assets and hinder productivity. It evaluates the "what ifs" and is performed prior to construction. - PSSR (Pre-Startup Safety Review): Consists of a checklist of items that must be thoroughly tested before a process is started or restarted to ensure that potential hazards have been adequately addressed. - MOC Process: Used to ensure that environmental, health and safety risks are carefully assessed and controlled before significant changes are implemented. The MOC process allows companies to identify potential new hazards that could result from these changes. - Daily JSA (Job Safety Analysis): A procedure that integrates accepted safety and health principles and practices into a particular job task or operation. - RCFA (Root Cause Failure Analysis): The process by which the root cause(s) of a specific failure is determined to decide what corrective actions should be implemented to alleviate or reduce the likelihood of the problem reappearing because of the same root cause(s). - Pre-JAS (Pre-Job Safety Analysis): The analysis of risks before the execution of some task. - Work permits. - Well-control training and certification.
Ecopetrol America	Ecopetrol America's workforce is primarily office staff and therefore a management system is not required, but components of an HSE management system are employed to ensure a safe workplace for all workers. For all joint venture operations, Ecopetrol ensures that the operator has the required HSE management system (SEMS for its Spanish acronym) in place before beginning operations.
Ecopetrol Brasil	Ecopetrol Brasil has aligned its identified business risks with Ecopetrol S.A.'s.

EM-MD-540a.4	Discussion of management systems used to integrate a culture of safety and emergency pre-paredness throughout the value chain and throughout project lifecycles
O&G Transport and Logistics (Midstream)	
Metric	**Discussion and analysis**
Year	**2022**
Cenit	Cenit has defined a strategy for Operational Emergency Preparedness and Response based on its evaluation of legal requirements, risk and consequence assessment, lessons learned, incident investigation and the process implementation itself, among others, and includes the designation of necessary elements to ensure emergency response, consequence mitigation and compliance with legal requirements. Emergency management includes action before, during and after the occurrence of an undesired event. Preparedness is focused on having adequate response capability including the availability of technical and human resources at different levels, in sufficient quantity and quality, as well as the designation of strategies and procedures for response, and joint work with external parties (State, communities and industry) according to the possible emergency scenarios identified in each facility. The response involves implementing previously defined strategies and procedures, making use of the resources available for this purpose, and ensuring that, once an event has materialized, its effect is mitigated and, therefore, consequences are minimized as much as possible. All these guidelines are included in the document SOS-ED-010- Standard for Preparedness and Response to Operational Emergencies, which is provided in the Annual PRE Plan of each facility, and foresees the execution, follow-up and response evaluation to materialized events.
Ocensa	The Safety and Emergency Management System in the value chain includes constant maintenance and reinforcement initiatives in three areas to prepare a timely response: — Organization and coordination — Training and coaching and — Equipment and facilities. Interactions between these areas and stakeholders that may be involved in emergency response are recognized through: — Standards and guidelines: Ocensa's safety and emergency management system fully complies with the national regulatory framework and is aligned with technical guidelines such as ISO 22300:2021, ISO 22301:2019, ISO 22320:2013, BS 11200 and NFPA 1600. — Organization and coordination: Preparation tools are developed for emergency response, including continuity plans, emergency and contingency plans, specific risk analyses, disaster scenario procedures, mutual aid agreements, and local emergency response plans and protocols. — Training and coaching: Annual workshop cycles are held to foster a culture of safety and emergency preparedness; wherein emergency plan strategies are practiced for each risk scenario. — Equipment and facilities: The company seeks to preserve and improve the availability of elements and infrastructure for emergency response in stations and offshore operations, including inspection routines, maintenance and renewal of specialized equipment, as well as the validation of control point cards. — Communication: Ocensa's emergency plans, PMA and disaster management plan is shared with the Community Action Boards (JAC for its Spanish acronym) and fishermen's associations in the areas of direct influence. — Joint efforts between the workforce and management: The management of response to address any eventuality are the responsibility the Support Team, the Local Command and the Executive Committee, who work together with the workforce.
ODL/OBC	The strategy for prevention, preparedness and response to emergencies and business continuity is a continuous cycle that extends throughout the value chain with contractors and subcontractors and includes: inspections of facilities, right-of-way, control points for spill contingencies, station infrastructure, portable and fixed response equipment, maintenance and operation of resources, purchase and renewal of structural and forest fire response equipment. The emergency preparedness program is committed to an annual work plan that includes: emergency response and maintenance of equipment to ensure its availability and reliability; information gathering for updating the emergency and contingency plan (PEC for its Spanish acronym); planning and conducting office and field drills for each system; relations with communities and territorial authorities to communicate the emergency and contingency plan (PEC) and disaster risk management plan (PGRD); creation of brigades and training plan for their members; specialized practices in spill control, barrier installation, and fire control for each system, with the participation of the relevant auxiliary agencies. The Incident Command System serves as the model to coordinate emergency preparedness (ICS), which is based on the USAID/BHA model. The structure for emergency, crisis and business continuity management is strategic and tactical-operational and entails the participation of the CMT (crisis management team) and the IMT (incident management team) and its task force (emergency brigades at each station).

EM-MD-540a.4	Discussion of management systems used to integrate a culture of safety and emergency pre-paredness throughout the value chain and throughout project lifecycles
O&G Transport and Logistics (Midstream)	
Metric	**Discussion and analysis**
Year	**2022**
ODC	Through the contractor management program of the occupational health and safety system, each of the partner companies with which the ODC has currently contracted is monitored through monthly and/or quarterly meetings, field inspections at different work stations and HSE evaluations to confirm the emergency and contingency plans of each and their interface with the Emergency and Contingency Plan of the ODC facilities and their prevention management included in their annual planning (training, drills, inspections, etc.). Throughout the year, two drills were carried out with partners, communities were trained in first response, and major accident analyses were begun to adjust disaster scenarios and emergency and contingency plans. The Company also worked on updating the inventory of emergency response equipment and have a purchase plan to replace obsolete equipment.
Progasur	The company has a risk and disaster management plan that includes risk awareness and reduction processes, as well as disaster management (PEC), based on the assessment of natural, anthropic, socio-natural and operational hazards that are possible and/or credible in the infrastructure. The main objective of this assessment is to define and record the identification, reduction and mitigation actions required to manage the risk associated with the operation and conditions of the gas pipelines. Likewise, Progasur has established preventive and corrective activities that anticipate efficient and safe reactions to an incident that compromises the normal development of activities, the safety of personnel, or the provision of service and business continuity.

EM-RM-540a.3	Discussion of measurement of Operating Discipline and Management System Performance through Tier 4 Indicators
Refining and Marketing	
Metric	**1**
Unit	**Discussion and analysis**
Year	**2022**
Refinería de Barrancabermeja **Refinería de Cartagena**	The refineries monitor and handle process safety risk management through the following indicators and in the following scenarios: At Management Level: Incident Severity Indicator SP N1. At the Operational level: Incident Severity Indicator SP N1, SP N1 Index, VH-H risk reduction index.

Topic:	The Integrity of Gas Delivery Infrastructure		
IF-GU-540a.1	Number of (1) reportable pipeline incidents, (2) Corrective Action Orders (CAO), and (3) Notices of Probable Violation (NOPV)		
	Gas Distributors		
Metric	**1**	**2**	**3**
Unit	**Number**	**Number**	**Number**
Year	**2021-2022**	**2021-2022**	**2021-2022**
Alcanos	0	0	0
Gases del Oriente	0	0	0
Metrogas	0	0	0

IF-GU-540a.2	Percentage of distribution pipeline that is (1) cast and/or wrought iron and (2) unprotected steel	
	Gas Distributors	
Metric	**1**	**2**
Unit	**Percentage by length**	**Percentage by length**
Year	**2021-2022**	**2021-2022**
Alcanos	100	0
Gases del Oriente	0	0
Metrogas	100	0

- **Gases del Oriente:** The entire steel pipeline system in the Gases del Oriente distribution system is coated with coal tar in some sections, with Fusion Bonded Epoxy (FBE or dual FBE) epoxy coating and, additionally, the system has an impressed current cathodic protection system. Gases del Oriente does not have puddled cast iron or unprotected steel piping.

IF-GU-540a.3	Percentage of gas (1) transmission and (2) distribution pipelines inspected		
	Gas Distributors		
Metric	**1**	**2**	
Unit	**Percentage by length**	**Percentage by length**	
Year	**2021-2022**	**2021**	**2022**
Alcanos	Not applicable	70	30
Gases del Oriente		100	100
Metrogas		28	31

- **General:** The companies do not have transmission pipelines are they are natural gas distributors and marketers.
- **Alcanos:** The decrease in the percentage of gas distribution pipelines inspected is due to the company's policy aimed at guaranteeing the safety of the infrastructure, above the standards established in NTC3728, which recommends performing inspections of secondary networks at least every 5 years. The organization established a policy for monitoring and patrolling activities considering the age of the distribution infrastructure. Therefore, for networks older than 20 years, inspections are carried out every 3 years, every 2 years for networks between 10 and 20 years, and every 2 years for networks older than 10 years.

IF-GU-540a.4	Description of efforts to manage the integrity of gas delivery infrastructure, including risks related to safety and emissions
	Gas Distributors
Metric	**1**
Year	**2022**
Alcanos	Alcanos de Colombia has a preventive maintenance program focused on the integrity of the distribution networks, classified according to their structure - polyethylene and steel of different diameters - conducting monitoring and patrol activities to guarantee the existence, tightness and operation thereof, with a periodicity based on the age of the network. For the steel network, there are impressed current cathodic protection systems, sacrificial anodes and coupons to validate the integrity of the pipeline. The company also has an Occupational Health and Safety Management System, supported by an HSEQ team with nationwide coverage and an environmental management program, a risk management plan, and a risk committee to respond immediately to any emergency. It has a highly trained work team to respond to emergencies through planning, identification, and establishment of controls, emergency brigade structures and a crisis committee to respond to emergency events and thus ensure the continuity of operations. It also has an administrative and operational field staff that is highly experienced and employs an updated training plan, The company has highly experienced administrative and operational field personnel with vast experience and a training plan in place, as well as providing training for all workers with an HSE focus and the development of specific competencies with the requisite updating thereof. It also ensures operational safety through procedures, safety standards, safe work analysis and work certifications for critical and/or high-risk operations, as well as monitoring and supervision of activities. It also has a contingency plan for the gas distribution systems, and communication channels through emergency service lines 018000918808 and 164, which are directed to and received at the Contact Center and operations center (CDO), providing 24/7 response. Likewise, the company has competent and qualified administrative and operational personnel for emergency response, with their respective vehicles, equipment and tools for safety management and emergency response. Alcanos de Colombia has procedures and instructions for risk management, focused on mitigation and emergency preparedness, as well as a timely response to possible eventualities that may occur in the areas of influence. Therefore, a mutual aid plan has been established with external organizations and strategic allies and has in place cooperation agreements with contractors belonging to aqueducts, sewers, electrical works or other civil works, sharing information about projects and distribution networks to avoid damage to the company's infrastructure. Additionally, it allocates the necessary resources such as highly qualified personnel, technical and financial resources, certified equipment and tools, and infrastructure security systems, to guarantee the mitigation of emergencies and the assurance of processes. The company also has an approved budget for Operation and Maintenance expenses, which includes preventive activities to study the state of the network; the quality of the assets is also maintained through new investments to guarantee the quality of service provision under the criteria of financial sufficiency and economic efficiency.
Gases del Oriente	To manage the integrity of the gas supply infrastructure, Gases del Oriente implements the following measures: 1. Maintenance training for the O&M manager. 2. Personnel training through the SENA (National Training Service). 3. Training by suppliers. 4. Participation in the Sustainable Gas work group that involves all the national distribution companies, where good practices in the execution of O&M processes and regulatory issues are shared, 5. Conducting network monitoring activities, indirect integrity studies (Closed Interval Potential Surveys - CIPS, Pipeline Current Mapper - PCM-ACVG, Instant ON-OFF, Guided Waves, coating repair, gravimetric coupons, internal cleaning with scrapers, chromatography analysis). 6. Performing annual drills for fuel gas leaks; annual national earthquake drill; internal training and from the parent company. 7. Operation and maintenance program focused on preserving the integrity of the assets, which has budgetary approval from the interested parties. 8. Operator recertification process, such as CNG operators, gas technology, certification in labor competence in internal installations and in thermofusion for polyethylene pipes. Additionally, network patrol activities are carried out for right-of-way inspection, network monitoring to locate and repair leaks, training with utility companies to prevent and mitigate interventions on the network, training with security agencies, and active participation in the departmental risk management committee. To prevent fugitive emissions, the company has preventive and corrective activity that evaluates the tightness of the networks, such as network monitoring. To control deliberate emissions, controlled burns are carried out at venting points. Furthermore, in high-consequence sites, the organization identifies the location of pipelines and other facilities using signage with the emergency line phone number and company name clearly noted.

IF-GU-540a.4	Description of efforts to manage the integrity of gas delivery infrastructure, including risks related to safety and emissions
	Gas Distributors
Metric	**1**
Year	**2022**
Metrogas	The procedures to maintain the integrity of gas pipelines in Metrogas consists of the execution of CIPS and PCM studies, corrosion coupons, internal cleaning and monitoring of the primary natural gas network, five-yearly recertification of compressed natural gas storage equipment and measurement of the thickness of lines in compression and decompression stations, communicating with risk agencies, a contingency plan for emergencies, auditing, training in different techniques to maintain the safety of the asset. Additionally, the company manages health and human safety risks, plans annual drills to involve the community and risk management agencies, has an emergency hotline and a call center, has a 7/24 response to any emergency that may arise, with timely attention within the established timelines, and performs predictive maintenance studies and takes the necessary corrective measures to mitigate possible damage caused to the infrastructure and integrity of the networks to increase the useful life of the asset. PCM: Evaluate the integrity of the steel pipeline coating of the natural gas network, using the PCM or Pipeline Current Mapper technique (verifying the condition of the coating in buried metallic pipelines). CIPS: Closed Interval Potential Inspection; which involves interpreting above-ground pipes (voltage) measurements along the entire length of the line.

Topic:	**Nuclear Safety and Emergency Management**
IF-EU-540a.1	Total number of nuclear power units, broken down by U.S. Nuclear Regulatory Commission (NRC) Action Matrix Column
IF-EU-540a.2	Description of efforts to manage nuclear safety and emergency preparedness
	Electric Utilities
ISA	Not Applicable: These disclosures do not apply to the companies reporting in this subsector, because their operations are in the transmission segment of the value chain and they do not participate in generation or distribution activities.
ISA CTEEP	
ISA REP	
ISA Intercolombia	
ISA Interchile	
ISA Transelca	

Topic:	Grid Resiliency

IF-EU-550a.1	Number of incidents of non-compliance with physical and/or cybersecurity standards or regulations
	Electric Utilities
Metric	**1**
Unit	**Number**
Year	**2021-2022**
ISA	There were no incidents of non-compliance with physical or cybersecurity security standards or regulations in 2022.
ISA CTEEP	
ISA REP	
ISA Intercolombia	
ISA Interchile	
ISA Transelca	

IF-EU-550a.2	(1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days		
	Electric Utilities		
Metric	**1**		
Unit	**Index**		
	1	**2**	**3**
Year	**2021-2022**		
ISA	Not Applicable: These disclosures do not apply to the companies reporting in this subsector, because their operations are in the transmission segment of the value chain and they do not participate in generation or distribution activities. The trunk transmission systems are not representative of the interruptions generated to users, which are predominantly in the distribution systems, a segment in which ISA Interchile does not operate.		
ISA CTEEP			
ISA REP			
ISA Intercolombia			
ISA Interchile			
ISA Transelca			

SASB Metrics Summary

				Sector - Subsector	EM-EP	EM-MD	EM-RM	RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS
					Exploration & Production	Midstream	Refining & Marketing	Chemicals	Biofuels	Gas Utilities & Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services
Dimension	**Topic**	**Metric**	**Description of the metric (Summary of the metric)**		**Ecopetrol S.A Hocol S.A Ecopetrol Permian LLC Ecopetrol America LLC Ecopetrol Óleo e Gas do Brasil**	**Cenit Ocensa OBC ODL ODC Progasur**	**Refinería de Barrancabermeja Refinería de Cartagena**	**Esenttia**	**Ecodiesel**	**(Invercolsa) Alcanos Gases de Oriente Metrogas CLC**	**ISA ISA CTEEP ISA REP ISA Intercolombia ISA Interchile ISA Transelca**	**ISA Intervial**	**XM Ecopetrol Trading Asia Pte Ltd**
Environment	**Greenhouse Gas Emissions**	**110a.1**	Gross global Scope1 emissions, percentage methane, percentage covered under emissions-limiting regulations		X	X	X	X			X		
		110a.2	Amount of gross global Scope 1 emissions for type hydrocarbons (EM-EP) Greenhouse gas (GHG) emissions associated with power deliveries (IF-EU) Discussion of long- and short-term strategy or plan to manage Scope 1 emissions.		X	X	X	X			X		
		110a.3			X						X		
		110a.4	Number of clients provide services								X		
	Air Quality	**120a.1**	Air emissions of pollutants, and volatile organic compounds (VOCs)		X	X	X	X	X		X		
		120a.2	Number of incidents of non-compliance associated with air quality permits, standards, and regulations population (RR-BI)				X		X				
	Energy management	**130a.1**	1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy					X					
	Water Management	**140a.1**	(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress Mely High Baseline Water Stress		X		X	X	X		X		
		140a.2	Volume of produced water and flowback generated; percentage (1) discharged, (2) injected, (3) recycled; hydrocarbon content in discharged water (EM-EP) Number of incidents of non-compliance associated with water quality permits, standards and regulations (RT-CH)(IF-EU) *Description of water management risks and discussion of strategies and practices to mitigate those risks(RR-BI)		X		X	X	X		X		
		140a.3	Percentage of hydraulically fractured wells for which there is public disclosure of all fracturing fluid chemicals used (EM-EP) *Description of water management risks and discussion of strategies and practices to mitigate those risks (RT-CH) (IF-EU) *Number of incidents of non-compliance associated with water quality permits, standards and regulations(RR-BI)		X			X	X		X		
		140a.4	Percentage of hydraulic fracturing sites where ground or surface water quality deteriorated compared to a baseline		X								
	Hazardous Materials Management	**150a.1**	Amount of hazardous waste generated, percentage recycled (EM-RM) (RT-CH) Amount of coal combustion residuals (CCR) generated, percentage recycled (IF-EU)				X	X			X		

Activity Metrics

			Sector - Subsector	EM-EP	EM-MD	EM-RM	RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS
				Exploration & Production	Midstream	Refining & Marketing	Chemicals	Biofuels	Gas Utilities & Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services
Dimension	**Topic**	**Metric**	**Description of the metric (Summary of the metric)**	**Ecopetrol S.A Hocol S.A Ecopetrol Permian LLC Ecopetrol America LLC Ecopetrol Óleo e Gas do Brasil**	**Cenit Ocensa OBC ODL ODC Progasur**	**Refinería de Barrancabermeja Refinería de Cartagena**	**Esenttia**	**Ecodiesel**	**(Invercolsa) Alcanos Gases de Oriente Metrogas CLC**	**ISA ISA CTEEP ISA REP ISA Intercolombia ISA Interchile ISA Transelca**	**ISA Intervial**	**XM Ecopetrol Trading Asia Pte Ltd**
		150a.2	(1) Number of underground storage tanks (USTs), (2) number of UST releases requiring cleanup, and (3) percentage in states with UST financial assurance funds (EM-ER) Total number of coal combustion residual (CCR) impoundments, broken down by hazard potential classification and structural integrity assessment (IF-EU)			X				X		
	Biodiversity Impacts	**160a.1**	Description of environmental management policies and practices for active sites (EM-MD) Number of incidents of non-compliance with environmental permits, standards and regulations (IF-EN)		X						X	
		160a.2	Number and aggregate volume of hydrocarbon spills, volume in Arctic, volume impacting shorelines with ESI rankings 8-10, and volume recovered (EM-EP) Percentage of land owned, leased, and/or operated within areas of protected conservation status or endangered species habitat (EM-MD) Discussion of processes to assess and manage environmental risks associated with project design, siting and construction (IF-EN)	X	X						X	
		160a.3	Percentage of (1) proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat (EM.EP) Terrestrial acreage disturbed, percentage of impacted area restored (EM-MD)	X	X							
		160a.4	Number and aggregate volume of hydrocarbon spills, volume in Arctic, volume in Unusually Sensitive Areas (USAs), and volume recovered (EM-MED)		X							
Social Capital	**Security, Human Rights & Rights of Indigenous Peoples**	**210a.1**	Percentage of (1) proved and (2) probable reserves in or near areas of conflict	X								
		210a.2	Percentage of (1) proved and (2) probable reserves in or near indigenous land	X								
		210a.3	Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict	X								
	Community Relations	**210b.1**	Discussion of process to manage risks and opportunities associated with community rights and interests (EM-EP y RT-CH 210a.1)	X			X					
		210b.2	Number and duration of non-technical delays	X								
	Data Security	**230a.1**	Description of approach to identifying and addressing data security risks									X

			Sector - Subsector	EM-EP	EM-MD	EM-RM	RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS
				Exploration & Production	Midstream	Refining & Marketing	Chemicals	Biofuels	Gas Utilities & Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services
Dimension	**Topic**	**Metric**	**Description of the metric (Summary of the metric)**	**Ecopetrol S.A Hocol S.A Ecopetrol Permian LLC Ecopetrol America LLC Ecopetrol Óleo e Gas do Brasil**	**Cenit Ocensa OBC ODL ODC Progasur**	**Refinería de Barrancabermeja Refinería de Cartagena**	**Esenttia**	**Ecodiesel**	**(Invercolsa) Alcanos Gases de Oriente Metrogas CLC**	**ISA ISA CTEEP ISA REP ISA Intercolombia ISA Interchile ISA Transelca**	**ISA Intervial**	**XM Ecopetrol Trading Asia Pte Ltd**
		230a.2	Description of policies and practices relating to collection, usage, and retention of customer information									X
		230a.3	(1) Number of data breaches, (2) percentage involving customers' confidential business information (CBI) or personally identifiable information (PII), (3) number of customers affected									X
	Energy Affordability	**240a.1**	Average retail electric rate for (1) residential, (2) commercial, and (3) industrial customers						X	X		
		240a.2	Typical monthly electric bill for residential customers for (1) 500 kWh and (2) 1,000 kWh of electricity delivered per month						X	X		
		240a.3	Number of residential customer electric disconnections for non-payment, percentage reconnected within 30 days						X	X		
		240a.4	Discussion of impact of external factors on customer affordability of electricity, including the economic conditions of the service territory						X	X		
	Structural Integrity & Safety	**250a.1**	Amount of defect- and safety-related rework costs								X	
		250a.2	Total amount of monetary losses as a result of legal proceedings associated with defect- and safety-related incidents								X	
Human Capital	**Workforce Health & Safety**	**320a.1**	(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR)	X		X	X			X	X	
		320a.2	Discussion of management systems used to integrate a culture of safety throughout the exploration and production lifecycle	X		X	X			X		
	Workforce Diversity & Engagement	**330a.1**	Percentage of gender and racial/ethnic group representation for (1) executive management and (2) all other employees									X
		330a.2	(1) Voluntary and (2) involuntary turnover rate for employees									X
		330a.3	Employee engagement as a percentage									X
Business model and innovation	**Product Specifications & Clean Fuel Blends**	**410a.2**	Total addressable market and share of market for advanced biofuels and associated infrastructure			X						
		410a.3	Volumes of renewable fuels for fuel blending: (1) net amount produced, (2) net amount purchased			X						
	Product Design for Use-phase Efficiency	**410a.1**	Revenue from products designed for use phase resource efficiency				X					
	Lifecycle Emissions Balance	**410a.1**	Lifecycle greenhouse gas (GHG) emissions, by biofuel type					X				
	Lifecycle Impacts of Buildings & Infrastructure	**410a.1**	Number of (1) commissioned projects certified to a third-party multi-attribute sustainability standard and (2) active projects seeking such certification								X	
		410a.2	Discussion of process to incorporate operational-phase energy and water efficiency considerations into project planning and design								X	

				Sector - Subsector	EM-EP	EM-MD	EM-RM	RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS
					Exploration & Production	Midstream	Refining & Marketing	Chemicals	Biofuels	Gas Utilities & Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services
Dimension	**Topic**	**Metric**	**Description of the metric (Summary of the metric)**		**Ecopetrol S.A Hocol S.A Ecopetrol Permian LLC Ecopetrol America LLC Ecopetrol Óleo e Gas do Brasil**	**Cenit Ocensa OBC ODL ODC Progasur**	**Refinería de Barrancabermeja Refinería de Cartagena**	**Esenttia**	**Ecodiesel**	**(Invercolsa) Alcanos Gases de Oriente Metrogas CLC**	**ISA ISA CTEEP ISA REP ISA Intercolombia ISA Interchile ISA Transelca**	**ISA Intervial**	**XM Ecopetrol Trading Asia Pte Ltd**
	Safety & Environmental Stewardship of Chemicals	**410b.1**	(1) Percentage of products that contain Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment					X					
		410b.2	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact					X					
	Climate Impacts of Business Mix	**410b.1**	Amount of backlog for (1) hydrocarbon related projects and (2) renewable energy projects									X	
		410b.2	Amount of backlog cancellations associated with hydrocarbon-related projects									X	
		410b.3	Amount of backlog for non-energy projects associated with climate change mitigation									X	
	Genetically Modified Organisms	**410c.1**	Percentage of products by revenue that contain genetically modified organisms (GMOs)					X					
	End-Use Efficiency & Demand	**420a.1**	Customer gas savings from efficiency measures, by market							X	X		
		420a.2	Percentage of electric load served by smart grid technology								X		
		420a.3	Customer electricity savings from efficiency measures, by market								X		
	Reserves Valuation & Capital Expenditures	**420a.1**	Sensitivity of hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions		X								
		420a.2	Estimated carbon dioxide emissions embedded in proved hydrocarbon reserves		X								
		420a.3	Amount invested in renewable energy, revenue generated by renewable energy sales		X								
		420a.4	Discussion of how price and demand for hydrocarbons or climate regulation influence the capital expenditure strategy for exploration, acquisition and development of assets		X								
	Sourcing & Environmental Impacts of Feedstock Production	**430a.1**	Discussion of strategy to manage risks associated with environmental impacts of feedstock production						X				
		430a.2	Percentage of biofuel production third-party certified to an environmental sustainability standard						X				

			Sector - Subsector	EM-EP	EM-MD	EM-RM	RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS
				Exploration & Production	Midstream	Refining & Marketing	Chemicals	Biofuels	Gas Utilities & Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services
Dimension	**Topic**	**Metric**	**Description of the metric (Summary of the metric)**	**Ecopetrol S.A Hocol S.A Ecopetrol Permian LLC Ecopetrol America LLC Ecopetrol Óleo e Gas do Brasil**	**Cenit Ocensa OBC ODL ODC Progasur**	**Refinería de Barrancabermeja Refinería de Cartagena**	**Esenttia**	**Ecodiesel**	**(Invercolsa) Alcanos Gases de Oriente Metrogas CLC**	**ISA ISA CTEEP ISA REP ISA Intercolombia ISA Interchile ISA Transelca**	**ISA Intervial**	**XM Ecopetrol Trading Asia Pte Ltd**
Leadership and governance	**Business Ethics & Transparency**	**510a.1**	Percentage of (1) proved and (2) probable reserves (EM-EP), (1) Number of active projects and (2) backlog (IF-EN) in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	X							X	
		510a.2	Description of policies and practices for prevention of (1) bribery and corruption, and (2) anti-competitive behaviour in the project bidding processes (EM-EP)/ (IF-EN). Total amount of monetary losses as a result of legal proceedings associated with charges of (1) bribery or corruption and (2) anticompetitive practices (IF-EN) (EM-EP)	X							X	
		510a.3									X	
	Professional Integrity and Pricing Integrity & Transparency	**510a.1**	Description of approach to ensuring professional integrity									X
		510a.2	Total amount of monetary losses as a result of legal proceedings associated with professional integrity (SV-PS), associated with national pipeline and storage regulations (EM-MD) and with price fixing or price manipulation (EM-RM)									X
		520a.1			X							
						X						
	Management of the Legal & Regulatory Environment	**530a.1**	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	X		X	X					
		530a.2							X			
	Critical Incident Risk Management	**540a.1**	Process Safety Event (PSE) rates for Loss of Primary Containment (LOPC) of greater consequence (Tier 1). Description of management systems used to identify and mitigate catastrophic and tail-end risks	X	X	X	X					
		540a.2		X	X	X	X				X	
		540a.3	Number of (1) accident releases and (2) nonaccident releases (NARs) from rail transportation		X	X					X	
		540a.4	Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout the value chain and throughout project lifecycles		X							
	Integrity of Gas Delivery Infrastructure	**540a.1**	Number of (1) reportable pipeline incidents, (2) corrective actions received and (3) violations of pipeline safety statutes3								X	
		540a.2	Percentage of distribution pipeline that is (1) cast or wrought iron and (2) unprotected steel (IF GU) and number of (1) accident releases and (2) nonaccident releases (NARs) from rail transportation2(EM-MD)		X						X	
		540a.3									X	
		540a.4	Description of efforts to manage the integrity of gas delivery infrastructure, including risks related to safety and emissions								X	

			Sector - Subsector	EM-EP	EM-MD	EM-RM	RT-CH	RR-BI	IF-GU	IF-EU	IF-EN	SV-PS
				Exploration & Production	Midstream	Refining & Marketing	Chemicals	Biofuels	Gas Utilities & Distributors	Electric Utilities	Engineering & Construction Services	Professional & Commercial Services
Dimension	**Topic**	**Metric**	**Description of the metric (Summary of the metric)**	**Ecopetrol S.A Hocol S.A Ecopetrol Permian LLC Ecopetrol America LLC Ecopetrol Óleo e Gas do Brasil**	**Cenit Ocensa OBC ODL ODC Progasur**	**Refinería de Barrancabermeja Refinería de Cartagena**	**Esenttia**	**Ecodiesel**	**(Invercolsa) Alcanos Gases de Oriente Metrogas CLC**	**ISA ISA CTEEP ISA REP ISA Intercolombia ISA Interchile ISA Transelca**	**ISA Intervial**	**XM Ecopetrol Trading Asia Pte Ltd**
	Operational Safety, Emergency Preparedness & Response	**540a.1**	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)					X				
	Nuclear Safety & Emergency Management	**540a.1**	Total number of nuclear power units, broken down by results of most recent independent safety review							X		
		540a.2	Description of efforts to manage nuclear safety and emergency preparedness							X		
Activity Metrics		**000.A**	Activity Metrics	X	X	X	X	X	X	X	X	X
		000.B	Activity Metrics	X		X		X	X	X	X	X
		000.C	Activity Metrics	X				X	X			
		000.D	Activity Metrics	X	X			X	X	X	X	
		000.E	Activity Metrics							X		

In the 2022 SASB report of Ecopetrol S.A., metrics are grouped by theme for the development of each material issue. The information from subsidiaries is categorized by sector. Considering that multiple sectors and/or segments may develop metrics for the same issue, they will be consolidated to enhance the understanding of the chapter.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