

2023

TCFD

REPORT





I am pleased to present our fourth report, which was issued following the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). It

reflects the efforts and commitment of the Ecopetrol Group to manage climate change-related risks and opportunities during 2023 and the first half of 2024.

This report presents our key milestones in our corporate governance model as well as the progress we have made towards implementing our 2040 Strategy, which tackles global T ESG (SOSTECnibilidad®) challenges and underlines our commitment to the country's energy security. It also discloses the processes we implement to identify, evaluate, and manage these risks and opportunities as well as the metrics and goals we employ for their monitoring.

In the Ecopetrol Group, we continue to make headway towards the decarbonization of our operations and to seek and build business opportunities that promote the use of clean energies without eroding the competitiveness of our hydrocarbon business line and, in particular, continuing to increase our gas supply. At Ecopetrol, we are working towards a just energy transition process, laboring steadily and resolutely to become a company that has net-zero carbon emissions by 2050 (Scopes 1 and 2), reduce 55% of methane emissions by 2030, and incorporate 900 MW of clean energy from non-conventional renewable energy sources by 2025. These goals are framed within our strategic pillar, which aims to generate value through T ESG.

Along these lines, we invested approximately USD 432 million in 2023 and USD 249 million in

the first semester of 2024 in projects focused on water-saving initiatives in operations and warding off the perils of climate change through renewable energy projects, energy efficiency, and other innovations to achieve the goals proposed in our 2040 Strategy.

We are proud members and early adopters of the Task Force on Climate-related Financial Disclosures (TCFD) recommendations. Moreover, throughout this document, we refer to complementary reporting systems that provide additional information, thoroughness, and detail, such as the 2023 Integrated Management Report, the 20-F Report filed with the U.S. Securities and Exchange Commission (SEC), and the Sustainability Accounting Standards Board metrics report (SASB), among others.

Finally, I would like to underscore our commitment and dedication to finding concrete solutions that will benefit not only our business but also the country and the global fight against the climate crisis.

Ricardo Roa
President / CEO
Ecopetrol Group

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01

GOVERNANCE



1. Governance



For the Ecopetrol Group, corporate governance is a valuable asset, helping us ensure the sustainability of our business lines and a driver for the execution of our 2040 Strategy, "Energy that Transforms."

The corporate governance model of the Ecopetrol Group (EG) brings to fruition the set of rules and practices for decision making implemented by Ecopetrol's governing bodies, as well as the mechanisms to work jointly and relate with the companies that are part of the Ecopetrol Group.

For 2023, Ecopetrol focused on analyzing and defining key issues to fulfill the 2040 Strategy "Energy that Transforms" by implementing a robust corporate governance model, which provides the elements and tools designed to attain a unity of purpose and direction among the EG.

This governance structure establishes that the EG will be managed through three (3) business lines whose foundations are structured according to the energy transition strategy. These are:

- Hydrocarbons
- Energies for the Transition
- Energy Transmission, Toll Roads, and Telecommunications

In 2024, seeking to propel further the energy transition, Ecopetrol has reoriented its organizational structure by redefining its Low Emission Solutions line towards Energies for the Transition.

1.1 Oversight by the Board of Directors of Ecopetrol S.A. of climate-related risks and opportunities

Profile Board of Directors members

The members of the Board of Directors have diverse skills, professional experience, and business qualifications. The Succession Policy and the Competencies and Experience Matrix of the Board of Directors incorporate, among others, the requirements for performing their duties, classified into primary, complementary, and desirable criteria. The complementary requirements related to climate change include the following noteworthy traits:

Table 1. Requirements for Board Members

Complementary Requirements	As of June 30, 2024
Health, safety and/or environment	7 members of the Board of Directors
Energy industry and/or energy transition	7 members of the Board of Directors
Sustainability	6 members of the Board of Directors
Technology and/or innovation	3 members of the Board of Directors

For additional information on the members of the Board of Directors and their competencies, please refer to the [2023 Integrated Management Report](#) (chapter About the Organization, pp. 29-47) and the section on the [Board of Directors](#) on our corporate website.

The Board of Directors continues to broaden its understanding and expertise of climate change and energy transition, including the participation of certain Board members in 2023 in:

- The II Great ACP Oil and Gas Forum. "Sustainability Facts" hosted by the Colombian Oil and Gas Association, highlighting the subjects (i) Roadmap to transition, (ii) Social energy justice, (iii) Decarbonization, (iv) Adapting for climate change, (v) Sustainable mobility, among others.
- The CERAWeek conference organized by S&P Global addressed issues related to economic growth and energy transition, decarbonization of operations, corporate strategies, and development of indicators associated with environmental factors, among others.
- emissions, and climate and sustainability, among others.
- The 2024 ARPEL Naturgas Week, whose theme was "Driving fair energy transitions for Latin America and the Caribbean", organized by the Association of Oil, Gas and Renewable Energy Companies of Latin America and the Caribbean (ARPEL) and the Colombian Natural Gas Association (Naturgas). The event focused on evaluating current structural issues of the natural gas industry, international trends, and public and regulatory policies, highlighting the role of natural gas as a critical vector for fulfilling fair energy transitions. Ecopetrol is a member of ARPEL's Energy Transition Committee.

In 2024 to date, the Board of Directors participated in:

- The annual CERAWeek conference explored strategies to handle a rapidly changing energy world. The topics included energy markets, energy markets in transition, supply chains to achieve net zero
- The 2024 ANDESCO Congress, organized by the National Association of Public Utilities and Communications Companies (ANDESCO), a trade association that brings together the

different public utilities companies nationwide. It included seminars on topics related to investments for energy security and transition, Ecopetrol's leadership in the energy transition, energy security and the

supply of energy and gas services, new approaches to the circular economy, and climate change and its impact on electricity transmission, among others.

Board Committees

During 2023, the topics covered and presentations made at the Board of Directors meetings and those of its steering committees addressed general topics and challenges associated with the Ecopetrol Group's strategy in the face of climate change and energy transition in the course of its duties, including:

- i. The Audit and Risk Committee oversees business risks, including issues related to T ESG and the Business Risk Map, which incorporates the risks associated with climate change, water resources, and biodiversity.
- ii. The Corporate Governance and Sustainability Committee supports the analysis and decision-making related to the "Generating Value through T ESG " pillar of the 2040 Strategy. In 2023, it reviewed industry trends related to technological, environmental, social, and governance issues, as well as corporate responsibility, human rights, and corporate governance matters.
- iii. The HSE (Health, Safety & Environment) Committee guides the environmental strategy, including climate change, water management, and industrial and process health and safety issues. In 2023, it reviewed the energy transition, reducing GHG emissions, hydrogen roadmaps, and the methane reduction target.
- iv. During the course of the year, the Technology and Innovation Committee studied issues related to cybersecurity, science, technology and innovation, and the digital agenda.
- v. The Business Committee assesses the allocation of resources for projects and considers risk management in business opportunities and their value generation and strategic relevance. During 2023, it analyzed the investment plan for 2024-2026, monitored investments and their outlook for 2024, and assigned resources for executing various projects. It also updated the criteria related to capital discipline.
- vi. The Remuneration, Appointments, and Culture Committee reviews and recommends to the Board of Directors issues for its approval related to variable remuneration (VR), including the Ecopetrol Group Balanced Management Scorecard (BSC or TBG for its Spanish acronym) and the Long-Term Incentive Plans (LTIP). In 2023, the Committee reviewed topics related to the succession of Ecopetrol S.A.'s President, the results of the 2022 BSC, and recommended to the Board the approval of the 2024-2026 BSC,

which includes climate-related indicators. For further information on the VR and incentive structure that

includes climate-related objectives, see the "Variable Remuneration" section in this Report.

For further information on the Board of Directors and its Committees, refer to the [2023 Integrated Management Report](#) ("About the Organization" pp. 29-47) and the [Form 20-F Annual Report Filing](#) ("Corporate Structure" section pp. 210-236).

Climate-related subjects, including climate change, water, and biodiversity, are mainly addressed by the HSE Committee. From 2023 to date, the following subjects were addressed:

- Energy transition and hydrogen roadmaps
- HSE digital agenda
- Analysis of the methane emissions reduction target
- Reduction of GHG emissions
- Follow-up of HSE incidents 2023
- Ecopetrol S.A. healthcare system
- HSE performance 2023
- GHG emission reductions and compliance analysis for emission reductions to 2030

Nevertheless, other Board committees address strategic issues involving material environmental matters.

Further information on the topics covered at board con committee meetings is provided in the [2023 Integrated Management Report](#) (pg. 43)

1.2 Management's role in assessing and managing climate-related risks and opportunities

On the path towards energy transition, the Ecopetrol Group has defined the 2040 Strategy "Energy that Transforms" based on four (4) pillars associated with Competitive Returns, Growth with the Energy Transition, Generate Value Through T ESG, and Cutting-edge Knowledge. To achieve this, the Ecopetrol Group has diversified its business portfolio into three (3) business lines: (i) Hydrocarbons, (ii) Energies for the Transition (previously Low Emission Solutions), and (ii) Transmission, Toll Roads, and Telecommunications.

The Company's Senior Management plays a crucial role in the execution of the 2040 Strategy defined by the Board of Directors, especially in the "Generate Value Through T ESG " pillar, by evaluating indicators related to climate change and defining the short and medium-term action plan focused on accelerating and prioritizing the decarbonization of operations through the implementation of energy efficiency projects and initiatives, reduction of fugitive emissions, venting and flaring, incorporation of renewable energies, hydrogen, CCUS (carbon capture, use and storage) and NCS (natural climate solutions), among others. Furthermore, it manages potential physical and transition climate-related, risks, decarbonization, and energy transition.

As a diversified energy group, the Ecopetrol Group participates in all links of the hydrocarbon chain and linear infrastructure, both in energy transmission and road concessions. At the same time, it continues to diversify into businesses that allow it to find new alternatives for the energy transition.

In line with the 2040 Strategy and aiming to position Ecopetrol as a leader in energy diversification in the region, and as part of its transformation process to achieve a more agile and efficient organization, the Board of Directors of Ecopetrol, in its meeting held on June 6, 2024, approved changes to its organizational structure to sustain its value promise to investors and to address stakeholder expectations while promoting prosperity in the country. This will allow the company to uphold the competitiveness of the Hydrocarbons business, further develop and scale the businesses of the Energies for the Transition portfolio, and grow the Energy Transmission, Toll Roads, and Telecommunications business line headed by ISA.

Following the above, the Low Emission Solutions business line was transformed into Energies for the Transition, with the objective of driving a fair energy transition process, managing a portfolio that includes natural gas and LPG, biogas, hydrogen, carbon capture, storage and use, renewable energies and energy management, among others. Below is a graphical representation of the main corporate bodies and their duties and responsibilities regarding climate-related issues (see Figure 1):

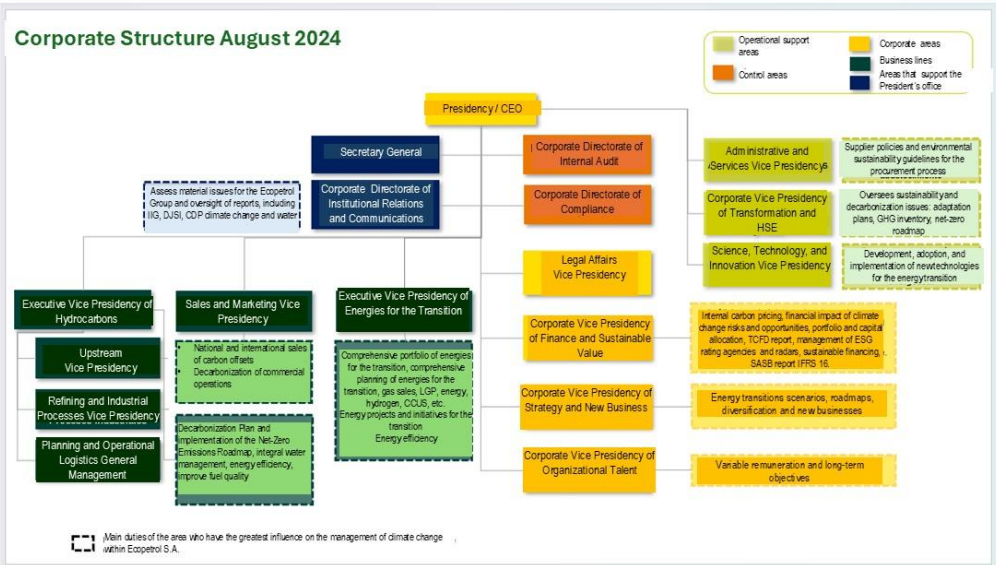


Figure 1: Ecopetrol governance structure related to climate change to July 2024

The President (CEO)

The President is responsible for directing and managing the Company. He executes and oversees the implementation of the corporate strategy and all operations and activities that are part of the corporate purpose, including climate change-related matters. The Ecopetrol Group's CEO is responsible for the Company's Balanced Scorecard (BSC) and communicating progress to the Board of Directors.

The Executive Committee (ExCo)

The Executive Committee includes nine (9) members, including the President of Ecopetrol and first-level vice presidents.¹ The purpose of the Executive Committee is to monitor the fulfillment of the Ecopetrol Group's strategy, the short and long-term business plan, and strategic and cross-cutting issues for the three business lines. Each business line has its own goals for reducing greenhouse gas emissions (GHG), which are defined in the Strategy. The Committee is also responsible for outlining certain strategic or tactical plans under internal regulations, including the Decarbonization Plan, which defines how the Company's climate ambition will be achieved.

The ExCo also has the responsibility of being knowledgeable about and monitoring the risks defined in the Business Risk Map, which include climate change and energy transition-related risks. Within this framework, the Corporate Vice Presidency of Compliance periodically presents all business risks that have been generally reviewed by the ExCo.

Senior Management

The following is a detailed description of the duties carried out by the vice presidencies with the greatest impact on climate change management in Ecopetrol S.A.:

- Executive Vice Presidency of Hydrocarbons: directs the Company's operations in the Hydrocarbons business line and is responsible for the execution of initiatives concerning the Decarbonization Plan and the implementation of the Net-Zero Emissions Roadmap, as well as achieving objectives to improve fuel quality.
- Executive Vice Presidency of Energies for the Transition: leads the Company's energy transition and oversees the Low Emissions business line. It centers on supporting the ideation, incubation, and maturation of opportunities through the direction, guidance, and monitoring of the integrated strategic plan that includes, among others, natural gas, LPG, biogas, energy, renewables, hydrogen, CCUS, and geothermal energies.
- Corporate Strategy and New Businesses Vice Presidency: designs the corporate strategy by defining new energy transition scenarios and establishing the outlook for each business in line with industry trends and the Group's ambitions. In addition, it focuses on potential new developments for each business line, considering

¹ Executive Vice President of Operations, Corporate Vice President of Finance and Sustainable Value, Corporate Vice President of Strategy and New Business, Legal Vice President, Vice President of Corporate Affairs and General Secretary, Commercial and Marketing Vice President and Low Emissions Solutions Vice President.

diversification, fit, and opportunity. It also represents the Company before the National Government and manages all regulatory changes required to maintain the competitiveness of the businesses and enable the investments associated with the energy transition

- Corporate Vice Presidency of Land Transformation and HSE: from the Climate Change Management area, it guides all climate change, circular economy, and biodiversity-related initiatives, leading the implementation of the Decarbonization Plan and defining the emission reduction and offset goals. It also performs the requisite analysis and follow-up to ensure compliance with the goals, administers the Atmospheric Emissions Management System (SIGEA), defines the overall guidelines for the management of emission offsets, and establishes the actions to adapt to climate change in order to reduce vulnerability and manage climate-related risks.
- Upstream Vice Presidency: recommends, matures, executes, and follows up the implementation of projects related to climate change, decarbonization, integral water management, and energy efficiency, among others, in operations - from exploration to the production fields in the Upstream segment of the Hydrocarbons business line in keeping with the Business Group's strategy.
- Refining and Industrial Processes Vice Presidency: is responsible for energy efficiency in the Downstream segment of the Hydrocarbons business line, as well as for decarbonization initiatives, including reduction of methane and GHG emissions, CO2 storage and low-emission H2 production initiative, integrated water management aligned with the EG's water neutrality strategy, solid waste and circular economy in its operations.

The Company's organizational structure includes additional vice presidencies that also play key roles in climate change management:

- Vice Presidency of Institutional Relations and Communications: ensures the definition and updating of the Ecopetrol Group's material issues, the management of reports and benchmarks (including the IMR, the DJSI, and CDP Climate Change and Water, among others), their coordination and publication; the monitoring and analysis of the "Generate value through T ESG" pillar of 2040 Strategy and the roadmaps of the material elements.
- Corporate Vice Presidency of Compliance: is responsible for directing the policies, guidelines, procedures, and administration of the Integrated Risk Management System, which includes the management of business risks, such as issues associated with climate change and energy transition.
- Sales and Marketing Vice Presidency: ensures the efficient commercialization and management of carbon credits, adding value to the Ecopetrol Group's decarbonization roadmap, particularly concerning the GHG emissions offset strategy. Participates in estimating and verifying the portfolio's product carbon footprint (PCF) and leads the commercialization of the company's carbon offset crude oil and products. Additionally, it monitors, evaluates, and carries out EG's incursion into emerging markets with

products with better environmental performance, such as second-generation biofuels and asphalts with recycled materials.

- Corporate Vice Presidency of Finance and Sustainable Value: it heads portfolio management and capital allocation, evaluates and analyzes the financial impact of climate-related risks and opportunities and sustainable financing alternatives, as well as the relationship with investors such as Climate Action 100+ and Net Zero Asset Managers Initiative, risk rating agencies, and ESG radars (e.g. MSCI, Sustainalytics, among others). It is responsible for the coordination and publication of reports (TCFD and SASB) and models, planning the strategic roadmap from a financial standpoint, and monitoring the financial execution of the sustainability roadmap and its accomplishments as far as delivering sustainable value.
- Science, Technology, and Innovation Vice Presidency: fast-tracks access, adoption, development, and application of knowledge and cutting-edge technologies to address the main challenges of the Ecopetrol Group in its current and future businesses, as well as those needed to meet its TESG objectives throughout the full cycle of research and technological development, applied innovation, digital reinvention, and the swift arrangement of Science, Technology, and Innovation (CT+I) ecosystems.
- Administrative and Services Vice Presidency: leads the decarbonization, waste and materials, water, and biodiversity initiatives in the procurement and services chains, incorporating sustainable criteria in the selection and assessment of suppliers.
- Corporate Vice Presidency of Organizational Talent: attracts, develops, and retains high-performing human talent that leverages the energy transition and ensures the incorporation of cutting-edge skills and knowledge to successfully address the energy transition.

Education on climate change-related issues

The Corporate Vice Presidency of Organizational Talent prepares and provides the information required by the 2040 Strategy to educate and train Ecopetrol Group employees in the basic concepts of climate change, circular economy, energy transition, and decarbonization.

The Ecopetrol University, through the School of Low Emission Solutions, offers education geared towards developing skills for a fair energy transition. In 2023, it implemented the following activities:

- The Energy Transition Forum was attended in person by 350 workers of the Ecopetrol Group and had over 2,560 connections via streaming. The main aim of the Technological Forum was to complement the Energy Transition Plan with a focus on decarbonization, aligned with the TESG goals of the Ecopetrol Group to 2040 based on successful financial structures and international best practices.

- In partnership with the French Petroleum Institute (IFP for its French acronym), a virtual Energy Transition program was carried out with the participation of more than 7,800 Ecopetrol Group workers who were taught about the challenges of energy transition in the global context, the pro and cons of the various renewable technologies, the role of gas, hydrogen, CCUS in the transition and the importance of energy efficiency.
- For its study abroad program alternative, ten employees were selected during 2023 to pursue their master's degrees in subjects related to the energy transition.
- During 2023, the Energy Transition Learning Roadmap was designed and implemented to strengthen skills in the five working segments defined in the 2040 strategy: Circular Economy (wherein 133 individuals participated), Renewable Energies (78 participants), Decarbonization (203 participants), Fuel Quality (50 participants) and Energy Efficiency (178 participants).
- A total of 80 workers were trained to update their knowledge of energy transition regulations and risks.
- Training was provided focused on gas development through the Petrotechnical School and the Offshore Program within the framework of the current Offshore programs, with the participation of over 100 professionals.
- The hydrogen learning pathway was designed, which will be provided as part of the education and training offered in 2024, building upon the skills required by Ecopetrol to ensure knowledge about key issues for developing hydrogen projects as an energy source and its importance in the energy transition.
- Three Social Dialogue workshops were carried out jointly with the Mission to Support the Peace Process of the Organization of American States (MAPP-OAS), targeted mainly at regional professionals of the Procurement and Sustainable Territory Vice Presidencies (Environment and Physical Security) focused on Social Dialogue and Conflict Transformation, Social Dialogue and Consensus Building, and Social Dialogue and Negotiation Strategies. These workshops seek to develop negotiation skills as a mechanism for dialogic and the transformation of social conflicts in the regions where Ecopetrol operates. In 2023, 49 people participated, including 51% from Sustainable Territory Vice Presidency, 16% from Upstream Vice Presidency, 31% from Administrative and Services Vice Presidency, and 3% from other corporate areas.

Regarding Knowledge Management, the following activities were carried out:

- 8E+ talks for all Ecopetrol and Business Group workers, with the participation of over 7,400 attendees, and information focused on energy savings, decarbonization, emissions reduction, and energy consumption saving in well drilling and completion, integral water management as a pillar in the production business, marine renewable energies and their potential in Colombia, water injection in cycles and energy transition: and the experience in Chichimene, among others.

- o Eleven webinars on various subjects were provided targeting specific groups. These included topics such as: tax incentives and ESCO business model to realize energy efficiency initiatives, incentives for developing energy efficiency initiatives, CCUS, carbon markets, green hydrogen production at the Cartagena Refinery, and an update on energy-related regulation, among others.

1.3 Responsiveness of variable remuneration and incentive structure to climate-related objectives

The Company has two (2) components within its remuneration structure associated with the achievement of business results:

(i) Short-term variable remuneration (VR): applicable to the entire team of direct employees and based on the Company's achievement of strategic objectives defined in the Management Balanced Scorecard: BSC EG.

Each year at yearend, the VR of each employee is calculated based on their individual target, which equals a percentage of their annual monetary income multiplied by the achievement of business results (including the effect of HSE or environmental events, internal control faults reported by the statutory auditor) and the individual performance of each employee.

For 2023, the BSC of the EG included climate change-related targets classified into three main foci:

- i. Growth with Energy Transition: in line with the objectives centering on the Development of Energy Solutions, which includes Hydrogen (H2), Carbon Capture and Storage (CCUS), Growth in Energy Transmission and Toll Roads based on infrastructure for energy transition, and Growth in Gas by measuring the new gas & LPG supply.}
- ii. Generate Value through T ESG: through the decarbonization of operations and integrated water management objectives, employing the greenhouse gas (GHG) reduction and water management efficiency (capture and reuse of water resources) indicators.
- iii. Cutting-edge Knowledge: enabling T ESG through Science, Technology, and Innovation for the material issues relating to climate change, water, biodiversity, and ecosystem services, among others, in addition to the challenges posed by the energy transition.

The EG's 2023 BSC included 15 indicators, of which 11 were related to the energy transition and T ESG, totaling 65% of its weight.

Table 2. Climate change-related indicators/milestones included in the EG's 2023 BSC

Focus		Indicator/Milestone	Weight	Unit	Target 2023	Real 2023	Fulfilment (Real/Plan)
Grow with the Energy Transition	Low emissions businesses	Development of Energy Solutions: H2, CCUS	10%	%	100	64	64%
	Transmission and Toll Roads	Growth in Energy Transmission and Toll Roads: infrastructure for the energy transition	5%	%	100	97.47	97%
	Energy Sovereignty	Growth in Gas and LNG	10%	%	100	100	100%
Decarbonization Reduction in GHG		Decarbonization of Operations: 1. GHG emission reductions	5%	Ton CO2e	416,672	581,532	140%
		Decarbonization of Operations: 2. Strategy to close the gap 20230	2%	%	100	100	100%
		Efficient Water Use: capture and reuse	3%	%	100	106.4	100%
Knowledge CT+I model implementation		CT+I value added	5%	M USD	595.67	111.95	131%

(ii) Long-Term Incentives (LTI): long-term incentives are associated with the achievement of strategic objectives that guarantee the sustainability of the Company and encourage cohesiveness among the upper and middle management team with the shareholders' interest in the medium and long term.

The LTIs are part of the remuneration structure for the CEO/President, Vice Presidents, equivalent positions, and other middle and upper management roles according to their level of responsibility and measured under performance criteria. The value assigned to the LTI is based on an individual target which corresponds to a part of the annual monetary income and is recognized in proportion to the achievement of the corporate and individual results for each worker.

The LTI plans are valid for three (3) years, and each year, a new version of the plan is launched with objectives aligned with the 2040 strategy and the targets for the three years.

The strategic goals of the plans for 2023 are presented below, which are categorized into three main themes: (i) financial competitiveness, (ii) production and reserves, and (iii) decarbonization of operations and diversification into low-emission businesses (see Figure 2).

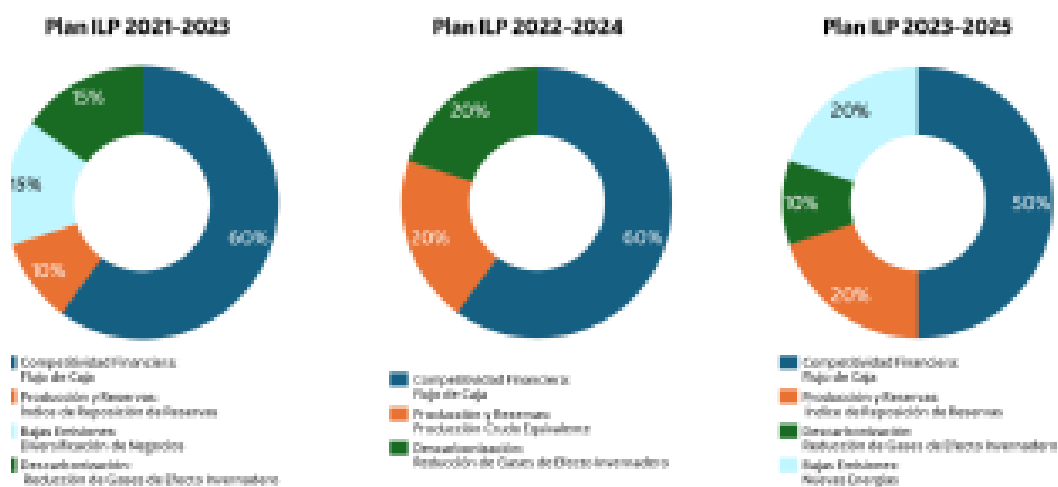


Figura 2. Plan de Incentivos a Largo Plazo (ILP) vigentes:

Figure 2. Current Long-Term Incentive Plan (LTIP)

- Financial Competitiveness: Cash Flow
- Production and Reserves: Reserves replacement
- Low Emissions: Diversification of Businesses
- Decarbonization: Reduction of GHG emissions

The achievement of the Company’s financial target is a condition for the benefit payout, and the final LTI calculation reflects the results of each employee’s individual goals, performance, and fulfillment of the defined indicators. Regarding climate change, the 2021-2023, 2022-2024, and 2023-2025 LTIs include the greenhouse gas reduction indicator with an average weight of 15% therein. In addition, the 2023-2025 LTIs specifically include the Group’s commitment to reducing methane gases and a metric concerning hydrogen production (5%) and renewables (5%) within the aforementioned indicator.

02

STRATEGY



2. Strategy

The 2040 Strategy of the Ecopetrol Group fully addresses current environmental, social, and governance challenges, maintaining its focus on generating sustainable value for all its stakeholders.

Through this Strategy, Ecopetrol seeks to become a leading company in the Americas in energy diversification and enabling growth through the energy transition by maximizing value and the competitiveness of the oil businesses, by maximizing the value and competitiveness of the oil businesses, accelerating the diversification of the portfolio, without neglecting the generation of value through TESG, ensuring the decarbonization of operations and leveraging on technology, innovation, and human talent to maintain competitive returns. The 2040 Strategy defined four (4) drivers: (i) Grow with the Energy Transition; (ii) Generate Value Through TESG; (iii) Cutting-edge Knowledge; and (iv) Competitive Returns.

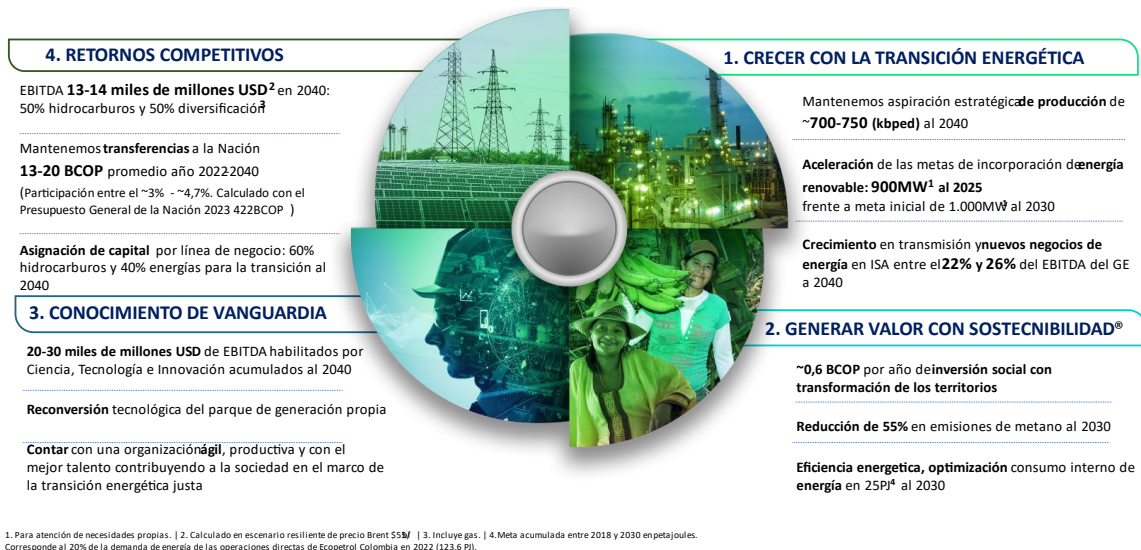


Figure 3. Evolution of the Ecopetrol Group's strategy

1. GROW WITH THE ENERGY TRANSITION:
 - Maintain **production** at **~700–750 mbped** to 2024
 - Speed up the rates of renewable energy incorporation: **900MW¹** to 2025
 - **Growth** in **energy** transmission and **new businesses** in ISA to **22% to 26%** of the EG's EBITDA
2. GENERATE VALUE THROUGH TESG
 - **Social investment** of **~0.6 TCOP** annually with territorial transformation
 - **55% reduction** in methane emissions by 2023
 - **Energy efficiency, optimizing** internal **energy** consumption to 25PJ⁴ by 2023
3. CUTTING EDGE KNOWLEDGE
 - Cumulative **20–30 BUSD** additional EBITDA provided by science, technology, and innovation

- Technological conversion of the self-generating park
 - **Have an agile**, productive organization with the best talent, contributing to society within the framework of a fair energy transition
4. COMPETITIVE RETURNS
- EBITDA of 13-14 M USD² in 2040: 50% from hydrocarbons and 50% diversification³
 - Continue **transferring** to the Nation **13-20 TCOP** on average in the years 2022-2040 (Interest of ~3% to 4.7%, calculated according to the National Budget 2023 of 422 TCOP)
 - Allocation of capital by business line: 60% hydrocarbons and 40% energies for the transition by 2040

1) To address own needs; 2) Computed in a resilience scenario with Brent price at \$5 USD/b; 3) includes gas; 4) Cumulative goal 2018 to 2030 in petajoules, equals 20% of energy demand from Ecopetrol Colombia's direct operations in 2022 (123.6 Pj)

Through the implementation of this strategy, the Ecopetrol Group seeks to contribute to Colombia's energy security and economic development, focused on a gradual, fair energy transition. This transition reflects the following components:

- i. Energy supply: to provide, maintain, and affordably transport energy, safeguarding energy for current users and reaching new users.
- ii. Economics and finance: maintain competitive returns and contribute to the economy with a diversified energy matrix.
- iii. Environment: climate action and decarbonization, environmental protection, and the preservation of biodiversity.
- iv. Society: strengthen the connection therewith and mutual contributions, impacting the generation of value to society while building and co-creating a more sustainable future while complying with its commitments.

The aforementioned components are integrated into the specific actions of the Ecopetrol Group's 2040 Strategy:

(i) **Continue strengthening the competitiveness of the oil and gas business** to guarantee the capture of the value of the current portfolio, as well as resilience in the face of various energy transition scenarios and greater price volatility, to continue to provide competitive returns that positively impact the economic development of Colombia. In particular, further gas development in the Colombian Caribbean is expected, with a focus on improved recovery to maintain the value of current assets.

(ii) **Diversify the business portfolio into low-emission business lines**, which considers three dimensions:

- a. **Diversify the traditional business** includes goals related to the diversification of the hydrocarbon business line, which includes the Upstream (oil and gas exploration and production), Midstream (transportation), and Downstream (refining and petrochemicals) segments.
- b. **Diversify in the electricity and infrastructure market:** the strategic objective seeks to leverage ISA's value and boost its growth by primarily increasing its portfolio and expanding into new territories.
- c. **Diversify into sustainable businesses:** in this area, three options are currently being analyzed: hydrogen (H2), carbon capture, use and storage (CCUS), and Natural Climate Solutions (NCS). The priority is to focus on maturing these three emerging businesses.

(iii) **Achievement of decarbonization objectives leveraged on the TESG strategy**

Achievement of the decarbonization objectives: Accelerate and prioritize energy efficiency and the reduction of GHG emissions through the following actions: a) constant updating and continuous verification of the GHG inventory; b) identify, develop and implement initiatives to reduce emissions in operations through energy efficiency, renewable energies and reduction of flaring, fugitive emissions, and venting; c) advance in the development of emerging technologies by implementing green and blue hydrogen and CCUS pilots; and, d) develop and consolidate an NCS offset portfolio. Section 4, "Metrics and Targets" of this document provides more detailed information on this topic and decarbonization targets.

2.1 Capital allocation and investment criteria in TESG-focused initiatives and projects.

Execution of 2023 and first semester 2024 investments

In 2023, the Ecopetrol Group allocated USD 432 million towards its three business lines to further the "Generate value with TESG" pillar of its 2040 Strategy.

This represents a 46% year-on-year increment versus the investments made in 2022, primarily targeted to water projects in operations and preventing climate change through decarbonization initiatives that include renewable energies, energy efficiency, and hydrogen, as well as investment to improve fuel quality, restore or preserve biodiversity and ecosystem services, and in occupational health, industrial and process safety, and circular economy projects.

Concerning the water in operations, USD 164 million was invested mainly in projects in the Orinoco Region, underscoring the successful water injection and the integral secondary development module in Castilla that aims to optimize water use through the reuse of production water and captured water.

In the case of climate change projects, total investments of USD 137 million were made, of which USD 81 million were allocated to energy efficiency initiatives, USD 41 million to renewable energy projects, and USD 15 million to projects concerning hydrogen, natural gas

leakage, and venting, and carbon capture, use and storage, seeking to fulfill the goal of reaching net zero Scope 1 and 2 net emissions by 2050 for the whole business group.

In addition, USD 131 million have been assigned primarily to fuel quality projects such as SOX Emissions Control and Fuel Quality Baseline at the Barrancabermeja Refinery to improve asset reliability, as well as to other categories such as biodiversity and ecosystem services, occupational health, industrial and process safety, and circular economy.

Year to date, the Ecopetrol Group has invested USD 249 million in the "Generating Value Through T ESG" pillar, where integral water management continues to play a leading role, focusing mainly on projects in the CPO09 and Castilla assets. Additional initiatives in areas including energy efficiency, fuel quality, decarbonization, and circular economy were also carried out.

2.2 Climate-related risks and opportunities

The Ecopetrol Group continues to strengthen its process to identify, evaluate and manage climate-related risks and opportunities, establishing for this purpose the following time frames and action plans:

- Short-term (0-3 years): this time horizon for assessing dependencies, impacts, risks, and opportunities is aligned with the three-year financial plan, BSC and material element roadmaps and seeks to: (i) establish and achieve the annual target and intermediate GHG emission reduction targets and those in other spheres such as water and biodiversity; (ii) identify the short-term risks and determine mitigation actions, controls and Key Risk Indicators (KRI) within the framework of the annual risk management cycle, (iii) identify and implement cost-effective opportunities for meeting the company's environmental goals.
- Medium-term (4-17 years): this time horizon is consistent with the material issues roadmaps set out in the 2040 Corporate Strategy and the Long-Term Plan (LTP), especially concerning climate change. It is used to review the GHG emissions reduction and offset targets to 2030 under the Company's Decarbonization Plan. This time horizon allows for identifying emerging risks that may impact the company in the next five (5) years or beyond.
- (LP) Long-term (> 18 years): is used to review market trends, changes in policies and regulations, and emerging technology developments that may impact the Company's climate ambition and the long-term business strategy.

Currently, Ecopetrol has identified the following physical risks, transition risks, and opportunities at the Group level presented below:

Physical Risks

Physical risks concern the Company's exposure and vulnerability to the impacts of climate variability and change in Colombia.

For the Ecopetrol Group, acute risks are caused by extreme climatic events whose frequency and intensity have been growing due to the gradual increase in global temperature. In Colombia, this is reflected in the occurrence of the meteorological phenomenon “El Niño” and its opposite weather pattern, “La Niña”, emphasizing that the occurrence of these phenomena does not suppress seasonal events; in other words, El Niño does not nullify the rainy seasons, nor does La Niña reverse the dry or less rainy seasons. The resulting conditions are, among others, water shortages, floods, fires, storms, hurricanes, and rising sea levels that can change in frequency and intensity. Extreme weather events could cause damage to assets, negatively affecting the Company’s operations and financial condition.

Alternatively, the risks classified as chronic result from medium and long-term changes in climate conditions, including rising sea levels, global warming, or droughts. Therefore, the acute risks associated with climate variability events are the most relevant, and as such, short-term financial and strategic effects and impacts are considered (see Section 2.2 “Impact of climate-related risks and opportunities on the organization’s business, strategy and financial planning” of this Report).

Transition Risks

Transition risks pose a challenge for the Company in quantifying its financial impact for adequate long-term strategic planning and establishing a resilience plan so it may be sustainable over time. The Ecopetrol Group has identified the potential risks that might pose a financial and strategic impact, underscoring actions for their appropriate management.

Regulatory risk

The regulatory scenario related to energy transition and climate change involves regulatory changes that may directly affect the Company in the short and medium term. Currently, the regulatory framework is not binding on the business sector, including the Ecopetrol Group. However, the Company is committed to contributing significantly to national and sector goals, which may be reflected in mandatory requirements in the future.

The following current local regulatory changes have been identified as potentially having a financial or strategic impact on the Company:

- i. New mitigation and adaptation associated information requirements associated with

mitigation or adaptation in order to apply for or modify current and future licenses.

- ii. Greater demands associated with the regulation regarding fugitive emissions venting and flaring detection and repair.
- iii. Limits on the use of offsets to meet decarbonization targets.
- iv. New requirements to validate and verify reduction projects and their registry in the National Registry of GHG Emission Reductions (RENARE).
- v. Implementation of the National Program of Tradable GHG Emissions Quotas (PNCTE), similar to an Emissions Trading System, which would assign emission rights. This program is in the design and

development phase of the regulatory framework, and its enactment is expected in 2025, with full enforceability by 2030. Enrollment of the Company to the program would have At the international level, the SEC (Securities Exchange Commission) climate-related disclosure rule is currently under review, which may be adopted by the Colombian Financial Superintendency and modify existing norms. Additionally, there might be possible restrictions on the voluntary offset of GHG emissions for exploration, production, and refining activities to encourage and accelerate reduction actions in the company's value chain.

At the international level, the SEC (Securities Exchange Commission) climate-related disclosure rule is currently under review, and the Colombian Financial Superintendency may adopt it to modify existing legal requirements.

Legal risk

Negative reactions and lawsuits against the Ecopetrol Group's climate action may affect the Company's operations and financial condition. However, the Group has a structure that allows for ongoing interaction with its stakeholders, allowing it to address requirements promptly. Likewise, issues related to climate change are publicly disclosed on the website and in the Integrated Sustainable Management Report, which is publicly available.

Risk of trapped assets

Under its energy transition scenarios, the Ecopetrol Group has developed a strategy aimed at identifying assets trapped in its hydrocarbons business line. Based on fuel demand projections, a risk of trapped assets has been identified, for which a methodology has been implemented that allows the Company to measure market factors, sustainability, and technical capacity for the assets in the upstream segment. Based on the results of this assessment, segment mitigation plans are being implemented for assets identified as having a potential trapped assets risk.

Market risk

The energy transition has focused the market towards a preference for low-carbon products, which may imply for the Ecopetrol Group a risk of not meeting market demand if it lags in developing such products. Therefore, the Company constantly monitors and analyzes the market changes, trends, and behavior related to the performance and best practices of the oil, gas, and refining industry, in addition to using low-carbon products and energy use for electrification.

To manage this risk, Ecopetrol has been making progress in improving the quality of its fuels and in developing renewable fuels such as biodiesel, renewable diesel, and jet fuel.

Reputational risk

For the Ecopetrol Group, the reputational risk stems from the impossibility of responding promptly to expectations from investors and other stakeholders to

establish ambitious goals concerning climate change, which could substantially affect the Company's image and brand. Therefore, within the framework of the business risk "Inadequate response to environmental challenges associated with climate change, water, and biodiversity," mitigation measures and Key Risk Indicators (KRI) are established to reduce and monitor the Company's exposure to impacts associated with climate change, water, and biodiversity commitments, obligations, and expectations. For this reason, constant benchmarking is conducted against the performance of its peers to challenge the Company's climate strategy and endorse an ambition in line with the Paris Agreement objectives and global Oil & Gas industry initiatives.

More information on the risks associated with climate change is available in the [Form 20-F Annual Report Filing](#) (Section 5.2 "Risk Factors" pp. 149-184 and Section 5.3.2 "Managing Low Carbon Economy and Climate Change Risk" p. 181).

Technology risk

The path to energy transition depends on successfully selecting, developing, and deploying new technologies and capabilities needed to operate, as well as their upkeep and improvement. In this context, the Company may see its profitability affected if it fails to prepare and adapt.

Prioritizing transition risks

Based on the described risks mentioned above, Ecopetrol conducts a risk analysis to establish the potential financial impact of said risk. This first analysis considers the market and regulatory risks most likely to materialize, evaluated under the three scenarios of the World Energy Outlook 2022 of the International Energy Agency (IEA): (i) Net-Zero Emissions (NZE), (ii) Announced Pledges Scenario (APS), and (iii) Stated Policies Scenario (STEPS).

Concerning market risk, the impact on the value of the assets of the Upstream segment and its resilience to different hydrocarbon demand expectations was assessed. The oil business showed resilience to volatility in both the APS and STEPS scenarios. However, this exercise cannot be considered absolute, as the IEA scenarios do not contemplate the local energy demand dynamics, especially in the natural gas market.

Regarding regulatory risk, two routes were evaluated: i) quantification of the cost impact due to change in carbon prices, and ii) quantification of the financial repercussions derived from higher abatement costs associated with limits placed on the use of offsets, which allowed analyzing the effects on cash flow and possible capital allocation needs to enable the entry of new abatement opportunities to achieve decarbonization goals.

The quantification of the financial impact of the Company's prioritized climate-related business risks is estimated below (see Table 3), which is derived from the analysis of the Risk Assessment Matrix (RAM) economic dimension, which considers a range between medium and very high (USD 10 million to USD 150 million).

Table 3. Estimated main financial impacts of climate-related risks (indicative)

Risk category	Description	Probability	Magnitude of impact	Estimated financial impact
Acute physical risk	Climate variability phenomena have the most significant impact on Ecopetrol's infrastructure and operations. The "El Niño" phenomenon is characterized by (i) lack of rainfall, which can drastically decrease the flows of surface water bodies, affecting both the use of fresh water and wastewater discharges due to a reduction in dilution	Likely	High in the economic dimension	>USD 80 million (over three years)

	potential in the receptor bodies; (ii) increased temperatures, which causes heat waves and could have a direct impact on the health of our workers and cause an increase in epidemics and diseases; and (iii) the potential negative impact on energy supply due to the decrease in the level of the water bodies that supply the country's hydroelectric generation system.			
Regulatory risk	Failure to achieve the 2030 GHG emissions reduction target due to limits to the accepted ratio of offsets. Currently, Ecopetrol estimates that about 30% of the reduction to 2030 will be achieved by offsetting through Natural Climate Solutions projects. This percentage could be reduced following the guidelines established by SBTi or other similar initiatives. If the accepted percentage decreases, other reduction technologies will be required, which will increase operating costs.	Likely	High in the economic dimension	> USD 252 million (to 2030)

In addition to the transition risks described above, Ecopetrol has a business risk map that incorporates other strategic risks related to sustainability and the Company's energy transition. Further details are provided in Chapter 3.

Climate Change-Related Opportunities

In order to identify, evaluate and respond to climate-related opportunities, the Ecopetrol Group monitors and evaluates the energy market and the business environment. Since 2022, changes in the environment have been identified, analyzing the following variables in each business line: (i) Hydrocarbons: demand for oil and derivatives by sector and region; (ii) Energies for the Transition: gas demand and electricity generation capacity; and (iii) Electricity Transmission: kilometers of electricity networks, and transversally, the energy matrix, total emissions, demand for electric vehicles and carbon market. Based on this monitoring, Energy Transition Scenarios were defined to guide the long-term strategic analysis of the Ecopetrol Group (2040) to define the action lines, implications for the Company, and a roadmap for an in-depth analysis of the opportunities, performing the following:

- (i) Update of the Ecopetrol Group's Energy Transition scenarios based on current global and local trends.
- (ii) Identification and analysis of the drivers that show a positive trend or outlook in the updated short-, medium- and long-term scenarios. This analysis identifies a group of potential opportunities.
- (iii) Market size or opportunity analysis to establish the Company's capabilities or competitive standing by building a business plan to assess its viability.
- (iv) Construction of the roadmap to develop feasible opportunities.

2.3 Scenario analysis

Energy transition scenarios for strategic planning.

Ecopetrol has been analyzing energy transition scenarios since 2018 as part of its strategic planning process. This exercise allows for the definition of actions to manage the risks and opportunities involved in transitioning to a low-carbon economy and adapting the business strategy to ensure long-term value creation.

Within the framework of the 2040 Strategy, scenario trends, and sensitivities were translated into three business scenarios, as shown in Table 4:

Table 4. Transition energy scenario for strategic planning

Energy Transition Scenarios	Description
Benchmark Scenario	It considers the same trends identified in the Energy Transition Benchmark Scenario, which is also the baseline scenario for the Company's 2040 Strategy.

High Price Scenario	Associated with Decelerating Sensitivity trends in terms of energy transition. Seeks to reflect a business scenario in which the current trend is maintained and climate targets are not met by 2030 or 2050.
Stress Test Scenario:	It reflects the trends of the Accelerated Transition Scenario and some developments of the Sensitivity to a 2°C Scenario.

Energy transition scenarios were developed following the formulation of the 2040 Strategy and its ratification in 2023. These scenarios, other than business scenarios, are key tools for reviewing and monitoring strategic trends and anticipating challenges and opportunities up to 2040 in the face of various climate scenarios.

Energy transition scenarios for monitoring trends

During 2023, the construction of energy transition scenarios was initiated, which aims to be a solid and unified reference framework that allows the Ecopetrol Group (EG) to anticipate and understand the challenges and opportunities of the energy transition, through the presentation and comparison of three scenarios: Climate Alignment, Energy Balance and Climate Divergence.

- Climate Alignment (1.7° - 1.8°C): Transformation to low-emission economies aligns governments and institutions around climate change. In addition, developed countries reach a net zero goal, while other countries follow a slower path. This is not enough to achieve the global net-zero goal of 1.5 °C.
- Energy Balance (1.9° - 2.3°C): Fundamental changes in governments, markets, and society set in motion a long-term energy transition, the debate continues between energy security and accelerating the transition.
- Climate Divergence (2.5° - 2.8°C): Dissimilar interests in decarbonization despite policy, regulation and market changes. Global public policy decisions are insufficient to close the climate ambition gap.

Ecopetrol finds it essential to compare the three potential scenarios. While the first and third scenarios do not represent the group's core vision, assessing different perspectives on the global energy transition remains necessary. According to the strategic 2040 outlook, Ecopetrol considers the second scenario the most likely, aligning with a gradual energy transition. This transition envisions increased use of low-emission energy sources while retaining conventional energy in the overall energy mix. Additionally, this scenario is expected to enhance sustainability and resilience in energy supply. In this context, the Ecopetrol Group is committed to diversifying its energy portfolio, emphasizing the incorporation of low-emission energy sources, such as renewables and natural gas, to mitigate climate change and reduce reliance on traditional fossil fuels.

The scenario analysis reaffirms Ecopetrol's long-term strategy, centered on growing with the energy transition, supported by a solid decarbonization roadmap and a TESG strategy.

Based on this analysis, the Ecopetrol Group identified various opportunities related to energy supply, resource efficiency, the development of new products and services, market expansion, and overall resilience in the face of the energy transition. The identified opportunities are presented in more detail below:

Table 5. Main Opportunities identified

Type	Opportunity	Horizon*	Status
Diversification of traditional business	Low-emission energy logistics and transportation opportunities	Mid-term	In construction
	More sustainable petrochemical products	Short-term	In progress
	Cleaner fuels	Short-term	In progress
	Gas as a transition fuel	Short-term	In progress
	Analysis of new alternatives for exploration, production, transportation and refining segments	Mid-term/Long-term	In construction
Diversification of sustainable businesses	Hydrogen	Mid-term/Long-term	In progress
	CCUS Carbon Capture Use and Storage	Mid-term/Long-term	In construction
	NCS Natural Climate Solutions	Mid-term/Long-term	In progress
Energy efficiency	Energy efficiency program: operational control, technological improvement and the Energy Intensity Index (EII) improvement.	Short-term	In progress
Renewable Energy	Self-generation from solar, wind, and small hydroelectric power plants, among others.	Short-term/Mid-term	In progress

Time Horizons: Short-term: 1-3 years), Mid-term: 3-7 years, and Long-term: >7 years are considered within the opportunity identification process framework.

The identified opportunities reflect the diversification of Ecopetrol's portfolio and the strengthening of EBITDA, driven by the gradual transformation of business lines under moderate and conservative pricing scenarios. By 2040, the distribution of each business line is expected to be: Hydrocarbons (50%), Energy Transition (24%), and Transmission, Toll Roads, and Telecommunications (26%).

Incorporating non-conventional renewable energies is a key strategic lever for the Group. Our goal is to achieve 30%-40% of the Group's total installed capacity from these sources, including solar, wind, biomass, and hydro. This ambition has accelerated, with plans to add 900 MW by 2025 and 1000 MW by 2030.

Ecopetrol is committed to the Just Energy Transition as one of Colombia's largest energy consumers, accounting for a tenth of the country's total consumption. This commitment requires us to lead by example in optimizing energy consumption as a crucial measure against climate change. To this end, our energy efficiency target aims for a cumulative reduction of 25 PJ in internal consumption by 2030.

Diversification of our traditional business

As part of its energy transition efforts, the Ecopetrol Group has identified opportunities to enhance the resilience of its hydrocarbon business. This includes capitalizing on the prospects for gas, addressing the need for logistics and transportation for various fuels and energy types, and responding to the increasing demand for more sustainable petrochemical products. The upstream, midstream and downstream segments are exploring how to expand their service portfolios to integrate these opportunities.

Diversification of sustainable businesses

Given the anticipated rise in demand for solutions and services in these areas over the coming decades, the Group has defined the EBITDA generation potential within its "Growing with the Energy Transition" pillar. The focus is on business lines such as Transmission, Toll Roads, and Telecommunications (via ISA), and Energies for Transition (primarily natural gas, hydrogen, CCUS, and SNC). Energy transmission plays a crucial role in enabling a fair and equitable transition, as well as in promoting regional energy integration. This business line aims to contribute 20% to EBITDA growth by 2030 and 26% by 2040, with a capital allocation target of 15% by 2040. From a diversification standpoint, the successful integration of ISA into the Ecopetrol Group is notable, contributing 12% of the Group's EBITDA in 2023 and strengthening its position in electricity transmission. In 2023, approximately COP 10 trillion was awarded to power transmission projects across Colombia, Brazil, Chile, and Peru. For 2024, ISA is expected to invest around US\$1.4 billion, with US\$1.2 billion directed towards power transmission. By 2026, the energy network is projected to expand by 2,500 kilometers, reinforcing the company's leadership in regional energy transmission.

Regarding hydrogen, an average annual investment of approximately COP 5 billion has been allocated between 2023 and 2040. Ecopetrol Group is executing a dynamic plan for green

and blue hydrogen production, organized into three phases: the first (2022-2030) focuses on scaling up hydrogen use within its own operations, with industrial projects and applications in sustainable mobility; the second (2030-2040) targets opportunities in maritime and air mobility, driving decarbonization; and the third phase (from 2040) aims at promoting widespread hydrogen adoption. Noteworthy developments in 2023 include the opening of the hydrogen mobility park in Cartagena and our participation in launching Colombia's first green hydrogen corridor.

Ecopetrol has prioritized gas in line with its 2040 strategy and recent discoveries in the Colombian Caribbean offshore, outlining a strategic plan for the next 20 years. Key actions include i) ensuring the monetization of its current gas portfolio, ii) developing additional demand within Colombia, and iii) expanding its presence in the gas value chain in Colombia and the region in line with regulatory frameworks and market opportunities.

Finally, the CCUS and SNC opportunities are still in the structuring and consolidation phases.

2.4 Impact of Climate-Related Risks and Opportunities on Business, Strategy, and Financial Planning

The Company recognizes the challenge of determining the financial and strategic impact of climate-related risks and opportunities and how these are integrated into its short, mid, and long-term strategy and financial planning. In response, the Ecopetrol Group has advanced in analyzing the most significant risks and opportunities with a high probability of occurrence. This analysis does not preclude a supplementary review of other risks and opportunities linked to climate or the energy transition, considering that this process depends on the availability of data and the assessment of probable climate scenarios.

Below is an indicative estimate of the financial benefits from the prioritized climate-related opportunities aligned with Strategy 2040 (see Table 6).

Table 1. Main financial benefits from climate-relates opportunities (measures)

Category	Description	Probability	Size of impact	Contribution estimated to 2040 EG EBITDA
Products and services	Leverage the prospects of gas as a transition fuel, the need for logistics and transportation for other fuels and energies, and the growing demand for lower-emission petrochemicals..	Very probable	Medium	Between USD 1,000 and USD 1,800 million
Products and services	Development of low-carbon hydrogen projects (blue, green, white).	Very probable	Medium	Between USD 300 and USD 700 million
Products and services	Development of carbon capture, storage, and use (CCUS) projects.	Probable	Medium	Between USD 1.000 and USD 1.500 million
Products and services	Implementation of Natural Climate Solutions (NCS) projects	Probable	Medium-low	Between USD 200 and USD 300 million
Access to new markets	Transmission and toll road business (ISA)	Very probable	Medium	Between USD 3.000 and USD 4.000 million

03

RISK MANAGEMENT



3. Risk Management

Risk management in Ecopetrol is supported by the Integrated Risk Management System (SRI for its Spanish acronym), based on COSO 2013, COSO ERM 2017, and ISO 31000:2018 standards, and is governed by the provisions of internal regulations, as well as included in the corporate bylaws, comprehensive policy, Good Governance Code, manuals, handbooks and internal instructions established for this purpose. This system encompasses the set of principles, reference framework, and processes that allow the Company to manage uncertainty's effects on achieving objectives, maximizing opportunities, and facilitating decision-making.

At Ecopetrol, comprehensive risk management seeks to outline the general guidelines for risk management (identification, assessment, mitigation, monitoring, and disclosure), and to establish a culture that encourages informed decision-making, considering possible events that may have a positive or negative impact on the Company's objectives.

Identifying, evaluating, and responding to climate-related risks is part of Ecopetrol's SRI (See Figure 4). Its management, monitoring, and review are performed continuously to maintain risks within the defined tolerance and acceptance thresholds.

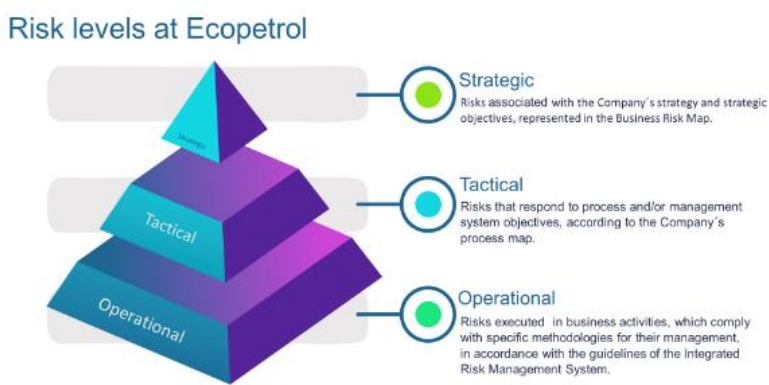


Figure 4. Risk levels in Ecopetrol

For more information on Integrated Risk Management, refer to the section [Risk Management at Ecopetrol](#) on the corporate website or the [Integrated Management Report 2023](#) (Chapter 6. "Creating Value through TEGS").

2.5 Inclusion of the climate-related risks in the business risk map

The Business Risk Map is constructed and updated collectively based on an analysis of the internal and external environment, considering market trends, specific risks of the Ecopetrol Group companies, management standards, industry risks, and those issues that are generally subject to analysis and review of the sustainability indexes and radars. Its construction resulted in topics and trends that feed the updating of risks, reviewed by the

Audit and Risk Committee of the Board of Directors and recommended their approval to the Board of Directors.

The Ecopetrol Group's current Business Risk Map was approved in August of 2023. As part of its update, the topic of biodiversity and ecosystem services has been integrated into the Business Risk category titled "*Inadequate response to challenges associated with climate change, water, and biodiversity.*" Gas and LPG supply aspects have also been incorporated into the risk category "*Low-emission businesses that do not generate the expected value in the context of the energy transition.*" Information on the risks mentioned above is provided below.

Inadequate response to challenges associated with climate change, water, and biodiversity.

This risk refers to the company's vulnerability to negative impacts resulting from a limited ability to respond promptly, efficiently, and effectively to climate change, water, and biodiversity commitments, obligations, and expectations. It encompasses (i) short, mid, and long-term goals within the business strategy; (ii) the value chain's role in ensuring operational continuity; (iii) energy-related costs; (iv) stakeholder expectations (government, society, communities, employees, investors); and (v) adaptation to climate variability and changes in the country's climatological conditions that affect water availability and security in different regions. For more details on this risk, please refer to Ecopetrol's website.

Low-emission businesses that do not generate the expected value in the context of the energy transition

This risk extends to the company's exposure to negative impacts from non-compliance with the value promise and energy transition goals of the business lines within the energy portfolio. These lines include i) energy transmission and toll roads; ii) low-emission businesses (such as hydrogen, natural climate solutions - SNC, and Carbon Capture, Use and Storage - CCUS/Carbon Capture and Storage - CCS); and iii) the supply of gas and LPG. The risk also covers the potential failure to meet the expectations of various stakeholders (society, communities, employees, contractors, shareholders, and customers) regarding the energy transition.

Below is the updated [Business Risk Map](#) for 2023. (Figure 5).

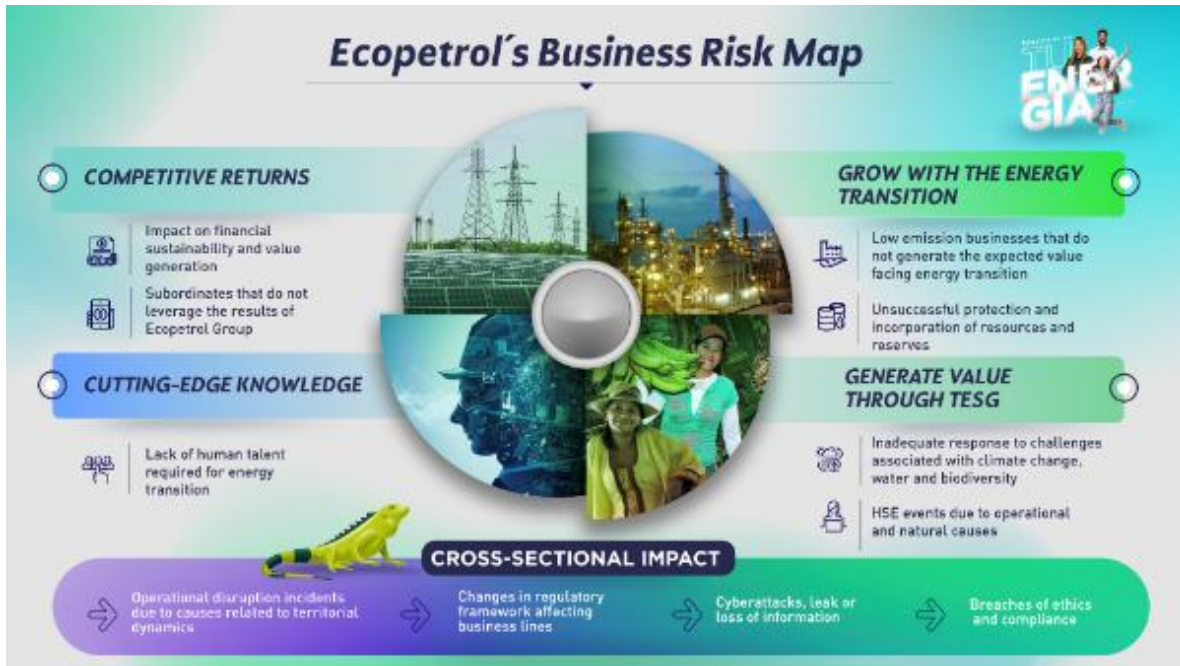


Figure 5. Business Risk Map 2023

2.6 Identification of Emerging Risks at Ecopetrol

For Ecopetrol, Emerging Risks are defined as those risks that could have a long-term impact on the company (3-5 or more years) or, in some cases, may have begun to impact the organization.

In 2023, Ecopetrol identified 17 trends categorized into social, environmental, economic, technological, and geopolitical; based on the assessment of these trends, 18 emerging risks were identified, which were then evaluated for their potential impact and the timeframe in which each could emerge. For more information, visit Ecopetrol's website [Emerging Risks at Ecopetrol](#).

The identification and evaluation of emerging risks are presented graphically below (see Figure 6):

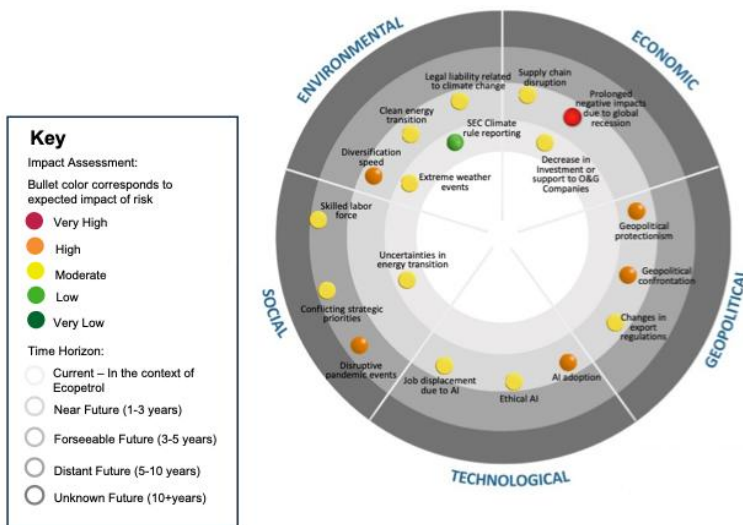


Figure 6. Evaluation of emerging risks

The following describes Ecopetrol's main emerging risks:

Table 7. Description of Ecopetrol's climate-related emerging risks.

Risk	Description
Extreme weather events	Extreme global weather events, such as extreme droughts/floods and polar ice melt with unknown consequences, impact Ecopetrol's assets, operations and supply chain.
Regulatory reporting on climate issues to the SEC	As a foreign company registered with the SEC and subject to the proposed rule on the improvement and standardization of Climate-related information, Ecopetrol's cost of compliance is increased due to higher reporting requirements, certification requirements and organizational talent needed to comply with the regulations.
Climate change legal liability	Under Article 8 of the Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (Escazu Agreement), Ecopetrol (as a hydrocarbon producer) could potentially be exposed to legal liability related to environmental matters, including its disclosure of environmental information, public participation in the decision-making process on environmental matters and actions that affect or could adversely affect the environment or violate laws and regulations related to the environment. Potential climate change legal liability for which the company may be held liable (e.g., damages caused by climate change, lack of

Risk	Description
	transparency and disclosure, breach of fiduciary duty, and failure to exercise due diligence on the standard.
Speed of diversification	The risk that the pace of diversification of the incorporation of renewable energies from peer companies will be at a faster pace than defined in Ecopetrol's strategic position, generating the possibility that the Company will not be able to make adequate investments or rapidly incorporate renewable energies and alternatives to fossil fuels, while investors increase their preference from traditional oil companies to more diverse alternative energy companies and consumers move towards energy from renewable sources in the foreseeable future (e.g. 3 to 5 years).

For more information on Emerging Risks, please visit Ecopetrol's website at the following link [Emerging Risks](#).

04

METRICS AND TARGETS



4. Metrics and Targets

To adequately manage climate-related risks and opportunities, Ecopetrol reports its goals and metrics using consistent, credible, and comparable data. To this end, it has implemented reporting frameworks, such as GRI, SASB, CDP climate change and water, WBA, and DJSI, among others, which allow the Company to disclose its climate-related performance and ambition in a relevant and transparent manner.

2.7 Metrics used to assess climate-related risks and opportunities

To establish goals and evaluate climate-related risks and opportunities, Ecopetrol has established metrics that are permanently updated and monitored. To ensure data quality and traceability, the company has a software solution in SAP that integrates metrics associated with GHG emissions inventory, criteria pollutants and VOCs, water and waste.

Metrics associated with GHG emissions

Data related to the GHG inventory of assets operated by Ecopetrol S.A. include emissions from the Refinería de Cartagena refinery. Regarding the emission inventories of the subsidiaries of the Ecopetrol Group, progress is being made in defining mechanisms to integrate and consolidate their reporting. Therefore, the data is reported in a segmented manner. This definition is within the framework of implementing the international financial reporting standards on sustainability and climate (International Financial Reporting Standards - IFRS S1 Sustainability disclosure and IFRS S2 Climate-related disclosure). The requirements for reporting information aligned with the financial statements will be evaluated in the implementation process.

Table 8 presents the metrics related to GHG emissions for the period 2019 – 2023:²

Table 8. Ecopetrol Group GHG Emissions Inventory Metrics.

GHG Emissions of Ecopetrol S.A. ³	2019	2020	2021	2022	2023
CO ₂ e emissions - Scope 1 (ktCO ₂ e)	13.009	11.976	11.960	11.950	12.005
CO ₂ e emissions - Scope 2 (ktCO ₂ e)	697	862	581	506	744
CO ₂ e emissions – Scope 3 (ktCO ₂ e)	143.770	138.718	140.905	150.989	155.106
<i>Use of product sold</i>	134.123	130.585	131.757	140.786	146.056
<i>Purchase of goods and services</i>	7.658	6.464	7.708	8.751	7.998

² As recommended by ISO 14064-1 and the GHG Protocol, the base year emissions may need to be recalculated as companies undergo significant structural changes such as acquisitions, divestments, and mergers, as well as significant changes in the emissions estimation methodology. This recalculation is performed not only for the base year but also for the historical series, in order to maintain consistency in the reported data. Accordingly, emissions for the base year (2019) and the historical series have been recalculated, taking into account the following: i) The bottom-up and top-down methane measurements made in the production segment; ii) the reversion of the Nare asset in the Upstream segment.

³ The GHG emissions inventory is prepared under the ISO 14064-1 methodology, and specifically following the guidelines of the GHG Protocol Corporate Standard (scope 1), GHG Protocol Scope 2 Guidance (scope 2), Corporate Value Chain (scope 3) and Accounting and Reporting Standard (scope 3). It is structured under the operational control approach. The information differs from that available to the public through the Integrated Management Report because at the close of this report there is no final information for the last two months of the year. The information disclosed here as well as the information available on the website corresponds to updated information.

GHG Emissions of Ecopetrol S.A.³	2019	2020	2021	2022	2023
<i>Investments</i>	1.656	1.232	969	905	726
<i>Other categories</i>	333	437	471	547	326
Reduction of GHG emission – New projects (ktCO ₂ e)	381	200	293	416	582
GHG emissions intensity - Upstream (Kg CO ₂ e/BOE Produced)	35,82	38,16	37,33	35,86	34,10
GHG emissions intensity - Downstream (Kg CO ₂ e/BOE throughput)	40.27	39,80	38,45	39,79	36,99
Upstream segment Subsidiaries⁴					
CO ₂ e emissions - Scope 1 (ktCO ₂ e)	290	286	260	250	296
CO ₂ e emissions - Scope 2 (ktCO ₂ e)	14	19	25	28	26
GHG emissions intensity - Upstream (Kg CO ₂ e/BOE Produced)	27.16	20.38	16,91	16,90	22,33
Midstream segment Subsidiaries⁵					
CO ₂ e emissions - Scope 1 (ktCO ₂ e)	547.5	488.7	449,8	442,6	457,6
CO ₂ e emissions - Scope 2 (ktCO ₂ e)	163.4	129.3	74,6	72,5	116,7
Downstream segment Subsidiaries⁶					
CO ₂ e emissions - Scope 1 (ktCO ₂ e)	96.5	95.9	92,5	94,0	94,0
CO ₂ e emissions - Scope 2 (ktCO ₂ e)	23.1	29.4	19,0	16,0	16,0
Transmission and Toll Road segment Subsidiaries⁷					
CO ₂ e emissions - Scope 1 (ktCO ₂ e)	26.5	31.0	31,5	29,4	21,2
CO ₂ e emissions - Scope 2 (ktCO ₂ e)	12.6	12.8	9,4	8,7	9,2

In the second half of 2024, the third-party verification of the GHG emissions inventory for 2021, 2022, and 2023 will for the first time include the most relevant Scope 3 categories.

Other environmental metrics

Concerning other environmental metrics, Table 9 shows the data associated with Ecopetrol S.A.'s criteria pollutants and VOCs.

Table 9. Other Ecopetrol S.A. climate change-related metrics

Criteria pollutants and VOC	2019	2020	2021	2022	2023
NOx (kt) emissions	26.22	28.55	27.39	29.10	29.71
SOx (kt) emissions	17.90	15.03	16.46	16.97	17.36
CO (kt) emissions	10.81	11.42	11.12	11.37	10.92
Particulate matter (kt) emissions	1.53	1.50	1.39	1.60	1.83
COV (kt) emissions	292.31	276.81	243.84	223.03	189.63

⁴ The Upstream segment reflects Hocol's information, which structures the GHG inventory under an operational control approach and consolidates the information using the global warming potentials values of AR5. Currently, internal verification is being carried out to provide an external verification for the last quarter of the year.

⁵ The Midstream segment includes Cenit, Ocesa, ODL, OBC and ODC. The inventory of each of the companies is carried out under an operational control approach. These companies have carbon neutrality certification that includes the verification of their GHG emissions inventory.

⁶ The Downstream segment includes Esenttia, which structures its GHG inventory under an operational control approach under the ISO 14064-1 standard. The 2019-2021 historical series has been verified by ICONTEC. Scope 3 GHG emissions are currently under review.

⁷ The transmission and toll roads segment includes ISA and its companies, which structure its GHG inventory under the GHG Protocol methodology.

**Assets operated by Ecopetrol S.A. (includes Refinería de Cartagena refinery)*

In addition, the metrics published in the 2023 Integrated Management Report were subject to third-party verification by the firm EY, following the International Standard ISAE3000.

For more information and details of the metrics, please consult:

- [2023 Integrated Management Report](#) (Environment chapter, Sections “Climate action”, “Water neutrality”, “Use of alternative energy and sources”, “Fuel quality”, “Clean air for the environment”, “Integrated waste management”, “Biodiversity and ecosystem services”, and “Circular economy”).
- [Sustainability Accounting Standards Board \(SASB\) 2023 Metrics Report](#) (for metrics of Ecopetrol and its subsidiaries).
- [Quarterly Results](#)

2.8 Climate-related targets

[The Ecopetrol Business Group is committed to achieving net-zero carbon emissions by 2050.](#) This plan includes the absolute goal of reducing by 50% of its scope 1, 2 and 3 emissions by 2050 and 25% of its scope 1 and 2 emissions by 2030 with 2019 as the baseline year. In this way, the business group contributes to Colombia's commitment to reduce by 51% of GHG emissions by 2030, in line with the targets as an advocate of the Paris Agreement.

To determine this target, the base year 2019 GHG emissions of the Company were estimated, including emissions generated by the assets operated by Ecopetrol S.A., the Refinería de Cartagena refinery, the transportation segment (CENIT, ODL, Bicentenario, ODC and OCENSA), Hocol, Esentia, ISA and an estimate of assets with partners.

Following the best practices to construct GHG inventories, the Ecopetrol Group updated the emissions of the base year and the historical series considering, among others, the following: (i) direct measurements of methane emissions using bottom-up and top-down technologies and construction of own emission factors which augmented these emission estimates in the assets of Ecopetrol S.A.⁸; (ii) acquisition and divestment of production assets; (iii) inclusion of emissions from ISA and its subsidiaries; (iv) addition of emissions from subsidiaries located in the United States (Permian and America) and Brazil; and (v) updating of global warming potentials and emission factors.⁹

In light of the above, in 2022 Ecopetrol recalculated its historical series for 2019–2022.

⁸ The bottom-up and top-down methane measurements performed in the production segment, as part of the Company's plan to improve the detection, quantification and sealing of fugitive emissions and venting encompassed 95% of the Company's facilities. With these measurements, emission factors were adjusted and constructed accordingly to modify the methodology for estimating emissions, representing an emissions increase of around 2.7 million tons of CO₂e/year.

⁹ The emission factor of the National Interconnected System increased by 54% due to the effect of El Niño Southern Oscillation (ENSO), which affected the composition of the national energy matrix, decreasing hydroelectric generation and increasing thermal generation.

To achieve the 2030 target, Ecopetrol is implementing projects and initiatives in energy efficiency, reduction of fugitive emissions, venting, and flaring, and renewable energies, which are below USD 50/tCO₂e (equivalent to the established internal carbon price).

To leverage compliance with the target, it is estimated that up to 30% of emissions will be offset by Natural Climate Solutions projects, a share that could decrease under the guidelines established for the Oil & Gas sector endorsed by the Science-Based Target Initiative (SBTi) or other applicable guidelines.¹⁰

For their part, the Midstream companies Esenttia and ISA and their companies achieved carbon neutral certification following their decarbonization strategy, which includes emission reduction goals.

For further details of the targets set by the Ecopetrol Business Group, please consult:

- [Sustainability Accounting Standards Board \(SASB\) 2023 Metrics Report](#) (for the metrics of Ecopetrol and its subsidiaries).
- [Ocesa Sustainable Management Report 2023](#) (available in spanish)
- [ODC Management Report 2023](#) (available in spanish)
- [ISA Integrated Management Report 2023](#)
- [Esenttia Sustainability Report 2023](#)

2.9 Advances regarding climate-related goals

In 2023 the Ecopetrol Group achieved an emissions reduction of 581,532 tCO₂e. The emissions reduction achieved exceeds by 43% the target established for the year, set at 407,040 tCO₂e. Consequently, between 2020 and 2023¹¹ a cumulative reduction of 1,491,644 tons of CO₂e was achieved. The emissions reduction target for 2024 is set at 269,600 tCO₂e and between 2020 and 2024, a cumulative reduction of 1.6 million tCO₂e is expected. The annual target is an indicator included in the Group's BSC.

Furthermore, the initiatives associated with renewable energies, energy efficiency and routine flaring in the power plants have specific targets included in the Roadmaps available in the Integrated Management Report 2023.

In flaring, Ecopetrol S.A. has committed to reducing routine flaring to zero by 2030, in line with the global Zero Routine Flaring initiative led by the World Bank.¹² In June 2024, the Company presented the third report to this organization, disaggregating the figure into total

¹⁰ In March 2022, the Science Based Target (SBTi) initiative published a Fossil Fuels Policy, which includes the following assumptions: (i) paused validation of fossil fuel sector targets; (ii) will not accept new commitments from companies or subsidiaries according to defined categories, and (iii) eliminated previous commitments from oil and gas companies effective immediately. The updated guidance is expected to be published by the end of 2023. Once published, Ecopetrol will review its ambition and alignment with SBTi.

¹¹ Includes reductions achieved by Ecopetrol S.A., the Midstream (transport) segment (CENIT, ODL, Bicentenario, ODC and OCENSA), Hocol and Esenttia.

¹² Zero Routine Flaring, a World Bank initiative launched in 2015 with the support of the Global Gas Flaring Reduction Partnership (GGFRP), which seeks to eliminate routine gas flaring in fields as soon as possible and by 2030 at the latest.

flaring and routine flaring. In 2023, over 71,000 tons of CO₂e were reduced through process optimization projects and the utilization of gas for self-generation or sale.

In March 2023, [Ecopetrol S.A. committed to reducing its methane emissions by 45% by 2025](#) and 55% by 2030 with respect to the 2019 baseline, in the direct operations of the production segment through the detection, measurement and mitigation of fugitive emissions and the reduction of venting in tanks and wells. This is in line with the recent regulation issued by the Ministry of Mines and Energy on the reduction of flaring and venting in hydrocarbon exploration and production activities and with voluntary commitments acquired by the EG as a participant in the Climate and Clean Air Coalition (CCAC)¹³ and the Oil and Gas Methane Partnership - OGMP 2.0.

During COP28, Ecopetrol increased its ambition to reach zero methane emissions by 2030 through the Oil and Gas Climate Initiative (OGCI) - Aiming for Zero Methane Emissions and reaffirmed its commitment to climate action by joining the Oil and Gas Decarbonization Charter (OGDC) initiative.

The methane emissions reduction plan has allowed the Company to close more than 1,769 leaks detected through detection and measurement campaigns carried out in the direct operations of the Upstream segment, or ~14,000 tons of methane (392,000 tCO₂e) as a result of the initiatives to reduce fugitive emissions and venting in tanks and wells. Additionally, under the OGMP 2.0 initiative, Ecopetrol received Gold Standard recognition in 2023 for its detailed reporting¹⁴ of emissions by assets and its progress in methane emissions measurement and reporting. By May 2024, the fourth OGMP report covered 100% of operated assets at L3 and L4 levels, with 18 directly operated material assets reaching L5 level.

For non-operated assets, 73 were reported, with 2 at L5 level (36 at L3-L4, 7 at L1-L2, and 28 excluded). In 2024, Ecopetrol participated in a scientific study with Carleton University and the United Nations Environment Program (UNEP) on methane emissions measurement in Colombia. This study includes Ecopetrol's most representative direct emissions assets and 8 assets with partners, using advanced technology for methane detection. The results will help Ecopetrol enhance methane emissions estimation and identify high-potential reduction projects.

Regarding scope 3 emissions, Ecopetrol will continue in the analysis of emission reduction alternatives and their associated costs, as well as bring them into line with the company's Strategic Plan to define a possible target for 2035 or 2040, including in these efforts both the supply chain and customers. In 2022, Ecopetrol reviewed different alternatives to reduce emissions by i) increasing the share of lower-emission hydrocarbons that replace

¹³ Climate and Clean Air Coalition (CCAC), a United Nations-led initiative to assess methane sources and implement cost-effective methane abatement technologies and practices.

¹⁴ Reporting levels: L1 - single consolidated; L2 - by emission category; L3 - generic emission factors for each type of source; L4 - direct bottom-up measurements; L5 - reconciliation of bottom-up and top-down measurements.

crude oil; ii) diversifying its product portfolio to include low-emission businesses that replace hydrocarbons; and iii) incorporating carbon sinks, either its own or those of third parties.

In the supply chain, Ecopetrol advanced in the inclusion of decarbonization clauses in prioritized contracts to encourage the estimating of GHG emissions, implement mitigation and offset measures and craft a decarbonization plan.

Committed to environmental sustainability, the supply chain launched a training program for key stakeholders, including buyers, suppliers, and contract follow-up professionals. In 2023, 10 training sessions were held, with an average of 273 participants per session. The following decarbonization topics were covered:

- Ecopetrol's Decarbonization Strategy for the supply chain
- Decarbonization and emissions mitigation plans
- Emissions offsets and carbon markets

The supply chain decarbonization strategy is based on supplier segmentation, identifying strategic suppliers that support decarbonization goals to focus efforts. The segmentation is based on the suppliers' greenhouse gas emissions during their contract operations with Ecopetrol, categorized as follows:

- High potential: More than 500 tCO₂e generated during the term of the contract
- Medium potential: Between 100 tCO₂e and 500 tCO₂e generated during the term of the contract
- Low potential: Less than 100 tCO₂e generated during the term of the contract

Ecopetrol made a commitment to be water neutral by 2045 by reducing by 66% freshwater withdrawal for industrial use in its operations, eliminating discharges to freshwater bodies, and offsetting 34% of the remaining water consumption; it also instituted the Water Neutrality Roadmap.

Regarding the “Clean Air for the Environment” initiative, GHG emission reduction efforts have led to a co-benefit in reducing 3,500 tons of VOC, 700 tons of NO_x, and 130 tons of SO_x, surpassing the established targets. Additionally, the following short-term goals have been set:

- Monitor the co-benefits of GHG emission reduction initiatives on criteria pollutant and VOC emissions.
- Reduce SO_x emissions by 2025 through the SO_x emission control project at the Barrancabermeja Refinery, targeting a reduction of 1,800 t/year.

Establish a monitoring network by 2025 using low-cost sensors and data analytics to implement an air quality monitoring and modeling system for the refineries.

For more information on these targets, please refer to the [2023 Integrated Management Report](#) (“Environment” Chapter).

CDP Benchmarking

For Ecopetrol, disclosing climate-related information serves as a way to inform stakeholders about progress, results, and actions taken to mitigate climate change. Ecopetrol reports annually on climate, water, and biodiversity through the CDP platform. These reports are available at the following link: <https://www.cdp.net/es/responses/22341>

2.10 Progress in Taskforce on Nature-related Financial Disclosures initiative

Ecopetrol has been a member of the Task Force on Nature-Related Financial Disclosures (TNFD) since 2021. Between 2022 and 2023, it conducted two pilots to test the LEAP (Locate, Evaluate, Assess, and Prepare) methodology proposed by TNFD. As part of the internal process, a gap analysis was performed on natural capital issues. Consequently, biodiversity was incorporated into the business risk category: "Inadequate response to challenges related to climate change, water, and biodiversity."

In the development of these pilots, the first focused on the Yarigui-Cantagallo field, where Ecopetrol identified and prioritized nature-related dependencies and impacts within its operations. Relevant biomes, natural assets, and ecosystem services were identified, using data from sources such as ENCORE, IBAT, Global Forest Watch, Water Risk Filter, and Ecopetrol's own information.

The second pilot applied the socio-ecological resilience tool at four Ecopetrol sites in the Middle Magdalena Valley. This tool is based on a dynamic model that simulates socio-ecological system processes in response to impacts from productive activities, generating time series and indicators that help set intervention limits in these territories without disrupting their balance.

Ecopetrol continues to learn about, apply, and integrate the TNFD framework to consolidate dependencies, impacts, risks, and opportunities related to natural capital, including climate change and water. One of the key challenges is bridging the gap between global climate scenarios (IPCC) and local ones, which demands deeper analysis and advanced tools. During the World Economic Forum, Ecopetrol committed to being an early adopter of the TNFD framework, aiming to generate its first report by 2025. You can find more about the early adopters here: [TNFD Adopters](#).

5. TCFD Table of Contents

The following table (see Table 10) presents the relationship between specific TCFD recommendations and disclosures and the sections of this report. It also refers to documents where more detailed information can be found.

Table 10. TCFD Table of Contents

Recommendation	Disclosure	Ecopetrol Group Report	Detailed information ¹⁵
Governance: Disclose the organization's governance regarding climate-related risks and opportunities.	a) Describe the Board's oversight of climate-related risks and opportunities.	1.1 Board's oversight of climate-related risks and opportunities.	IMR 2023- Message to Stakeholders: pp. 7-11, Governance structure and Board of Directors: pp. 29-47 20F 2023- 7. Corporate Governance: pp. 210-236.
	b) Describe management's role in assessing and managing climate-related risks and opportunities.	1.2 Management's role in assessing and managing climate-related risks and opportunities.	IMR 2023 - Duties of the Board of Directors and Senior Management in the oversight of impacts: p. 39, Board Members: pp. 33-35 , Risk Management: pp. 73-85 20F 2023 - 7.3.2 Board Committees: pp. 226-227, 7.6 Remuneration of Directors and Management: p. 234
Strategy: Disclose the current and potential impact of climate-related risks and opportunities on the organization's business, strategy and financial planning, where such information is material.	a) Describe the climate-related risks and opportunities identified by the organization in the short, medium and long term.	2.1 Climate-related risks and opportunities	IMR 2023 - 2040 Strategy: pp. 53-59, TCSG: pp. 155-184, Environmental strategy: p. 185-195, Climate change: pp. 196-227, Integral water management: pp. 2228-243, Biodiversity: pp. 244-255, Circular economy: pp. 190-195, Use of alternative energies and sources: pp. 216-220, Air quality: pp. 224-227 20F 2023 - 2.1.1 2040 Strategy: Energy that Transforms: p. 5, 3.11 Technology, Environment,

¹⁵ 20F - form 20-F filed with the Securities and Exchange Commission
 IMR- Integrated Management Report
 ACGR-Annual Corporate Governance Report
 SASB- Report on Sustainability Accounting Standards Board Metrics

			<p>Social and Governance (TESG): p. 85-89, 5.2 Risk Factors: pp. 148-194</p> <p>Ecopetrol website: Risk management</p>
b) Describe the impact of climate-related risks and opportunities on the organization's business, strategy and financial planning.	2.2 Impact of climate-related risks and opportunities on the organization's business, strategy and financial planning.	<p>IMR 2023 – Investments and environmental expenses: p. 186, Climate change: pp. 196-227, Integral water management: pp. 228-243, Circular economy: pp. 190-195, Use of alternative energies and sources: pp. 216-220, Air quality: pp. 224-227</p> <p>SASB 2023 - EM-EP-420a.3 (1) Amount invested in renewable energies; (2) revenues generated by the sale of renewable energies: p. 55, EM-EP-420a.4 Analysis of how the price and demand for hydrocarbons or climate regulation influence the capital investment strategy for exploration, acquisition and development of assets: p. 56</p> <p>20F 2023 - 2.1.2. 2022 – 2040 Strategy: Energy that Transforms: p. 5, Investment Plan, p. 8</p> <p>Ecopetrol website: Risk Management</p>	
c) Describe the resilience of the organization's strategy, taking into consideration	2.3 Scenario analysis	2021 CDP Climate - C3. Business Strategy (C3.2)	

	different climate-related scenarios, including a 2°C or lower scenario.		
Risk Management Disclose how the organization identifies, assesses, and manages climate-related risks and opportunities.	a) Describe the organization's processes for identifying and assessing climate-related risks.	3.1 Integrated Risk Management System	IMR 2023 – Risk Management System pp. 73-85 SASB 2023 - EM-EP-320a.2 Analysis of management systems used to integrate a culture of safety throughout the exploration and production life cycle: p. 94, EM-EP-540a.2 Description of the management systems used to identify and mitigate catastrophic and ultimate risks: pp. 71-72 20F 2023 - 5.3. Risk Management: pp. 179-185
	b) Describe the organization's processes for managing climate-related risks.	3.2 Inclusion of climate-related risks in the business risk map	IMR 2023 –Risk Management System: pp. 71-87 20F 2023 - 5.3. Risk Management: p. 179, 5.3.2 Managing Low Carbon Economy and Climate Change Risks: p. 181
	c) Describe how the processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	3.2 Inclusion of climate-related risks in the business risk map 3.3 Aligning business risks with ESG (Environmental, Social and Governance) issues and TESG strategy.	IMR 2023- Risk culture: p. 85

<p>Metrics and Targets: Disclose metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.</p>	<p>a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.</p>	<p>4.2 Metrics for assessing climate-related risks and opportunities.</p>	<p>IMR 2023 – Investments and environmental expenses: p. 186, Climate change: pp. 196-227, Integral water management: pp. 228-243, Biodiversity: pp. 244-255, Circular economy: pp. 190-195, Use of alternative energies and sources: pp. 216-220, Air quality: pp. 224-227, Comprehensive waste management: pp. 259-267</p> <p>SASB 2023 – Air quality EM-EP-120a.1: p. 24, Water management EM-EP-140a.1, 140a.2, 140a.3, 140a.4: p. 30</p> <p>Ecopetrol website: 2Q24 Quarterly results – TESG Dashboard</p>
	<p>b) Disclose Scope 1, Scope 2 and, Scope 3, if applicable, GHG emissions and related risks.</p>	<p>4.2 Metrics for assessing climate-related risks and opportunities.</p>	<p>IMR 2023 – Direct and indirect GHG emissions scopes 1,2 and 3: pp. 206-215</p> <p>SASB 2023 – GHG Emissions EM-EP-110a.1: p. 17</p>
	<p>c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance as compared to its targets.</p>	<p>4.1 Ecopetrol’s climate-related targets</p>	<p>IMR 2023 – Environmental strategy targets: pp. 185-189, Climate change: pp. 196-227, Integral water management: pp. 228-243, Biodiversity: pp. 244-255, Circular economy: pp. 190-195, Use of alternative energies and sources: pp. 216-220, Air quality: pp. 224-227</p> <p>SASB 2023 – Discussions on short- and long-term</p>

			<p>strategy and/or plan to manage emissions EM-EP-110a.3: pp. 22-23</p> <p>Ecopetrol website: Greenhouse Gas Mitigation, 2Q23 Quarterly Results - TESG Dashboard</p>
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Glossary

ANDI: National Business Association of Colombia for its Spanish acronym
 BSC: Balanced Management Scorecard
 BSC: Management's Balanced Scorecard
 CCAC: Climate & Clean Air Coalition
 CCUS: Carbon Capture, Use, and Storage
 CEO: Chief Executive Officer
 CFO: Chief Financial Officer
 CH₄: Methane
 CO₂: Carbon dioxide
 DJSI: Dow Jones Sustainability Index
 EBITDA: Earnings before interest, taxes, depreciation, and amortization
 ECCN: Colombia Carbon Neutrality Strategy for its Spanish acronym
 EII: Salomon Energy Intensity Index
 ELC: Entity Level Control
 ESG: Environmental, Social and Governance
 ExCo: Executive Committee
 GGFR: Global Gas Flaring Reduction Partnership
 GHG: Greenhouse gas
 GRI: Global Reporting Initiative
 HSE: Health, Security and Environment
 IDEAM: Colombian Institute of Hydrology, Meteorology and Environmental Studies
 IEA: International Energy Agency
 IMR: Integrated Management Report
 IPCC: Intergovernmental Panel on Climate Change for its Spanish acronym
 IRMS: Integrated Risk Management System
 ISA: Interconexión Eléctrica S.A. E.S.P.
 ISO 3100: International risk management norm
 KRI: Key Risk Indicator
 LDAR: Leak Detection and Repair
 LPG: Liquefied Petroleum Gas
 LTI: Long-Term Incentives
 MHCP: Colombian Ministry of Finance and Public Credit for its Spanish acronym
 MSC-WEF: Measuring Stakeholder Capitalism- World Economic Forum
 NCRE: Non-conventional renewable energy sources

NCS: Natural Climate Solutions
NDC: Nationally Determined Contribution
NO_x: Nitrogen oxides
NPV: Net Present Value
OGMP: Oil & Gas Methane Partnership
PID: Integrated Development Plan for its Spanish acronym
PIGCCme: Colombia's Comprehensive Climate Change Management Plan for the Energy and Mining Sector for its Spanish acronym
PNCTE: National Program of Tradable GHG Emissions Quotas for its Spanish acronym
PVS: Wildlife Project for its Spanish acronym
RAM: Risk Assessment Matrix
RCP: Representative Concentration Pathways
RENARE: National Registry of GHG Emission Reductions for its Spanish acronym
SASB: Sustainability Accounting Standards Board.
SBTi: Science-based targets.
SEC: Securities and Exchange Commission.
SFC: Financial Superintendence of Colombia for its Spanish acronym.
SHP: Small Hydroelectric power plant
SIGEA: Atmospheric Emissions Management System.
SOX: Sulfur oxides
SRI: Integrated Risk Management System..
TCFD: Task Force on Climate-Related Financial Disclosures.
TCNCC: Third National Climate Change Communication.
TEG: Technology Environmental Social and Governance.
TNC: The Nature Conservancy.
VOC: Volatile Organic Compounds
VCU: Vice-Presidency of Compliance.
VHR: Vice-Presidency of Human Resources.
WCS: Wildlife Conservation Society

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