



# Sustainability Report 2022

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# Message from the CEO

One of Petrobras' assumptions is to communicate clearly, objectively, and with transparency about the company's contribution to sustainability projects. Thus, the 2022 Sustainability Report sets forth our environmental, social and governance (ESG) strategy, commitments, targets, indicators, performance and practices.

In 2022, Petrobras' contribution to society with employee compensation, taxes, suppliers, financial institutions, and shareholders was BRL 483 billion. Additionally, investments of around BRL 121 million in voluntary social and environmental projects, of BRL 462 million in social and environmental programs related to licensing requirements, of BRL 32 million in cultural and sports projects were made, in addition to donations totaling BRL 272 million in aid to families under socially vulnerable situations.

The publication of the Petrobras Human Rights Guidelines, the establishment of the Human Rights Commission and the placing of specific commitments on the subject in the strategic plan inaugurated a new way of doing things for the company. In early 2023, we published our positioning aimed at promoting diversity and to strictly counter any harassment or discrimination. And the first steps towards this have already been taken, with the implementation of the Petrobras Program Against Sexual Violence. This is our goal, and we acknowledge there is a long way to go.

Peoples' health and well-being, environmental protection and operational safety are non-negotiable values and were present in the activities carried out throughout 2022, in line with the ambitions of zero fatalities and zero spills. In that regard, Petrobras seeks to constantly act to remain a global safety benchmark in the oil and gas sector. In 2022, we had a Total Recordable Injury (TRI) of 0.68, which represented an increase of 0.14 when compared to the previous year. Still, it was below the alert limit of 0.7 set by the company for the year. However, with the deepest regret, we report the occurrence of five fatalities in 2022, which underwent a strict analysis and learning process to continuously improve our processes in order to make them safer and more resilient. In this regard, we held Human Factors Day, where strengthening active listening by the workforce provided learning from daily activities and the continuous improvement of our processes and the strengthening of our safety, environment and health culture proactively and preventively.

Improving the integrity and the reliability of facilities and process improvement have been a constant pursuit at Petrobras and, as a result, over the past five years, process safety accidents have been reduced by more than half. In 2022, nine events involving oil and oil products spills with a volume greater than one barrel were recorded. Fortunately, the integrated emergency response structure made it possible for fast and effective actions to be taken for the prevention and mitigation of the impacts of these accidental events.

Recognizing the climate urgency, for more than a decade Petrobras has been working on the decarbonization of its operations, ensuring a robust path towards reducing operational emissions. In addition to the improvements already achieved over the years, we have the ambition to achieve neutrality of operational emissions by 2050. Between 2015 and 2022, absolute operational Greenhouse Gases (GHG) emissions fell by 39% and we made progress in emissions efficiency in all our operational segments. As of 2023, we aim to further expand our operations in low-carbon businesses, developing new business opportunities in CCUS (carbon capture, utilization, and storage), renewable energy, hydrogen and biorefining, as well as promoting nature-based solutions that mitigate climate change, in particular the preservation and expansion of forests.



In compliance with license requirements, 65 protected areas were strengthened, through a contribution to the Environmental Compensation Fund, in the amount of BRL 66.5 million. We also invested approximately BRL 95 million in research and development of technological solutions projects aimed at improving the management of biodiversity, water resources, and effluents, as well as minimizing, giving value, and reusing solid waste. In the last three years, we have reduced fresh water withdrawal by more than 20% in our operations and reduced the generation of process residue by around 18%. In 2022, 76% of waste from the process was destined. Our Biodiversity Action Plans, which are being prepared for all our facilities, are aimed at improving biodiversity in our areas of operation, and we are already developing methodologies for assessing the net gain in biodiversity.

***There is no value creation without taking care of people and without thinking about our impact on the world. That is true sustainability.***

In line with the continuous improvement of transparency and governance, in 2022, Petrobras approved a new Tax Policy, as well as the Price Formation Guideline for Petroleum and Natural Gas Products in the Domestic Market. And, in 2023, we approved the new commercial strategy for defining gasoline and diesel prices, in line with the aforementioned guideline. Our governance efforts have been recognized, and for the sixth consecutive time we were certified with the Governance Indicator of the Office for Coordination and Governance of State-owned Companies (IG-SEST), ranked the highest level of the indicator.

For the second year in a row, we are part of the Dow Jones Sustainability Index World™, with a maximum score in the Environmental Report, Risks Related to Water and Social Report criteria, and special mention in the Operational Eco-efficiency, Labor Practices and Human Rights criteria.

Following major transformations in the world, in special, changes in the energy, digital, social, and environmental segments, Petrobras is going through a phase of changes and new perspectives. In April 2023, we approved our new organizational structure. The new organizational chart aims at preparing the company for the energy transition, strengthening the project development area through greater integration with the research and development area and increasing the synergy between corporate processes.

With agility and great teamwork, on June 1, 2023, we approved the strategic and guiding elements of the Petrobras Strategic Plan for the period from 2024 to 2028, including planned investments in low carbon projects of between 6% and 15% of the total investment in the next plan. We also outlined six new guidelines: attention to people; adequacy and improvement of to the current refining park; focus on profitable assets and E&P decarbonization; sustainable development of the country; fair energy transition; and international operations through technological and operational partnerships.

These drivers will lead us to the company's vision, which has been revised: "To be the best diversified and integrated energy company in value generation, building a more sustainable world, reconciling the focus on oil and gas with diversification into low carbon businesses (including petrochemicals and fertilizers), sustainability, safety, respect for the environment and total attention to people."

This vision reinforces our vocation of being an integrated energy company and highlights the business diversification needed for the energy transition, while reinforcing our concern for people.

We are committed to the socioeconomic development of the regions where we operate and to improving the quality of life of society as a whole, respecting human rights and the environment, in accordance with the principles of the United Nations Global Compact and the Guiding Principles on Human Rights and Business and inspired by the Sustainable Development Goals.



Those are the changes that will materialize the reason of our existence, which is set forth in our new purpose: “To provide energy that ensures prosperity in an ethical, just, safe, and competitive way.” What we seek is a trajectory for the energy transition to a fair, inclusive low-carbon economy, with changes in energy use patterns, assessing and minimizing the social impacts for all parties: our employees, communities, and our entire supply chain.

We trust that, with the combination of strategic assets, a highly qualified and committed technical workforce, and the largest research center in Latin America, it will be possible to promote solutions for a sustainable future of Petrobras in the coming decades and for the newer generations. And we will do all this while valuing our workers and ensuring the level of excellence in operational safety.



**Jean Paul Prates**  
**Petrobras CEO**



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# About the report

The 2022 Sustainability Report meets the requirements of Law 13,303/16 and covers the period from January 01, 2022, to December 31, 2022, with the addition of relevant data regarding the history or facts that occurred in the initial months of 2023, until 06/01/2023. In the cases when this occurs, the period is stated. Petrobras' Sustainability Report is published annually, after the Financial Statements and other specific documents (such as the Human Rights and Corporate Citizenship Supplement and the Climate Change Supplement) referenced in this report.

We use the Global Reporting Initiative (GRI Standards 2021) as guidelines for sustainability reporting, and we respond to indicators contained in standards from the Sustainability Accounting Standards Board (SASB), aimed at the oil and gas industry that are suitable for our organization (Exploration & Production, Midstream and Refining & Marketing). As a complementary reporting methodology, we use the International Petroleum Industry Environmental Conservation Association (Ipieca) Sustainability Reporting Guide. The GRI Summary, as well as the correlation with the IPIECA Guide, with the principles of the Global Compact and the United Nations Sustainable Development Goals (SDG) can be found at the end of this report.

The scope of information includes our activities in Brazil and abroad, including data regarding subsidiaries listed in the Financial Statements, when relevant to the parent company (consolidated).

In some cases, the data considers only the parent company or the parent company and some subsidiaries that bring materiality to the indicator. In this case, the information under consideration is stated next to the indicator.

In compliance with recommendation 5.1 of GRI 1: GRI Fundamentals, we increased the number of indicators with consolidated data compared to our previous publication.

Our report contains initial chapters that include the strategic deployment for ESG (Environmental, Social and Governance) topics based on risks and opportunities identified in the short, medium, and long term, and engagement with our stakeholders, given that their demands are considered in our management and reporting. Next, we present our material topics, their indicators, initiatives, and management practices, distributed in the ESG dimensions.

The emissions data published in the 2021 Sustainability Report underwent minor adjustments due to the inventory review following third-party certification completed in July 2022.

Since the Board of Directors is responsible for deciding on matters present in the law, in the Bylaws, or in a rule approved by the Board itself, which in this case does not include the approval of material topics, this report and its materiality matrix were approved by our Executive Board. The Executive Board is the head governance body responsible for managing the company's business in accordance with the mission, objectives, strategies, and guidelines established by the Board of Directors. The report was also validated by the advisory committee to the BoD, Committee on Safety, Environment and Health (CSMS).

KPMG is responsible for the limited assurance service for the information in the 2022 Sustainability Report and its report can be seen in the chapter Auditors' limited assurance report.



## Notice to the reader



This document may contain forecasts that are only a reflection of management expectations. The terms "anticipates", "believes", "expects", "forecasts", "intends", "plans", "projects", "targets", "shall", as well as other similar terms, seek to identify such forecasts, which obviously involves risks or uncertainties that we may or may not predict, and therefore are

not guarantees of future results. Therefore, the future results of our operations may differ from current expectations, and the reader should not rely solely on the information contained herein. We undertake no obligation to update such forward-looking statements in light of new information or future developments in this document.



[2-1] [2-6]

## About us

We are a publicly traded corporation that operates in an integrated and specialized manner in the oil, natural gas and energy industry. We are experts in exploration and production as a result of decades of development in Brazilian basins, especially in deep and ultra-deep waters, which has made us a global leader in this segment.

However, our business goes beyond the reach of the field and oil and gas extraction. This means a long process where we transport oil and gas to our refineries and natural gas treatment units, which must be equipped and constantly evolving to supply the best products. Our priority is to operate at low costs and with a low carbon footprint, contributing to our commitment to sustainable development for a society in transition.

There were no significant changes in our business model in the last year. On the other hand, during this period, we stopped providing services related to the operation and maintenance of TAG's transport pipelines, we began Transbel operations, and ended our shale processing operations on November 4, 2022, by completing the sale of shares in the company Paraná Xisto S.A., located in São Mateus do Sul, Paraná.

Our main products sold in Brazil and globally are petroleum, diesel, gasoline, natural gas, aviation kerosene, LPG, naphtha, and fuel oil.

**PRODUCTION DATA** (consolidated)

Activity	Quantity
Refining crude oil and other raw materials Million barrels per day (MMbpd)	1.662
Refining operation capacity <sup>1</sup> Million barrels per day (MMbpd)	1.851
Oil production Million barrels per day (MMbpd)	2.2
Natural gas production Thousands of barrels of oil equivalent per day (Mboed)	531
Production of synthetic gas from shale ore Millions of standard cubic feet per day (MMscfd)	4.2240
Synthetic oil production using shale Million barrels per day (MMbpd)	0.0021
Total natural gas transported <sup>2</sup> Billions of cubic meters (Bn m <sup>3</sup> )	7.75 (pipelines)
Total transported crude oil and refined products Millions of cubic meters (MM m <sup>3</sup> )	630 (pipelines and terminals) 63.1 (Transpetro ships)
Non-conventional oil production <sup>3</sup> Million barrels per day (MMbpd)	0.0028
Non-conventional oil production <sup>3</sup> Thousands of barrels of oil equivalent per day (Mboed)	9.09

>> Information about our activities can be found in the item "Our businesses" of Form 20F.

## Reserves

We have a large proved reserve base and operate and produce most of Brazil's oil and gas. Most of our proved reserves in the domestic market are located in the Campos and Santos offshore basins in southeastern Brazil, which allows us to optimize our infrastructure and limit our development and production costs for our new discoveries. In addition, we have developed exploration and production knowhow in deep and ultra-deep waters from almost 50 years of operations in Brazilian sea basins. The Santos Basin is the main source of our future growth in proved reserves and oil production.

<sup>1</sup> Doesn't consider units divested by 12/31/2022.

<sup>2</sup> Transported by Transpetro.

<sup>3</sup> Non-conventional production (*shale*): Shale from the Neuquén River (Argentina).



## Share control

We are controlled by the Federal Government, which, on Friday, March 31, 2023, directly held 50.26% of our common shares and 28.67% of our total share capital. The Federal Government also held an indirect interest of 18.48% of our preferred shares; and 7.94% of our total share capital, through the following shareholders: Brazilian National Economic and Social Development Bank (BNDES) and BNDES Participações S.A. (BNDESPAR.) We don't currently have a shareholder agreement.

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>> [Information about our controlling shareholders can be found in item 6.5 of the Reference Form.](#)

## Operations in Brazil

We operate most of Brazil's refining capacity, most of which is concentrated in the Southeast, a region where the country's most populous and industrial markets are located, and adjacent to the sources of most of our crude oil. We operate in the sale of oil products through a planned combination of oil refining in our refineries and the import of oil products, seeking to maximize margins. We are also involved in the production of petrochemicals through holdings in various companies.

We are responsible for the largest natural gas-powered thermoelectric facility in Brazil. Our plants have an important role in the flow and monetization of our own gas, and the portfolio management of the power generation complex undergoes permanent evaluation. In relation to natural gas, we operate in the production, flow, processing, transport, and import of Liquefied Natural Gas (LNG), LNG regasification, supply of gas for own consumption and for the marketplace, where the transport is undergoing a divestment process.

Natural gas can be fuel or raw material for different uses, such as locomotion, the transformation industry, heating or cooking in homes, and the production of fertilizers, as well as for generating energy in thermoelectric plants.

In 2022, we achieved yet another annual record in gas utilization, reaching 97.3% utilization in relation to gas produced. In addition, it is worth mentioning that in Oct/22 we reached our monthly record, with 98.0%.

Our largest gas customers are the natural gas distribution companies, responsible for serving the captive market made up of users in the industrial, commercial, residential, and vehicular segments, in addition to customers in the thermoelectric segment. We also cater to customers who act as free consumers, consisting in most cases of large industrial plants, as well as refineries and thermoelectric plants.

To serve our consumer market, we process natural gas from our onshore and offshore production (mainly from fields in the Campos, Espírito Santo and Santos Basins), we import natural gas from Bolivia, and LNG through the regasification terminals in Guanabara Bay and Pecem.

Natural gas is transported through pipelines that connect the main sources of supply (domestic production and imports) to consumers.

Brazil has an integrated transport pipeline network that extends over almost the entire Brazilian coast, from Ceará to Rio Grande do Sul, in addition to reaching more inland regions of the country in Minas Gerais, São Paulo and Mato Grosso do Sul. Brazil also has an isolated system in the Northern Region that moves natural gas production from Urucu to Manaus. The transport pipeline network is operated by different transport companies, and we hold shares in some, but are undergoing a divestment process.

We participate in the Brazilian energy market primarily through our investments in gas-fired thermoelectric plants, renewable energy and interests in fuel oil, diesel, and natural gas plants.



## International operations

As of 12/31/2022, we had activities in six countries, in addition to Brazil. In Latin America, our operations are exploration and production in Argentina, Bolivia, and Colombia, where we also have oil product distribution activities. In North America we produce oil and gas through a joint venture. We have subsidiaries in The Netherlands (Rotterdam), USA (Houston) and Singapore that support our commercial and financial activities. These units are responsible for market intelligence and trading of oil, oil products, and natural gas, in addition to storage (tankage) and chartering operations.

The management of our portfolio includes continuous and integrated analysis of our assets, seeking at generating value and competitiveness, in line with the corporate strategies for the business segments. Active portfolio management seeks to ensure good market opportunities, in accordance with our strategic objectives, generating value for shareholders, employees, communities, customers, suppliers, society and partners.

[3-1] [3-2]

# Materiality

The ten material topics that make up our matrix are the result of the process of context analysis, impact mapping, analysis of significance, prioritization and validation of the topics that represent our most significant impacts on the economy, the environment, and people, including impacts on human rights.

Our materiality is reviewed annually and was, in its latest update, reviewed in accordance with the 2021 GRI (Global Reporting Initiative Standards), more specifically GRI 3 - Material Issues and GRI 11 – Oil and Gas Sector, in order to:

- Identify and assess our impacts, real and potential, positive and negative, in the short, medium and long term
- Contribute to the vision of how the company creates value
- Increase transparency, with more ample communication of the most relevant topics to our stakeholders, for a better assessment of our performance
- Evaluate whether, based on changes in the context of the period, there were changes in material topics
- Contribute to the company's sustainability management

Our process was also developed with the intention of being circular, in order to create a constant feedback loop over time and was carried out with the support of the specialized consulting company Green Domus.

## PETROBRAS MATERIALITY CONSTRUCTION PROCESS





For the context analysis, internal documents were studied, such as: Strategic Plan, Management Report, Form 20-F, Code of Ethical Conduct, standards for identifying social and environmental impacts, Ombudsman's Office reports, customer service, media and social network. Documents from the sector or that have impacts related to our business were also studied, such as: Global Risk Report 2022, Global Sustainability Yearbook 2022, Ipieca Sustainability Guide, SDG Ambition, material topics from Ipieca and the Sustainability Accounting Standards Board (SASB).

In the impact mapping stage, in addition to the documents mentioned in the context analysis, interviews were conducted with the organization's managers in complement the identification process, allowing these managers to contribute to the next stage called significance analysis.

The interviewees, in addition to spontaneously mentioning the most significant actual and potential risks to the economy, the environment and people, including impacts on human rights, attributed the significance of such impacts based on a severity and probability analysis. Respondents were invited to perform this analysis when assigning importance, as well as being instructed to provide severity precedence over likelihood of potential negative human rights impacts. However, to collect the significance of internal and external documents, the frequency analysis methodology of such impacts was used, except for media and social network analysis documents. In these cases, the significance not only considered the frequency, but also the reverberation (for example, topics with greater engagement or coverage had greater significance). For the significance stage, spontaneous and prompted interviews were also done, and surveys with the aid of a list of impacts identified in the mapping and internal significance stage. In other words, the most significant impacts from the document analysis and internal interviews were consulted for the following (prompted) interviews and for the surveys. For consolidation, data were normalized on a scale between zero and one.

Since the GRI started to pre-establish topics and their corresponding impacts that should be evaluated, impacts related to the topics "conflict and security" and "unfair competition" were included for the prompted interviews and surveys even though during the stages of context analysis and mapping they have not been rated as more relevant. With this, the stakeholders were able to assess, when prompted, the entire universe of topics required by GRI 11. No impacts associated with topics other than the sectoral norm were identified.

The stakeholders included for the significance stage were:

- Customers
- Consumers/Society
- Communities in coverage area
- Suppliers
- Investors
- Media
- Public authorities
- Internal public

For prioritization, impacts were analyzed in line with the 22 material topics of the GRI Standard 11 and their data were normalized and later grouped into Petrobras' material topics. For example, the impact "atmospheric pollution and its impacts on ecosystems, people's health and the well-being of local communities" was aligned with the topic of the GRI Standard "Atmospheric emissions". In the consolidation process, this GRI topic was grouped with the topics "GHG Emissions" and "Adaptation, resilience and climate transition" since Petrobras manages these topics in an integrated manner. The Petrobras topic was then titled as: "Climate resilience, GHG emissions and other gases".



Through the method, six topics classified as highly important were selected both in the internal analysis (from the perspective of the organization) and from the external analysis (from the perspective of the interested parties) and four topics as important. Petrobras' material topics are listed below, in order of significance, with the first item being the most important.

**1<sup>st</sup> ECONOMIC IMPACTS:** Consequences from payments of taxes, royalties, salaries and suppliers, distribution of dividends and their consequences at the local, national, and global level, such as the multiplier effect on the economy, social transformations, and improvements in infrastructure through these payments. It includes impacts on business, market and value chain arising from vulnerability to commodity prices, variation in production and demand, pricing policy adopted and investments and divestments of companies and assets, as well as tax approach, tax compliance and accountability reports for payments to governments.

**2<sup>nd</sup> BUSINESS INTEGRITY:** Governance and compliance mechanisms covering aspects of corporate integrity, positioning in relation to ethics and anti-corruption, promotion of a balanced and fair environment. It includes actions to prevent, detect and remedy misconduct and harmful acts committed against the company, including those related to fraud, corruption, influence peddling, money laundering, commercial sanctions, conflict of interests and other illicit activities against management that cause economic and reputational impacts for the company, its investors and value chain, as well as the management of contracts and availability of public information regarding them. It includes the risk of negative impacts due to a weak system, ineffective controls, or biased supervision, as well as the risk of positive impacts due to responsible business practices and integrity commitments in the value chain.

**3<sup>rd</sup> CLIMATE RESILIENCE, GHG EMISSIONS AND OTHER GASES:** Direct and indirect emissions of greenhouse gases (scopes 1, 2 and 3), risks and opportunities, and the company's approach to climate change and energy transition. It includes management of atmospheric emissions and their impacts on ecosystems, people's health, and the well-being of local communities. It includes positive impacts from the implementation of technologies in the process to reduce the emission intensity, in the development of products with less environmental impact, and mitigation programs and projects.

**4<sup>th</sup> ACCIDENT PREVENTION AND MANAGEMENT:** The set of strategies, plans and management practices adopted by the company to promote the safe operation of assets and maintain the readiness of emergency response systems to mitigate impacts on human life, the environment, infrastructure, and reputation. It includes the ability to perform integrated work with public authorities, partners, the community, and other actors in emergencies, such as response actions for leaks at sea to prevent them from reaching the coast or any sensitive areas.

**5<sup>th</sup> BIODIVERSITY:** Consists of managing risks and impacts to biodiversity, seeking to avoid and minimize impacts, such as changes in air, soil and water quality and loss of fauna and flora species, and when this is not possible, recover and/or compensate for residual impacts in line with the mitigation hierarchy, throughout the life cycle of the projects. It includes programs and projects for environmental protection and restoration, contributing to the conservation and improvement of biodiversity and ecosystem services, especially in areas of high biodiversity value in terrestrial and especially oceanic environments, due to the greater activity in this biome.

**6<sup>th</sup> LOCAL AND TRADITIONAL COMMUNITIES:** Economic and social development of communities, directly or indirectly, with the installation of the company and the implementation of local development programs, social inclusion and reduction of inequalities, investment in infrastructure and services for the community, as well as the company's approach in the relationship process community. Negative impacts on the community in the investment and divestment process, general social disturbances, and risk of human rights violations in the community. It includes direct and indirect impacts such as: production of noise, odor, soot, demographic increase, increase in the influx of workers and vehicle traffic, increase in the cost of living and impacts on indigenous and traditional communities such as fishing due to the areas of restriction, carrying out seismic and support vessel traffic, as well as those resulting from leaks. It includes impacts from the



company's efforts to raise community awareness regarding accidents, including those caused by third parties, such as fuel theft, and to prevent violence or violation of human rights by the company's security forces in conflict situations. It includes positive impacts such as security and protection for local communities through dialogue between communities and public security forces.

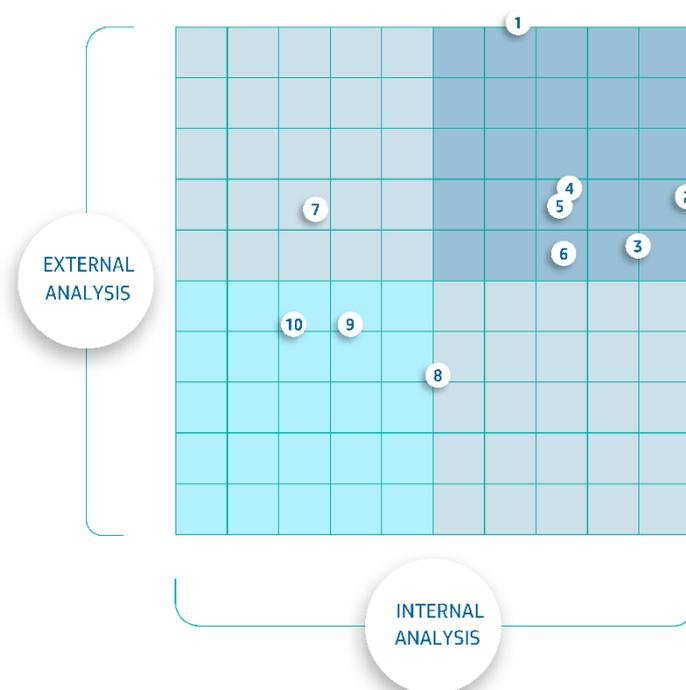
**7<sup>th</sup> LABOR PRACTICES AND EQUALITY OF OPPORTUNITY:** Employment opportunities and positive impacts on workers through the employment practices adopted and their influence on the supply chain. It includes impacts on employees, on their careers and development, and on the organizational environment due to the level of transparency in communication and the establishment of dialogue, especially in career advancement processes, and the company's policies and practices in relation to the promotion of non-discrimination, diversity, equity, inclusion, and equality of opportunity.

**8<sup>th</sup> SAFETY, HEALTH, AND WELL-BEING:** Company approach to achieving healthy and safe working conditions. It includes the effort to prevent physical and mental damage to workers and to promote health, seeking to avoid negative impacts such as fatalities, accidents at work and occupational diseases.

**9<sup>th</sup> WATER AND EFFLUENTS:** Variation in the availability or quality of water in our areas of influence due to the capture/or disposal of effluents associated with the company's activities, including produced water. It covers negative impacts on biodiversity and human health in the case of water scarcity for capturing water or assimilating our effluents, and positive impacts such as the return of water resources in better quality than those collected or in the implementation of projects for the conservation and recovery of springs and riparian forest.

**10<sup>th</sup> WASTE MANAGEMENT AND DECOMMISSIONING:** It covers measures for the proper management of solid waste throughout the lifecycle of our businesses. This includes circular economy practices that seek to prevent waste generation by reducing, reusing, recycling, and treating hazardous and non-hazardous waste and environmentally appropriate disposal of waste, valuing materials and resources and avoiding or mitigating possible impacts to the environment and human health. This includes the decommissioning process related to dismantling, transportation and disposal of equipment, structures, and waste, as well as its risks and opportunities. It also includes the proper planning and execution of studies and projects, all while seeking sustainability, environmental protection, safety, and care for people.

When comparing the view of impacts on stakeholders and the organization, the topics are distributed as follows:





Of the 22 topics in Standard 11, six of them were considered non-material for having a priority lower than 0.2 on the normalized scale (from 0 to 1). In other words, all those with a scale of 0.2 or higher were considered material. They include: “forced labor and modern slavery”, “public policy”, “unfair competition”, “freedom of association and collective bargaining”, “rights to land and natural resources” and “rights of indigenous peoples”.

The impacts related to the topic “forced labor and modern slavery” appeared only once in the evaluated internal documents and not once in the external ones. In internal interviews, the topic appeared spontaneously only once and was evaluated as having low significance. It should be noted that the scale used for significance was: minimal, low, medium, high or very high. When the prompted method was used, only the stakeholder group “customers” evaluated the topic as having a significance of medium to high. All others were evaluated as having a significance between very low and low.

Although impacts related to the topic “rights to land and natural resources” are in the internal and external documents evaluated, they were only mentioned spontaneously in a single internal interview. In the prompted method, such impacts were indicated as non-existent, with low or very low significance by stakeholders. Only “internal public” evaluated this with a significance between low and medium.

The impacts regarding the topic “public policies” had two spontaneous mentions in the internal interviews, and only one of the cases was evaluated as having a high level of significance. When prompted, stakeholders evaluated it with a significance between medium and low, except for the stakeholder group “public authorities”, who evaluated it as average, and the stakeholder group “investors”, who evaluated it as very low.

Although impacts related to the topic “labor union freedom and collective bargaining” appear in two evaluated documents, they were not mentioned spontaneously in the internal interviews, and when prompted, stakeholders evaluated them as non-existent, with low or very low significance. Only “internal public” evaluated these impacts as having a significance between low and medium.

Finally, the impacts related to the topic “unfair competition” appeared in only two documents, in no spontaneous internal interview, and when prompted, were evaluated as having significance level between very low and medium. Only the stakeholder group “clients” evaluated it as having a significance level between medium and high.

Since in Brazil the concept of traditional peoples (which includes the local fishing community) also includes indigenous peoples, the management of the relationship with the local community was classified as of high importance in the significance process. Also, Petrobras is undergoing the licensing process for the Brazilian Equatorial Margin; therefore, the material topic “rights of indigenous peoples” was grouped with the topics “local communities” and “conflict and security” of GRI Standard 11. The list of the 22 GRI topics and the 10 Petrobras topics can be seen below:



## PETROBRAS MATERIAL TOPICS COMPARED TO GRI TOPICS

GRI Topic	Petrobras Topic
11.1 - GHG emissions	
11.2 - Adaptation, resilience and climate transition	3 <sup>rd</sup> - Climate resilience, GHG emissions and other gases
11.3 - Atmospheric emissions	
11.4 - Biodiversity	5 <sup>th</sup> - Biodiversity
11.5 - Waste	
11.7 - Closing and rehabilitation	10 <sup>th</sup> - Waste management and decommissioning
11.6 - Water and effluents	9 <sup>th</sup> - Water and effluents
11.8 - Asset integrity and process safety accident management	4 <sup>th</sup> - Accident prevention and management
11.9 - Occupational health and safety	8 <sup>th</sup> - Safety, health, and well-being
11.10 - Hiring practices	
11.11 - Non-discrimination and equality of opportunity	7 <sup>th</sup> - Labor practices and equality of opportunity
11.12 - Forced labor and modern slavery	-
11.13 - Freedom for labor unions and collective bargaining.	-
11.14 - Economic impacts	
11.21 - Payments to governments	1 <sup>st</sup> - Economic impacts
11.15 - Local communities	
11.18 - Conflict and safety	6 <sup>th</sup> - Local and traditional communities
11.17 - Rights of native peoples	
11.16 - Rights to land and natural resources	-
11.19 - Unfair competition	-
11.20 - Fighting Corruption	2 <sup>nd</sup> - Business integrity
11.22 - Public policies	



The comparison between the material issues raised and Petrobras' latest materiality matrix can be seen in the table below. In this comparison, considering the analysis requirement of the 22 topics indicated by the GRI Standard 11 and the classification used in the standard, we had a change of topics, although the content is similar in some cases, but with a different distribution. The following were included as material topics: "biodiversity"; "labor practices and equality of opportunity"; "water and effluents"; and "waste management and decommissioning". Despite not having been included as material in the previous materiality assessment, they were present in our reports with some indicators.

The previous topic "Regulatory environment, market opening and competition" included several types of content. It was defined as: respect for legislation, compliance management, lobbying and competitive behavior, as well as adapting practices to comply with the regulatory environment and market opening. The sole GRI material topic "unfair competition", as noted earlier, was not attributed high significance in this new materiality. It should be noted that, even so, our "business integrity" topic provides information regarding market regulations and our position to avoid anti-trust practices.

>> [Additional information about the market and competition can be found on Form 20-F.](#)

## MATERIAL TOPICS COMPARED TO THE TOPICS OF THE PRIOR REPORT

Topic 2021	Topic 2022
1- Business ethics and fighting corruption	Business integrity
2 - Climate resilience and transition to a low-carbon economy	Climate resilience, GHG emissions and other gases (inclusion of atmospheric emissions as material)
3 - Active and transparent communication	Economic impacts (includes the portion of transparent communication related to payments to governments, portfolio management, and other topics that impact stakeholders economically)
4 - Safety and commitment to life	Safety, health, and well-being
5 - Accident and leak prevention	Accident prevention and management
6- Regulatory environment, market opening, and competition	Economic impacts (includes impacts related to pricing and payments to governments)
7 - Economic-financial resilience	Economic impacts (includes impacts related to the production curve)
8 - Socioeconomic impacts:	Economic impacts (partially) Local and traditional communities (partially)
-	Biodiversity (new as material)
-	Labor practices and equal opportunity (new as material)
-	Water and effluents (new as material)
-	Waste management and decommissioning (new as material)



For the validation stage, presentations were made to Petrobras' Health, Safety and Environment Committee (HSMC), as well as individual interviews with some of its members and stakeholders who are specialists in sustainability and/or the oil and gas sector. This process sought to test our selection of material topics, gathering the impressions of specialists regarding:

- the scope of the topics raised, helping to ensure that no potentially material topic for the company or the sector was neglected
- the threshold we established to define which topics are material for the report
- the alignment with the topics of sectorial standard GRI 11

***As a result, the test contributed to improving the wording of the identified material topics and to the writing of the Sustainability Report itself, but it did not question the identification of material topics per se, the methodology, or the prioritization.***

The topics correlated to the Sustainable Development Goals can be seen in the table below:



	Economic impacts	Business integrity	Climate resilience, GHG emissions and other gases	Accident prevention and management	Biodiversity	Local and traditional communities	Labor practices and equality of opportunity	Safety, health and well-being	Water and effluents	Waste management and decommissioning
1 NO POVERTY	●		●			●	●			
2 ZERO HUNGER										
3 GOOD HEALTH AND WELL-BEING			●			●		●		●
4 QUALITY EDUCATION							●			●
5 GENDER EQUALITY	●					●	●			
6 CLEAN WATER AND SANITATION					●	●			●	●
7 AFFORDABLE AND CLEAN ENERGY			●							
8 DECENT WORK AND ECONOMIC GROWTH	●		●				●	●		●
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	●		●							
10 REDUCED INEQUALITIES	●						●			
11 SUSTAINABLE CITIES AND COMMUNITIES			●			●				●
12 RESPONSIBLE CONSUMPTION AND PRODUCTION		●	●	●	●				●	●
13 CLIMATE ACTION			●							
14 LIFE BELOW WATER			●	●	●				●	●
15 LIFE ON LAND			●		●				●	●
16 PEACE, JUSTICE AND STRONG INSTITUTIONS	●	●				●	●			
17 PARTNERSHIPS FOR THE GOALS	●									

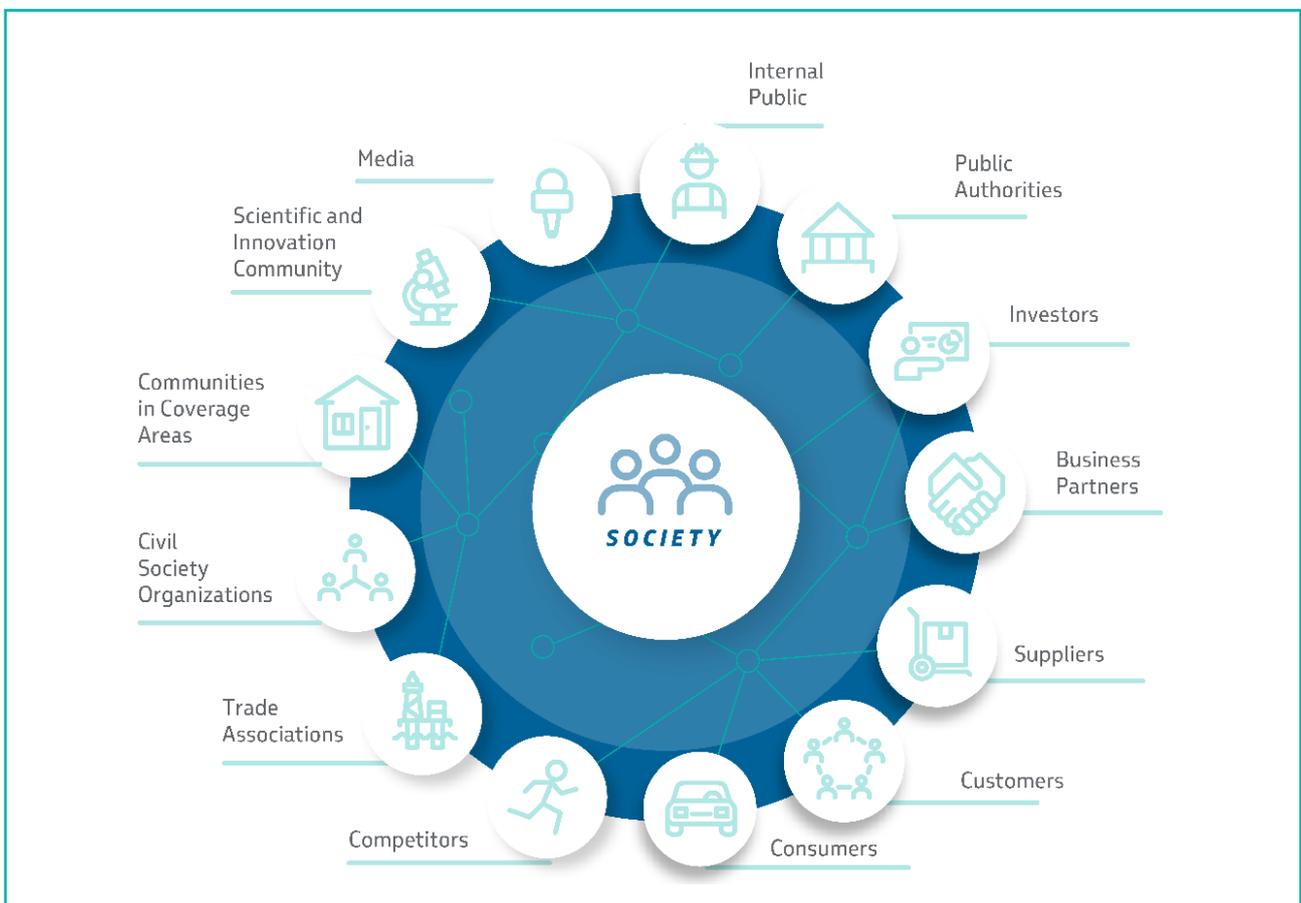
[2-29]

# Stakeholder engagement

We classify stakeholders as groups of individuals and organizations that have common social, political, economic, environmental, or cultural issues and needs. They establish or may establish relationships with us and can influence or being influenced by our activities, business, and reputation. The selection of stakeholders that will be engaged is done through prioritization based on the analysis of relevance and impact, in addition to the existing relationships. The criteria can be different according to each interest group.

Engagement actions aim at dialogue, defending interests, increasing favorability, and strengthening ties with those involved, which allows us not only to present our positions and plans, but also to better understand the doubts, needs and expectations of these stakeholders. This approximation enables a more effective flow of information and, consequently, mutual gains over time.

Our classification of stakeholders is shown in the following figure:



## Engagement with our stakeholders

Our approach for engagement with stakeholders is adapted according to the characteristics of each stakeholder, as shown below:



Internal Public



- > Operational highlights
- > HSE
- > Strategy, performance and results

Main concerns and topics raised by stakeholder

- > Hybrid work regime
- > Collective Bargaining Agreement (ACT)
- > Portfolio management (divestments and investments)
- > Organizational changes
- > Compensation and benefits
- > Pension Plan
- > Health insurance plan

How we seek to ensure meaningful stakeholder engagement



Engagement with our internal public occurs through digital interaction on our internal communication channels, such as intranet, social networks, online communities, and sharing of messages and news, as well in-person and virtual events. These channels cover a wide range of topics of interest to employees, such as company strategies, policies, initiatives and guidelines, operational results and highlights, and people management practices. In 2022, we had more than 36 million visits, 1.5 million of which was to the news tab. Also noteworthy is Workplace Petrobras, our internal social network focused on communication and relationships. There, communication is done through personal profiles and topical groups. In 2022, the approximately 50,000 users created 56,000 posts and interacted more than 1 million times, considering comments and reactions (likes).

We periodically conduct surveys with our employees to collect insights on key topics for people management. Throughout 2022, we surveyed organizational culture engagement at work for all our employees, as well as surveys on the organizational climate and environment for employees of assets undergoing divestment, hibernation or activity optimization.

Media



Main concerns and topics raised by stakeholder

- > Fuel prices
- > Company activities
- > Company results
- > Leadership actions
- > New projects/ project status
- > Energy transition
- > Businesses and partnerships
- > Innovation/ Technology

How we seek to ensure meaningful stakeholder engagement



We promote engagement with the press through the Petrobras Agency ([www.agencia.petrobras.com.br/en](http://www.agencia.petrobras.com.br/en)), where we publish relevant information to our stakeholders. These include announcements about business and operations, social responsibility actions in our coverage areas, accidents reporting, among other releases and audiovisual content, always with the aim of informing the media and society in a transparent manner. During the year, we did 314 press releases (regarding warnings and agendas) and had approximately 2,920 interactions such as addressing demands, agendas suggestions, correction requests, etc. In 2022, we also held five press conferences and more than 65 individual interviews for regional, national and international outlets, or participation in events open to the press, in addition to courses for journalists on topics such as fuel prices, Equatorial Margin, and dividend distribution.

To ensure prompt service to the press, we have a team of press officers who work on call on weekends and holidays.

In addition to the calls, releases and interviews, we monitor news published about Petrobras (clippings) and prepare the company's spokespersons through media training (26 managers trained in 2022).



Consumers



Main concerns and topics raised by stakeholder

- > Results and dividend payments
- > Fuel prices
- > Portfolio management
- > Energy efficiency
- > Sustainability
- > Integrity and compliance
- > Organizational management and leadership

How we seek to ensure meaningful stakeholder engagement



In 2022, we strengthened our digital communication strategy as a continuous and transparent dialogue channel with different segments of society. With a routine for publishing content on social networks, we further increased the visibility of our strategies, commitments and actions and enable greater public engagement. The content permeate our operational activities, investments in research and development, new products, environmental and social commitments, sponsorships and new public selections, innovation and digital transformation, energy efficiency, sustainability, management, governance, and fuel price composition and predictability.

We made approximately 1,300 posts on our profiles on Facebook, Instagram, Twitter, LinkedIn and TikTok, the latter of which we debuted with a specific content strategy for young audiences. We ended the year with more than 260,000 subscribers on Youtube, an increase of almost 200% compared to the previous year.

Our content on social media and Google was viewed more than 700 million times. There were more than 1 million reactions, around 79 thousand comments, and more than 15 million clicks, directing the public to our websites and blogs, an environment with more detailed content, which reached a monthly average of more than 340 thousand users.

We carried out two national advertising campaigns, aired on broadcast TV. One of them focused on Petrobras' contribution to society based on our social and environmental projects and investments in technology and innovation, and the other focused on the development of new, more sustainable products, such as Diesel R and CAP Pro asphalt.

Business Partners



Main concerns and topics raised by stakeholder

- > Well safety
- > Public consultation for regulation of abandonment fund
- > Depleted reservoir recovery
- > Communication platforms

How we seek to ensure meaningful stakeholder engagement



Our collaboration with other companies in the oil and gas sector takes place in two ways: consortia for exploration and production of hydrocarbons (E&P Consortia) and cooperation agreements. As part of E&P Consortia, there is a governance rule that defines representatives of each company for discussions and decision making at the technical and operational levels. All impacts related to such ventures are dealt with in these forums. This same governance regulation stipulates the obligation to comply with the main laws and regulations regarding compliance and anti-corruption practices existing in the world, in addition to applicable Brazilian laws and regulations. Technical cooperation alliances, through private agreements, seek to exchange experiences and good practices that can generate mutual benefits in matters of a technical-operational nature, such as well safety, recovery of depleted reservoirs, studies of alternative energy opportunities, among others. Such cooperation alliances also provide for the creation of discussion and decision-making forums.



Civil Society Organizations



Main concerns and topics raised by stakeholder

- > Human rights
- > Diversity
- > Climate change
- > Risk of biodiversity loss
- > Net positive biodiversity impact
- > Risk of water scarcity/ water security
- > Exploration of the Equatorial Margin

How we seek to ensure meaningful stakeholder engagement



Partnerships with Civil Society Organizations (CSOs) occur mainly through socio-environmental projects. These projects are received through two channels: public selection or direct choice. The public selection process can have a broad or restricted focus in relation to territories and topics, and must be disclosed and governed by specific regulations for each edition. During the process, a service channel is available on the selection website, in chat or email format, to clarify doubt on the part of interested institutions. In addition, we maintain an open channel for receiving direct choice proposals on our website. In early 2023, we opened the largest selection of socio-environmental projects in our history, which investments of more than BRL 400 million. The public notice covers the different fronts: Forests, Ocean, Education, and Sustainable Economic Development, with priority audiences being indigenous peoples, traditional communities, fishermen, women, black people, children, people with disabilities, and LGBTQIA+.

We also participate in civil society initiatives and associations in the oil and gas industry and in social, environmental, and governance issues. Together with these organizations, participation in working groups or commissions that have different objectives is frequent. These objectives include the development of manuals and standards, research, sharing of best practices, and even the establishment of joint public commitments.

In 2022, we continued talking to and developing a closer relations with Civil Society Organizations that partner the company, aiming to increase knowledge about our project in the exploratory phase in the Brazilian Equatorial Margin.

Competitors



Main concerns and topics raised by stakeholder

- > Opening process and promotion of free competition in the Brazilian natural gas market

How we seek to ensure meaningful stakeholder engagement



We relate competitors by participating in the main global conferences and discussion forums in the oil and gas segment, as well as industry forums such as the Oil and Gas Climate Initiative (OGCI) and the International Petroleum Industry Environmental Conservation Association (Ipieca).

Our Planning and Intelligence Market area monitors competitors activities and provides inputs for our other internal areas to develop technical and commercial actions.

The increase in competition in the oil and gas sector is verified through a greater diversification of Brazilian production between companies (the participation in the production of other companies increased from 17% in 2015 to 31% in 2022, while the number operators went from 26 to 45 in the same period). This plurality of companies, which reflects the dynamic context and attractiveness of the oil and gas industry in Brazil, can intensify the appetite of companies in oil fields auctions, influencing the amount paid in the auctions, the sharing of infrastructure, and the country's consumer market.



Scientific and Innovation Community



Main concerns and topics raised by stakeholder

- > Project management and continuity
- > New opportunities for cooperation
- > Access to Petrobras project data and information for research purposes

How we seek to ensure meaningful stakeholder engagement



We establish technological partnerships through terms of cooperation and other instruments, technical meetings, public calls for presentation and execution of research projects, promotion of internal and external workshops, and sending of communications by e-mail on strategic topics and of interest.

The Petrobras Connections for Innovation program covers our open innovation initiatives organized into different modules, which include energy efficiency and emissions reduction projects.

In 2022, we continued dialogue and approach actions with groups of academics about the project in its exploratory phase in the Brazilian Equatorial Margin.

In December, we invited universities to a virtual meeting to promote diversity together with innovation partners focused on affirmative actions aimed at increasing the percentage of women, black people, people with disabilities, and other minority groups in STEM careers (Science, Technology, Engineering, and Mathematics).

Through the Petrobras Socio-environmental Program, we support voluntary environmental initiatives carried out by leading institutions and coordinated by representatives of the scientific and academic community. These projects have partnerships with several universities and research centers, in addition to providing scholarships and professional development opportunities for students and researchers.

Communities in coverage area



Main concerns and topics raised by stakeholder

- > Presence of animals
- > Strong odor/smell
- > Noise/rattle
- > Soot/dust in the air
- > Employment opportunities
- > Invasion/excavation/burning in areas with Petrobras pipelines or land
- > Request for pruning/cutting vegetation on Petrobras land

How we seek to ensure meaningful stakeholder engagement



Our relationship with the communities located in our coverage area is guided by a corporate standard that determines levels of engagement to be established. The actions are included in the local social responsibility and community relationship plans. One of the main actions established in the social responsibility plans are the community committees. In 2022, we held 38 meetings of Petrobras Community Committees.

We also provide assistance through toll-free phones with 24-hour service coverage, seven days a week, using contact channels widely disseminated in the communities where we operate.

With a view to expanding and materializing transparency regarding the impacts and results of our actions, throughout 2022 we published the Lado a Lado bulletin in digital format, with quarterly editions.



Public authorities



Main concerns and topics raised by stakeholder

- > Naval industry
- > Gas reinjection
- > Socio-environmental investments
- > Cultural and sport sponsorships
- > Portfolio management
- > Fuel pricing policy
- > Energy transition
- > Exploration of the Equatorial Margin
- > Development of the Gaslub Cluster
- > Decommissioning
- > Progress in improving the exploration and production business environment
- > Development the midstream and downstream market
- > Regulation of natural gas market in Brazil

How we seek to ensure meaningful stakeholder engagement



Our relationship with public authorities is carried in an ethical, clear, transparent and impersonal manner, following our Code of Ethical Conduct in addition to other internal regulations, such as the Institutional Relationship guidelines and our standard for Interactions with Public Agents.

Issues raised by public authorities are dealt with proactively or on demand through responses to requests for information, explanatory technical notes, sending letters, cards and communications, meetings with public agents and participation in public hearings. In addition, we participate in working groups and programs coordinated by public agencies or by Petrobras itself, public hearings with regulatory agencies and ministries, as well as meetings with collegiate bodies.

In 2022, we ran a pilot program to disseminate integrity practices, with the municipality of Quissamã, in the state of Rio de Janeiro, sharing experiences and improving processes, and based on lessons learned, it provided a review for 2023 that will still have greater scope and effectiveness.

We held 33 meetings to monitor the protocols of intent signed with the government of the state of Rio de Janeiro, the municipality of Itaboraí, and the Federation of Industries of the State of Rio de Janeiro (Firjan) to join efforts for the viability of an industrial complex in the area where Gaslub is located.

For the Active Portfolio Management program, we developed a plan with specific relationship and engagement strategies for this audience and influencers, seeking to clarify and strengthen the company's position.

Customers



Main concerns and topics raised by stakeholder

- > Reliability and predictability in supply of products and pricing
- > Contractual negotiation
- > Measurement problems
- > Customer Channel
- > Biofuels Regulatory Standard

How we seek to ensure meaningful stakeholder engagement



We carry out technical and management events, integration events, visits and meetings, satisfaction surveys, and establish frequent contact with customers, either remotely and/or through on-site visits, in addition to providing other relationship channels, such as the Customer Service (SAC) and the Petrobras Technical Assistance Program.



## Suppliers



## Main concerns and topics raised by stakeholder

- > Supplier registration and certification
- > Supplier performance evaluation
- > Procedures for using Petronect and SAP Ariba
- > Prior knowledge of technical specifications and contractual drafts
- > Dynamics of Integrity Due Diligence assessment
- > Prospects for contracting goods and services
- > Quality management

## How we seek to ensure meaningful stakeholder engagement



Engagement with the supplier market takes place through relationship actions aimed at the entire supplier base, with the **Supplier Channel** being the main relationship vehicle. In this channel, reformulated throughout 2022, we provide institutional information to our suppliers of goods and services, we disclose our contracting rules, guidelines on processes of registration, qualification and pre-qualification of suppliers, technical specifications, draft contracts, as well as clarifications regarding operation of bids, contracts, compliance and sustainability.

Additionally, the Supplier Channel includes tools that provide access to our public databases, as shown in the "Consumption in Contracts" section, which enables practical and personalized access to contracts and bids information, aiming to help companies map potential opportunities for participation in public tenders.

As an engagement tool, we give out the Best Suppliers Award, where we recognize suppliers that stand out in their market niches for their high performance in supplying goods and services to Petrobras. In its 5th Edition, held in December 2022, domestic or foreign companies that supplied goods or provided services in 2021 were evaluated, and 22 companies being awarded in various categories, including the ESG. The result of the award was widely publicized in several media, including in our Supplier Channel, according to the **Supplier Performance Assessment** tab.

For international suppliers, we promote events in partnership with diplomatic representations aimed at foreign companies, in order to clarify doubts and encourage their participation in our bidding process. In 2022, we invited suppliers from Petrobras' main segments to an event related to the global carbon market.

In order to expand the capillarity of our communication actions, we hold monthly through live transmissions with various topics of interest to the supplier market. In 2022, these meetings had more than six thousand participants.

By establishing constant interactions with the supplier market, Petrobras reinforces its commitments to best sustainable management practices in the supply chain, implementing actions such as the partnership established with the UN Global Compact in 2022, which will enable the company to offer, in 2023, the Human Rights and Business Learning Tool to a group of selected strategic suppliers.

Reinforcing communication channels with the supplier market, our Ombudsman's Office coordinates the response and complaints sent by suppliers and bidders, directing them to the specific internal supplier service channels.

Our subsidiary Transpetro interfaces with suppliers through its **Supplier Channel**.



## Trade Associations



## Main concerns and topics raised by stakeholder

## Topics raised by labor unions:

- > Collective Bargaining Agreement
- > Worker Health, Safety and Environment (HSM)
- > Covid-19
- > Health Insurance Plan (AMS)
- > Work regime
- > Attendance and payroll
- > Portfolio management and employee mobility

## Topics raised by business and employer associations:

- > Progress in improving the O&G business environment
- > Opportunities to be a Petrobras supplier
- > Exploration of the Brazilian Equatorial Margin
- > Energy transition and safety
- > Transformation of the midstream and downstream market
- > Opening process and promoting of free competition in the natural gas market in Brazil
- > Active portfolio management

## How we seek to ensure meaningful stakeholder engagement



We have established a close relationship with trade unions, industry federations, entities representing segments of our supply chain, entities representing segments of the O&G industry, among others.

Among the entities representing the industry segments, we can highlight our performance as members of the Brazilian Petroleum, Gas, and Biofuels Institute (IBP), the Brazilian Downstream Association (ABD), and the Brazilian Exploration and Production Association (ABEP).

Virtual and face-to-face meetings were held on topics of interest to the entities (supply for Petrobras, energy transition, and exploration on the Brazilian Equatorial Margin, for example) and an event about the global carbon market where some entity representatives were invited.

Communication with the unions is centralized in the Human Resources area. It is done through in-person or virtual meetings and by e-mails and letters sent to the corporate address: [relacoes\\_sindicais@petrobras.com.br](mailto:relacoes_sindicais@petrobras.com.br)

In 2022, there were more than 260 meetings and approximately 2,000 interactions (memos, letters, and emails) with the unions.

We maintain relationships with 17 unions and 2 federations in the oil category, as well as with 8 labor unions and a federation of maritime categories. We maintain a policy of permanent dialogue and negotiation with the employee representatives. An example is that we periodically hold meetings with the unions to address issues such as the work regime, benefits, and monitoring the Collective Bargaining Agreement.



## Investors



- Main concerns and topics raised by stakeholder**
- > Senior management's commitment to ESG topics
  - > Scope 3 goals
  - > Investments aimed at energy transition
  - > Revenue participation of renewables
  - > Decarbonization targets
  - > Diversification strategy
  - > New exploration frontiers
  - > Strategic plan
  - > Investments in renewable energy sources
  - > Corporate governance mechanisms
  - > Shareholder Compensation Policy
  - > Fuel pricing policy
  - > Divestment processes
  - > Debt level
  - > Governance in project approval
  - > Human Rights
  - > Decommissioning
  - > Biodiversity

### How we seek to ensure meaningful stakeholder engagement



Our relationship with investors takes place mainly through meetings (one-on-one or in groups, participation in conferences and roadshows) and presentations at events such as quarterly webcasts and Petrobras Day.

We also release quarterly and annual reports, memos, material facts and news clarifications, in addition to various other financial, operational, and management information, available on our investor relations website. We also hold shareholder meetings, and provide telephone, letters and e-mails services to our investors and shareholders, in addition to the service provided by the bookkeeping bank for our shares to all shareholders.

Investor concerns are considered in our strategic planning process and in the improvement of our processes. These interactions motivated the increase in our information reports regarding environmental, social, and governance (ESG) issues.

**MAIN INSTITUTIONAL COMMUNICATION CHANNEL**

<https://www.petrobras.com.br>  
<https://nossaenergia.petrobras.com.br>  
<https://www.investidorpetrobras.com.br>  
<https://www.agenciapetrobras.com.br/>  
<http://transparencia.petrobras.com.br/>  
<https://precos.petrobras.com.br/>  
[facebook.com/petrobras](https://facebook.com/petrobras)  
[twitter.com/petrobras](https://twitter.com/petrobras)  
[instagram.com/petrobras](https://instagram.com/petrobras)  
[linkedin.com/company/petrobras](https://linkedin.com/company/petrobras)  
[youtube.com/petrobras](https://youtube.com/petrobras)  
[tiktok.com/@petrobras](https://tiktok.com/@petrobras)

**CITIZEN INFORMATION SERVICE:**

<http://transparencia.petrobras.com.br/servico-informacao-cidadao>

**REPORTING CHANNEL:**

<https://www.contatoseguro.com.br/petrobras>  
0800 601 6925

**REQUESTS LGPD PETROBRAS:**

<https://petrobras.com.br/em/privacy-and-protection-of-personal-data/>

**SUPPLIER CHANNEL:**

<https://canalfornecedor.petrobras.com.br/en/>

**PETROBRAS OMBUDSMAN GENERAL:**

<https://petrobras.com.br/en/ombudsman/>  
0800 28 28280



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# Risk management and corporate governance

Good corporate governance practices are a pillar that supports our business. Our activities are guided by ethics, integrity, and transparency.

We also believe that integrated and proactive risk management is essential for delivering safe and sustainable results. The fundamental principles of our Corporate Risk Management Policy are respect for life in all its diversity, ethical performance in compliance with legal and regulatory requirements, as well as full alignment and consistency with our strategic plan. Risk management is integrated with the guidance of risk response actions that consider the possible impacts on our stakeholders and aimed at adding or preserving shareholder value and business continuity.

## Risk management

Our risk management process is coordinated by a corporate area, allowing the standardization and uniformization of our risk analyses and the management of risk responsibilities, which are structured according to a model with three lines. In this model, each group of managers that make up the lines plays a distinct role in the governance structure. This presupposes a set of continuous and integrated activities, supported by a structure that comprises, in practice, the Board of Directors, the Executive Board, members of the general structure and all employees, service providers, and other involved parties.

The organizational units, in conjunction with the Executive Risk Management Department, are responsible for the identification, assessment and treatment of risks. Strategic risks are reported quarterly to the Executive Committee - Risk, Executive Board, Statutory Audit Committee and to the Board of Directors, and high and very high risks are reported monthly to the Statutory Audit Committee. The effectiveness of the risk management process is assessed by the Internal Auditors, a body directly subordinated to the Board of Directors.

## Identification, assessment, and treatment of risks

The preparation of our Corporate Risk Matrix is coordinated by the corporate risk management area and involves all areas of our structure. In this process, employees with different specialties are involved so they can identify and report potential risks for our entire organization, considering any type of risks, including social, environmental, and economic risks. This process provides risk identification, its associated controls, its probability of occurrence, and its impact assessment, in addition to treatment proposals. The impact assessment considers four dimensions: Financial, Image/Reputation, Legal/Compliance, and Environmental/Life.

This qualitative analysis of risks allows the prioritization and direction of efforts related to action plans to be carried out, to minimize the events that may adversely affect us and maximize those that may bring us benefits. In addition, it may be necessary to do a risk analysis to support decision making, which may include a quantitative analysis, where numerical simulations are used to evaluate the combined effect of the identified risks and other sources of uncertainty on our objectives.

The identified risks are subject to treatment actions that can be of the following types: avoid, reduce, transfer, accept, observe, research, or explore (only for opportunities) the risk.



Risk-related decisions, in addition to qualitative and quantitative analyzes, consider the degree of risk aversion of decision-makers, response actions, and a cost-benefit analysis, in which the costs of response actions cannot exceed the expected benefits or avoided losses.

Using the risk matrix, we identify the main events and sustainability risk factors that could affect our long-term performance. The management and treatment of these risks will be provided throughout the report, according to how the chapters are organized, as detailed below:

Material topic	Main associated events and risk factors <sup>1</sup>	Risk management and treatment (pages)
<b>Economic impacts</b>	Differing interpretations and new requirements from regulatory agencies in the company's industry related to, for example, royalties and government participation  Differing interpretations regarding tax legislation or changes in tax law may have an adverse effect on the company's financial condition and on its results	59 to 72
<b>Business integrity</b>	Failure to prevent, detect in a timely manner, or correct behaviors that are inconsistent with our principles ethics and rules of conduct  Violation of human rights in our operations, whether in our workforce, in the communities where we operate, or in our supply chain	73 to 94
<b>Climate resilience, GHG emissions and other gases</b>	Energy transition: Market, regulatory, legal, reputational, and technological risks  Greater demands regarding the transparency of actions related to the transition to low carbon  Fuel restrictions related to pollutant emission levels	96 to 119
<b>Accident prevention and management</b>	Safety, environmental and health risks in our operations and facilities, such as oil spills, product leakage, fires and explosions  Intentional acts such as clandestine diversion, crime, theft, sabotage, roadblocks, and protests	120 to 130
<b>Biodiversity</b>	Fluid/hydrocarbon spills and leaks that impact biodiversity	123 to 146
<b>Water and effluents</b>	Water scarcity events and difficulties in obtaining grants for the right to use water resources  Fluid/hydrocarbon spills and leaks that impact water resources.	147 to 158
<b>Waste management and decommissioning</b>	Increased regulatory requirements and stakeholder expectations related to decommissioning projects	159 to 170

<sup>1</sup> Emerging risks are highlighted in the following section and are not part of this list.



Material topic	Main associated events and risk factors <sup>2</sup>	Risk management and treatment (pages)
<b>Local and traditional communities</b>	<p>Expectations and dynamics of the communities where we operate</p> <p>Impacts on the communities where we operate due to our operational activities, such as noise, emissions, limits to circulation spaces, etc.</p>	172 to 184
<b>Labor practices and equality of opportunity</b>	<p>Difficulties in attracting, developing and retaining people with the necessary skills and training could negatively impact the implementation of our strategy</p> <p>Strikes, labor stoppages or claims by our employees or by employees of our suppliers, contracted companies, or in other sectors</p> <p>Obligations related to our pension and medical care plan</p>	192 to 219
<b>Safety, health, and well-being</b>	<p>Epidemics and pandemics in public health</p> <p>Differing interpretations and environmental regulations for health and safety, as well as industry standards that are becoming more stringent</p> <p>Failures in emergency response and victim rescue service</p> <p>Safety, environmental and health risks in our operations and facilities, such as oil spills, product leaks, fires and explosions (the occurrence of one of these events, or other related incidents, could result in impacts to the health of the workforce and/or surrounding communities, fatalities and environmental damage)</p>	215 to 226

## Emerging risks

Emerging risks are new long-term risks arising from external factors, where we have identified a potential for a significant impact on a large part of our operations and which may require adaptations to our strategy. We highlight below some highly relevant emerging risks and the measures we are taking to mitigate these risks.

### Energy transition risk

The Paris Agreement calls for a profound reduction in greenhouse gas (GHG) emissions and a transformation of the energy supply. Our scenarios point to an unequivocal energy transition, with an uncertain pace. Changes are already being observed in the energy markets, such as the consolidation of the mobility electrification trend and the cost reduction and expansion of the scale of modern renewable energy production and energy storage.

The growing aggravation of climate change raises social concern. The transition to a low-carbon economy, in addition to the possible reduction in demand for fossil fuels, may lead to a market segmentation of oils and fuels according to their carbon intensity. Stricter environmental regulations aimed at mitigating

<sup>2</sup> Emerging risks are highlighted in the following section and are not part of this list.



climate change, such as carbon pricing, could result in a potential increase in operating costs. Environmental laws and international treaties can increase litigation risks and have a material adverse effect on the company. Heightened investor awareness of climate risks, along with increased regulatory restrictions related to carbon-intensive sectors, may lead to greater difficulties in accessing capital and increased costs. We anticipate increasing pressure to develop and utilize technology options to improve operational emissions performance to keep pace with the demands of a low-carbon economy. There are also greater demands regarding the transparency of these actions and their results, with potential reputational risk.

To deal with the challenges and take advantage of the opportunities of the energy transition, we have been working on several fronts. As our basis, we use a strategic model that seeks double resilience: economic, resilient to scenarios of low oil prices, and environmental, with high levels of emissions efficiency.

We perform a scenario analysis and adopt conservative oil price assumptions, directing investments towards resilient assets that are aligned with the objectives of the Paris Agreement.

To strengthen our low-carbon position, we prioritized investment in the decarbonization of our operations, biorefining and skills for the future. For these initiatives, investments of USD 4.4 billion are included in the Strategic Plan 2023-2027 (SP 2023-27), as follows:

- USD 3.7 billion for the decarbonization of our operations, which includes increased efficiency and operational performance of refineries (RefTOP program), low carbon solutions in new E&P projects, Decarbonization Fund and R&D in decarbonization of operations;
- USD 0.6 billion for the BioRefino 2030 Program, which develops projects to produce a new generation of fuels, more modern and sustainable, such as, for example, Diesel R, with renewable content and BioQAv;
- USD 0.1 billion in skills for the future, which includes R&D in non-operating activities and opportunities for profitable diversification.

We are advancing in the analysis of diversification opportunities that also reduce the carbon footprint of our products and businesses, in pursuit of the company's sustainability over the long term. In the SP 2023-27, three segments were selected for potential portfolio diversification, on which we will advance in internal studies: Offshore Wind Energy, Hydrogen and Carbon Capture. We still do not have investments allocated in this Strategic Plan for these potential new businesses.

We monitor progress in the regulation of the carbon market in Brazil, the main market where we operate. Despite the publication of Decree No. 11,075/2022, the definition of the instrument that will be adopted in Brazil is still pending in the federal legislature, and the regulated sectors and segments will still be defined within the scope of the national executive branch. Therefore, there are many uncertainties regarding the form and dynamics of a future carbon market in Brazil, and there is not enough reliable and available information about the future intentions of the regulators that allow us to consider the impact of the carbon price on the valuation of our portfolio for accounting estimates. However, we use carbon price curves associated with scenarios in portfolio risk analyses, sensitivity analyzes of investment projects, and in assessing eligibility for the use of the Decarbonization Fund.

To reduce reputational and litigation risk, we maintain robust governance for periodic monitoring and assessment of our results, including senior management. We also invest in transparency, adopting the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) as a reference for our disclosures on the matter, responding to and monitoring our results in the various external evaluation indices, such as the (CDP) and the Dow Jones Sustainability Index™ (DJSI), and doing gap analyses for improvements. We maintain a healthy dialogue with investors and society about our strategies and positioning on climate change and energy transition, through publications such as our Climate Change



Journal, the Sustainability Report, our website, and bilateral events, among others. Reinforcing our reputation, we also have our socio-environmental projects, which are one of the company's action fronts in climate resilience and transition to low carbon. Projects in the Forest line support natural climate solutions, generating social and environmental benefits.

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>> **Information about our management of risks associated with the energy transition can be found in the chapter [Climate resilience, GHG emissions and other gases](#).**

### Physical risks of climate change

The physical impacts of climate change could potentially influence some of the operating conditions of our assets, such as water availability for refineries and thermoelectric plants and wave, wind, and ocean current patterns for offshore platforms.

We assess the physical risk associated with climate change in our operations through research and development of climate regionalization. This is done with renowned institutions in Brazil and abroad (University of São Paulo – USP, National Institute for Space Research – INPE and National Oceanic and Atmospheric Administration – NOAA), examining parameters considered potentially more susceptible to these changes, generating qualified information for the process of adapting our operations.

For the studied offshore meteoceanographic variables, in general, over the useful life of our assets, the magnitude of the impacts is within the safety parameters already considered in our projects.

With regard to the risk of water scarcity, we carried out an inventory of the use of water resources at all our water-using facilities, such as refineries, thermal plants and production assets. We relied on the water risk mapping and assessment tools of WRI's (World Resources Institute) Aqueduct Water Risk Atlas, applied annually, for all our onshore facilities and the Water Scarcity Risk Index (IREH), applied every two years, for a set of around 45 facilities identified as mapping priorities. This set includes all refineries and thermal plants, in addition to the onshore production assets and terminals considered most relevant for the assessment. Water Scarcity Risk Index is an internal risk tool, developed in partnership with the Federal University of Rio de Janeiro (UFRJ), which considers aspects of water availability, watershed vulnerabilities and the resilience of our facilities.

In addition, a Decision Support System was recently developed, in partnership with USP/LABSid, which allows the creation of water availability forecasts using hydrological data, land use and land coverage, incorporating climate change scenarios for analysis of the risk and vulnerability in meeting water demands at our units. The implementation of the system is in progress, and it is yet another important resource for the continuous improvement of our water risk management.

From the mapping of scarcity risks, we evaluate possible actions for mitigation or adaptation, such as in-depth studies, at the installation and watershed level, assessing current and future water availability, as well as identifying alternative sources of abstraction, and studies for the optimization of water use, such as the optimization of cooling systems in priority thermal plants.



## Geopolitical conflicts

The assessment of the geopolitical environment is an inherent activity in discussions regarding the strategic positioning of companies in the O&G industry. The conflict that broke out between Russia and Ukraine in February 2022 brought, in addition to issues related to the human drama, a series of impacts for the entire industry. The lack of prospects for the end of the conflict and the uncertainty of how Russia's reinsertion in international diplomacy will take place after the war suggests that its effects could last over the medium and long term.

Among the risk factors that may give rise to impacts on Petrobras, it is possible to cite limitations imposed on the movement of people, airspace restrictions, suspension of maritime traffic in some regions, dominance of conflict-involved countries in the supply of raw materials, and sanctions against conflict-involved countries, among others.

The company has already been impacted by the conflict due to supplier delays and increases in LNG prices and predicts that it may still face more situations of discontinuity or delay in the supply of goods and services critical to its strategic plan, as well as increased costs.

Among the possible impacts, there could be a delay in the implementation schedule of production units. SP 2023-27 forecasts a high frequency of oil production unit contracting in the coming years. In addition to the technological challenge, the number of units demanded represents a challenge for the supplier market to meet the demand in the allotted time interval. Also, the direct and indirect restrictions arising from the conflict in the Ukraine could bring even greater difficulties to the execution of these projects. If the supply chain does not meet the contracted deadlines, it is possible that Petrobras will not meet its operational targets on the expected dates. In that case, the company may ultimately need to postpone one or more of its projects.

Another potential highlighted impact is related to the increase in LNG prices. Since Russia and Ukraine are important players in the natural gas market, restrictions on the supply of this product in the European market imply an increase in demand for LNG, resulting in an increase in the price of the product. As the balance of supply and demand is achieved with the importation of LNG, variations in the price of LNG can impact the supply cost of our supply portfolio, without the necessary and immediate transfer to customers, therefore impacting results over the short term.

The conflict could also catalyze discussions about our strategy, such as the resumption of segments that have been considered lower priority in recent years, such as fertilizers. Given the importance of Russia and Ukraine in the fertilizer market, the restriction of supply from these countries due to the conflict has placed the issue under discussion within the Brazilian government. Petrobras, with a history of participation in this market, with a strong presence in the natural gas chain, and as a state-owned company, is perceived by the Brazilian federal government, our controlling shareholder, as an important agent for the development of this segment. As a result, it is possible that the fertilizer market becomes more commercially attractive, changing our previous assessment and our resumption of investments in the segment.

We have been acting in a timely manner to mitigate the effects of these external events on our results. Regarding impacts on the supply chain, the Cell for Monitoring Conflict Impacts in Ukraine for the Supply Chain was created in March 2022, with a focus on surveying risks and potential impacts on the development of our projects and operations, and implementation of mitigation actions through interactions with the supplier market.

About the increase in LNG costs, we work on several fronts, seeking to reduce exposure to this risk by reducing exposure to the difference in supply price, studies to reduce consumption, and an increase in supply from other sources, including:



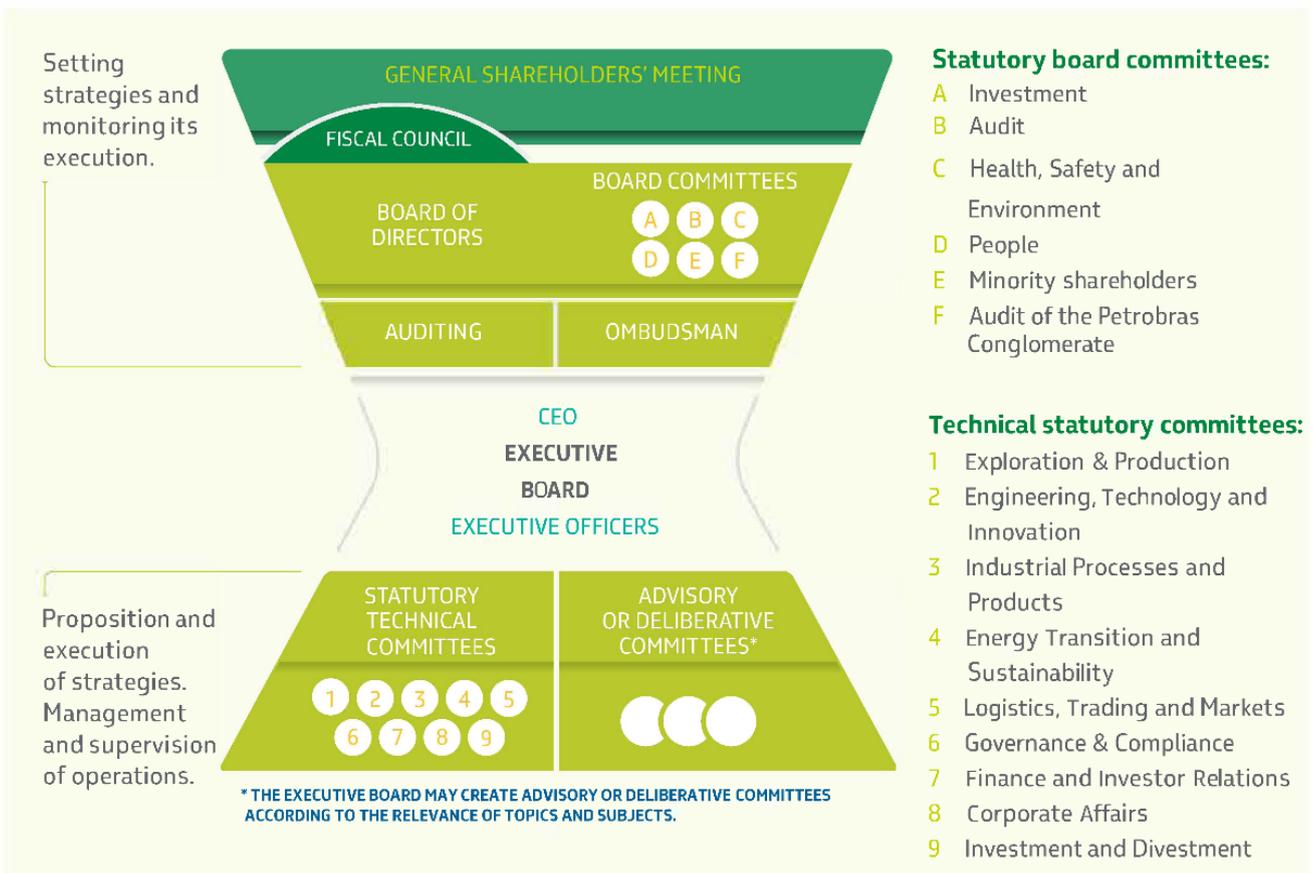
1. Acting with the MME and ANEEL to review parameters related to the remuneration for thermal plants, seeking to align them with input costs;
2. Search for LNG supply alternatives, through advance purchase of cargo and negotiation for purchase in the firm modality;
3. Renegotiation of PPT (Priority Program for Thermolectric Plants) contracts and negotiation of substitute generation contracts with third-party thermal plants, seeking to reduce the volume of gas to be delivered, and negotiations for the purchase or generation of energy by third parties;
4. Assessments to increase gas supply, by postponing E&P shutdowns – reallocating them to periods of lower demand - ensuring the reliability of processing plants, optimizing gas flow routes, making parameters of the gas delivered more flexible at UTGCA, and optimization of production in fields such as Manati and Roncador.

>> Information about risk factors can be found in our [Reference Form](#).

## Governance structure

Our governance structure is composed of: General Shareholder Meeting, Fiscal Council, Board of Directors, and its committees (Board of Directors Committees), Audits, Ombudsman’s Office, Executive Board and its committees (Statutory Technical Committees and Executive Advisory or Deliberative Committees).

### GOVERNANCE STRUCTURE





According to our Bylaws, the Board of Directors is composed of a minimum of seven and a maximum of eleven members and is responsible for, among other things, establishing the general direction of the company's business, defining its mission, strategic objectives, and guidelines.

The Board of Directors must be composed only of external members, with no current statutory or employment ties with the company, except for the CEO and the member elected by the employees. The composition of the Board of Directors must observe a minimum of 40% independent members, as provided for in our Bylaws. Additionally, the functions of Chairman of the Board of Directors and CEO of Petrobras cannot be exercised by the same person, in line with the best corporate governance practices. Our Bylaws also requires that the term of office of Board Members is 2 years, allowing a maximum of 3 consecutive re-elections.

On April 26, 2023, our new organizational structure came into effect, which will show its impact throughout the year. The new makeup of the offices (CEO, Energy Transition and Sustainability; Engineering, Technology and Innovation; Industrial Processes and Products; Logistics, Trading and Markets; Corporate Affairs; Finance and Investor Relations; Exploration and Production; Governance and Compliance) seeks to prepare the company for the energy transition by creating an office focused on this topic. It will also bring together engineering, technology and innovation activities, strengthening the project development area with research and development efforts, in addition to concentrating corporate activities in an area focused on company management, strengthening synergies between processes. The change can be seen on our [organizational chart](#).



## STATUTORY COMMITTEES AND THE BOARD OF DIRECTORS<sup>3</sup>

Committee	Main attributions
<b>Health, Safety, and Environment Committee (CSMS)</b>	Assist the Board of Directors in establishing policies and guidelines related to the strategic ESG (Environmental, Social and Governance) management of HSE, climate change, transition to a low carbon economy, social responsibility, among other matters. This committee also monitors HSE indicators and image and reputation surveys, suggesting actions when necessary.
<b>Investments Committee (COINV)</b>	Advise the Board of Directors in defining our strategic guidelines, the strategic plan, the annual business plan, among other strategic and financial matters. The committee also assists the Board of Directors in the analysis of business opportunities, investments and/or divestitures, mergers, incorporations and spin-offs in which Petrobras is involved and which are the responsibility of the Board of Directors. In addition, COINV advises the Board of Directors in the analysis of our annual funding program.
<b>Statutory Audit Committee (CAE)</b>	Advise the Board of Directors on the analysis of the annual and quarterly consolidated financial statements, prepared in accordance with accounting practices adopted in Brazil and with the international financial reporting standards (IFRS); advise the Board regarding the establishment of global policies related to risk assessment and management; evaluate and monitor our risk exposure; receive, forward and monitor internal and external complaints, including confidential ones, in matters related to the scope of its activities; analyze the reports about internal controls related to financial, accounting, operational, legal and ethical aspects, prepared by the internal audit and by the units responsible for evaluating these controls, and verify compliance with the recommendations contained in these reports; supervise the activities of the areas responsible for internal controls, internal audit and the Ombudsman's Office; perform prior analysis of transactions with related parties that meet the criteria established in the Policy on Transactions with Related Parties, approved by the Board of Directors; become aware of governance and compliance activities; evaluate and monitor, together with management and the internal auditors if the actions to prevent and combat fraud and corruption are appropriate; ensure the adoption, maintenance and improvement of good company practices of legal compliance and integrity, reporting to the Board when deemed necessary; and evaluate the following reports to be published as needed on our website and filed with the CVM: Annual Letter of Public and Corporate Governance Policies and Report on the Brazilian Corporate Governance Code - Publicly Traded Companies.
<b>Conglomerate Statutory Audit Committee (CAECO)</b>	It is responsible for being the audit committee of companies in the Petrobras conglomerate that do not have a local audit committee. Created to meet the requirements of Law No. 13,303/16, which provides for the possibility for subsidiaries to share the costs and structures of their respective parent companies. It also works in advising the Petrobras Board of Directors in issuing guidance to the conglomerate's companies in relation to the matters provided for in its internal regulations.
<b>People Committee (COPE)</b>	Assist the Board in aspects related to the management of human resources in senior management, including, but not limited to: compensation (fixed and variable), nominations and succession policies, as well as selection and eligibility. The Personnel Committee acts, in accordance with Law No. 13,303/16 and Decree No. 8,945/16, as an Eligibility Committee. When exercising this function, its statements will be intended to assist shareholders in appointing members to the Board of Directors and Fiscal Council of Petrobras and to verify the conformity of the process of evaluation of the administrators and of the fiscal councilors the company, not being limited in these cases to an advisory body to the Board of Directors. COPE also advises the Board of Directors in any potential application of a measure of the consequence system to members of the Senior Management and external members of the Board of Directors committees, in addition evaluating appeals regarding disciplinary measures that require dismissal, when the Petrobras Integrity Committee does not decide by consensus. The Committee also monitors image and reputation surveys, recommending actions when appropriate.
<b>Minority Shareholder Committee (COMIN)</b>	Assist the Board of Directors in transactions with related parties involving the Federal Government, its autarchies and foundations and federal state companies, including the monitoring of the revision of the Onerous Cession Agreement. COMIN also provides advice to shareholders, issuing an opinion on certain matters within the jurisdiction of the General Meeting, pursuant to article 30, paragraph 4 of our Bylaws.

<sup>3</sup> Report monthly to the Board of Directors.



The following table shows the composition of our highest governance bodies:

#### COMPOSITION OF BOARD OF DIRECTORS AND FISCAL COUNCIL<sup>4</sup> (Parent Company)

Forum	Members	Executive role <sup>5</sup>	Independents	Women	Underrepresented <sup>6</sup>
Board of Directors	11	2	82%	9%	18%
External members in committee of the Board of Directors <sup>7</sup>	6	0	100%	50%	17%
Fiscal Council <sup>8</sup>	10	N/A	70%	40%	20%

>> Information on the attributions and duties of our Board of Directors can be found on our [Bylaws and its Internal Regulations](#) on our [Investor Relations website](#).

>> Information regarding the composition of our Board of Directors and Fiscal Council can be found in [The Reference Form - Composition and Professional Experience of Management and the Fiscal Council](#).

### Selection and nomination of the Board of Directors

The selection and appointment processes for the Board of Directors, our highest governance body, including its committees, follow the guidelines set out in the Bylaws and the Policy for the Appointment to Senior Management and the Fiscal Council.

The Appointment Policy upholds the strengthening of principles such as transparency, equity, accountability, corporate responsibility, independence, focus on results, and diligence in relation to the selection, nomination, and evaluation processes of the appointee's eligibility, which must be observed together with the legislation and our Bylaws.

In this sense, the guidelines, procedures, minimum requirements, and impediments established in the legislation, the Bylaws, and in this policy must be observed by all those who exercise the right to appoint, whether they are employees or shareholders, regardless of whether they are majority or minority shareholders, or are holders of common or preferred shares.

The Nomination Policy states that those responsible for nominations must consider, in the best interest of society: (i) the profile compatible with the function to be performed; (ii) the succession plans established for the role; (iii) the variety of skills and experiences, training and qualifications recommended for each collegiate body; and (iv) the nominee's track record with respect to integrity and performance assessments.

Also in accordance with the Policy, one should seek to achieve diversity in the composition of the Board and complementarity of experiences and qualifications, such as: (i) experience as an executive or director; (ii) knowledge of finance and accounting; (iii) specific knowledge of the energy sector; (iv) general knowledge of the national and international market; (v) knowledge of compliance, internal controls and risk management; (vi) strategic vision and knowledge of good corporate governance practices; and (vii) time availability.

<sup>4</sup> Portray on 5/10/2023.

<sup>5</sup> CEO and employee representative.

<sup>6</sup> By underrepresented social groups we mean political minorities related to color/race; LGBTQIA+; disabled; gender identity.

<sup>7</sup> The committees are made up of Board Members and external members. Each board member can be on more than one committee.

<sup>8</sup> Considers full and alternate members.



Regarding the appointment of the board member elected by the employees, in addition to the guidelines applicable to all appointed board members, it must comply with the rules contained in Law 12,353/10 and in electoral regulations approved by the board.

It is up to the company's shareholders, gathered in a meeting, to decide whether or not to elect each of the nominees to the company's Board of Directors and Audit Committee, as well as to assess all the skills necessary to hold the position.

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>> [Information about the Nomination Policy can be found in the Petrobras Code of Good Practices.](#)

## Decisions regarding sustainable development

The decision-making process for to sustainable development topics involves several corporate governance structures, including the Board of Directors and the Executive Board.

The Health, Safety and Environment Committee, which supports the Board in ESG (Environmental, Social and Governance) matters, is composed of chief officers and external members. The Executive Committee for Health, Safety, and Environment, one of the committees that advise our Executive Board regarding these aspects, is made up of executives from the corporate and operational areas.

In the executive decision-making sphere, we highlight seven executive departments with specific responsibilities associated with the management of topics related to sustainable development in 2022, including the impacts caused in each sphere as a result of the activities we carry out: Finance; Investor Relations; Social Responsibility; External Relationship; Health, Safety, and Environment; Climate Change; and Human Resources.

The responsibility hierarchy unfolds as managers report to the Executive Board, who in turn, follow the guidelines of the Board of Directors, both of which are advised by their respective committees.

Our main decisions are taken collectively (Board of Directors and Executive Board) or shared, requiring at least two managers to approve the act. This decision model is based on the four-eyes principle, which increases the transparency and control of our decision-making process.

In 2022, in addition to the statutory advisory committees of the Board of Directors and the Institutional Relationship and Sustainability Officer, we have operational, tactical, and strategic forums that make up our HSE Governance, Climate Change and Social Responsibility, so that these matters can be dealt with at all levels of the company, as stated here.



## SUSTAINABILITY FORUMS

Forum	Main attributions
<b>HSE Executive Committee (CE-SMS)</b>	Advise the Executive Board regarding the definition of HSE, Climate Change and Social Responsibility strategies, policies, and guidelines. Analyze and issue recommendations to Executive Board regarding objectives, targets, and investment plans for the development of the strategy; performance monitoring and recommendation of improvement actions to our units and corporate holdings; audit recommendations; proposals for projects and improvement actions and requirements of the HSE Committee of the Board of Directors.
<b>HSE Commission</b>	Advise the manager of the "Manage HSE" macroprocess with the standardization, integration, development, and critical analysis of the unfolded processes of the macroprocess, seeking continuous improvement of HSE performance at Petrobras.
<b>HSE Thematic Commissions (Safety Commission, Process Safety Commission, Environment Commission and Health Commission, among others)</b>	Advise the HSE Commission in the definition of HSE strategies, guidelines, standard procedures and norms; monitor the implementation of HSE strategies, guidelines, programs, projects and actions in the various areas of the company and its subsidiaries; periodically monitor and report on HSE performance; to deliberate or forward to the HSE Committee proposals for programs, projects and actions for improvement in the HSE area presented by the thematic forums; approving the update of the training grid for the topic; and propose and/or monitor ICT and digital transformation solutions for the topic.
<b>Climate Commission</b>	Advise the macroprocess manager in the standardization, integration, development, and critical analysis of the deployed processes of the Manage Climate Change macro process, seeking the continuous improvement of our performance in atmospheric emissions, energy efficiency and climate change.
<b>Human Rights Guidelines</b>	Develop the action plan to ensure the implementation of the results, guidelines and inputs produced by the Human Rights Working Group (WG). Execute the human rights commitments listed in SP 2023-27).
<b>Community committees</b>	Spaces coordinated by Petrobras, with the participation of community leaders and other social actors, normally on a quarterly basis. The purpose of these committees is to maintain permanent dialogue with the communities neighboring our operations, discussing issues related to the impacts arising from activities and operations in the communities, and actions to be developed to expand the positive impacts and minimize the negative impacts.

### Defining strategy and policy

Our Bylaws define that the Board of Directors is responsible, among other things, for establishing the general orientation of our business, defining our mission, our strategic objectives, and our guidelines. It is also responsible for approving, as proposed by the Executive Board, the strategic plan, and its respective multi-annual plans, as well as annual plans and programs for expenditures and investments, promoting annual analysis regarding the fulfillment of goals and results in the execution of said plans. It must also publish its conclusions and communicate them to the National Congress and the Federal Audit Court.

The Board of Directors is also responsible for setting our global policies, including those for managing commercial strategy, financial, risk, investments, the environment, information disclosure, dividend distribution, transactions with related parties, spokespeople, human resources, and minority interests, in compliance with the provisions of art. 9, Paragraph 1 of Decree No. 8,945, of December 27, 2016.



According to our Bylaws, it is up to the Executive Board, among other duties, to evaluate, approve, and submit to the Board of Directors the basis and guidelines for the preparation of the Strategic Plan, as well as the annual programs and multi-annual plans, as well as annual expenditure and investment plans and programs with their respective projects. The Executive Board and its members are responsible for managing our business, in accordance with the mission, objectives, strategies and guidelines established by the Board of Directors.

As provided for in the company's Bylaws and in its Internal Regulations, the Board of Directors must meet, ordinarily, at least every month, and extraordinarily, whenever necessary. In 2022, our Board of Directors met 26 times, 12 of which were ordinary meetings and 14 were extraordinary meetings.

Through the annual schedule of permanent agendas, the Board of Directors and its advisory committees assess the agendas related to their attributions. In addition, it is up to the units to assess the convenience and opportunity of forwarding to the Board of Directors and its advisory committees other relevant matters that were not scheduled in the Annual Calendar of the Permanent Agenda for the body.

Additionally, the Board of Directors and its advisory committees may request additional information and supplementary documents to the competent technical bodies, as necessary.

The Statutory Audit Committee and the Health, Safety and Environment Committee communicate critical ESG issues through periodic reports to the Board of Directors, who become aware of the critical issues forwarded by the various areas of the company. The following table presents some of the main issues marked as critical by Governance in conjunction with the competent areas, and the frequency with which they were reported to the committees for their decision-making in 2022:



Critical topics	Frequency
Monitoring of Critical Accidents	13
Governance Informative Bulletin	12
Monitoring of social initiatives aimed at families in situations of social vulnerability, to contribute to access to essential inputs, with a focus on LPG, with the respective financial dimension	10
Monitoring of the Risk Matrix for Internal Controls and Fraud and Corruption	6
Monitoring indicators and surveys of Petrobras' image and reputation, related to sustainability issues	5
Reporting of the most severe sustainability related risks	4
Monitoring efforts to investigate complaints, internal protocols, and administrative accountability processes	4
Session reserved for high-risk and very high-risk complaints	4
Related Party Transactions Report	4
Commitment to Life Program	3
Performance monitoring and implementation of the Low Carbon and Sustainability Agenda Commitments: Actions for the Implementation of Commitments 1 to 6	2
Monitoring of Actions for the Implementation of Sustainability Commitments in water, waste, and biodiversity (Commitments 7, 8 and 9)	2
Annual Letter of Public and Corporate Governance Policies and Report on the Brazilian Corporate Governance Code	2
Ombudsman's Office Integrated Report	2
Report on the activities of the Profitable Diversification Committee	1
Planning of internal audits and results of internal and external HSE audits	1
Environmental Licensing and Strategic Issues	1
Environmental Litigation	1
Deployed actions on the Oil and Grease Content (TOG) agreement between Petrobras and Ibama	1
Human Rights guidelines and policies in effect at the Company	1
Monitoring the Implementation Plan of the LGPD (General Law for Personal Data Protection)	1
Independent auditors' recommendations report for improving internal controls	1



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>> [Information on complaints received by the Ombudsman's Office and taken to the Board of Directors can be found in the Business integrity chapter.](#)

>> [Information about our Bylaws and main governance instruments can be found on our Investor Relations website.](#)

The managers and members of the fiscal council, upon installment and annually, must participate in the Mandatory Training for Statutory Officers (TOPE). TOPE addresses topics on corporate and capital market legislation; disclosure of information; internal control; code of conduct, Law nº 12,846/2013 (Anti-Corruption Law) and other matters related to our activities. Board members and fiscal councilors who have not participated in annual training in the past two years cannot be re-appointed. Upon installment, TOPE seeks to provide a broad understanding of the challenges, duties and responsibilities related to the positions and provide material for reading, consultation and learning about the company's main governance instruments, in addition to management reports. In the 2022 cycle of this program, the following topics were presented, among others: Code of Ethical Conduct; governance model and decision-making process; compliance, internal controls and related party transactions; risk management; business performance; and Brazilian anti-corruption legislation. In the annual TOPE, the following topics were addressed in 2022: adaptation of the ESG agenda to business strategies; sustainability risk management; and future for oil and energy.

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>> [Information on training can also be found in the Labor practices and equality of opportunity chapter.](#)

## Compensation associated with sustainability objectives

In SP 2023-27, we present four top metrics, three of which are used for variable compensation of all our employees (IAGEE, VAZO and Delta EVA®). These metrics are elements that translate and quantify the attributes of our vision and provide more explicit guidance regarding the main objectives of the company, to ensure that activities are aligned with the main commitments established in the plan. Of these three metrics, two are correlated to ESG, the indicator showing compliance with the goals regarding greenhouse gases (IAGEE) and oil and oil product leakage volume (VAZO), committing the entire company to these goals.

Performance analysis takes place through the Performance Management (GD) process, which assesses competencies and goals. In the Performance Management process, goals are based on specific metrics, broken down from senior management scorecards into unit scorecards, seeking to ensure that individual and shared goals are shared by leadership to teams and employees, contributing to the achievement of our main metrics.

Regarding the evaluation of senior management, we clarify that there is a division of responsibilities in the company.

- a) Annual Individual Assessment of the CEO and Executive Officers, coordinated by the Human Resources unit under the supervision of the People Committee (COPE);
- b) Collective Annual Assessment of the Executive Board, coordinated by the Governance Unit;
- c) Collective evaluation of the performance of the Board of Directors and the Committees that advise the Board of Directors, carried out internally or by a specialized external company, with the coordination of the General Secretariat of Petrobras under the supervision of the Chairman of the Board of Directors and;
- d) Individual evaluation of Board Members and members of the Committees that advise the Board of Directors, coordinated by the General Secretariat under the supervision of the Chairman of the Board of Directors.



Under the coordination of HR, the individual performance assessment of the members of the Executive Board is made up of an assessment in three dimensions: (i) competencies, (ii) management and (iii) results.

In the competences and management dimensions, a multidimensional assessment is done with inputs from self-assessment, peers, and the chairman. The results dimension is the result of the top metrics and the specific metrics of the scorecards, which are calculated by Corporate Performance Executive Management.

### Assessment of the Board of Directors and its advisory committees

The Board of Directors and its advisory committees, as collegiate bodies and for each of its individual members, receive annual performance evaluations as provided for in the Bylaws, in the Company's Corporate Governance Guidelines and in the Internal Regulations of the Board of Directors.

According to Article 29, IV, of the Company's Bylaws, the Board of Directors is responsible for "evaluating, annually, the individual and collective performance results of the managers and members of the Board Committees, with the methodological and procedural support of the People Committee, observing the following minimum requirements: a) exposure of management acts regarding the lawfulness and effectiveness of the managerial and administrative action; b) contribution to net income for the year; and c) achievement of the objectives established in the business plan and compliance with the long-term strategy referred to in article 37, paragraph 1 of Decree No. 8945, of December 27, 2016."

The Board of Directors are currently assessed in two stages: (i) self-assessment, individual and collegiate, in line with the SEST (Secretariat for Coordination and Governance of State-owned Companies) assessment forms; and (ii) diagnosis made by a specialized consulting company, contracted through a bidding process, which uses its own methodology and forms for evaluating the Board of D and its committees, as collegiate bodies, respecting the requirements and dimensions present in the provided services specifications.

The results of the evaluations are forwarded to the Board of Directors in order to identify possible opportunities for improvement, with no expected impacts to Board Member compensation or its committee members, since the compensation they receive is fixed.

### Evaluation of the Executive Board

The Board of Directors must make an annual assessment of the Executive Board's performance, based on the methodology it defined, which consists of evaluating the scope of the metrics defined by the Board and the qualitative evaluation of four criteria: strategy, decision-making process, structure, and identity.

The overall compensation for Board of Directors and Executive Board members is approved annually by the General Meeting, in accordance with Article 152 of the Brazilian Corporate Law (Law No. 6,404, December 15, 1976). The compensation of Executive Board members considers the economic and financial results, the recognition of management efforts, and their alignment with our short, medium and long-term strategies and goals. The compensation for the members of the Board of Directors corresponds to 10% of the average monthly compensation received by the members of the Executive Board. There is no difference between benefit plans and contribution rates for the highest governance body, senior executives, and all other employees.

Approved in 2019, the Performance Award Program ("PPP") consists of a variable compensation program for all employees. Aligned with Petrobras' Strategic Plan, the PPP seeks to align the interests of shareholders, executives, occupants of positions with additional payment for leadership/management, and employees without additional payment for leadership/management position; encouraging results-oriented behavior; rewarding people for the results achieved; compensating differently for differentiated delivery; and contributing to the attraction and retention of talent.



In fiscal year 2021, the PPP was activated after meeting the minimum established prerequisites: shareholder compensation statement and payment for the fiscal year under consideration, and approved by the Board of Directors, while obtaining positive net profit in the fiscal year.

For the calculation of the 2022 Variable Compensation (PPP 2022), the triggers for its activation were maintained and some incremental adjustments were made to the indicators of our top metrics, seeking alignment with the Strategic Plan 2022-2026.

During 2022, the scorecards of the organizational units were still considered as input for the evaluation of the Executive Board (CEO and Officers), executive managers and other members of our general structure, which are reflected in the calculation of variable compensation.

Thus, in 2022, these scorecards include the following items:

- (i) the results of our key metrics such as: Delta EVA® (Economic Value Added – measures the economic profit in a given period minus the cost of capital invested from its operating profit), IAGEE (monitors our performance in relation to the direct emission of greenhouse gases into the atmosphere) and VAZO (calculates the total volume of oil leaked in occurrences with a volume above one barrel and which reached bodies of water or non-impermeable soil);
- (ii) specific metric scores for each executive scorecard (represented by specific indicators that address economic, environmental, and social factors); and
- (iii) discretionary evaluation made by the immediate superior according to the employee's profile and performance.

The higher the hierarchical level, the greater the weight of the main metrics and thus of the multiple compensations associated with the award, reflecting the greater degree of responsibility of the manager in relation to the metrics of his area and our performance metrics.

The estimated disbursement amount will depend on a number of factors, such as individual employee performance and company performance metrics.

For members of the Executive Board (CEO and Officers), executive managers and general managers, the payment of the Long-Term Incentive (ILP) is deferred over five years, whose amounts will be referenced by the market price of Petrobras shares, but without granting options to purchase the company's shares. For this group, 60% of the program value is paid in cash and the balance of 40% is settled in four deferred annual installments. This amount is symbolically converted into the corresponding number of Petrobras common shares (PETR3), using the weighted average of the last 60 trading sessions of the program's reference year, acting as an impetus for sustainable decision making. The installments will be received after the established grace periods, upon formal request from the interested party. The value of each installment to be paid is equivalent to the transformation of symbolic shares into monetary value based on the weighted average quotation of Petrobras common shares (PETR3) in the last 20 trading sessions prior to the date of the request. In addition, we have mechanisms to protect the company (clawback), whereby Executive Board members (CEO and Officers), Executive Managers and General Managers no longer earn the upfront and deferred installments of the Performance Award Program (PPP) in cases of resignation or when applying sanctions provided for in the system of consequences.

At the same time, we do not adopt specific compensation mechanisms for senior management members, such as attraction bonuses or recruitment incentive payments, or termination payments.



[2-24]

# Sustainability strategy and performance

Our Strategic Plan 2023–2027 (SP 2023–27) was prepared preserving the company's vision, values, and purpose. With the vision of “being the best energy company when it comes to generating shareholder value, with a focus on oil and gas, done with safety, and respect for life, people, and the environment,” we preserved our values in SP 2023–27:

- Respect for life, people, and the environment;
- Ethics and transparency;
- Achievement and trust; and
- Market orientation and results

In addition, we maintained our purpose of “providing provide energy that ensures prosperity in an ethical, safe, and competitive manner.”

SP 2023–27 proposes a set of strategies aimed at an effective contribution to a prosperous future, such as:

- deliver sustainable results for a society in transition, by acting in business with social and environmental responsibility, safety, integrity, and transparency;
- maximize portfolio value, with a focus on deepwater and ultra-deepwater assets;
- operate with assets focused on proximity to the oil supply and the consumer market, adding value to refining facilities with more efficient processes and new products, moving towards a low-carbon market;
- operate competitively in the sale of oil and oil products, maximizing the capture of value through the integration and safe and efficient operation of the upstream and downstream logistics chain; and
- innovate to generate value in our businesses, today and in the future, and achieve decarbonization goals.

In order to ensure alignment of incentives for achieving corporate goals, SP 2023–27 reaffirms the four top metrics of the past plan, wich are:

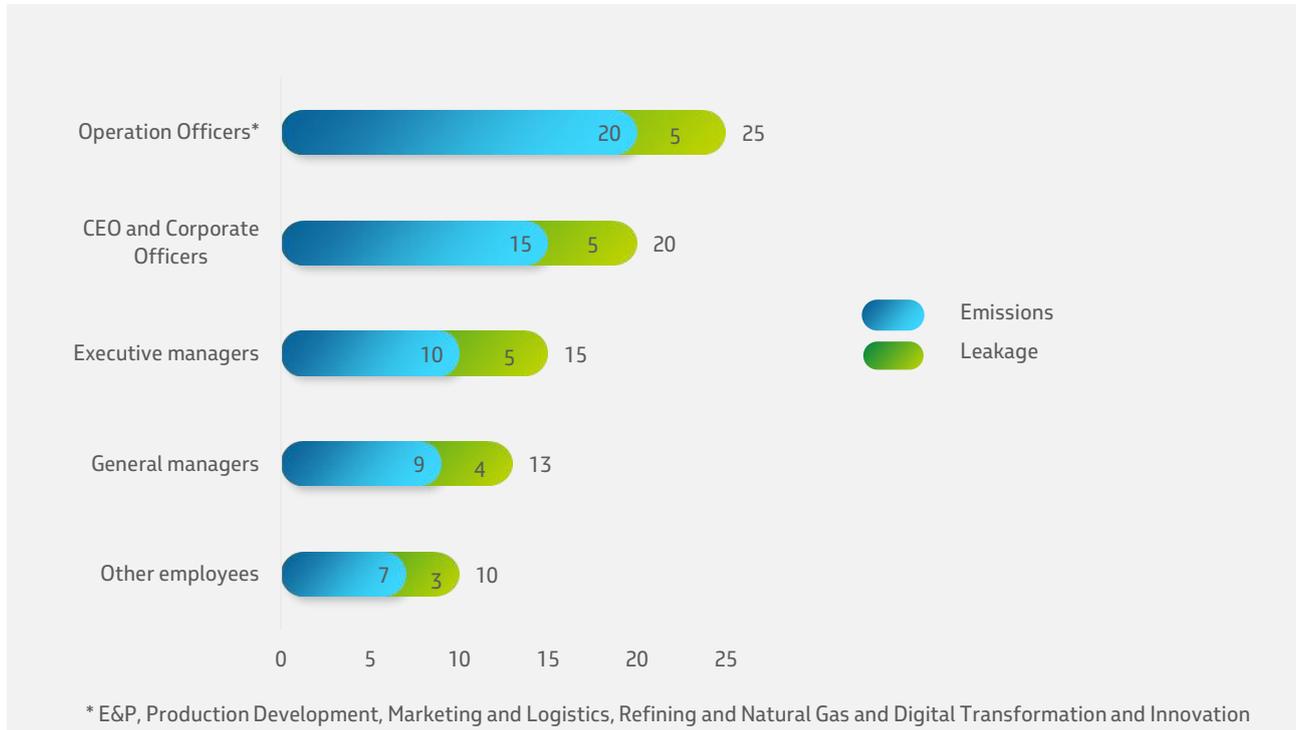
- Exploration and Production and Refining greenhouse gas emissions target achievement indicator (IAGEE);
- Volume of oil and oil products leaked (VAZO);
- Petrobras Delta EVA®; and
- Total Recordable Injury (TRI)

IAGEE and the VAZO reflect the SP 2023–27 alignment with low carbon and sustainability commitments, while TAR is a fundamental tool for achieving our ambition in terms of safety: zero fatalities. IAGEE represents the fulfillment of meeting the greenhouse gas intensity targets for E&P and Refining.

IAGEE, VAZO and ΔEVA® indicators impact the variable compensation of all employees, including senior management. Our variable compensation program seeks to align individual performance with our global goals and increase engagement so that everyone feels responsible for our results. In this way, the variable compensation of each employee or executive is calculated based on individual goals and on meeting these three top metrics.



## MINIMUM VARIABLE COMPENSATION LINKED TO EMISSIONS AND LEAKAGE GOALS IN 2022 (%)



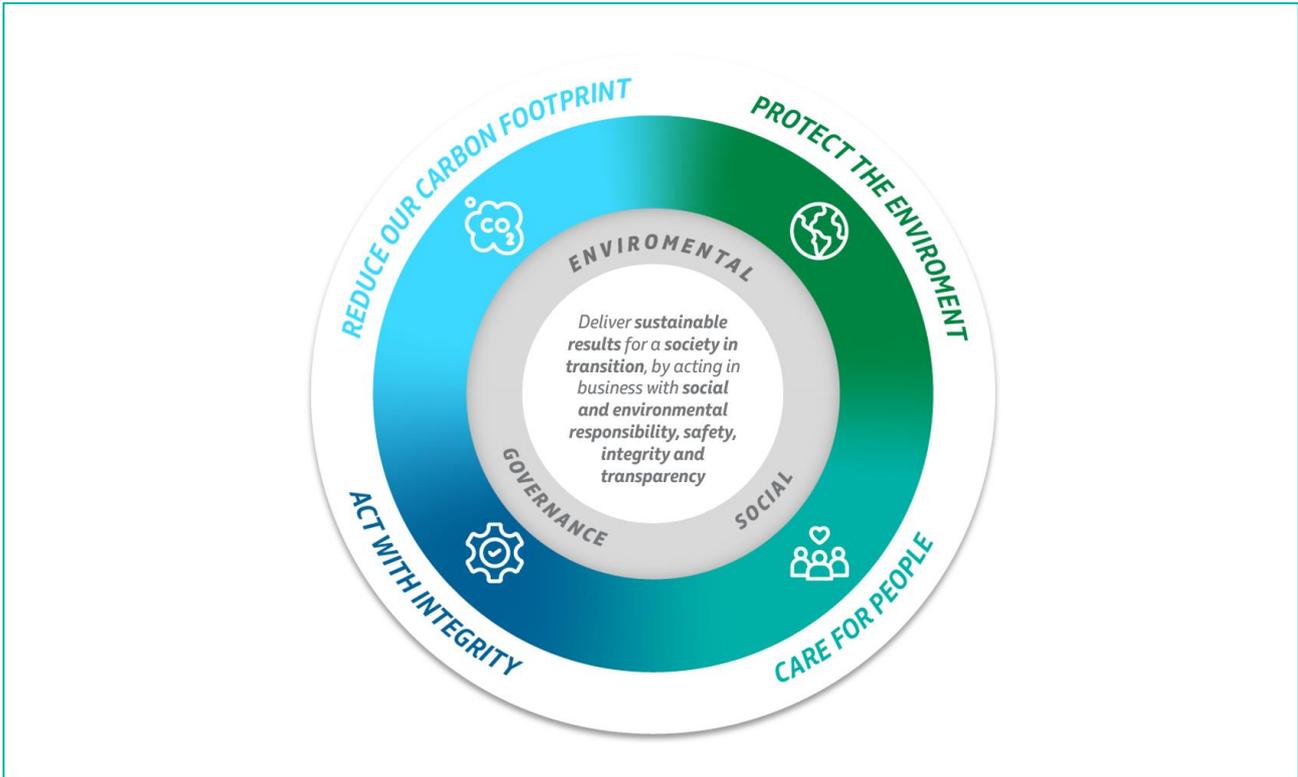
Our commitment to life is a non-negotiable value and our recognized safety culture continues to be reinforced every day to strengthen operational and personal safety. Therefore, we also maintained the ambition of zero fatalities and zero leaks in our plan.

In SP 2023-27, we improved the strategies related to the Environmental, Social and Governance (ESG) topics, integrating their elements into a single vision, with emphasis on four main ideas:

- reduce our carbon footprint;
- protect the environment;
- take care of people; and
- act with integrity.

For each of these driving ideas, a set of relevant topics was identified that support and guide our actions, projects, programs, and related commitments.

## OUR ESG POSITIONING



The commitments related to each of the four main ideas of the mandala were consolidated into a single list, in line with the concept of integrated ESG<sup>1</sup>:

 <p><b>REDUCE OUR CARBON FOOTPRINT</b></p>	<ul style="list-style-type: none"> <li>▪ Reduction of total operational absolute emissions by 30%<sup>2</sup> by 2030</li> <li>▪ Zero routine flaring by 2030</li> <li>▪ Reinjection of 80 million tCO<sub>2</sub> by 2025 in CCUS projects</li> <li>▪ GHG intensity in the E&amp;P segment: achieve portfolio intensity of 15 kgCO<sub>2</sub>e/boe by 2025, maintaining 15 kgCO<sub>2</sub>e/boe by 2030</li> <li>▪ GHG intensity in the Refining segment: achieve an intensity of 36 kgCO<sub>2</sub>e/CWT by 2025 and 30 kgCO<sub>2</sub>e/CWT by 2030</li> <li>▪ Consolidation of 55% reduction in the intensity of methane emissions in the upstream segment by 2025, reaching 0.29 tCH<sub>4</sub>/thousand tHC</li> </ul> <p style="text-align: center;"><b>GOAL</b></p> <p style="text-align: center;">Neutralize emissions (scopes 1 and 2) in activities under our control and influence partners to achieve the same goal in non-operated assets by 2050<sup>3</sup></p>
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<sup>1</sup> The commitments that indicate a reduction percentage are based on 2015.

<sup>2</sup> Regarding absolute emissions, Petrobras' commitment seeks to maintain the level of emissions in 2030 in relation to 2022 when we consider the emissions related to the average thermoelectric dispatch of the last 5 years in this year's projection. Petrobras' commitment is not to exceed 54.8 million tons of CO<sub>2</sub> in 2030, unless there is a strong demand for electricity generation from thermal plants due to national water stress events. Achieving this commitment considers the possibility of using carbon credits as a complementary strategy and depends on actions to gain efficiency and divestments provided for in SP 2023-27.

<sup>3</sup> Our ambition refers to emissions within Brazilian territory, where more than 97% of our operational emissions occur. For the other emissions, we also aim for neutrality within a period compatible with the Paris Agreement, in line with local commitments and international organizations.



### PROTECTING THE ENVIRONMENT

- 40%<sup>4</sup> reduction of our withdrawn freshwater by 2030
- 30%<sup>4</sup> reduction in solid waste generated in processes by 2030
- Allocation of 80% of solid waste generated in processes for RRR<sup>5</sup> routes by 2030
- 100% of our facilities with a Biodiversity Action Plan by 2025



### CARE FOR PEOPLE

- Measure and disseminate the social return of at least 50% of voluntary socioenvironmental projects (by 2025)
- Keep socioeconomic diagnosis of communities up to date (up to three years) in 100% of operations (of all business units and refineries in the portfolio)
- Promote human rights and diligence the operations (100% training of employees in HR and 100% of operations with due diligence in HR) by 2025
- Promoting diversity by providing an inclusive working environment
- Development of impact initiatives, which contribute to the solution of social and/or environmental problems, involving opportunities to act with our stakeholders and customers of our products
- Promotion of safe operations, based on the protection of life, empowering 100% of the leadership in mental health and acting in the promotion of the well-being of more than 38,000 employees



### ACT WITH INTEGRITY

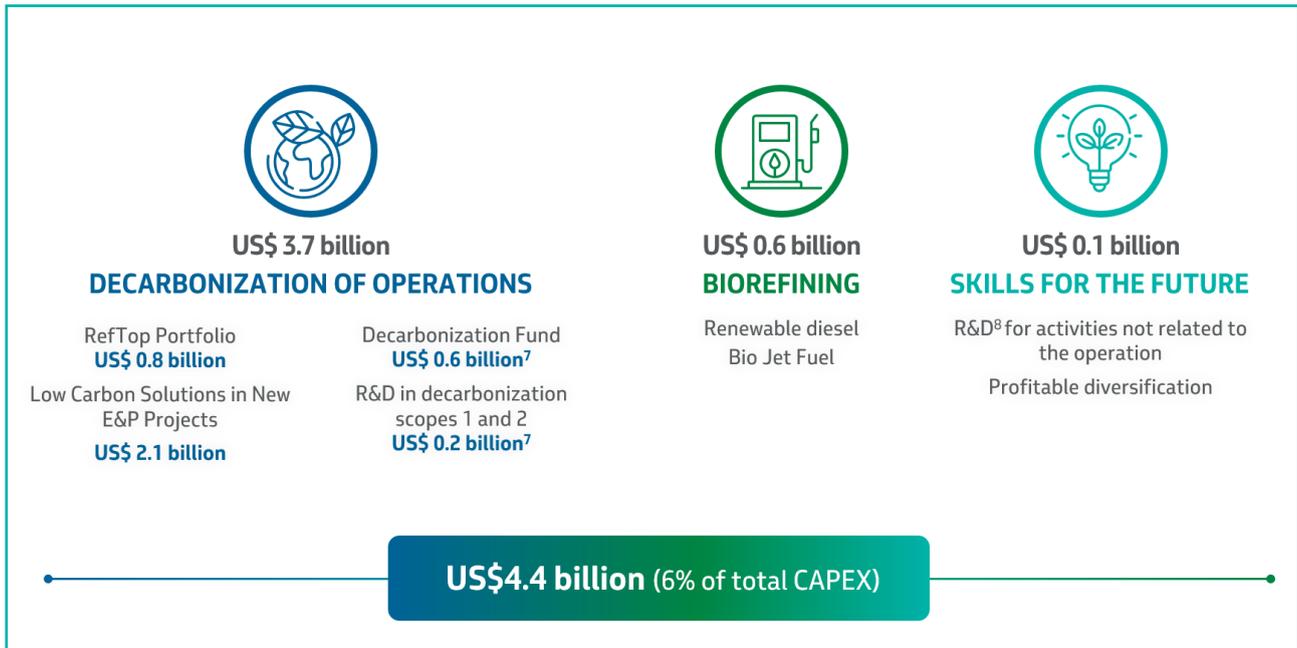
- Adoption of a governance model that allows a balance between efficiency and control.
- Promotion of an environment of reference in ethics, integrity, and transparency at our company.
- Encouraging the adoption of ESG practices among our stakeholders

<sup>4</sup> In relation to 2021.

<sup>5</sup> Reuse, recycling, and recovery.



Seeking to reinforce the decarbonization initiative, our SP 2023-27 brings important elements that reinforced our sustainability agenda and low carbon positioning, allocating Capex<sup>6</sup> of USD 4.4 billion:



The planned budget for the Decarbonization Fund in SP 2023-27 is USD 600 million over the five-year period, representing a significant growth compared to the previous plan, which was USD 248 million. Moving forward in initiatives aimed at profitable diversification, SP 2023-27 adds the businesses that were indicated by a multicriteria analysis, among several studied, as the most suitable for the company. We determined to deepen studies in the new businesses of offshore wind, hydrogen, and carbon capture, in addition to the continuity of biorefining efforts.

<sup>6</sup> Acronym in English for expenses or investments in capital goods.

<sup>7</sup> Expenditures classified as Capex can be allocated as Opex (operational expenditure) for amounts related to the decarbonization fund and spending on research and development (R&D).

<sup>8</sup> The expected expenses for the low carbon portfolio correspond to 10% of the total R&D budget, which depend on the legal obligation.

**MAIN SUSTAINABILITY METRICS<sup>9</sup>** (consolidated)

Indicator	2022 Achievement	Goal or Maximum Admissible Limit (LMA) for 2022	2022 Performance	Goal or LMA for 2023
Fatalities	5	LMA: Zero	Actual results below zero fatality goal	Goal: Zero
TRI	0.68	LMA <0.7	Actual result 3% under the planned Warning Level for the year	<0.7
VAZO <sup>10</sup>	218.03 m <sup>3</sup>	Goal: Zero LMA: 120 m <sup>3</sup>	Actual result was above the volume leaked in 2021 (11.6 m <sup>3</sup> ) and 82% above the warning limit established for 2022	Goal: Zero LMA: 120 m <sup>3</sup>
IGEE <sup>11</sup> E&P	15 kgCO <sub>2</sub> e/boe	16.5 kgCO <sub>2</sub> e/boe	Actual result 9.1% less than the emission intensity goal established for 2022	Note <sup>12</sup>
IGEE <sup>11</sup> Refining	37.9 kgCO <sub>2</sub> e/CWT	39.2 kgCO <sub>2</sub> e/CWT	Actual result 3.3% less than the emission intensity goal established for 2022	37.8 kgCO <sub>2</sub> e/CWT

In July 2022, we signed a credit line with sustainability commitments (Sustainability-Linked Loan - SLL) in the amount of USD 1.25 billion and maturing in July 2027. The contract was made with Bank of China, MUFG and The Bank of Nova Scotia, with competitive costs compared to market benchmarks, and with incentive mechanisms for achieving sustainability commitments, based on GHG intensity indicators in E&P and Refining; and on the methane intensity indicator in the upstream segment.

This is the first time that Petrobras received financing associated with corporate sustainability goals, which reinforces the company's focus on decarbonizing its operations and expands its liability management strategy through the diversification of financing models, in line with sustainability requirements increasingly present in the debt markets.

<sup>9</sup> Fatalities and TAR (Injury Rate per million man-hours) data include Petrobras Parent Company, Libra, Petrobras Bolivia S.A. (PEB), Petrobras International Braspetro B.V. – Sucursal Colombia (GDP-COL) and Transpetro. Emission data considers all companies that we have operational control over.

<sup>10</sup> Leaked volume of oil and oil products. The volumes of oil and oil products leaked related to our operation are computed (not including clandestine deviations) of all occurrences with account for a volume leaked above one barrel (0.159m<sup>3</sup>) and that have reached water bodies or non-waterproofed soil.

<sup>11</sup> Intensity of Greenhouse Gas Emissions

<sup>12</sup> Considering the unique profile of GHG emissions during the commissioning process of new E&P units, which do not represent the intrinsic performance of these units in full operation, as of 2023 the indicator of the E&P segment that will be part of our top metric will refer to the intensity of GHG emissions from currently implemented units (IGEE E&P Implemented Units). For 2023, the target for IGEE E&P Implemented Units is 15.04 kgCO<sub>2</sub>e/boe. The IGEE E&P indicator of the total portfolio, related to our history and commitment to sustainability, will be maintained and we will also start to monitor the GHG emissions performance of the new units only (IGEE E&P New Units). In this sense, we increased the transparency on the performance of the E&P segment by monitoring two new metrics.

**MAIN ECONOMIC AND GOVERNANCE INDICATORS** (consolidated)

Indicator	2018	2019	2020	2021	2022
Proved oil, condensate, and natural gas reserves (Biboe)	9.6	9.6	8.8	9.9	10.5
Oil, LGN and condensate production (mmbbl/d)	2,099	2,222	2,282	2,224	2,154
Natural gas production (Mboed) <sup>13</sup>	529	548	554	550	531
Revenue from sales (millions of BRL)	310,255	302,245	272,069	452,668	641,256
Operating profit (loss) (millions of BRL)	60,545	81,154	52,893	202,404	292,964
Adjusted Ebitda (millions of BRL)	114,852	129,249	142,973	234,576	340,482
Net profit (loss) - Petrobras Shareholders (millions BRL)	25,779	40,137	7,108	106,668	188,328
Free cash flow (millions BRL) <sup>14</sup>	55,450	73,232	118,132	168,992	205,754
Net debt (millions USD) <sup>15</sup>	84,360	87,121	75,538	58,743	53,799
Capex (millions BRL) <sup>16</sup>	49,370	111,120	40,796	47,500	50,501
Market Leverage <sup>17</sup>	46%	44%	46%	41%	39%
Percentage of employees trained in ethics and integrity <sup>18</sup>	86%	99%	98%	99.2%	99.2%
Employee disciplinary measures <sup>19</sup>	282	351	250	147	107
<b>Petrobras Transparency</b> website users (monthly average)	11,034	10,126	10,081	12,490	14,343

<sup>13</sup>As of 2019, the unit of measurement of gas production is thousands of barrels of oil equivalent per day (Mboed)

<sup>14</sup>We changed our free cash flow metric was to reflect the new Shareholder Compensation Policy, approved in 2021, and now includes net cash generated by operating activities less acquisition of property, plant and equipment and intangible assets. 2020 free cash flow has been recalculated based on changes in this metric for comparative purposes only and does not affect past dividends. The values for the years 2018 to 2019 were not recalculated and are presented considering the metric in force at the time of its calculation.

<sup>15</sup>The effects of the adoption of IFRS 16 occurred as of January 1, 2019, when the rule went into effect.

<sup>16</sup>In 2019, the amount includes the signing bonus of BRL 68,612 million for the acquisition of the Onerous Cession. In 2022, the amount includes a signing bonus of BRL 4,242 MM for the S epia and Atap u fields.

<sup>17</sup>Net Debt/ (Net Debt + Market Cap)

<sup>18</sup>Excluding employees on long-term leave or assigned to other corporate holdings and external entities, the percentage is 99.7%. This data covers only employees of Petrobras Parent Company (including those assigned to subsidiaries).

<sup>19</sup>Data from Petrobras Parent Company.

**MAIN ENVIRONMENTAL INDICATORS** (consolidated)

Indicator	2018	2019	2020	2021	2022
Oil and oil product spills (m <sup>3</sup> )	18.4	415.3	216.5	11.6	218.03
Emission of greenhouse gases (millions tCO <sub>2</sub> e)	62	59	56	62	48
GHG intensity in E&P (kgCO <sub>2</sub> e/boe)	17.5	17.3	15.9	15.7	15.0
Intensity of methane emissions in E&P (tCH <sub>4</sub> /mil tHC) <sup>20</sup>	0.57	0.58	0.45	0.32	0.26
GHG intensity in refinement (kgCO <sub>2</sub> e/CWT)	42	41.7	40.2	39.7	37.9
Fresh water withdrawal (Megaliters)	182,316	156,864	146,251	150,749	122,167
Generation of hazardous solid waste from processes (thousand t)	121	120	123	109	99
Facilities with biodiversity action plan (PAB) <sup>21</sup>	-	-	-	25%	25%

<sup>20</sup> Revised 2021 value after third-party certification completed in July 2022, from 0.33 tCH<sub>4</sub>/mil tHC to 0.32 tCH<sub>4</sub>/mil tHC.

<sup>21</sup>Data from Petrobras Parent Company, Libra and Transpetro. The number of units with prepared PABs was maintained, however, the percentage of progress was revised due to the addition of units in the forecast for the preparation of plans, with the inclusion of those operated by our subsidiary Transpetro. The PABs expected to be prepared in 2022 were not carried out due to the need for a new bidding process, which was concluded at the end of the year. For 2023, our goal is to prepare (or revise) 36 PABs, when we will reach approximately 60% of our ESG Commitment in Biodiversity.

**MAIN SOCIAL INDICATORS<sup>22</sup> (consolidated)**

Indicator	2018	2019	2020	2021	2022
Fatalities <sup>23</sup>	6	2	0	3	5
Total Recordable Injuries (TRI) <sup>23</sup>	1.01	0.76	0.56	0.54	0.68
Investments in cultural projects (millions BRL) <sup>24</sup>	38	37	18	37	28
Investments in sport projects (millions BRL) <sup>24</sup>	80	71	5	1	4
Investments in NCT projects <sup>25</sup> (millions BRL) <sup>24</sup>	17	13	8	12	17
Investments in socio-environmental projects (millions BRL)	87	116	89	88	121
Social and environmental projects with measurement of social return (%) <sup>26</sup>	-	0.94	5.88	13.75	23.6
Donations (millions BRL) <sup>27</sup>	-	0.9	26	101	272
Number of Employees <sup>28</sup>	63,361	57,983	49,050	45,532	45,149
Number of Female Employees <sup>28</sup>	10,518	9,331	8,161	7,692	7,670
Management positions held by women (%) <sup>28</sup>	18.1	18.4	19.1	19.3	19.4
Number of black employees <sup>29</sup>	17,914	16,763	14,744	13,914	13,937
Management positions held by black employees (%) <sup>29</sup>	17.7	19.3	20.0	21.3	21.9
Number of employees with disabilities <sup>30</sup>	239	337	278	404	537

<sup>22</sup> Some numbers have coverage specifics, as indicated.

<sup>23</sup> Data from Petrobras Parent Company, Libra, PEB, PIB- COL and Transpetro

<sup>24</sup> Until 2021 the number was just for the Petrobras Parent Company.

<sup>25</sup> Business, Science and Technology.

<sup>26</sup> The percentage considers the cumulative number of projects measured from 2019 onwards by the number of projects in the portfolio on December 31 of each year. Data from Petrobras Parent Company.

<sup>27</sup> Until 2019 the number was just for the Petrobras Parent Company.

<sup>28</sup> In the 2020 Sustainability Report, the numbers of employees and respective percentages were only from the Petrobras Parent Company. In the current report we present the data including the subsidiaries in Brazil and abroad. Data prior to 2021 were adjusted considering this scope.

<sup>29</sup> Self-declared employees of black or brown color/race, not including employees of contracted companies who work on the company's premises. In the 2020 Sustainability Report, the number of employees and respective percentages were only for Petrobras Parent Company. In 2021, we present data for the parent company and subsidiaries in Brazil. Data prior to 2021 were adjusted considering this scope. For cultural reasons in some countries, the information for 2018, 2019, 2020 and 2021 could not be obtained and consolidated, including the subsidiaries abroad. The 2022 numbers consider data from the Parent Company, subsidiaries in Brazil and subsidiaries abroad (Petrobras Netherlands B.V., Petrobras America INC., Petrobras Singapore Limited, Petrobras Operaciones S.A., Petrobras Oil & Gas B.V. – Turkey branch, Petrobras International Braspetro B.V.). For cultural reasons in some countries, this information cannot be obtained and consolidated for all companies abroad.

<sup>30</sup> Until 2020 the number was just for the Petrobras Parent Company.



## Awards



For the fifth consecutive year, we won the "Gold Seal" awarded by the Brazilian GHG Protocol Program<sup>31</sup>, in recognition of our transparency in the publication of the company's greenhouse gas emissions inventory.



We achieved an A- (Leadership category) in the annual CDP<sup>32</sup> Climate Change questionnaire, and in the Water Security questionnaire for the second consecutive year. We also scored an A- on the Supplier Engagement Rating.



For the sixth consecutive year, we were awarded the 2022 Transparency Trophy, the main accounting award in Brazil. Recognition is granted annually by the National Association of Finance, Administration and Accounting Executives (Anefac) to Brazilian companies with the best quality and transparency in their financial statements.



We received the Association for Supply Chain Management (ASCM) Award for Excellence in the Corporate Transformation category, in recognition of our superior performance and dedication to advancing the field of supply chain management. ASCM's corporate certification standards for sustainability are used to assess an organization's alignment with three pillars: ethics, sustainability and economic responsibility.



We received the Authorized Economic Operator (OEA) Certificate for the first time. Certification is granted by the Federal Revenue Authority to operators in the international logistics chain that meet high levels of safety, compliance and reliability established by the agency. As a result, we began to receive benefits from Brazilian Customs related to greater agility and predictability of cargo in international trade flows.



We won the 2022 ANP Innovation Award in Category V (specific topical area "Industry 4.0/ Digital Transformation") with the implementation of "Real-Time Monitoring of Sea Well Integrity".



Petrobras Bolivia was recognized as the company with the best corporate reputation in the sector in Bolivia in 2021 by Monitor Empresarial de Reputación Corporativa (MERCOR).



For the sixth consecutive time, we were certified with the Governance Indicator of the Office for Coordination and Governance of State-owned Companies (IG-SEST), ranked the highest level of the indicator (Level 1).



We reached 94% adherence to the Brazilian Corporate Governance Code (CBGC).



TBG was awarded the Green Seal environmental award for the fifth consecutive year. O Jornal do Meio Ambiente grants the award based on a nomination and a survey carried out by the newspaper's own Sustainability Committee, which consults environmental agencies at the federal, state and municipal levels, such as: state environmental departments throughout Brazil, the Ministry of Environment, Ibama, Conama, municipal governments and other institutions linked to environmental preservation.



We received awards for the best investor relations program, best investor relations team, best ESG (Environmental, Social and Governance) program, best event for investors and analysts, "Petrobras Day 2021" at the New York Stock Exchange, and the best crisis management offered by Institutional Investor.



For the second year in a row, we are part of the Dow Jones Sustainability Index World™, with a maximum score in the Environmental Report, Risks Related to Water and Social Report criteria, and special mention in the Operational Eco-efficiency, Labor Practices and Human Rights category.



We received the "Legal Department 4.0" certification from the Brazilian Association of Lawtechs and Legatechs (ABZL), which rewards good legal management practices in innovation, people management, legal efficiency and business partnerships.



In 2022, Transpetro received the maximum score for its Transparency Portal, evaluated by the Federal Controller General (CGU). The Petrobras' Transparency Portal, for the second consecutive year, also achieved the highest score in the CGU ranking, as the only government-controlled company to comply with 100% of the active transparency requirements set forth in the Law of Access to Information (LAI).



Petrobras University received the ATD BEST Award 2023, the highest award in the training industry in the world, which also recognizes advances in methodologies, technologies and innovation applied to training. Additionally, we were recognized by the 2023 GlobalCCU Awards, a worldwide entity of corporate universities, and by the 2023 People Management Highlight Award from the Brazilian Association of Training and Development (ABTD).



We achieved a score of 65 in the Ecovadis' sustainability assessment, ranking first in the industry worldwide (89th percentile). Ecovadis is a sustainability assessment process for companies and their production chain that considers aspects related to the environment, labor practices and human rights, ethics and sustainable purchasing.



We won the "Gold Certification" Quality of Life Award (PNQV), granted by the Brazilian Quality of Life Association (ABQV). The certification is for excellence in management and maintenance of a healthy work environment that favors the health, safety and well-being of the workforce.

<sup>31</sup> Main source, in the country, of instruments and tools to quantify greenhouse gas emissions.

<sup>32</sup> CDP is a global reference in providing information on these topics to more than 740 investors, whose assets more than USD 136 trillion.



# Governance



[2-6] [3-3] [11.14.1] [11.14.2] [11.14.3] [11.14.4] [11.14.5] [11.14.6] [11.21.1] [11.21.2] [11.21.3] [11.21.4] [11.21.5] [11.21.6] [11.21.7]

## Economic impacts

Due to the size of our business and our value chain, we have a relevant economic impact, especially on the Brazilian economy.

As defined in our material topics, economic impacts are the consequences arising from the payment of taxes, royalties, salaries and suppliers, distribution of dividends and their consequences at the local, national, and global level, such as the multiplier effect on the economy, social transformations and improvements in infrastructure.

This includes impacts on the business, the market and the value chain arising from vulnerability to commodity prices, variation in production and demand, pricing policy adopted, and investments and divestments of companies and assets, as well as our tax approach, tax compliance and accountability reports for payments to governments.

### Investments and portfolio management

The O&G sector is characterized by being capital intensive. The review of the investment portfolio takes place annually as part of the process of drawing up the Strategic Plan for the five-year period. The Petrobras investment portfolio, disclosed in Strategic Plan 2023-2027, reveals that the company plans to invest USD 78 billion in the next five years. This volume of funds will materialize in orders for goods and services that will meet the company's need to modernize and increase its production capacity. This is what guarantees our future, with the fulfillment of production and efficiency targets. But that's not all. These resources will trigger a multiplier process of income and employment. Especially in the Brazilian economy, where most of the investments will be made.

In addition, it is important to highlight the role that our products play as a fundamental input for economic growth. We produce the energy needed to expand agricultural production, our industry, and our services, as well as the energy that guarantees mobility, heat, electricity, and comfort.

Our operations result in wealth generation in the societies where we operate through taxes, as well as jobs and income generation. On the other hand, our portfolio management may indicate an exit from certain businesses or assets where we are not the best owners, which can impact employment, the supply chain, and the tax base in the regions where they are located.

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>> [Information on employee management can be found in the Labor practices and equality of opportunity chapter.](#)

When conducting acquisitions, strategic partnerships, and divestments, we are guided by systems based on applicable legislation, including the State-Owned Companies Law (Law No. 13,303/16) and the General Petroleum Law (Law No. 9,478/98), as well as decrees 9,355/2018 and 9,188/2017, combining the best market practices with the principles of public administration.

The following table shows the main divestment projects completed in the period from January 1, 2022, to December 31, 2022:



## DIVESTMENT PROJECTS

Signature date	Closing Date	Description
7/5/2021	2/4/2022	Sale of the entire stake in a set of seven land and shallow water field concessions located in the state of Alagoas, jointly called Polo Alagoas.
12/17/2020	5/10/2022	Sale of all interests in 14 onshore exploration and production concessions, located in the state of Bahia, jointly known as Polo Recôncavo.
4/28/2022	7/5/2022	Full sale of the stake (27.88%) in Deten Química S.A. (Deten).
7/28/2021	7/11/2022	Full sale of the stake (51%) in Petrobras Gas S.A. (Gaspetro).
1/29/2021	8/3/2022	Sale of the entire stake in the Peroá and Cangoá production fields, jointly known as Polo Peroá, in the BM-ES-21 concession, located in the Espírito Santo Basin.
8/14/2020	8/5/2022	Full assignment of rights to the onshore fields of Fazenda Belém and Icapuí, located in the Potiguar Basin, jointly named Polo Fazenda Belém.
11/11/2021	11/4/2022	Full sale of refining and logistics assets associated with the Shale Industrialization Unit (SIX) in Paraná.
8/25/2022	11/30/2022	Full sale of refining assets and associated logistics at the Isaac Sabbá Refinery (REMAN) in Amazonas.
12/23/2021	12/20/2022	Sale of all company stakes in the set of 11 onshore oil and gas production field concessions, with integrated facilities, located in the state of Sergipe, collectively known as Polo Carmópolis.
7/12/2021	12/22/2022	Sale of its entire stake in the Papa-Terra production field, located in the Campos Basin.

At Transpetro, 2022 ended with 26 ships flying the Brazilian flag in operation. At Transpetro Internacional (TIBV) a charter contract ended in February, leaving the subsidiary with ten vessels. In total, the fleet ended 2022 operating 36 vessels with an average age of 8.07 years and a total of 3.4 million dwt.

In January 2020, we communicated our decision to hibernate Araucária Nitrogenados S/A (ANSA), located in the city of Araucária, Paraná. In September 2021, we disclosed the opportunity (teaser) for the sale of our stake in this fertilizer plant; however, in December 2022, we communicated the closure of the competitive process, with the company being kept in hibernation to assess the next steps related to the divestment of the asset.

In assets and units under active portfolio management, we have a personnel plan for our own employees covered by the projects. Its pillars are respect for people, the guarantee of operational continuity with safety, mobility and transparency, and provides for three tools: permanence in the company through internal relocation to other areas or units, leaving the company through the Agreement Termination Procedure (PDA), and the Specific Voluntary Termination Program (Specific PDV). This plan is presented to employees after the signing stage of the purchase and sale agreement (signing) of each disinvestment process and for other types of projects, when authorized under the terms of the Petrobras Internal Personnel Plan Guideline. Each portfolio management project has its own personnel plan rules, with a



schedule suited to the characteristics and type of project (divestment, hibernation, building demobilization and optimization of activities), and has a robust change management process focused on relocating and adapting employees to new locations.

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>> [Information on Personnel Plan can be found in the Labor practices and equality of opportunity chapter.](#)

## Price formation

On July 27, 2022, our Board of Directors approved the Price Formation Guideline for Oil Products and Natural Gas in the Domestic Market. The guideline reiterated the competence of the Executive Board in the execution of pricing policies, preserving and prioritizing the company's economic result, seeking to maximize its value generation, and incorporated an additional layer of supervision by the Board of Directors itself and by the Fiscal Council. Said guideline can be found on our Investor Relations [website](#).

Additionally, on May 15, 2023, our Executive Board approved the commercial strategy for setting gasoline and diesel prices, in line with the aforementioned guideline, based on competitive prices by sales center, in balance with the national and international markets. This strategy allows Petrobras to compete more efficiently, taking into account its market share, to optimize its refining assets, under the premise of maintaining the company's financial sustainability.

This commercial strategy uses market benchmarks such as: (a) the customer's alternative cost, as a value to be prioritized in pricing, and (b) the marginal value for Petrobras. The customer's alternative cost includes the main supply alternatives, whether suppliers of the same products or substitute products, while the marginal value for Petrobras is based on the opportunity cost given the various alternatives for the company, including production, imports and exports of said product and/or oils used in refining.

As we are aware of the importance of our products to Brazilian society, we point out that, when setting our prices, we seek to avoid passing on the volatility of the international market and the exchange rate, while preserving a healthy competitive environment under the terms of the current legislation.

Finally, it is essential to differentiate Petrobras' sales prices for the distribution companies from those perceived by the final consumer. Petrobras' sales price at refineries and terminals is just a portion of the resale price perceived by consumers at service stations. Before the fuel reaches the consumer, taxes are added, costs for the mandatory mixture of anhydrous ethanol in gasoline, and biodiesel in diesel; and costs and margins of distribution companies and resellers. Each parcel has its own formation dynamics, without any influence from Petrobras. Historically, the final price of fuels is highly influenced by the tax burden on these products.

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>> [Information about the taxation of our products can be found in our Tax Report.](#)

## Added Value Distribution

In 2022 we had an added value distribution of around BRL 483 billion. Through our activities, we distribute value to our employees and federal, state, and municipal governments, through the payment of taxes, royalties and special participations, financial institutions, the supply chain and our shareholders.

In addition to other contributions to society such as voluntary socio-environmental projects, donations and environmental monitoring and impact mitigation projects, as detailed in the table below:

**DISTRIBUTION OF VALUE ADDED** (consolidated data in BRL million)<sup>1</sup>

Amount	2022
Direct compensation (personnel and management)	29,191
Taxes	224,836
Financial institutions and suppliers	40,013
Shareholders (including retained profits)	189,005
<b>Total distributed added value</b>	<b>483,045</b>

**OTHER CONTRIBUTIONS TO SOCIETY** (consolidated data in BRL million)

Amount	2022
Volunteer socio-environmental projects	121
Cultural, sports and business, science, and technology projects	49
Environmental monitoring programs and projects in environmental licensing processes	348
Projects to mitigate and compensate for socio-economic impacts	114
Donations	272
<b>Total</b>	<b>904</b>

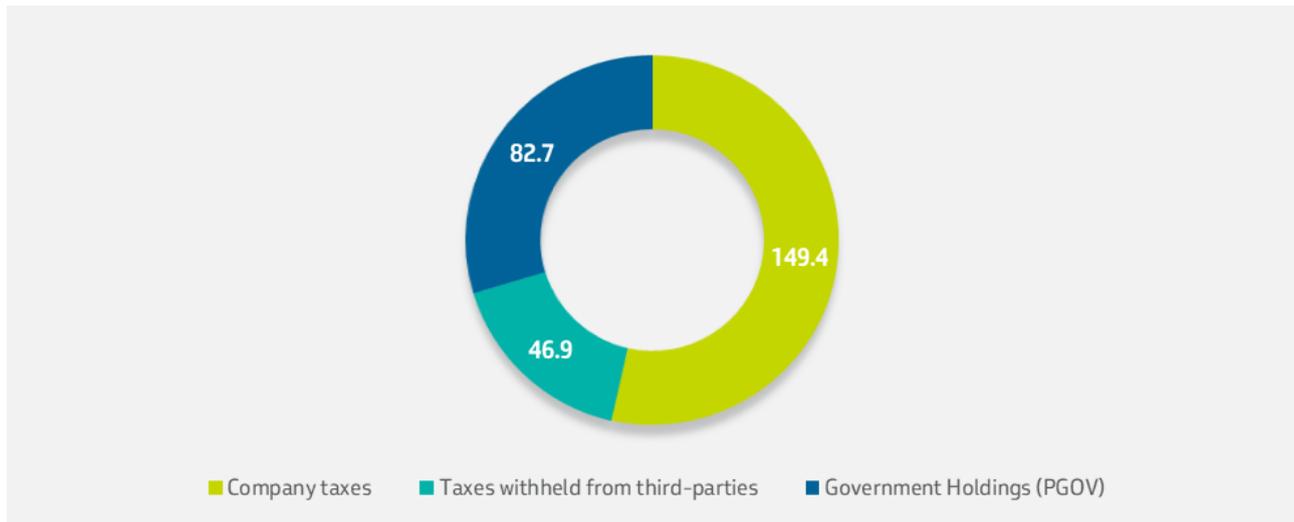
>> Information on environmental monitoring programs and projects in environmental licensing processes can be found in the Biodiversity chapter.

<sup>1</sup> Consolidated data. Amounts distributed according to the 2022 Value Added Statement. Direct compensation includes salaries, profit sharing, variable compensation, FGTS and benefits (advantages, retirement and pension plan and health insurance plan). In 2022, the payment of taxes and government participations was BRL279 billion and the amount of dividends paid to Petrobras shareholders was BRL194 billion.

## Payment of taxes and royalties

In 2022, Petrobras reached a record annual tax contribution, collecting a total of BRL 279 billion in the form of taxes and Government Holdings (PGOV) in Brazil and USD 134 million paid abroad. The collection of taxes and PGOV considerably increases the municipal, state and federal investment capacity, expanding the possibility of greater investment in urban infrastructure and services to serve the population.

### TAXES AND PGOV (data in BRL billion)



In the last five years, Petrobras has already collected more than BRL 1 trillion in taxes and government contributions for the Federal Government, States and Municipalities, providing a greater government budget for the execution of public policies that serve society.

[>> Information about our tax payments can be found in our Tax Report.](#)

Additionally, we have the legal duty to pay the ANP the amounts owed from government holdings (PGOV). Such disbursements are financial compensation for our oil production activities in the Brazilian territory, which aim to make a pecuniary return to society for the exploration of non-renewable resources. They are: royalties, special participation, signing bonus and payment for occupying or retaining an area.

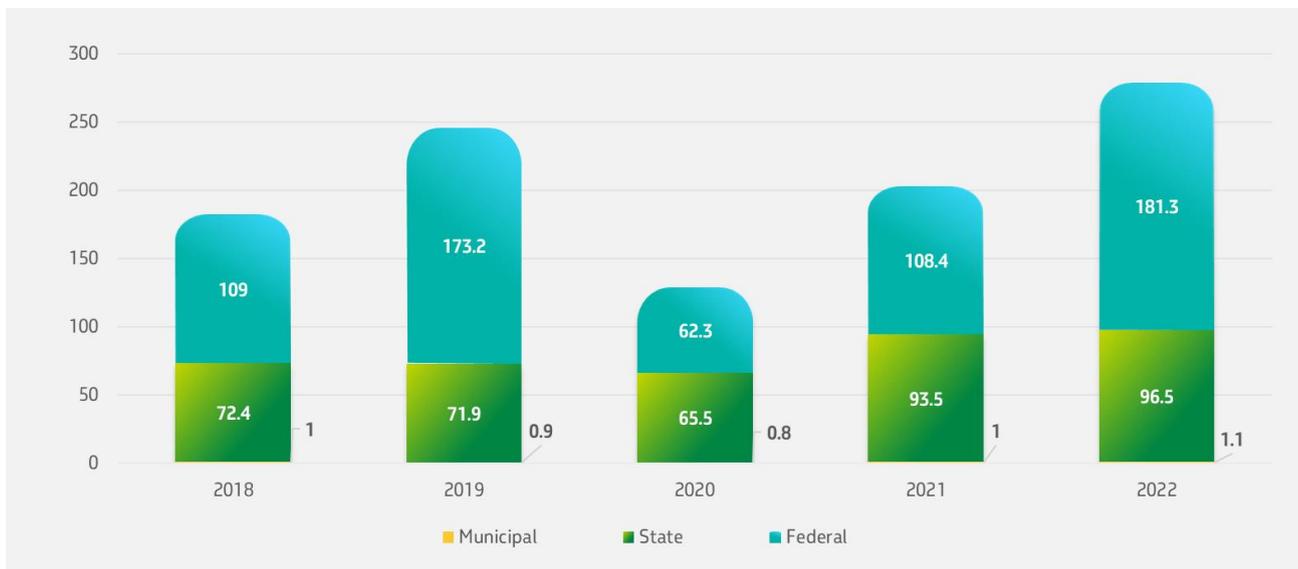


### EVOLUTION OF ROYALTIES AND SPECIAL INTERESTS (data in BRL billion)



In 2022, a total of BRL 82.7 billion was collected as government holdings. The amounts of PGOV paid are mainly formed by royalties (BRL 42.4 billion) and special participation (BRL 35.8 billion). In addition to these two recurring PGOV items, there was also the non-recurring payment of BRL 4.2 billion in signature bonus, referring to the acquisition of 30% of the S epia block and 52.5% of the Atapu block for BRL 2.1 billion each and BRL246 million paid for occupying or retaining the area.

### TAXES AND PGOV BY GOVERNMENT SPHERE (consolidated data in BRL billions)





## Cooperar para transformar (cooperate to transform) project



From September 2021 to March 2022, we carried out the Cooperar para Transformar project, on a pilot basis, in partnership with the municipality of Quissamã, located in the Northern portion of Rio de Janeiro state. In this project, we shared knowledge and best practices in governance, internal controls, and integrity with municipal public managers.

As a result of the project, we delivered proposals for the improvement of public governance, and for the application of oil revenues with a focus on the medium and long-term financial sustainability of the municipality. Recently, we revised the project to increase the number of municipalities served. This new proposal for the project will be released throughout 2023.

Regarding the financial assistance received from the government, we have the legal prerogative to use tax benefits, and the most significant ones are applied at the Federal level. Among these, we want to highlight the benefits linked to the development of areas in the north and northeast of Brazil, through the Superintendencies for the Development of the Amazon (SUDAM) and/or the Northeast (SUDENE). These benefits are linked to investment in the areas of research, development and innovation, the Worker Food Program, incentives for culture, and maternity leave. In these cases, there is a reduction in the amount due for taxes in accordance with the specific legislation for each benefit, and in 2022, we used BRL 2.69 billion due to these benefits.

### Tax management and compliance with tax legislation

The fundamental principle of the Petrobras tax policy is to ensure that tax management, which includes taxes and government holdings, adheres to the applicable legislation in Brazil and in the countries where we operate. Additionally, we manage taxes based on ethics, integrity, transparency, efficiency and social responsibility, contributing to the social and economic development of Brazil and the countries where we operate.

We comply with the tax legislation in Brazil and in the countries where we operate, defining our strategy based on the technical interpretation of norms, standards, and processes, and aligning it with our Business Purpose and Tax Risk Management.

Following the guidelines of our tax policy, we are committed to not hold equity interests in jurisdictions recognized as tax havens, as defined by Brazilian legislation, as well as to observe the Transfer Pricing rules provided for in Brazil and in the countries where we operate, with respect to all transactions with related or unrelated parties, when required by law. In recent years, the companies Petrobras Asphalt Trading BV - PAT BV, in Curaçao, and Bear Insurance Company - BEAR, in Bermuda, were closed. Petrobras' only equity interest in a tax haven jurisdiction, as defined by Brazilian law, is Braspetro Oil Services Company - BRASOIL, based in the Cayman Islands, currently without operational activity and whose liquidation is in progress, as approved by the Board of Directors in 12/21/2022.



As one of the largest taxpayers in Brazil, Petrobras is exposed, to a high degree, to the full complexity of the national tax system. To carry out all activities inherent to the calculation and settlement of taxes in the most efficient and assertive way possible, the Company has robust internal processes and controls. These are supported by a strong technological base resulting from our strategic initiative of digital transformation, and by technical staff trained to face the daily challenges arising from the large amount of new legislation published annually by the three spheres of government.

Petrobras maintains a good relationship with government entities, always preserving ethics and transparency in its actions. The company assumes sustainable tax positions, based on technical analyses, in accordance with applicable legislation and best market practices.

Due to the relevance of the Company in its operating context, we were chosen as representatives in the oil and gas segment in the cooperative tax compliance program, established by the Federal Revenue Service of Brazil, called CONFIA. The objective of the program is to improve the relationship between the tax authorities and the taxpayer, bringing greater legal certainty to the taxation process.

We are also certified in the Authorized Economic Operator program of the Federal Revenue Service and holders of several awards related to the transparency and technical quality of our financial statements.

Another effect derived from the significant Petrobras share in the collection of Brazilian taxes is our exposure to constant inspection by all levels of government, which impose a strong and routine follow-up tax audits, through specialized tax offices for large taxpayers.

We operate in complex market segments, which involve oil exploration, production, import and refining, in addition to the sale of products throughout the country, assessing our own and third-party taxes. In view of the various tax rules that can sometimes generate legal uncertainties, we thoroughly monitor our tax litigation, given the need to enter into legal disputes searching for the legal interpretation to apply to each fact under review.

We use productivity and quality indicators (Key Performance Indicators) to measure and monitor performance in the tax function, seeking continuous process improvement. Additional information about our Tax Policy, tax strategy, and tax litigation management is available in our Tax Report, published quarterly, in Form 20-F (SEC) and in the Reference Form (CVM), as well as in our financial statements, with emphasis on the explanatory tax notes: 16 and 18.3.1.

We have issued several reports with information of this nature, such as the Country-by-Country Report, Mandatory Disclosure Rules (DAC 6), Master File and Local Files. These are documents that provide clarity regarding our income tax policies and positions, in compliance with the guidelines of the BEPS (Based Erosion Profit Shifting) Project of the OECD, specifically Actions 12 and 13, which seek to promote greater fiscal transparency and avoid non taxation of commercial or financial operations (anti-abuse rules).

We also state the results and taxes paid by jurisdiction, regarding any Petrobras foreign corporate holdings, as shown in the table below. It is worth mentioning that the information may change from time to time, considering that the information for 2022 will only be available in June 2023, due to the difference in the fiscal calendar.

**FOREIGN CORPORATE HOLDINGS (BRL)**

Jurisdiction	Country	Result	Income Tax Paid
NL	The Netherlands	(3,624,050,062)	195,196,062
KY	Cayman Islands	7,245,775	-
US	United States	1,017,838,416	12,472
UY	Uruguay	223,167,191	11,095,922
BO	Bolivia	86,995,681	-
CO	Colombia	(7,893,289)	3,766,726
ES	Spain	12,842,346	-
GB	United Kingdom	8,343,468	1,585,259
AO	Angola	-	-
LY	Libya	659,847	-
MX	Mexico	(1,459,696)	-
AR	Argentina	81,677,698	30,922,036
SG	Singapore	82,209,549	46,164,520
VE	Venezuela	-	-
IR	Iran	-	-
<b>TOTAL</b>		<b>(2,112,423,076)</b>	<b>288,742,997</b>

>> [Information about taxation paid abroad at can be found in our Tax Report.](#)

In external relations, in matters of taxation and government holdings (PGOV), we seek, whenever possible, to develop cooperative relations with tax authorities, based on mutual respect, transparency and trust, and observing the strategies defined by us and our System of Integrity. In this regard, we are committed to complying with tax legislation in all locations where we operate, as well as optimizing payment using current tax incentives, with tax enforcement monitored by internal auditing and reviewed by an external audit.

In our interactions with public agents, we also follow the guidelines contained in our Code of Ethical Conduct and standards, in particular:

- (a) we adopt formal and documented means to express our position in the relationship with the public authorities;
- (b) we have adopted mechanisms that allow the traceability of interactions with public agents in order to guarantee their transparency, in compliance with the applicable corporate rules;
- (c) we always have at least one other employee provide company when we interact with stakeholder representatives, inside and outside our facilities;
- (d) we ensure that the confidentiality of the information is preserved, and that the disclosure only occurs in a timely manner and in accordance with the legal provisions and our rules.



## Supply chain

Our businesses generate jobs and income, not only because of the direct impacts of our activities, but also because of our indirect impact on the production chain. The purchase of goods and services by the company will become income for suppliers, who, in their production processes, will pay for new inputs, suppliers and labor in the production chain, driving the economy.

Throughout 2022, we signed an agreement with more than 15,000 suppliers, with a transaction amount of approximately BRL 250 billion, as detailed in the table below.

### CONTRACT VOLUME

Company	Number of suppliers with agreements signed in 2022	Contracts signed in 2022	Orders signed in 2022	Total transactions (BRL millions)
Petrobras Parent Company <sup>2</sup>	9,344	2,984	205,500	238,914.54
Petrobras Biocombustível	715	345	4,903	1,905.59
Transpetro	4,089	464	69,226	8,794.38
PECOCO	158	235	232	1,663.19
TBG	460	238	527	287.61
POSA	3	3	3	4.238
PEB	315	136	1,317	285.1
PIB-COL	85	61	93	478.21
PIB-BV	5	4	9	2.86
PNBV	25	9	120	92.41

<sup>2</sup> Of the total amount contracted by the Petrobras Parent Company in 2022, BRL 10,788.51 million was signed with corporate holdings.



## PROFILE OF OUR CONTRACTS

Company	Suppliers with up to BRL 100 thousand in business	Suppliers with between BRL 100 thousand and BRL 1 million in business	Suppliers with between BRL 1 million and BRL 100 million in business	Suppliers with more than BRL 100 million in business
Petrobras Parent Company	64.51%	16.98%	16.51%	1.99%
Petrobras Biocombustível	75.25%	15.05%	8.72%	0.98%
Transpetro	63.95%	23.38%	12.47%	0.20%
PECOCO	60.13%	20.89%	18.35%	0.63%
TBG	82.35%	11.24%	6.41%	0%
POSA	33.33%	33.33%	33.33%	0%
PEB	60%	28.89%	10.79%	0.32%
PIB-COL	47.70%	32.30%	19.00%	1.00%
PIB- BV	20%	60%	20%	0%
PNBV	56%	20%	24%	0%

We have a complex supply chain, with thousands of suppliers and the need for permanent availability of materials for our various operations. At the same time, we have the challenge of avoiding a shortage of materials at the units, while simultaneously preventing expenses inherent to possible excessive or untimely inventories.

As a reflection of the implementation of a series of advances in our supply chain management, focused on exploration, production, refining and transportation of products and services, we avoided an increase in capital and other additional costs with the company's inventory in the amount of BRL 656 million in 2022. This is based on the development of initiatives with an intense use of technology, with a focus on balancing the supply chain and optimizing inventories. All these actions generated an increase in inventory turnover, reduction of surpluses, sanitation and standardization that impacted the 40% reduction in the material registration base.

Regarding the contracting of local suppliers, considering the total amount of contracts and purchase orders entered into by the parent company during the year, 56.47%<sup>3</sup> are for contracts with suppliers based in Brazil. These transactions were carried out with 9,344 suppliers in 2022, of which 94% are domestic companies.

In 2022, our subsidiary Transpetro entered into commitments with 4,089 suppliers. When considering the total amount of transactions carried out, 97.18% of them were with suppliers headquartered in Brazil.

Of the commitments made 2022 by our subsidiary Petrobras Biocombustível, 36.2% went to local suppliers. In this case, local suppliers are considered to be all those established in the same State as the destination of the product and/or service procured by the biodiesel plant.

<sup>3</sup> Excluding contracting of production vessels (FPSO), the percentage of amounts committed to domestic suppliers was 83.71%.



## Conduct Adjustment Agreement (TAC) to offset Local Content fines



Petrobras entered into a TAC with the ANP for the compensation of fines for non-compliance with the local content clause related to 35 concessions, located in the Barreirinhas, Camamu-Almada, Campos, Espírito Santo, Parecis, Parnaíba, Pernambuco-Paraíba, Pelotas, Potiguar, Recôncavo, Santos, Sergipe-Alagoas and Solimões basins.

The TACs were established in accordance with ANP Resolution No. 848/2021 and provide for the conversion of local content fines from these concessions into new investment commitments in Exploration and Production in Brazil.

These commitments focus on the acquisition of goods and services for production development activities in Round Zero areas, which did not have local content obligations.

Under these agreements, Petrobras undertakes to invest approximately BRL 1.42 billion in local content by 12/31/2026, which made it possible to reduce the liability for fines in the amount of BRL 918 million in Petrobras' financial statements in 2022.

As for the profile of the contracted goods and services, there were no significant changes in 2022 compared to the previous year, with the main contracted categories being:

- Parent Company: Chartering of production platforms, chartering of rigs, well services, Engineering, Procurement, Construction and Installation - EPCI, underwater operations, flexible lines, valves, tubes, aerial chartering, chartering of ships and special vessels, chemicals and catalysts, geophysical services, Engineering, Procurement and Construction (EPC) services, and equipment maintenance.
- Transpetro: Operational support services, infrastructure maintenance, logistics, inspection, docking and complementary services, such as transportation and property security.
- Petrobras Biocombustível: National manufacturers and traders of vegetable oils (soybean, cotton, palm and residual oils and fats), animal fats (beef, pork, fish, and poultry), in addition to methanol and sodium methylate, which are the main inputs used in the industrial process.

>> Information on supplier management can be found in our [Human Rights and Corporate Citizenship Supplement](#).



## Supply chain promotion programs

To support the supply chain and promote the improvement of contract performance, we provide two incentive programs for the oil and gas industry: Progress and More Value Program.

In 2012, we launched Progress program, which seeks to offer credit with competitive volume and conditions for our supply chain, defining relationship rules between credit providers and borrowers that minimize risks.

To complement actions to promote the supply chain, in 2020 we launched the More Value Program, which consists of a financial solution tool for our suppliers, with a focus on fostering the oil and gas production chain in Brazil, offering the opportunity to anticipate invoices for goods delivered or services already performed.

This platform expands companies' access to working capital operations with more attractive rates with partner banks, using our company's payment risk (withdrawal risk) and bringing a new concept: the reverse auction. Prepayments are made 100% online, in a simple, fast, and secure manner. The program is part of an agenda of financial solutions that seeks to bring robustness to the supply chain and build productive relationships, so that we can implement projects more quickly and economically, being available for invoices using national currency. Interested suppliers can register at the More Value Program [website](#).

In 2022, the More Value Program executed more than BRL 16 billion in operations. Around 113 thousand invoices were anticipated, and 2.3 thousand suppliers have been registered in the program since December 2020.

## Petrobras Biofuel Fostering Family Agriculture



Photo: Petrobras Image Bank

### CONTEXT

The year 2022 proved particularly challenging for our subsidiary Petrobras Biocombustível (PBIO), in view of the necessary adaptations to meet the new biodiesel commercialization model, brought about by the end of the auctions regulated by the National Agency of Petroleum, Natural Gas and Biofuels (ANP). This fact further intensified the market dispute and there was a need to expand commercial relationships with customers through direct engagement. The main customers are fuel distributors, which purchase biodiesel to mix it with fossil diesel, in order to comply with the legal obligation.

In 2022, PBIO maintained the Social Biofuel Seal (SBS) certification, which is an identification component granted to biodiesel producers who promote the productive inclusion of farmers who are included in the National Program for the Strengthening Family Farming (Pronaf), contributing to generate employment and increased income from family farming. For the 2021/2022 harvest - we established production arrangements exclusively with family farming cooperatives. For this purpose, we entered into contracts with four cooperatives in three Brazilian states, two in the state of Bahia, one in Alagoas, and one in Sergipe.

### CHALLENGE

Encourage the diversification of raw material to accounting for the Social Biofuel Seal

### SOLUTION

Purchase of two different raw materials of vegetable origin (castor beans and dried coconut). Family farmers who provided raw materials received free Technical Assistance and Rural Extension (ATER), through the hiring of family cooperatives, which received bonuses based on the volume sold to cover the costs incurred in providing this service. The provision of free technical assistance and rural extension is a procurement pillars and allows farmers to have access to good cultivation techniques, which can increase their productivity.

### RESOURCES

In addition to the ATER bonus, PBIO, through the acquisition contracts signed with the cooperatives, paid

a family farming origination, for a total of **BRL 1.080 million.**

The payment of this bonus is proportional to the volume of raw material traded and aims to strengthen family farming, and its is a

free choice of the cooperatives and their members, provided that it is used to structure a single production chain or direct transfer to farmers who originated the raw material sold to the company.

### RESULTS

#### Contracted family cooperatives

Below is a summary with the number of contracted family cooperatives, contracts signed, orders for purchases/services, and the total values of the transaction :

Number of suppliers with commitments entered into in:

4

Contracts signed 2022:

8

Orders signed 2022:

207

Total transactions (BRL million):

**BRL 29.98**



## Investments in infrastructure and services

In addition to our direct and indirect impacts on jobs and income generation, we also invest in infrastructure and services with significant impacts on the communities located in our business coverage area.

We develop several socio-environmental projects and sponsorships with the aim of responding to the demands of communities in the territories where we operate and of achieving positive socio-environmental transformations, as presented in the chapter on Local and traditional communities.

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>> Information on our socio-environmental projects can be found in the [Local and traditional communities](#) chapter and in our [Human Rights and Corporate Citizenship Supplement](#).

We also make investments in infrastructure within the scope of environmental compensation projects. These investments are agreed during the environmental licensing processes and seek to directly benefit the communities impacted by our projects. In 2022, we highlight the following investments in infrastructure and services:

- Contribution of goods to support the management of conservation units located in the area of influence of the UTE-CAN assets in Rio Grande do Sul and UTE-TRI in Rio de Janeiro;
- Maintenance of several Air Quality Monitoring Stations, in communities in the areas affected by our assets. The data from the stations are forwarded to environmental agencies, which in turn make this information available to society. At the end of 2022, the following assets maintained and operated air quality stations: GNL- TRBGUA, Reduc, UTE-BF, UTE-SRP, UTE-TRI, APCAB, UTE-TMA, Cenpes, APITB, Regap, UTGCA, Replan, Refap, Repar, Termoceará, RNEST, UTE-TLG;
- Support in the construction of infrastructure for the benefit of fishing and *quilombola* communities in the area affected by APES in the north of Espírito Santo; and
- Support for fishing communities within the Fishing Activity Compensation Plan -PCAP - aimed at meeting the demands of fishing communities directly affected by our projects. Throughout 2022, the following fishing communities were included: Ponta Negra and Jaconé in the municipality of Saquarema-RJ, Praia Grande in the municipality of Arraial do Cabo-RJ and Sede in the municipality of Galinhos-RN.

Our subsidiary Transpetro also signed an agreement with Angra dos Reis (PMAR) with the intervention of the State Institute of the Environment (Inea) for the Execution of the Project to Complement the Sanitary Sewage System in the Monsuaba District. It began in June 2019, but due to the need for an amendment requested by PMAR, the most significant advances were made in 2022, with most of the sewage collection network and the structural base of the new sewage treatment station already built, with completion forecast for mid 2023.



[2-15] [2-26] [2-28] [3-3] [11.20.1] [11.20.2] [11.20.3] [11.20.4] [11.20.5]

# Business integrity

## Act with integrity

Good corporate governance and compliance practices are a support pillar for our business. Our work is guided by ethics, integrity, and transparency. Additionally, considering our operations in increasingly competitive markets, it is important that our governance model ensures the balance between efficiency and control to ensure that we operate quickly and safely at the same time.

The material topic of business integrity includes governance and compliance mechanisms, covering aspects of corporate integrity, positioning in relation to ethics and anti-corruption, and promotion of a balanced and fair environment. It includes actions to prevent, detect and remedy misconduct and harmful acts committed against the company. This includes those related to fraud, corruption, influence peddling, money laundering, commercial sanctions, conflict of interests, harassment, discrimination, and other illicit activities against management that cause economic and reputational impacts for the company, its investors and value chain, as well as the management of contracts and availability of public information regarding them. It also includes the risk of negative impacts due to a weak system, ineffective controls or biased supervision, as well as the risk of positive impacts due to responsible business practices and integrity commitments in the value chain.

Our business purpose is “to provide energy that ensures prosperity in an ethical, safe, and competitive manner” and we reaffirm our values in our strategic positioning, which represent our commitment to people, society, partners, and shareholders.

To act ethically and with integrity, we consider four relevant topics:

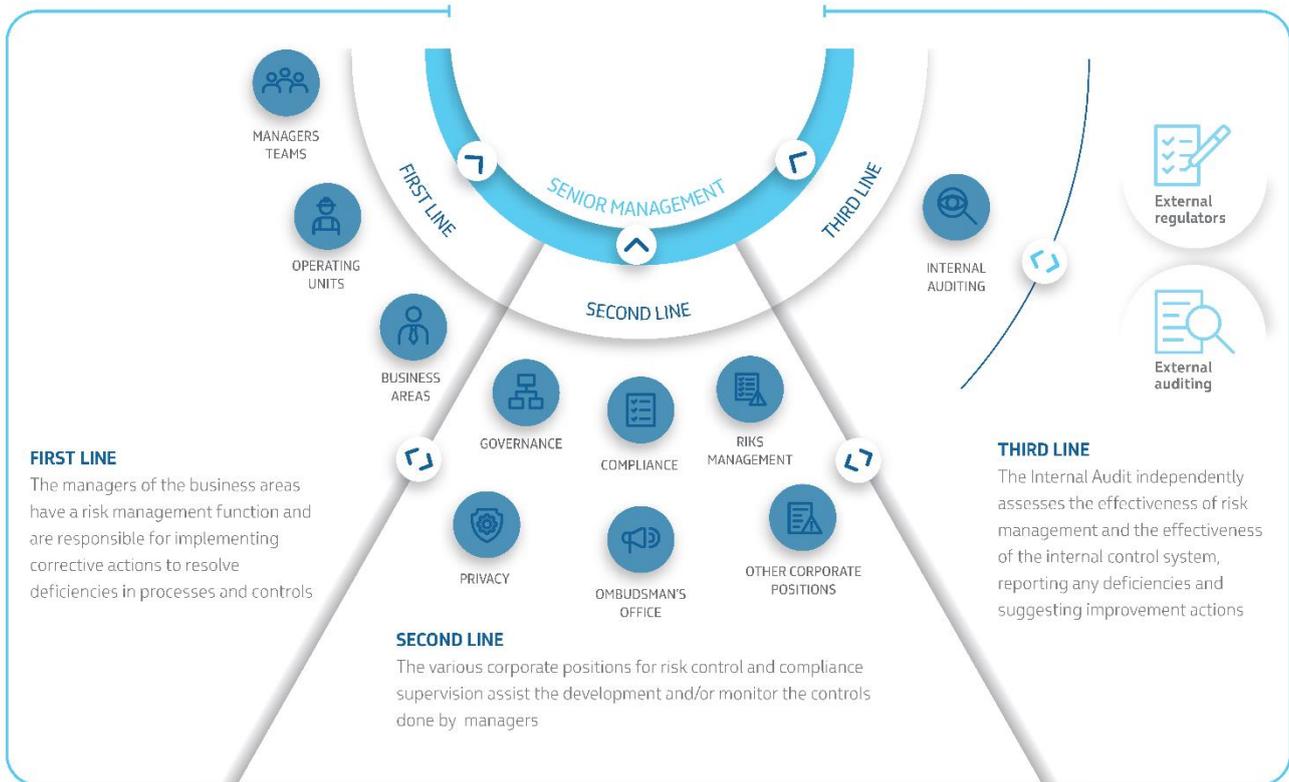
- Consolidation of a culture of integrity;
- Commitment to transparency;
- Governance focused on efficiency and control;
- Promotion of ESG (environmental, social and governance) among our stakeholders.

Our commitment to transparency is expressed in the values that support the Code of Ethical Conduct and guide our Strategic Plan. This commitment is recognized externally, and for the sixth consecutive year Petrobras was elected one of the ten companies with the most transparent financial statements in Brazil, in the category of companies with net revenues of more than BRL 20 billion by the National Association of Finance, Administration and Accounting Executives (Anefac).

## Integrity system

The Petrobras integrity system is a set of governance structures, standards, and management and control instruments aimed at preventing the materialization of compliance risks. Our integrity system is made up of the Compliance Program and the areas that work with compliance risks. It seeks to ensure a corporate environment of integrity for business, with transparency, ethics, and dialogue with our employees, partners and customers.

The performance model of the integrity system is structured according to the three lines of the Institute of Internal Auditors (IIA). In this model, each group that makes up the lines plays a distinct role in the governance structure. This presupposes a set of continuous and integrated activities, supported by the structure, as shown in the figure below:



## Compliance Program

Our **Compliance Program** is a set of mechanisms designed to prevent, detect and remedy misconduct and harmful acts committed against the company. The Program was built based on the principles and guidelines established in our **Compliance Policy** and in our **Code of Ethical Conduct**, with the purpose of fostering and maintaining an environment of integrity.

The Program is aimed at our various stakeholders, including: senior management, Petrobras employees and their corporate holdings, customers, suppliers, investors, partners, public authorities and all those who are related to and/or represent the company's interests in its business relationships. Petrobras' Governance and Compliance Officer is responsible for our Compliance Program, acting as the guardian of the integrity system.

## Governance and Compliance Officer

We have a Governance and Compliance Officer (DGC) made up of the Governance, Compliance, Corporate Integrity and Privacy areas. The board is led by an independent director, with an express provision in the Bylaws regarding the possibility of direct reporting to the Board of Directors. Since 2014, the Executive Director of Governance and Compliance has been elected from a list of professionals that were pre-selected by a specialized executive search agency.

The DGC operates as a second line of defense of Petrobras' integrity system and in the processes for managing compliance risks, advising on the development and monitoring of control activities carried out by the company's managers. Our Basic Organizational Plan, referenced in our Bylaws, highlight the responsibilities of the Governance and Compliance Officer (DGC), which include, among others, activities related to the prevention of fraud, corruption and money laundering as well as internal controls, integrity analysis for managers and counterparties, investigative processes and disciplinary deliberations. It is also responsible for activities related to the Petrobras corporate governance model, management of the decision-making process, and compliance with the General Data Protection Law (LGPD).



One of the duties of the DGC is to analyze and issue opinions regarding the procedural compliance of guidelines submitted to the Executive Board. In the event of an unfavorable opinion, the agenda item will not be sent to the Executive Board to decide on and must return to its issuer to meet compliance requirements.

Governance and compliance activities are reported at least quarterly to the Statutory Audit Committee and Fiscal Council, and annually to the Executive Board and Board of Directors.

In addition to the structure responsible for compliance actions, we have around 280 professionals from different areas acting as Integrity Agents, with the objective of contributing to the multiplication of information and the for the strengthening of the of integrity in the various areas of our company.

### **Data privacy**

When it comes to privacy, we act to address legal requirements and guarantee the protection of stakeholder personal data, without losing focus on the necessary transparency and the full exercise of the rights of holders, in addition to providing technical and administrative measures to assure prevention, security, and proper response against improper, non-compliant or unlawful treatment of this data.

In order to improve the management of personal data in our processes, in January 2022 a general management department was created that is directly linked to the Chief Governance and Compliance Officer, that will be in charge of processing personal data, in accordance with Law 13,709/2018 (General Law for Personal Data Protection - LGPD). It will focus on the management of privacy, responsible for coordinating compliance with the LGPD, guiding employees on the protection of privacy and carrying out the governance of privacy management and personal data protection processes, promoting awareness of the importance of the topic for all stakeholders, incorporating privacy protection into the organizational culture and decision-making processes.

## Governance of privacy management and personal data protection processes, in line with applicable regulatory and legal requirements



Photo: Petrobras Image Bank



### CONTEXT

On August 14, 2018, the General Law for Personal Data Protection, Law No. 13,709, was approved, effective as of September 18, 2020. In order to adapt the company to the requirements of this law, we created the Petrobras Privacy Program and Adaptation to LGPD, which culminated in the creation of the Privacy area.



### CHALLENGE

We had the challenge of introducing a culture of privacy and personal data protection among employees, as well as mapping the risks and opportunities for improvement within the scope of the applicable LGPD requirements, in all processes that handle personal data in the company.



### SOLUTION

With the sponsorship of senior management, we introduced a specific section on privacy and data protection into the Code of Ethical Conduct, published a Privacy and Personal Data Protection Guideline, created an internal portal dedicated to the topic, prepared mandatory training for employees and carry out ongoing awareness through lectures to stakeholders and specific areas of the company. We created a specific channel for reporting personal data violations incidents, as well as a channel for clarifying doubts related to privacy and protection of personal data, which also includes meeting "privacy by design" demands and customized training. Based on the risks identified in each company process, mitigation actions were prepared for implementation by their respective managers.



### RESOURCES



To move forward with these actions, we created the Privacy General Management, subordinated to the Governance and Compliance Officer, with

**12 full time employees** for the implementation of tLGPD compliance.



### RESULTS

**500** processes with mapped personal data treatment

**175** advisory actions in 2022

about **66 mil** employees trained in 2022 using distance learning course LGPD in Practice

**32 promotion events** in 2022, including training or events held with stakeholders and specific areas of the company

Improvements of internal privacy guidelines

Strengthening of "privacy by design" in company process

Privacy maturity and data protection survey

**40** corporate holdings of Petrobras



## Ethics Committee

Our Ethics Commission seeks to promote ethics management, acting as a forum for maturing and deepening ethics related issues. It was established in compliance with Decree No. 1,171/1994, Decree No. 6,029/2007 and Resolution No. 10/2008 of the Public Ethics Committee.

The members of the Petrobras Ethics Committee act as an advisory body on issues related to the principles, duties and conduct agreements established in the Code of Ethical Conduct and other instruments that make up the Petrobras Ethics Management System.

In addition, the Ethics Committee oversees compliance with the Code of Conduct of the Senior Federal Administration and forwards situations to the Public Ethics Committee that may constitute non-compliance with its rules.

In June 2022, the new composition of full members, alternates, and the executive secretary of the Ethics Committee was approved. In this new composition, professionals specialized in the themes related to the attributions of the Ethics Committee were appointed, with extensive experience in the positions they occupy, seeking gender diversity and representation from the operational areas.

For more information about the Petrobras Ethics Committee, please send an e-mail to [comissaodeetica@petrobras.com.br](mailto:comissaodeetica@petrobras.com.br)

## Policies and procedures

### Code of Ethical Conduct

Our Code of Ethical Conduct follows the best practices of business integrity and represents another step towards strengthening an environment of business integrity.

The Code defines the ethical principles that guide our actions and conduct commitments, both institutional and of our senior management and employees, explaining the ethical meaning of our mission, our vision, and our Strategic Plan. It addressed three principles, one of which is: "integrity, transparency and meritocracy" and 11 other commitments of conduct, including "accountability" and "transparency".

In accordance with the provisions of our Code of Ethical Conduct, in its items 4.6. and 4.8., we are committed to promoting integrity in the public and private business environment and reject any and all forms of fraud and corruption, including bribery, money laundering or insider trading, at all hierarchical levels. We also accept the duty to refuse to support and contribute to political parties or political campaigns of candidates for elective office.

The Code of Ethical Conduct can be accessed by all employees on our internal page and on our external website. We provide employees with an electronic system for periodic signing of the Code awareness agreement, especially when new documents or new content versions are released.

***By 2022, 98.63% of employees signed the informed consent agreement of the Code of Ethical Conduct.***

In November 2022, the Petrobras Board of Directors approved the new version of the Code of Ethical Conduct. The new Code incorporates and improves guidelines on topics and issues related to ASG, privacy and data protection, strengthening the company's integrity system.

In relation to business partners and other external organizations, such as our suppliers, we have a "standard clause" in our contract model, which requires them to be aware of and comply with the guidelines of our Code of Ethical Conduct.

## Political contributions

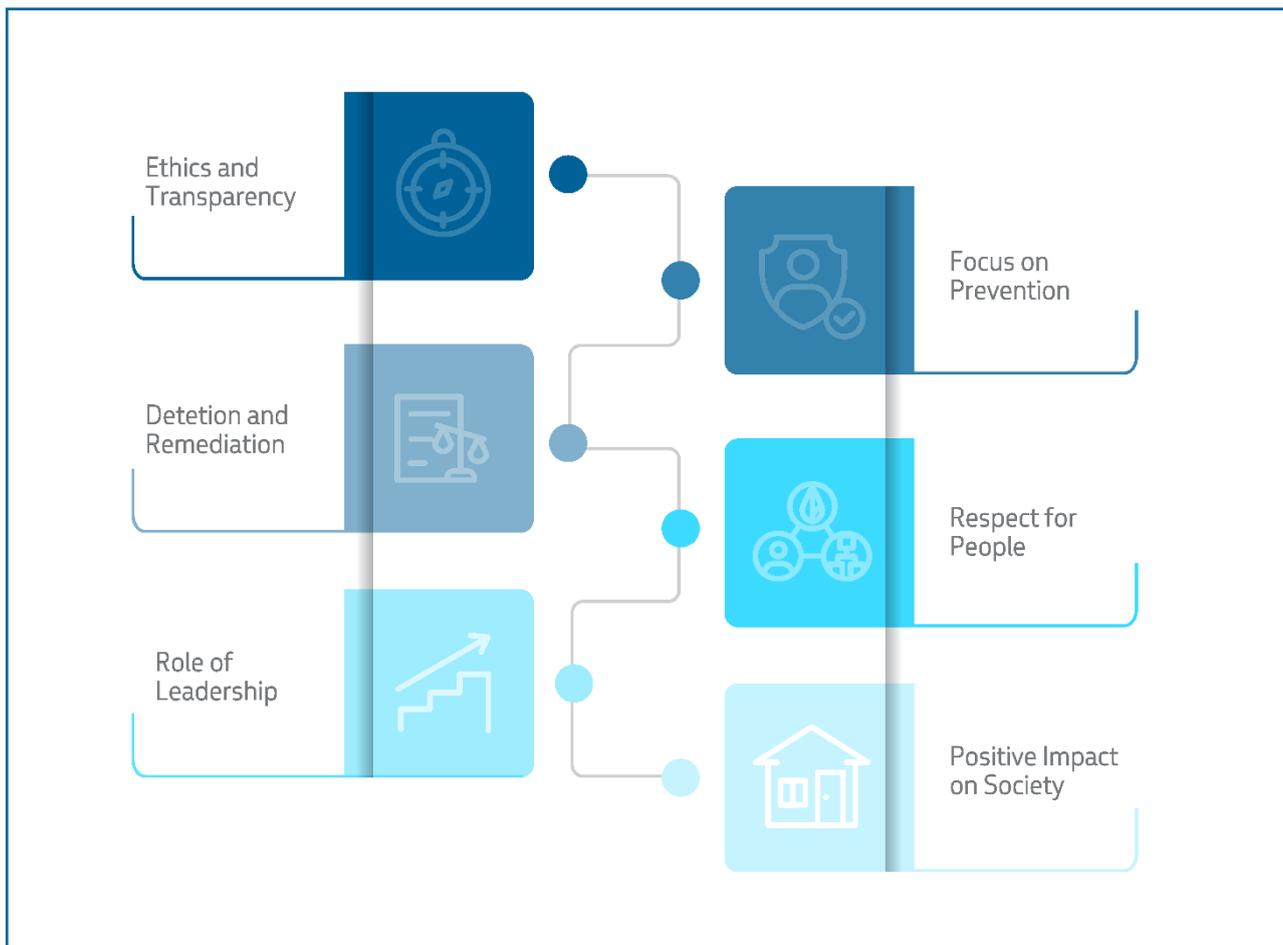


In accordance with the provisions of our Code of Ethical Conduct, we are committed to refusing support and contributions to political parties or political campaigns of candidates for elected office, and no complaints or incidents related to donations or political contributions in 2022 were identified.

### Compliance Policy

In 2022 we updated our Compliance Policy, which includes principles and guidelines that seek to describe and disclose the commitments we take on regarding the promotion of the highest ethical values of integrity and transparency in the conduct of our business, with zero tolerance for fraud, corruption, and money laundering.

In this review, we seek to reinforce the company's commitment to strengthening a culture of integrity, guided by the following principles:





### **Petrobras Ethical Conduct Guide for Suppliers**

Created in 2020 and revised in 2022, our **Petrobras Ethical Conduct Guide for Suppliers** provides guidance on expected ethical values and behavior. The guide reaffirms our zero tolerance for any and all forms of fraud and corruption, recommending the same stance to our supply chain.

Based on this guide and the standards with the guidelines for inspection of contracts for goods and services, we verify compliance with the execution of contractual clauses regarding aspects related to health, safety, and the environment, as well as social responsibility. In addition, we assess the performance and quality of our suppliers, and when necessary, apply our system of consequences, as set out in our **Quality Guide for Suppliers**.

In compliance with Articles 83 and 84 of Law 13,303/16, Petrobras internal procedures provide for the establishment of a Commission for the Analysis and Application of Sanctions (CAASE) for cases of contractual non-compliance, such as: non-compliance with labor, social security or HSE, contract abandonment, unjustified withdrawal from the bidding process, non-compliance with the Petrobras Ethical Conduct Guide for Suppliers, among other deleterious conduct.

### **Antitrust Compliance Guideline**

Created in 2022, our **Antitrust Compliance Guideline** embodies our commitment to strict compliance with antitrust legislation in Brazil and in foreign jurisdictions where we do business. Compliance with the guidelines provided for in this guideline is essential to prevent violations, as well as to prevent company damage from anti-competitive practices carried out by other agents.

### **Transparency Portal**

In December 2022, we launched our new **Transparency Portal** which, among several technological innovations, provides for integration with the Petrobras internal systems, allowing our managers to classify contracts and related documents as public so that they can be immediately made available to the external stakeholders. Only those documents that may compromise Petrobras competitiveness in operating markets will be exempt from the rule, supported by the Law on Access to Information (Law No. 12,527/2011 – LAI) and applicable legislation.

Once classified as public, the documents will be available for download in the Contracts section of the Transparency Portal. Documents initially considered confidential may have their classification revised at any time, in response to information access requests (based on the LAI).

Our Transparency Portal, for the second consecutive year, occupies the first place in the ranking of active transparency of the Federal Comptroller General (CGU), among more than 300 evaluated federal bodies and entities. On the Portal, we disclose institutional information, expenses, revenues, audits and accountability, in compliance with the Law of Access to Information (LAI), Law No. 12,813/2013 (Conflicts of interest Law) In addition, we also disclose the agenda of authorities, the salary table for employees, manager compensation, list gifts and hospitality, among other relevant information of societal interest.

In 2022, we recorded more than 229,000 accesses to the Transparency Portal and analyzed 2,992 requests for access to information, with an average response time of 13.6 days, making it the 9th most demanded body in Brazil.

## REQUESTS FOR ACCESS TO INFORMATION (%)



Of the requests for information received on contracts and agreements, the majority refer to access to copies and information about their execution. Regarding human resources, most demands are information on the number of employees, compensation and selection processes. The requests for information classified as integrity and control included internal investigations and access control to the units.

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>> [Information about our associations and external entities can be found at the in the appendix Main associations.](#)

### Training and communication

The disclosure of policies, rules and procedures related to ethics and integrity is made to all our stakeholders through campaigns and internal and external actions in the various communication channels. Such actions, planned based on our analysis of compliance risks, are combined with specific training actions, equally designed based on the prioritization of topics and stakeholders, with annual training on integrity for all our employees, including senior management. Employees and counterparties also periodically receive content on integrity issues, as well as audiences that work in areas more exposed to compliance risks, including fraud, corruption, and antitrust violations.

***Of the total number of our employees, 99.2% were trained in the General Data Protection Law.***

The following table summarizes the main integrity training courses carried out in 2022:



**COMPLIANCE TRAINING (Parent Company)**

Mechanism	Numbers from 2022	Gender	Functional category	Region
<p><b>Distance Learning LGPD in Practice</b> Training offered to all employees and mandatory for company employees</p>	38,388 employees completed the training, corresponding to 99.2% completion	6,471 Female 31,917 Male	20,093 High School 18,295 higher education	Northeast - 3,341 (9%) North - 633 (2%) Midwest - 140 (0%) Southeast - 32,783 (85%) South - 1,491 (4%)
<p><b>Introductory Distance Learning for Integrity Agents</b> Training offered to all Integrity Agents in the company</p>	104 Integrity Agents completed the training, corresponding to 36% of the target audience	30 Female 74 Male	52 High School 52 higher education	Northeast - 6 (6%) North - 2 (2%) Midwest - 2 (2%) Southeast - 87 (84%) South - 7 (7%)
<p><b>DGC Compliance Course</b> We closed the 5th DGC Compliance Course class, covering topics related to our Integrity environment. Training offered to integrity officers, employees of the Governance and Compliance Officer and employees of corporate holdings</p>	38 employees underwent training	15 Female 23 Male	7 High School 31 higher education	Northeast - 3 (8%) Southeast - 35 (92%)
<p><b>Mandatory Training for Statutory Officers (TOPE)</b> Course intended for new members of senior management, in compliance with the provisions of Law No. 13,303/16 and Decree No. 8,945/16. The initiative seeks to reinforce the basic concepts of governance and compliance <b>Audience:</b> CEO, chief officers, members of the Board of Directors and Fiscal Board of the parent company</p>	12 members completed the training	2 Female 10 Male	12 higher education 0 High School	Northeast - 0% North - 0% Midwest - 0% Southeast - 100% South - 0%

In addition to the ethics and integrity training listed in the table above, we offer a permanent portfolio of training that remain available for employees who did not take it at the time or who want to revisit the content. We also held lectures on preventing and combating moral harassment, sexual harassment and discrimination in the workplace. This initiative seeks to inform all our employees about these forms of violence and how they are harmful to the work environment and to victims. Raising awareness of everyone's duty to be vigilant in their day-to-day behavior and attitudes, the initiative seeks to contribute to a healthy work environment free of harassment and discrimination. By December 2022, 14 lectures were held, reaching 1,830 people, including employees from the administrative and operational areas.

## Training



Launched in 2021 with the aim of bringing the ethics and integrity topic to the offshore segment, the Petrobras Journey for Integrity expanded its actions in 2022. The pilot project was carried out at the P-74 unit and expanded to another 12 platforms belonging to the Búzios, UN-ES and UN-BS assets. In addition, some refineries and thermoelectric plants received visits from the Compliance area.

In 2022, Distance Learning for Counterparties was launched, which is another training option for our suppliers. This Distance Learning addresses themes from the Petrobras Ethical Conduct Guide for Suppliers, using case studies as a learning resource. The training was launched in March 2022. The first wave targeted around 70 suppliers, selected based on criteria such as the Integrity Risk Level (GRI) and the value of their active contract with Petrobras.

### Petrobras Dialogues

In December 2022, the annual integrity event “Petrobras Dialogues” took place. In its 8th edition, the event, aimed exclusively at the internal public, had the purpose of recognizing and celebrating the company's Journey for Integrity. The action was aimed at strengthening the relationship of trust between employees in the integrity system, as well as awakening a sense of belonging and highlighting the importance of each person's role along this journey.

### 100% Transparency Movement

As participants in the UN Global Compact, we have participated, since 2021, in the “100% Transparency Movement,” an initiative of the Global Compact Brazil Network, which seeks to contribute to the achievement of the Sustainable Development Goals of the 2030 Agenda. The companies participating in this initiative undertake to adopt measures that go beyond their legal obligations, such as strengthening mechanisms of transparency and integrity.

In all, the movement proposes five goals for members to achieve in stages by 2030:

- 100% transparency in dealings with government officials;
- 100% integrity in senior management compensation;
- 100% of the high-risk value chain trained on integrity;
- 100% transparent compliance and governance structures; and
- 100% transparent whistleblowing channels.

### International compliance cooperation

After improving our control mechanisms in recent years, we are intensifying cooperation with bodies such as the Organization for Economic Cooperation and Development (OECD), Transparency International and the World Economic Forum, with the aim of improving the business environment in organizations and in the world.



## Compliance risk management

Our risk management directs our integrity actions and strengthens our internal controls and governance. Our Corporate Risk Management Policy defines that this management is part of our commitment to act ethically and in compliance with the legal and regulatory requirements established in the jurisdictions where we operate.

We define compliance risks as those related to our integrity system, covering compliance with legislation and regulations applicable to our business and operations, compliance with internal policies and procedures, and compliance with values, ethical principles and guidelines for conduct. Each job we carry out is part of a macroprocess, that is, a group of activities focused on one of the company's objectives. The Petrobras Value Chain is the integration between the macroprocesses of all areas, whether business macroprocesses, management macroprocesses and corporate services. The macroprocesses unfold into processes that are transversal to the company's operations. Annually, we prepare and review the compliance risk matrix for the most exposed processes.

***In 2022, 258 processes (100%) of the company were reassessed based on risk factors related to fraud and corruption.***

Our integrity system is subject to the risk that managers, employees, contractors or anyone doing business with us may engage in fraudulent activities, corruption or bribery, circumvent or override its internal controls and procedures, or misappropriate or manipulate its assets for their personal benefit or that of a third party, against our interests. In this sense, one of the objectives of the integrity system is the prevention and treatment of these risks.

We continuously monitor our business processes to identify potential compliance deviations. Monitoring and control efforts are based on our integrity risk assessment. Whenever we identify an incident, we carry out a cause analysis to improve the business process and/or its respective controls, alerting those responsible for the failure to execute. If there are any sign of fraud, additional measures are taken. Our monitoring is continuously evaluated in relation to the effectiveness of the results obtained, in order to allow the development of new types of monitoring and implement the necessary changes in processes, controls, information technology systems, training, among others. Tools for mitigating risks such as fraud, corruption and breaches of ethics in general, among which we highlight the monitoring of compliance risks and the operational work of the Internal Audit area, as well as those within the scope of SOx certification. These are carried out in an integrated manner with the Executive Compliance Management through the execution of control tests. Internal Auditing, certified by the Institute of Internal Auditors Brazil, provides officers, executive managers and unit managers with operational audit reports, in addition to quarterly reports of their results to the Statutory Audit Committee, the Executive Board and the Board of Directors, so that the executives can monitor the implementation of the improvements.

## Internal controls and technology usage

The company updated its business management system, bringing a set of new technological solutions to conduct its corporate and business processes.

***We were able to automate around 34% of our internal controls, including those aimed at preventing and detecting potential occurrences of fraud and corruption.***



This level of automation allows us to reduce efforts in manual and repetitive tasks and reallocate our workforce to activities with greater added value, in addition to increasing the reliability and safety of processes.

## Integrity mechanisms in the value chain

### Integrity due diligence

We perform Integrity Due Diligence (DDI) of counterparties in order to know and assess the integrity risks inherent in our relationship with suppliers of goods and services; customers in the sale of oil products and oil; institutions in sponsorship projects and agreements related to Communication and Social Responsibility; parties to cooperation agreements and other types of agreements; shipowners and brokers; and companies interested in asset divestment processes and/or in corporate holdings, strategic and operational partnerships.

Among the verifications carried out during the DDI procedure are the identification of final beneficiaries of the legal entity, the use of intermediaries in business with Petrobras, the existence and application of integrity mechanisms by the legal entities evaluated.

The DDI result is expressed by the Integrity Risk Level (GRI) in high, medium and low categories, and is considered by managers in our decision-making process.

***In 2022, the compliance team assigned 2,294 GRIs to our suppliers.***

Also in relation to our suppliers, we have developed evaluation mechanisms that aim to guarantee that they have adequate technical, economic-financial, legal and HSE practices, in addition to having an ethical profile in their relationship with society and the environment.

In this way, we keep our supplier base active, with the objective of evaluating, prior to the conclusion of the contract, the companies in terms of meeting the technical, economic-financial, legal, integrity risk and HSE requirements. Our supplier evaluation has been continuously optimized and simplified, seeking to generate more value for the process. In 2022, we evaluated 2,611 companies on technical grounds; 3,604 companies on economic and financial grounds; 10,122 companies regarding legal requirements; and 419 companies regarding HSE requirements.

### Integrity Background Check

The Integrity Background Check (BCI) is an integrity mechanism that seeks to support managers and senior management in decision-making regarding the nomination of candidates for key positions, through the analysis of legal requirements and compliance with our Code of Ethical Conduct and our Manager Appointment Policy.

***In 2022, we conducted 3,787 Integrity Background Check assessments.***

### Conflicts of interest prevention

In addition to complying with article 115 §1 of law 6,404/1976 (Brazilian Corporations Law), law 12,813/2013 (Conflict of Interests Law) and law 13,303/2016 (State Companies Law), we have instruments that are continuously improved to deal with the identification and management of potential conflicts of interest relating to our managers and other employees.



## CONFLICT OF INTEREST PREVENTION INSTRUMENTS

Instrument	Mechanism to prevent conflicts of interest
<b>Bylaws</b>	Prohibits appointments for management positions from having a conflict of interest with the Federal Government or with us; conflicts of interest after the end of management of the managers and members of the Fiscal Council; and composition and operating rules for the committees that advise the Board of Directors.
<b>Corporate Governance Guidelines</b>	Define that the Board of Directors is to monitor and manage potential conflicts of interest between shareholders and senior management members.
<b>Code of Ethical Conduct</b>	Determines that employees must not be directly or indirectly involved in any activity that is in conflict with Petrobras interests, and that they must report the occurrence of conflict of interest situations that they become aware of through the Reporting Channel.
<b>Petrobras Ethical Conduct Guide for Suppliers</b>	It determines that suppliers must refrain from performing any act that may put our employees or public agents from other public bodies and institutions in a situation of conflict of interest, either real or potential.
<b>Conflict of Interest Prevention Guideline</b>	In addition to the guidelines contained in the Code of Ethical Conduct, the guideline presents the concept and types of conflict of interest, the prevention mechanisms we use, the roles and responsibilities of the areas involved, as well as the legislation and other regulations applicable.
<b>Guideline for the Prevention of Conflict of Interests regarding members of the Executive Board and equivalents to DAS-6 and 5</b>	In addition to the guidelines contained in the Code of Ethical Conduct, the Guideline presents the concept and types of conflict of interests, the roles and responsibilities of the areas involved, the concept of functions equivalent to DAS-6 and 5 in the company, and details the other obligations inherent in Law 12,813/13 applicable to the target audience of the regulation.
<b>Integrity Background Check</b>	Assesses the risk of conflict of interest related to the attributions and responsibilities of candidates for key positions, including verification of corporate holdings and kinship relationships with public and political agents.
<b>Ethics Commission</b>	It acts as an advisory body in the Compliance area, in relation to the assessment of identified conflict of interest situations, as well as in the definition of mitigating or remedial actions.
<b>Compliance Program</b>	The Compliance Program is the set of mechanisms designed to prevent, detect and remedy misconduct and harmful acts committed against the company, including those related to conflict of interests.
<b>Code of Best Practices</b>	It states that it is necessary that both our managers and our employees guide their conduct in accordance with the highest ethical standards, avoiding any conflict of interest or impropriety when trading securities issued by us.
<b>Policy for Nomination of Senior Management Members</b>	Establishes the minimum requirements and guidelines for appointing members of senior management and the Fiscal Council of Petrobras and its corporate holdings.
<b>Related Party Transaction Policy</b>	Establishes the principles that guide us and our employees when entering into Related Party Transactions and in situations where there is a potential conflict of interest in these operations



Our employees must consult potential conflicts of interest through the Electronic System for the Prevention of Conflicts of Interest (SeCI), a system developed by the Federal Comptroller General (CGU), in compliance with Law No. 12,813/2013 (Conflict of Interest Law). These queries are received by the Ombudsman's Office and then they are forwarded to the Compliance area for analysis. The other agents covered by art. 2 of Law 12.813/13 must carry out inquiries of potential conflicts of interest to the Ethics Commission of the Office of the President of Brazil.

If potential conflicts of interest are identified, the company's manager or employee must recuse themselves and abstain from participating in the decision, the negotiation, structuring and decision-making process related to the transaction, in order to guarantee the sole interest of the company.

***In 2022, considering the 187 consultations carried out, approximately 7% indicated a potential conflict of interest, generating recommendations and guidelines.***

Among the categories responsible for the highest number of queries/authorization requests in 2022, the demands involving the exercise of teaching activities and demands related to entrepreneurship stand out.

We emphasize that we have a **Transactions with related Parties Policy** and mechanisms for periodic reporting to a Statutory Audit Committee, but no conflicts of interest were identified in transactions with related parties in 2022.

### Antitrust practices

We are convinced that respect for antitrust legislation is fundamental for the socioeconomic principles and objectives of the National Energy Policy, in compliance with legal instruments related to the oil, gas, and energy sectors, can be preserved, and expanded. Additional guidance on the topic is the subject of internal memos issued by the Antitrust Office of our legal team, the body responsible for resolving doubts in relation to antitrust rules and their concrete application.

Our Legal Department is also responsible for monitoring and following up on any legal and administrative actions that deal with unfair competition or accusations of antitrust practices.

In the processes of active management of our portfolio, we seek to implement the most efficient strategies from a competitive point of view, to generate value in the various markets in which we operate.

We are also in constant contact with the Administrative Council for Economic Defense (CADE), monitoring any ongoing investigations in the markets affected by our operations. We promote a culture of competition, instructing our employees regarding aspects that may violate the economic order and how to prevent them, through lectures, meetings, and the issuance of manuals and general guidelines on the subject.

Additionally, our communication channels are open to receive questions, complaints, and complaints about our performance in relation to antitrust practices.

In the context of market opening, Law 14,134/2021 was sanctioned on April 8, 2021, known as the New Gas Law. The text, by revoking Law 11,909/2009 (Gas Law), established a new regulatory framework for the natural gas market in Brazil, with provision for changes in the regulation of activities related to gas transport, as provided for in art. 177 of the Federal Constitution, as well as related to the flow, treatment, processing, underground storage, conditioning, liquefaction, regasification and trading of natural gas. The New Gas Law forms the basis for creating a legal and regulatory environment conducive to the formation of an open and competitive natural gas market, allowing for competition between suppliers.

In compliance with the commitment to contribute to the opening process of the Brazilian gas market, encouraging competition by fostering the entry of new agents, on March 6, 2020, Petrobras entered into an amendment with Yacimientos Petrolíferos Fiscales Bolivianos (YPFB), reducing contracted volumes from 30



MM m<sup>3</sup>/day to 20 MM m<sup>3</sup>/day. On April 10, 2022, YPFB announced a commitment to sell additional volumes of natural gas to Argentina during the winter, of around 4 MM m<sup>3</sup>/day, at a higher price. Also in April 2022, the supplier informed that, as of May, it would unilaterally reduce deliveries of natural gas by 4 MM m<sup>3</sup>/day under the current contract by 4 MM m<sup>3</sup>/day.

In this regard, Petrobras and YPFB started negotiations to converge on a solution regardless of Petrobras adopting contractual measures due to supply failures. As a result, on August 5, 2022, Petrobras and YPFB adjusted the contracted volumes to establish a seasonal commitment in terms of delivery and take or pay.

According to the new contractual basis, the contracts will expire between 2026 and 2028, depending on the volume actually imported.

Some natural gas distributors and other entities filed nine lawsuits against Petrobras, in which they requested the extension of the effects of the natural gas supply contracts that would expire in December 2021. The prices of liquefied natural gas (LNG) that Petrobras imports, necessary to meet the commitments to sell natural gas assumed in other contracts, have increased significantly since mid-2021. Thus, Petrobras offered commercial proposals with prices in line with the market situation for the new contracts starting supply from January 1, 2022. However, some natural gas distributors and other entities sought to ward off the new prices, claiming that Petrobras was allegedly abusing its economic power.

In some of these processes, injunctions were handed down determining the maintenance of the prices established in the contracts scheduled to end in December 2021. Petrobras adopted the appropriate legal measures according to each case. At the same time, the company instituted arbitration procedures, considering that this is the dispute resolution method chosen in the contracts.

In addition, Petrobras has sought to resolve these conflicts through negotiation, having been successful in agreements involving the signing of new contracts for the supply of gas to the states of Ceará, Santa Catarina and Espírito Santo.

Additionally, it is worth noting that, after updating Petrobras' product portfolio, in October 2022, new natural gas supply contracts were signed with the following customers: Companhia de Gás de Minas Gerais (GASMIG), Companhia Paranaense de Gás (COMPAGAS), Companhia de Gás de Santa Catarina (SCGÁS), Companhia de Gás do Estado do Rio Grande do Sul (SULGÁS) and Refinaria de Mataripe.

Regarding the opening of the refining facilities, CADE initiated an inquiry to investigate signs of possible anticompetitive behavior by Petrobras, alleging the charging of different prices to its own group's refineries in the supply of oil to the detriment of third-party refineries, which is still in initial phase.

### Third Sector Ethical Connections

After the signing of sponsorship contracts or agreements for the implementation of our socio-environmental, cultural and sports projects, we maintain internal control procedures for their execution and monitoring, in order to strengthen ethical behavior and prevent acts of fraud and corruption.

In this sense, aiming to promote ethical values and compliance among Civil Society Organizations, we developed the Third Sector Ethical Connections project, in partnership with the United Nations Educational, Scientific and Cultural Organization (UNESCO). So far, 127 Civil Society Organizations have been engaged in the project.

#### Compliance procedures in sponsored projects

In order to avoid deviations in the use of resources related to the projects we sponsor, project proposals go through various analysis processes - technical, documentary and budgetary - prior to the start of contracting, ensuring that governance and compliance procedures are followed and seeking to prevent possible conflicts of interest.



Proposals for socio-environmental, business, science and technology projects, or cultural and sports sponsorships, are received via public selection or direct choice.

The public selection of projects corresponds to a broad and transparent process, with its own regulations, national dissemination, and collegiate selection committees to choose which projects to develop.

With direct selection, Petrobras analyzes proposals or opportunities that are forwarded directly to us, using our own project management systems, which must meet criteria for analysis and suitability for contracting, as well as their relevance to achieving our goals.

The submitted proposals undergo prior analysis and - if they meet the criteria and are considered relevant - they are forwarded to the recommendation of the Statutory Technical Committee on Institutional Relationships and Sustainability (CTE-RIS), and subsequent approval by the Director of Institutional Relationships and Sustainability.

In addition, Integrity Due Diligence (DDI) of the counterparties is done to learn about and assess the integrity risks inherent in our relationship with holders of sponsorship or agreement opportunities. The DDI result is expressed by the Integrity Risk Level. In addition, sponsorship projects are also subject to analysis and verification of prior compliance by the Special Communication Secretariat - SECOM.

### **Internal Audit**

Based on a methodology approved by senior management, manual and automated control activities are tested by the Internal Audit team. Within this context, they examine, for example, if the design of the financial reporting process is satisfactory, and whether the respective fraud risks of properly mitigated. Issues such as segregation of duties, authority limits, and registration and custody of assets are also considered.

The Internal Audit professionals involved in the assessment of controls undergo periodic training to maintain the skills and develop other skills necessary for the performance of their individual responsibilities, in addition to having solid knowledge of the main fraud and corruption risks. The Internal Audit team monitors their activities using the indicator Perception of Audit Work by Areas.

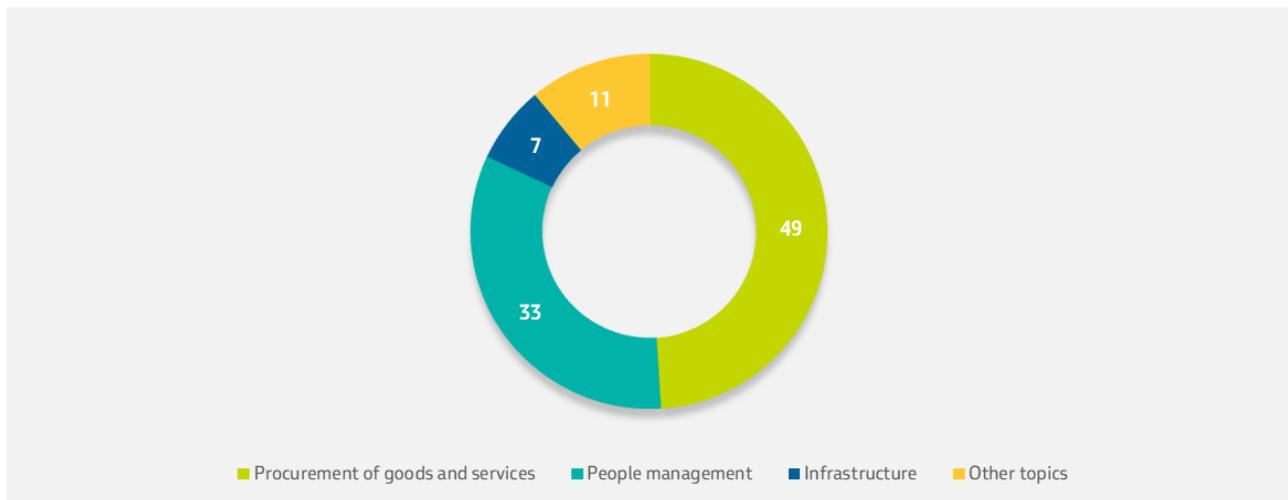
### **Mechanisms for handling requests and complaints**

We have several channels for receiving requests and complaints that allow greater transparency with our stakeholders and to provide adequate treatment. As examples, we can mention the Ombudsman's Office, the Reporting Channel, Customer Service, Citizen Information Service, etc.

For statements classified as complaints, requests, compliments and suggestions, the Ombudsman's Office works as a second reporting channel. In 2022, we received 3,205 complaints<sup>1</sup>, according to percentages in the following chart:

<sup>1</sup> The data considered in the survey refer to Petrobras and its subsidiaries.

## COMPLAINTS (%)



Of the complaints about contracting goods and services, most were regarding labor irregularities in contracted companies, such as late payment of salaries, severance pay and meal tickets. These reports provide inputs for the inspection of contracts and allow immediate action to be taken in relation to the supply chain. Within the scope of complaints related to people management, some of the notable demands were related to accessibility, racial and gender equity, and inclusion, especially regarding treatment of issues related to maternity leave, adoption and adaptation of work environments and conditions to accommodate people with disabilities.

### Reporting channel

Our Reporting Channel is available by phone and on the website, 24 hours a day, seven days a week, in three languages (Portuguese, English and Spanish) for the external and internal public of Petrobras and its subsidiaries. All information is received by a contracted, independent, and specialized company, which registers the report for due treatment by the Ombudsman's Office. In 2022, we received 2,365 reports<sup>2</sup> (33.9% by telephone, 60.3% via the website and 5.8% received by other means, such as a letter), which represents 1.5 reports for every 100 employees.

For the safety of whistleblowers, who may choose to remain anonymous, the IPs of their computers are not shared, and their calls are not tracked. In 2022, 74.8% of the reports were anonymous and 25.2% were identified. In addition, the treatment of reports preserves their secrecy and confidentiality, whether identified or anonymous. In situations where it is necessary to identify the whistleblower, as occurs in some cases of workplace violence, the treatment of the complaint continues only with their consent, always observing information privacy and confidentiality.

To ensure its integrity, the process for handling these reports is subject to specific internal controls. In addition, we have a Whistleblower Protection Guideline that establishes measures to protect people who make good faith reports about non-compliance in company operations, or who have unequivocally disclosed their intention to do so.

The graph below shows the Percentage number of reports received, presented in large groups according to their similarity.

<sup>2</sup> The data considered in the survey refer to Petrobras and its subsidiaries.

**REPORTS (%)**

Most of the reports on topics related to compliance incidents were about favoritism and irregularities in contracting processes and contractual execution. Regarding reports about workplace violence, most of them were related to abusive management, offense, and intimidation. On topics related to corporate safety incidents, most reports were related to security in the facilities and theft. Topics related to human resources, most reports were related to job role deviation.

Of the reports verified in 2022, 374 were confirmed or partially confirmed, with the adoption of the respective measures by the integrity system, 922 were not confirmed, and 1,056 were dismissed. The dismissals are mainly due to the lack of feedback from the whistleblowers to the Reporting Channel regarding necessary additional information. In addition, reports presented by third parties and in which the potential victim does not agree to deal with the demand are also dismissed.

Responsible for managing the Reporting Channel and linked to the Board of Directors, our Ombudsman's Office submits detailed information to the Statutory Audit Committee on a quarterly basis regarding reports of compliance incidents considered highly critical, classified as high and very high risk in our matrix. In addition, it submits semi-annually to the Statutory Audit Committee and annually to the Executive Board and Board of Directors quantitative and qualitative information on the complaints received, as well as other statement (including requests for information and complaints), providing support documentation for improving management.

Our Board of Directors became aware of the list of reports received, and our Statutory Audit Committee obtained detailed information on 34 compliance incident complaints that were considered to be the most critical, classified as high and very high risk according to our Compliance Incident Risk Matrix.

**Investigations**

Within the scope of our integrity system, we seek to maintain the reduction of the backlog and the average time of ongoing investigations related to conflict of interests, nepotism, irregularities in hiring processes, bribery/kickbacks, violence at work (related to moral or sexual harassment, discrimination and retaliation), among others, as well as the Administrative Liability Proceedings (PAR) being treated.

***In 2022, there was a 19% reduction in the balance of ongoing investigations compared to the previous year. With regard to PAR, this reduction reached 8%.***



During this period, we maintained our outstanding performance in the National Register of Punished Companies (CNEP), maintained by the Federal Comptroller General, as one of the main bodies that applies the consequence system provided for in Law No. 12,846/2013. This register presents the list of sanctioned companies and works as an important instrument of control by society, by providing transparency about punishments.

The reduction in the number and average time for ongoing investigations and the PARs being treated demonstrates our commitment to quickly investigate the reported situations, together with other measures, and contributes to the effectiveness of our integrity system, to the identification of possible irregularities, and for the implementation of corrective actions and process improvements.

### **Petrobras Against Sexual Violence Program**

In April 2023, the company created a working group to review the internal procedures for receiving and handling sexual harassment complaints in response to complaints received and media reports. The multidisciplinary group worked daily to create the Petrobras Against Sexual Violence Program, which was approved by the Executive Board, and which includes improvements in prevention procedures, how we receive and treat reports, as well as immediate, medium and long-term implementation actions.

The changes, such as the reduction in the period for completing the investigation (from up to 180 to 60 days), seek to prevent the occurrence of cases and provide more agility and reliability to the investigation of complaints, allowing more effective consequences to be applied in confirmed cases.

Upon receipt of the complaint, the need for immediate implementation of measures to avoid any contact between the accused and the person making the complaint will be analyzed. The entire process for investigating cases of sexual violence will be centralized in the Corporate Integrity area, and the team responsible for the investigation will be specialized, diverse and dedicated to handling this type of complaint. In addition, new training will be carried out for all teams involved in receiving and investigating complaints of sexual violence, among other actions provided for in the program.

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>> [Information on complaints of sexual violence can be found in our Human Rights and Corporate Citizenship Supplement.](#)

### **Sanctions for individual and corporate entities**

***In 2022, we applied 107 disciplinary measures to employees of different hierarchical levels at the Petrobras Parent Company, 22 contract terminations for just cause, 26 suspensions, and 59 written warnings.***

The cases refer to misconduct such as non-compliance or omission of internal regulations, negligence in the performance of functions, insubordination, among others.

Internal procedures executed by the appropriate areas in the company revealed no cases of corruption involving employees in 2022, as defined by article 317 of the Brazilian Penal Code.



It should be noted that pre-procedural investigations of facts that occurred prior to 2019 are ongoing, within the scope of the competent external bodies. On the other hand, in the legal realm, we received formal confirmation regarding twelve unappealable final court decisions, regarding charges made between 2014 and 2021, related to Operation Car Wash. In the criminal realm, in addition to the cases reported in the Operation Car Wash item, mentioned later on, our Legal Department is monitoring five lawsuits arising from the Dutch company SBM Offshore, two of which are split-offs and another six criminal proceedings involving corruption crimes. However, it is not possible to speak technically about confirmed cases, since there was no final judgment of these cases.

***We also had, within the scope of Administrative Liability Proceedings (PAR), 39 closed cases, of which 30 resulted in the liability of 41 corporate entities for the practice of harmful acts in Law 12,846/2013 (Corporate Anticorruption Law).***

### Operation Car Wash

Regarding Operation Car Wash, we continue to cooperate with the authorities and take the necessary measures to recover the damage suffered as a victim of the committed irregularities.

As reported since 2014 in our annual reports, Operation Car Wash, an investigation conducted by the Federal Police and the Federal Public Prosecution Office, has focused, since the beginning of its investigations, on irregularities involving suppliers of goods and services. This revealed undue payments to political parties, political agents, and others, including some of our former executives, who were arrested and/or indicted for money laundering and passive corruption.

In all criminal and administrative misconduct cases in which our former employees are defendants for acts related to corruption, we were recognized by the courts as a victim of the discovered irregularities; therefore, we act as an assistant to the prosecution, or one of the parties that presses charges, as the case may be.

As the investigations result in leniency agreements with the investigated companies or collaboration agreements with individuals who agree to return funds, we may be entitled to receive a portion of them. Thus, throughout the Operation Car Wash investigation, cash in the form of compensation for damages provided for in leniency agreements, collaboration agreements, and repatriations has been returned to us in the amount of approximately BRL 6.719 billion as of end of 2022. In 2021 alone, BRL 1.272 billion were returned and, in 2022, BRL 499 million, for the company.

In addition to recognizing our status as a victim, the Courts has been sentencing those accused of criminal acts to “minimal damage” (which offers the smallest amount of compensation for damages resulting from crimes), the value of which will be paid back to us. Such amounts will be charged to the defendants (individuals) by the Civil Court, but only after the respective criminal case has become final. At the end of 2022, these amounts totaled approximately BRL 1 billion, in addition to a dollar amount of over USD 145.59 million (since in some cases the amount of the sentence is presented in US dollars).

We monitor and collaborate with the work of the Federal Police, Federal Public Prosecution Office (MPF), The Judiciary, Federal Audit Court (TCU), Federal Comptroller General (CGU), and Administrative Economic Defense Council (CADE), as well as cooperate with investigations by international bodies. Petrobras is the plaintiff before the Federal Public Prosecution Office and the Federal Government in 32 administrative impropriety cases.



At the end of 2022, we there were 100 criminal cases in the context of Operation Car Wash, and we are considered an assistant to the prosecution in 89 cases and as an interested party in five other cases. In five cases, we are awaiting the granting of our request to be considered an assistant to the prosecution, and in another case, we are still evaluating our participation. We want to use this opportunity to make it clear that what guides our participation as assistants to the prosecution is the fact that there is strong evidence in the information prepared by the Public Prosecutor's Office that money was diverted from our coffers. Thus, our participation, alongside the prosecuting authorities, seeks to prove all wrongdoing so that a final decision can be handed down, sentencing the individual defendants to return amounts to our coffers (the so-called "minimum damage").

Petrobras Certification	No. of cases certified or awaiting certification/analysis
Interested Party	05
Assistant	89
Certification as assistant requested, awaiting authorization	05
Evaluating entry	01
<b>Total</b>	<b>100</b>

Note that eleven of the aforementioned criminal cases resulting from Operation Car Wash have had reached their final unappealable verdict for both the defense and the prosecution.

File no.	Case	Date
5007326-98.2015.404.7000	Cerveró/Jolmey	2/11/2016
5083838-59.2014.404.7000	Cerveró/Samsung	7/12/2017
5083258-29.2014.404.7000	Camargo Correa	10/22/2018
8620331-98.2015.100.0000	Gleisi Hoffman (STF)	1/11/2019
5031719-82.2018.404.7000	Eduardo Musa – Desm. Bumlai	1/15/2019
5027422-37.2015.404.7000	UTC	2/22/2019
8620386-38.2015.100.0000	Nelson Meurer (STF)	6/12/2019
5026212-82.2014.404.7000	Abreu e Lima	12/6/2019
5000553-66.2017.404.7000	Mariano Marcondes	2/17/2020
5036518-76.2015.4.04.7000	Andrade Gutierrez	10/15/2021
5036518-76.2015.404.7000	Vantage/Paul Bragg	2/4/2021
5036528-23.2015.404.7000	Odebrecht	5/10/2022

Of the 100 Operation Car Wash criminal actions that we monitor, 83 involve the crime of corruption.



We are currently party to a class action lawsuit initiated in the Netherlands, an arbitration proceeding in Argentina, and court and arbitration proceedings initiated in Brazil. In each case, the lawsuit was filed by investors (or entities claiming to represent investor interests) who purchased shares in the company traded on B3 or other securities issued by the company outside the United States, alleging damages related to facts discovered in Operation Car Wash.

In Argentina, we are defendants in two criminal actions. The first action alleges failure to comply with the obligation to disclose to the Argentine market a class action proposed by the Consumidores Financieros Asociación Civil para su Defensa before the Commercial Courts, in accordance with the provisions of Argentine capital market legislation, it is worth noting that we were never mentioned in the scope of said collective action. The second criminal action alleges an alleged fraudulent securities offering compounded by allegedly false information included in the company's financial statements issued prior to 2015.

In addition, EIG Management Company and certain affiliated funds (collectively, "EIG") filed a lawsuit against Petrobras on February 23, 2016 before the United States District Court for the District of Columbia. The plaintiffs allege that our company committed fraud by inducing them to invest in Sete Brasil Participações S.A. ("Sete"), through communications that would have failed to reveal an alleged corruption scheme involving Petrobras and Sete. EIG is seeking damages of at least USD 221 million.

The case is ongoing and on August 8, 2022, the Court: (i) rejected Petrobras' request for dismissal of the proceeding based on immunity from jurisdiction; (ii) upheld the allegations of the EIG funds regarding Petrobras' responsibility for the alleged fraud; (iii) determined that a trial be carried out to define any compensation to be paid by Petrobras to the EIG funds.

On August 18, 2022, Petrobras filed a Notice of Appeal, to inform the Court that it intends to appeal the decision. Subsequently, the legal arguments of the appeal will be presented, which, due to procedural limitations, can only attack the part of the decision that rejected the company's immunity from jurisdiction.

On August 26, 2022, Petrobras requested the suspension of the case until a decision regarding the aforementioned appeal. This request was granted by the judge on October 26, 2022.

Accordingly, the case before the lower court is suspended while the merits of the appeal filed by Petrobras before the Court of Appeals for the District of Columbia is pending judgment.

On April 29, 2022, a Closing Agreement (TEP) was entered into between, on the one hand, Petrobras and one of its affiliates, and on the other hand, Novonor S.A. (current name of Odebrecht S.A.) and some of its affiliates, with the purpose of definitively ending four contractual disputes, three of which are under discussion in arbitration proceedings.

The Closing Agreement seeks to regulate the effects for Petrobras and Novonor resulting from the Leniency Agreement entered into in 2018, by companies of the Novonor Group with the Federal Comptroller General and the General Counsel for the Federal Government. Petrobras will proceed with administrative misconduct actions against Novonor Group companies, seeking full compensation for the losses identified as a result of the illegal acts revealed by Operation Lava Jato, but to comply with the Leniency Agreements, while they are in force, it will not seek sanctions or precautionary measures, among others, against these companies. The Closing Agreement also does not exempt Novonor Group companies from submitting to the process of evaluating the requirements to be included in the supplier register or to participate in Petrobras' competitive contracting procedures, including integrity, in accordance with the applicable rules and in a timely manner, respecting the principles of isonomy and impersonality.



# Environment



[3-3] [11.1.1] [11.1.2] [11.1.3] [11.1.4] [11.1.5] [11.1.6] [11.1.7] [11.1.8] [11.2.1] [11.2.2] [11.2.3] [11.3.1] [11.3.2] [11.3.3]

# Climate resilience, GHG emissions and other gases

The impacts related to the material topic “climate resilience, GHG emissions and other gases” correspond to direct and indirect emissions of greenhouse gases (Scope 1, 2 and 3), the company’s risks, and opportunities in the face of climate change and energy transition. It includes management of atmospheric emissions and their impacts on ecosystems, people’s health, and the well-being of local communities, as well as the positive impacts of implementing technologies in the process to reduce the intensity of emissions, in the development of products with less environmental impact and mitigation programs and projects.

According to the Sixth Report of the Intergovernmental Panel on Climate Change (IPCC), climate change will affect all systems, both natural and human, and its economic impacts are expected to grow with global warming. However, specific implications present high levels of uncertainty, depending on factors such as the advancement of carbon neutral technologies, market structures, behavioral changes, and planning for a just transition.

The impacts on the global supply of energy caused by the conflict in the Ukraine brought security and energy access issues to the center of the discussion. All over the world, the effects of the crisis are reflected in its multiple dimensions: the urgency of transforming energy systems to be more secure, reliable, and resilient, due to the mix between natural gas, oil, coal, and electricity; and food and climate security.

The last Conference of the Parties (COP), held in Sharm El-Sheik, Egypt, ratified the objectives of the Paris Agreement, and emphasized the need to reduce global GHG emissions in all sectors, in line with the specificities of each country and recognizing the need to support a just transition. The discussion on the reduction in the use of fossil fuels, including oil and gas, also gained momentum, although no agreement was reached.

***The oil and gas industry plays an important role in minimizing its operational emissions and delivering less carbon-intensive products, since energy transition scenarios still point to a relevant role for oil products in the coming decades.***

In this context, we have the role of generating reliable and efficient energy for an environmentally sustainable world.



## Our focus and management

Our approach to climate change is based on three pillars:

<b>Carbon quantification and transparency</b>	<b>Resilience of our position in fossil facing the low-carbon transition</b>	<b>Strengthening our skills to create value in a low-carbon economy</b>
<p>Our decisions today affect carbon performance and value generation in the short, medium, and long term. We strive to ensure that the risks and opportunities of climate change are adequately captured in our scenarios, quantified, and considered in our choices. Our goal is to promote sustainability and resilience in our business, which entails ongoing efforts to improve continuously our decision-making processes. We embrace carbon transparency and highlight our support for the TCFD (Task Force on Climate-related Financial Disclosures) and the adoption of external references of disclosure and performance like the Sustainability Accounting Standards Board (SASB), IPIECA, Global Reporting Initiative (GRI) and International Association of Oil &amp; Gas Producers (IOGP).</p>	<p>The Oil and Gas industry supplies more than half of the primary energy consumed worldwide, meeting the needs of mobility, industrial production, residential cooking and heating, and electricity generation. Our scenarios indicate that oil and gas will remain in the world's energy matrix over the next few decades, albeit in decreasing volumes. In 2021, the sector's share exceeded 55% of the total supply of primary energy (bp Statistical Review of World Energy, 2022), and products meet this demand with widely varying carbon performance.</p> <p>Our priority is to operate at low costs and with superior emissions performance, safeguarding the competitiveness of our oil in world markets in a scenario of slowdown and subsequent contraction in demand. In our understanding, companies will become more competitive in the long-term market the more they can produce at low costs and with lower greenhouse gas (GHG) emissions, thriving in scenarios of low oil prices, carbon pricing, and possible oil differentiation practices based on the GHG emissions intensity in production.</p>	<p>We recognize that the goals of the Paris Agreement require profound reductions in greenhouse gas emissions and the transformation of the energy supply. Our scenarios point to an unequivocal energy transition, albeit at an uncertain pace. The risks and opportunities are different and depend on the markets, each company's characteristics, innovation evolution, and public policies.</p> <p>To strengthen our low-carbon position, we prioritize investment in decarbonizing our operations, developing products with lower carbon intensity and skills for the future. We are advancing in the analysis of possible new businesses that can diversify revenues and reduce exposure to carbon, ensuring the company's sustainability in the long term.</p>
CLIMATE CHANGE SUPPLEMENT		

>> Information on adaptation, resilience and climate transition and GHG emissions can be found in our [Climate Change Supplement](#).

The transition to a low-carbon economy can affect our business in several ways, such as reduced demand for fossil fuels and the consequent reduction in their prices, carbon pricing, and operational impacts due to climate change. We map these risks, quantify their impacts and define actions for their management, such as emission reduction commitments and technological innovation activities.

In our Strategic Plan 2023-2027 (SP 2023-27), we reviewed our set of sustainability commitments published for the 2025 and 2030 horizon, six of which are related to GHG emissions:<sup>1</sup>

1. Reduction of total operational absolute emissions by 30% by 2030<sup>2</sup>;
2. Zero routine flaring by 2030<sup>3</sup>;

<sup>1</sup> Base year 2015 for commitments that indicate a reduction percentage. The selection of 2015 as the base year is linked to a new cycle of goals after an initial cycle carried out between 2009-2015 and the year the Paris Agreement was created.

<sup>2</sup> Petrobras is committed to maintaining the level of emissions in 2030 in relation to 2022 when we consider the emissions related to the average thermoelectric dispatch of the last 5 years in this year's projection. Petrobras' commitment is to not exceed 54.8 million tons of CO<sub>2</sub> in 2030, unless there is a strong demand for electricity generation from thermal plants due to national water stress events. Achieving this commitment considers the possibility of using carbon credits as a complementary strategy and depends on actions to gain efficiency and divestments provided for in SP 2023-27.

<sup>3</sup> In accordance with the World Bank's zero routine flaring initiative.



3. Reinjection of 80 million tCO<sub>2</sub> by 2025 in carbon capture, use and storage (CCUS) projects;
4. GEE Intensity in the E&P segment: Achieve portfolio intensity of 15 kgCO<sub>2e</sub>/boe by 2025, maintained at 15 kgCO<sub>2e</sub>/boe by 2030);
5. Consolidation of a 55% reduction in the intensity of methane emissions in the upstream segment by 2025, reaching 0.29 t CH<sub>4</sub>/thousand tHC; and
6. GHG intensity in the Refining segment: Achieve intensity of 36 kgCO<sub>2e</sub>/CWT by 2025 and 30 kgCO<sub>2e</sub>/CWT by 2030.

Our absolute operational emissions reduction target encompasses 100% of assets operated across all our businesses, including power generation, for all GHGs.

With this review, we are accelerating the decarbonization of operations, increasing our target from 25% to 30% in absolute emissions by 2030 compared to 2015. The commitment on CO<sub>2</sub> reinjection also increased, from 40 to 80 million tCO<sub>2</sub> by 2025<sup>4</sup>. Finally, we also revised our commitment on the intensity of methane emissions, moving from a 40% reduction to the consolidation of a 55% reduction in the upstream segment by 2025 compared to 2015.

In addition to our short and medium term commitments, our long-term ambition<sup>5</sup> is to neutralize emissions in activities under our control (Scopes 1 and 2) by 2050 and influence our partners to achieve the same ambition in non-operated assets. Our commitments involve both working on existing assets and designing new projects.

In support of our commitments and reinforcement of our low carbon position, our Board of Directors approved in SP 2023-27 a Capex of USD 4.4 billion, as follows: (i) USD3.7 billion invested in projects that contribute to operational decarbonization initiatives (Scopes 1 and 2); (ii) USD0.6 billion in biorefining initiatives (renewable diesel and jet fuel); and (iii) USD 0.1 billion in Research and Development (R&D) for new low-carbon capabilities.

As one of the tools aimed at supporting our emissions neutrality trajectory, SP 2023-27 reinforced the Decarbonization Fund, which seeks to finance decarbonization solutions that reduce emissions with the lowest cost and greatest impact on carbon mitigation.

The planned budget for the fund, which is included in the total of USD 4.4 billion of resources allocated for low carbon, was increased from USD 248 million to USD 600 million in SP 2023-27.

It should be noted that the first portfolio of projects for use by the fund was approved in 2022, covering 13 opportunities with a total expected investment of USD 76 million between 2022 and 2026 and going into effect as of 2023 (year of first implementation) reaching around 1 million tCO<sub>2e</sub> per year of offset emissions when all 13 opportunities are implemented.

Throughout 2022, we made progress in analyzing possible new businesses that could reduce exposure to and dependence on fossil sources and that, at the same time, are profitable, guaranteeing our long-term sustainability.

SP 2023-27 now includes the businesses that were indicated by a multicriteria analysis, among several studied, as the most suitable for deepening studies: offshore wind, hydrogen, and carbon capture.

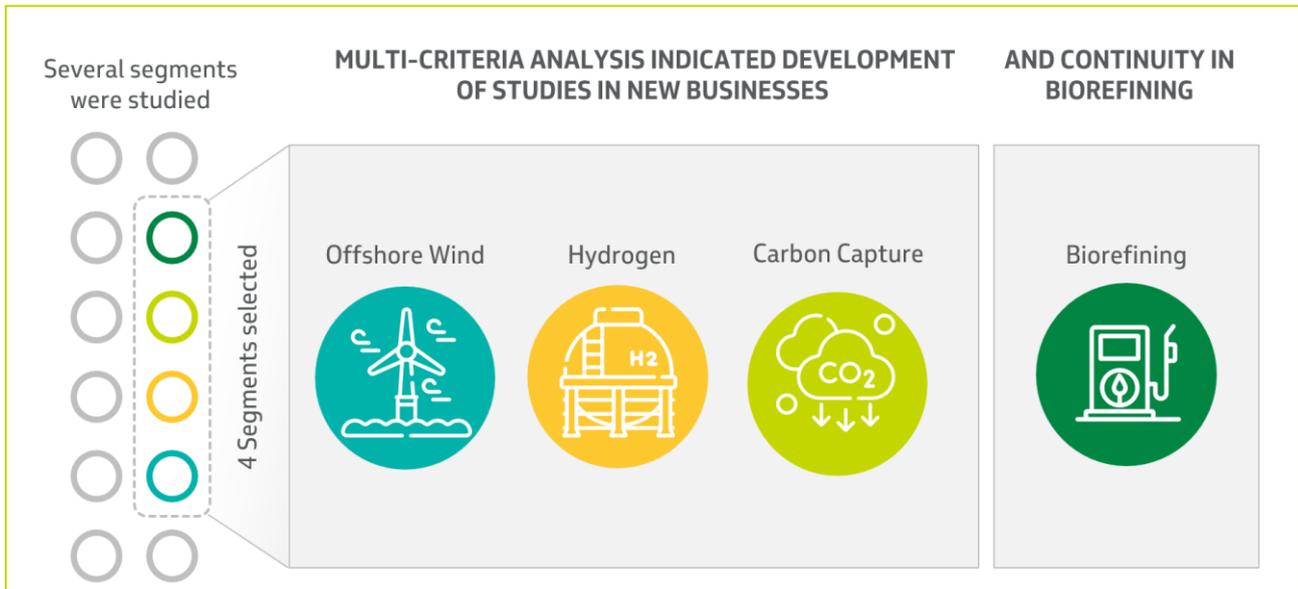
We emphasize that there is still no investment allocated in this strategic plan for these possible new businesses.

<sup>4</sup>The amount stated for the re-injection commitment is the accumulated total since 2008.

<sup>5</sup> Our ambition refers to emissions within Brazilian territory, where more than 97% of our operational emissions occur. For the other emissions, we also aim for neutrality within a period compatible with the Paris Agreement, in line with local commitments and international organizations.



## PROFITABLE DIVERSIFICATION



Our governance for climate change and energy transition is structured in such a way that these issues are addressed at all levels of the company, including senior management. Integration of the theme across the various levels of the company is carried out by the Executive Management of Climate Change, whose function is to design and coordinate corporate positioning, strategies and actions related to carbon management, atmospheric emissions, energy efficiency and climate change, aiming to maximize the company's value creation in view of the risks and opportunities linked to the transition to a low-carbon economy. This executive management currently responds to the newly created Energy Transition and Sustainability Executive Office. In 2022 in answered to Institutional Relationship and Sustainability Executive Office, which is responsible for overseeing all matters related to sustainability, including climate and the transition to a low-carbon economy.

The Indicator for Meeting Greenhouse Gas Targets (IAGEE), which represents the consolidation of meeting the greenhouse gas intensity targets for our E&P and Refining segments, is one of our top metrics, and impacts variable compensation of all employees, including senior management. The performance of this and other carbon related indicators are monitored internally by Climate governance.

**>> Information on our sustainability strategy and details on senior management compensation can be found in the Sustainability strategy and performance chapter.**

In addition to internal monitoring, we provided external disclosure regarding our carbon strategy management and performance, following the best transparency practices worldwide. We publish our Climate Change Notebook based on the TCFD requirements, we publish information and results on our website and in webcasts, and we hold meetings with investors, among other practices. Also in 2022, we achieved an A- grade (Leadership level) at the CDP and remained on the Dow Jones Sustainability Index™ (DJSI).

The results of the indices and evaluations, as well as contacts with external stakeholders and the internal monitoring of our performance are the basis for implementing improvements in the management of this issue.

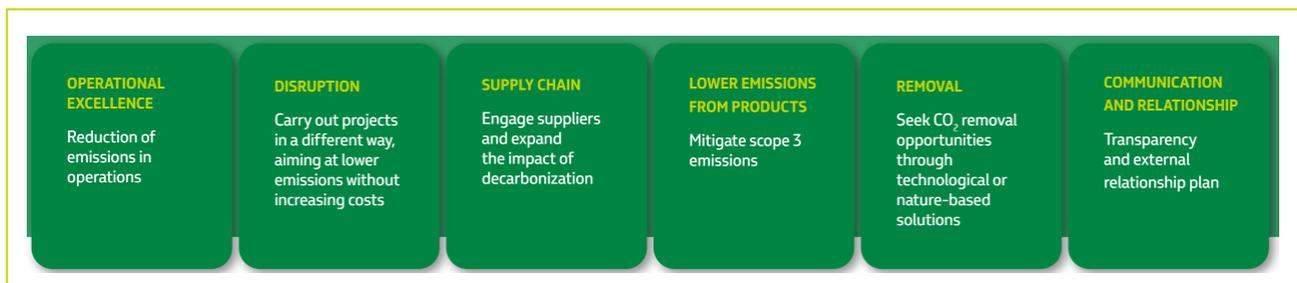


## Our decarbonization initiatives

Bearing in mind our commitments to sustainability with a focus on carbon and our ambition to be neutral in emissions, we systematically map opportunities to reduce GHG emissions. Since 2021, we have organized the set of opportunities to mitigate operational GHG emissions using the Marginal Abatement Cost Curve (MACC) methodology.

The challenge of achieving operational emissions neutrality is great, and we recognize that we have many, but not all, the answers on how to get there. To overcome this challenge, the Carbon Neutral Program was structured to strengthen our current low carbon position, as well as accelerating and reducing the costs of decarbonization solutions, providing the company with greater competitiveness. The program seeks an integrated corporate vision of all our initiatives, developed by different business areas, with different action fronts:

### CARBON NEUTRAL PROGRAM



>> Information about the Carbon Neutral Program can be found in our [Climate Change Supplement](#).

## Emission performance

As a basis for monitoring our emissions performance, since 2002 we have had proprietary software to manage our emissions inventory, the Atmospheric Emissions Management System (SIGEA®). This computerized system consolidates our emissions inventory through the monthly processing of information from approximately 10,000 emission sources. It lists GHG emissions: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>) and hydrofluorocarbons (HFCs), in addition to emissions of atmospheric pollutants.

Our inventory of atmospheric emissions is prepared in accordance with the guidelines of the Greenhouse Gas (GHG) Protocol, developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). For the composition of our inventory, we adopted the source-to-source methodology, known as "bottom-up". That is, the total inventory is made up of the sum of emissions from each emitting source. In terms of organizational boundaries, we use the operational control approach for our emissions inventory; therefore, emissions related to all assets under our operational control are included. Emissions calculations are based on international references such as the American Petroleum Institute (API) Compendium, the Compilation of Air Pollutant Emission Factors (AP-42) of the US Environmental Protection Agency (US EPA), and the calculation tool of the Brazilian GHG Protocol Program.

Our inventory has been published voluntarily since 2002 and is verified annually by a third party, representing our pioneering spirit in GHG management. We are also founding members of the Brazilian GHG Protocol Program and publish our inventory in its Public Emissions Registry, having received the Gold



Seal classification in 2022<sup>6</sup> for the fifth consecutive year, a standard of excellence in data quality and availability.

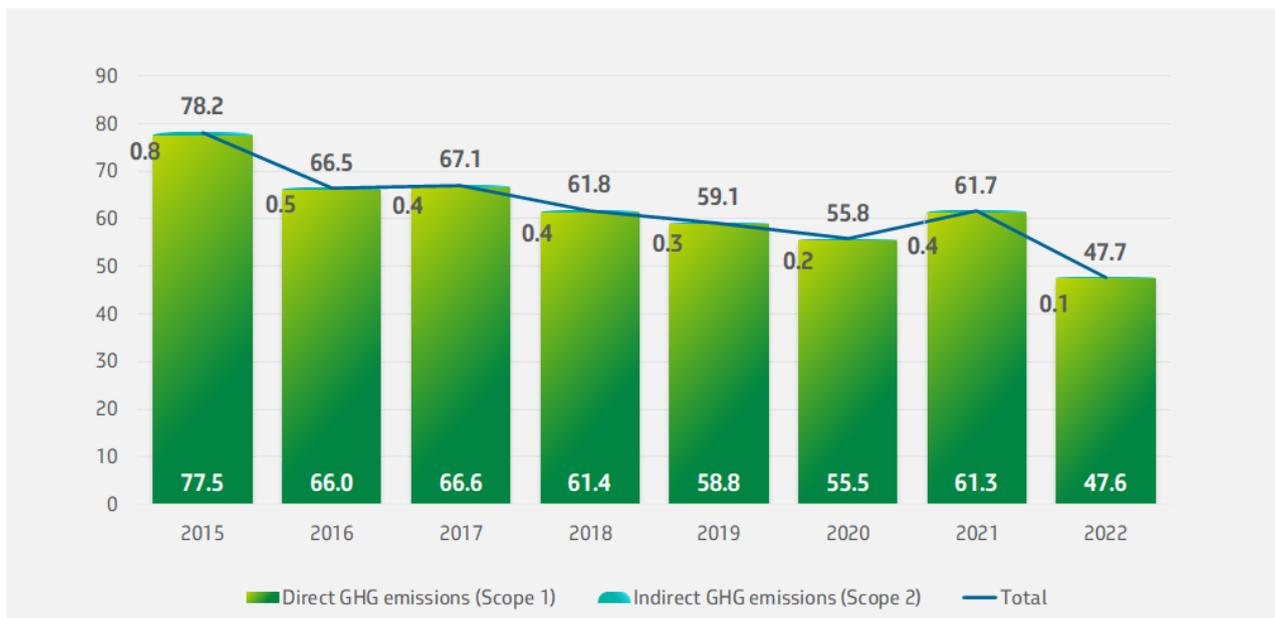
Each operational area is responsible for managing emissions and feeding SIGEA®. Based on its inventory, it assesses its own performance, identifies opportunities to reduce emissions at its units, and implements improvement solutions.

The Climate Change Executive Management monitors our global inventory and coordinates corporate and strategic actions. Based on the data consolidated by the emissions inventory and the calculation of expected indicators, it is possible to monitor our performance in emissions and progress in relation to the defined commitments. We have established carbon governance in where we monitor commitments, goals and initiatives at the various technical and managerial levels, including senior management.

## Reduction of greenhouse gas emissions

Between 2015 and 2022, our absolute operational GHG emissions dropped by 39%. In 2022, operational emissions totaled 48 million tCO<sub>2e</sub>, with the low thermoelectric dispatch in 2022 significantly affecting this result. Efficiency and loss reduction actions implemented in the operating segments, as well as the divestments completed at the end of 2021 and throughout 2022, were also vectors for lower GHG emissions.

### HISTORY OF ABSOLUTE GHG EMISSIONS<sup>7</sup> (consolidated in millions of tCO<sub>2e</sub>)



<sup>6</sup> Gold seal awarded in 2022 for our inventory for 2021 published on the platform of the Public Emission Registry of the Brazilian GHG Protocol Program.

<sup>7</sup>a) Emissions over the period refer to E&P, refining, fertilizers, petrochemicals, electricity generation, land (pipeline and road) and maritime transport operations, as well as distribution activities in Brazil, Argentina, Bolivia, Colombia, United States, Mexico, Paraguay, and Peru. The range of activity types and countries of operation may vary over the years according to our portfolio management.

b) We include direct (Scope 1) and indirect greenhouse gas emissions from the acquisition of electric and/or thermal energy produced by third parties (Scope 2).

c) CO<sub>2</sub> emissions were calculated based on the Global Warming Potential (GWP) values of the Fourth Assessment Report of the IPCC - Intergovernmental Panel on Climate Change (AR4). In reports prior to 2016, these emissions were calculated considering the GWP values of the IPCC's Second Assessment Report (SAR); therefore, there are changes in data from previous years.

d) Other possible changes in historical numerical information regarding previous publications of the Sustainability Report, are due to improvements in the atmospheric emissions management system or recommendations resulting from the third party verification process.

e) Our emissions are verified annually by a third party, with a forecast that data verification from 2022 will be completed by July 2023, and may undergo adjustments until then.

f) Biogenic CO<sub>2</sub> emissions are not representative in our inventory

g) 2021 value of direct GHG emissions (Scope 1) revised after third-party certification completed in July 2022, from 61.4 million tCO<sub>2e</sub> to 61.3 million tCO<sub>2e</sub>.



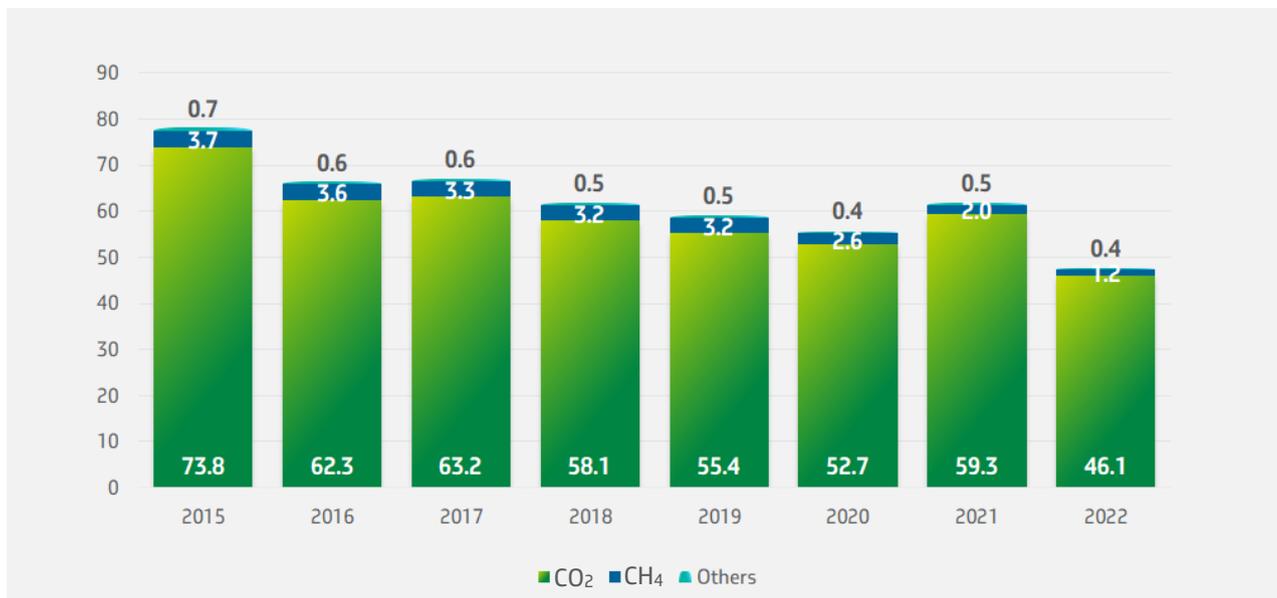
Our goal of reducing absolute operational emissions by 30% by 2030, compared to 2015, is aligned with the progressive reduction of our operational emissions, already considering the increase in production expected for the period, and is supported by a set of actions systems to be implemented in the coming years.

The expected effects of our asset portfolio management are included in the emissions trajectory already observed and are considered in our future emissions projection scenarios.

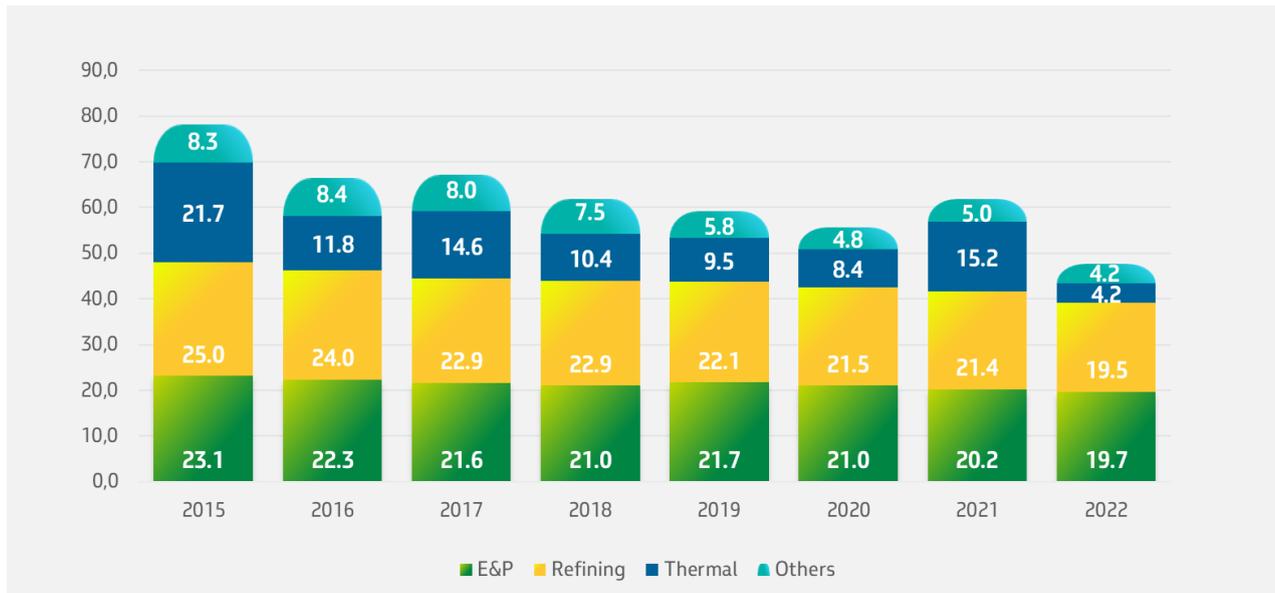
This target encompasses Scope 1 and 2 emissions of 100% of the assets operated in all our businesses, including power generation, for all greenhouse gases, making a material, relevant, short and medium-term contribution to tackling to climate change.

Our CO<sub>2</sub> emissions represented around 97% of the total GHG, in terms of CO<sub>2</sub> equivalent, emitted in 2022.

### HISTORY OF GHG EMISSIONS BY TYPE OF GAS<sup>8</sup> (consolidated in millions of tCO<sub>2</sub>e)



<sup>8</sup> "Others" includes HFCs and SF<sub>6</sub> gases. No emissions of PFCs and NF<sub>3</sub> were identified in our activities. 2021 CO<sub>2</sub> emissions revised after third-party certification completed in July 2022, from 59.4 million tCO<sub>2</sub>e to 59.3 million tCO<sub>2</sub>e.

**HISTORY OF GHG EMISSIONS BY BUSINESS SEGMENT<sup>9</sup>** (consolidated in millions of tCO<sub>2e</sub>)

Considering only the operational emissions from our oil and gas activities, that is, excluding emissions from thermal plants, there has been a continuous downward trend over the last few years, reaching a reduction of 23% between 2015 and 2022.

The E&P and Refining segments account for the most significant portion of our total absolute operating emissions. The GHG emission intensities of these two segments make up our top metric (IAGEE) and show a downward trend in recent years, as discussed below.

**GHG emission intensity in E&P**

We monitor our performance in terms of intensity of GHG emissions in the oil and gas production segment, and we have had outstanding results in the pre-salt fields.

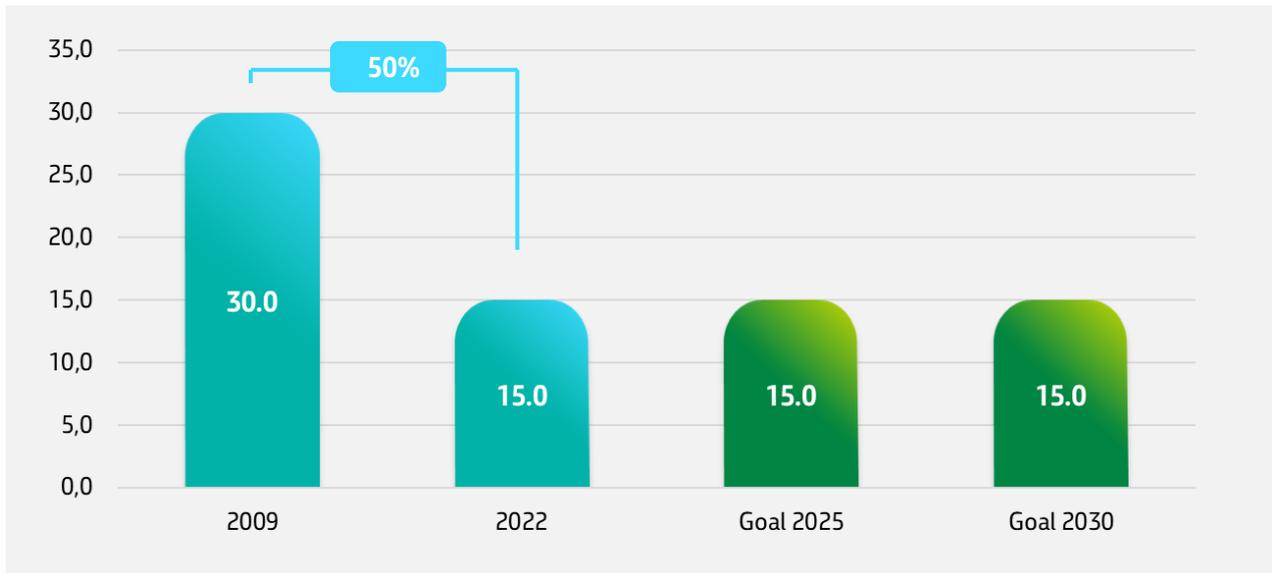
Our commitment is to continue to improve the carbon efficiency of our E&P activities, with the goal of reaching 15 kgCO<sub>2e</sub>/boe in 2025, maintained until 2030.

Since 2009, we have already achieved a 50% reduction in the intensity of GHG emissions in E&P activities, because of actions related to improvements in energy efficiency, reduction of losses, and better gas usage with reduced flaring, in addition to improvements in accounting and inventory of emissions.

<sup>9</sup> "Others" include gas treatment units, LNG terminals, maritime transport, gas transport activities (Transpetro and TBG), administrative activities of Petrobras, in addition to operational activities not previously described: Petrobras Biofuels; Fertilizers (until 2020); Liquegás (until 2019); and Petrobras Distribuidora (until 2018). 2021 GHG emissions from thermal plants revised after third-party certification completed in July 2022, from 15.4 million tCO<sub>2e</sub> to 15.2 million tCO<sub>2e</sub>. GHG emissions from 'Others' in 2021 were also revised from 4.9 million tCO<sub>2e</sub> to 5.0 million tCO<sub>2e</sub>.

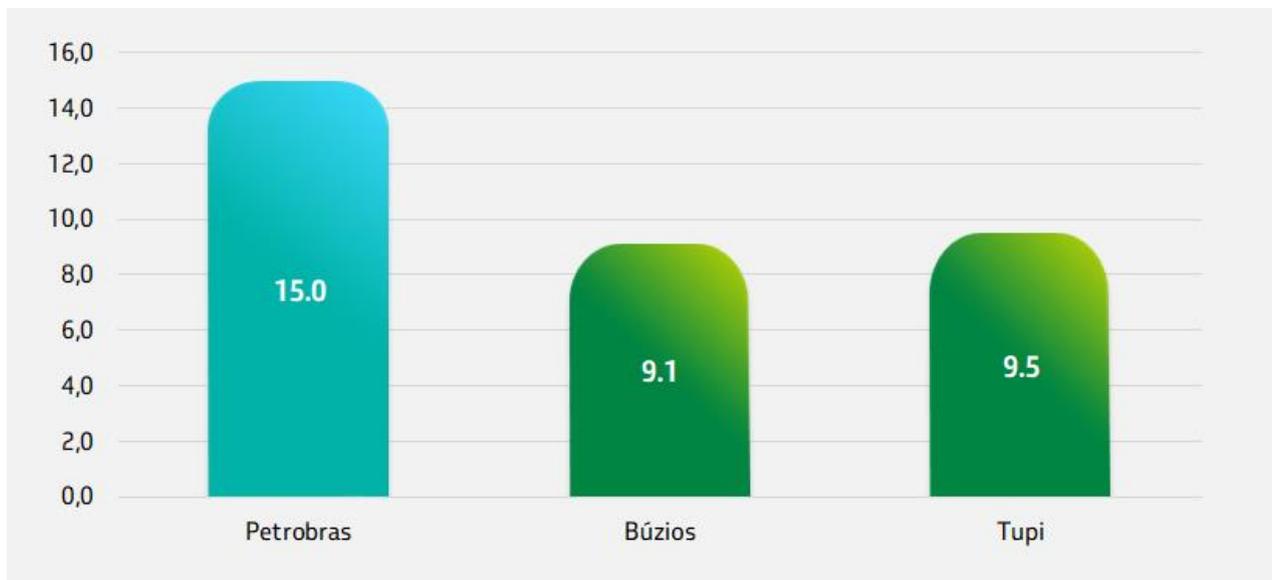


### INTENSITY OF GHG EMISSIONS IN E&P (consolidated in kgCO<sub>2e</sub>/boe)



We also highlight that the main pre-salt oil streams that we produce have a carbon intensity that is even lower than the average value of our operations. Together, the Tupi and Búzios streams accounted for around 51% of our total production in 2022.

### GHG EMISSION INTENSITY IN E&P - 2022 (kgCO<sub>2e</sub>/boe)



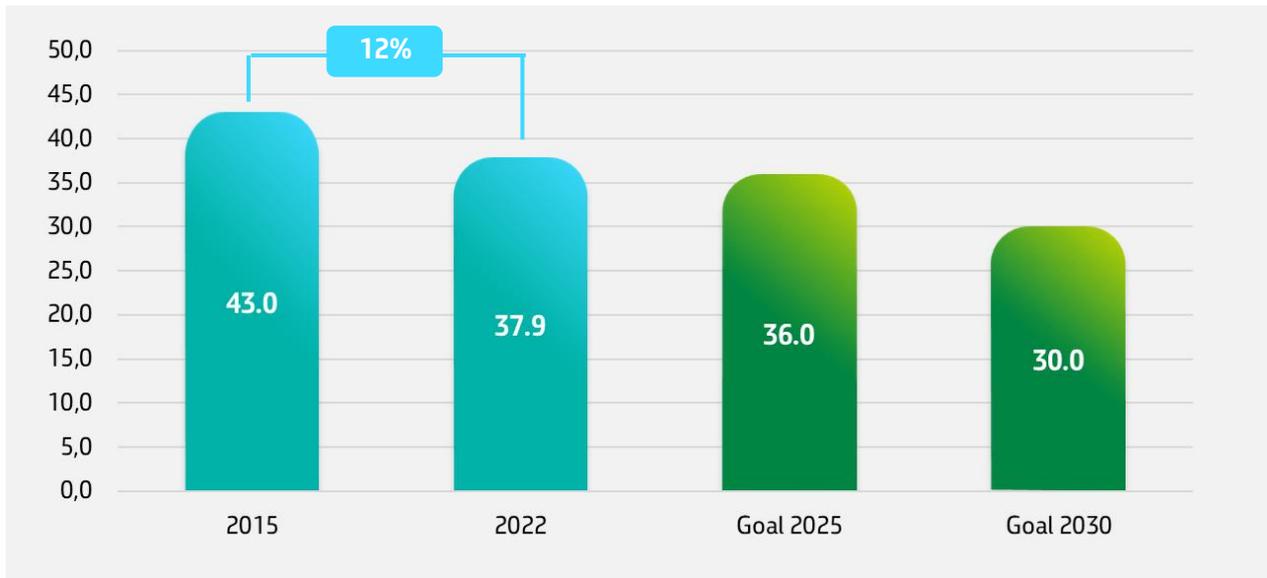
Considering the entry forecast of 18 new FPSOs (floating oil production, storage and transfer unit) in this five-year period and the differentiated performance profile in emissions for new units and those that already operate in mature fields, as of 2023, we will monitor the performance of the E&P segment using 3 metrics: IGEE E&P Implemented Units (which will become part of our top metric), IGEE E&P New Units, in addition to the IGEE E&P of the total portfolio, related to our history of commitment to sustainability. With these metrics, we will have greater transparency on the performance of new units and units that are already in operation.



### Intensity of GHG emissions in Refining

In the Refining segment, the intensity of GHG emissions continued the downward trend of recent years, reaching a result of 37.9 kgCO<sub>2</sub>e/CWT in 2022, a reduction of 4.5% compared to 2021 and 12% compared to 2015. The improvement observed in the indicator is mainly due to efforts in energy optimization of refining processes, a significant reduction in steam and condensate loss, and improvement in the performance of process furnaces.

#### INTENSITY OF GHG EMISSIONS IN REFINING<sup>10</sup> (kgCO<sub>2</sub>e/CWT)



### Upstream methane emissions

Our segment carbon intensity targets incorporate different GHGs, including methane. However, given the characteristics of methane, whose warming potential is very high in the short term, we monitor this gas with specific metrics. In SP 2023-27, we expanded our commitment to reduce emissions of this GHG, increasing our target from 40% to 55% of reduction in the intensity of methane emissions, in relation to the total operated production of hydrocarbons (tCH<sub>4</sub> /mil tHC), in the upstream segment. Our commitment is to achieve this reduction in 2025, using 2015 as the baseline year, which means reaching the result of 0.29 tCH<sub>4</sub>/thousand tHC in 2025.

<sup>10</sup> The kgCO<sub>2</sub>e/CWT indicator uses the CWT (Complexity Weighted Tonne) methodology, developed by Solomon Associates and the Association of European Oil and Gas Refining and Distribution Companies (CONCAWE) specifically for the European oil refining industry and adopted by the European Union Emissions Trading System (EU ETS) in setting the sector's GHG reduction targets. The CWT of a refinery considers a load equivalent to distillation in terms of potential GHG emissions, given the different process units and respective loads processed in a refinery. Thus, it is possible to compare emissions from refineries of various sizes and complexities. The process of external verification of the inventory and emission indicators for the year 2022 is expected to be concluded by July 2023, and may undergo alterations by this date.

**INTENSITY OF METHANE EMISSIONS IN E&P<sup>11</sup>** (consolidated in tCH<sub>4</sub>/mil tHC)

Since 2015, we have observed a reduction in the intensity of upstream methane emissions of around 60%. This result is mainly due to the reduction in the volume of gas sent to the flare, with a consequent increase in the rate of use of gas, the optimization of ventilation emissions estimates, and the adjustment of the flaring emission protocol (combustion efficiency).

In addition to the 2025 commitment, in early 2022 we announced our adherence to the Aiming for Zero Methane Emissions initiative promoted by the Oil and Gas Climate Initiative (OGCI). This initiative of the oil and gas sector recognizes that the elimination of methane emissions from the upstream segment is one of the best short-term opportunities in contributing to the mitigation of climate change and proposes a joint effort to achieve Near-Zero Methane Emissions by 2030.

We also highlight that between 2015 and 2022, we reduced our total direct methane emissions by 67%, that is, including all segments of the company.

In 2018, we announced our support for the World Bank's Zero Routine Flaring by 2030 initiative, and meeting this criterion is one of our Sustainability Commitments.

Our work to achieve this commitment includes mapping and reducing routine flaring volumes in our E&P assets in operation and in the projects for new assets.

We reviewed our engineering guidelines and incorporated the concept of routine zero flaring into the project bases for oil and gas production units, that is, all new projects will start operating in compliance with the commitment. As an example, we can mention the flare gas recovery system (FGRUs) installed in our new units, in addition to gas recovery from cargo tanks, closed drainage systems and glycol regeneration, actions that reduce methane emissions.

It is important to point out that we already have a high usage rate for gas produced, reaching 97.3% in 2022.

<sup>11</sup> Revised 2021 value after third-party certification completed in July 2022, from 0.33 tCH<sub>4</sub>/mil tHC to 0.32 tCH<sub>4</sub>/mil tHC.



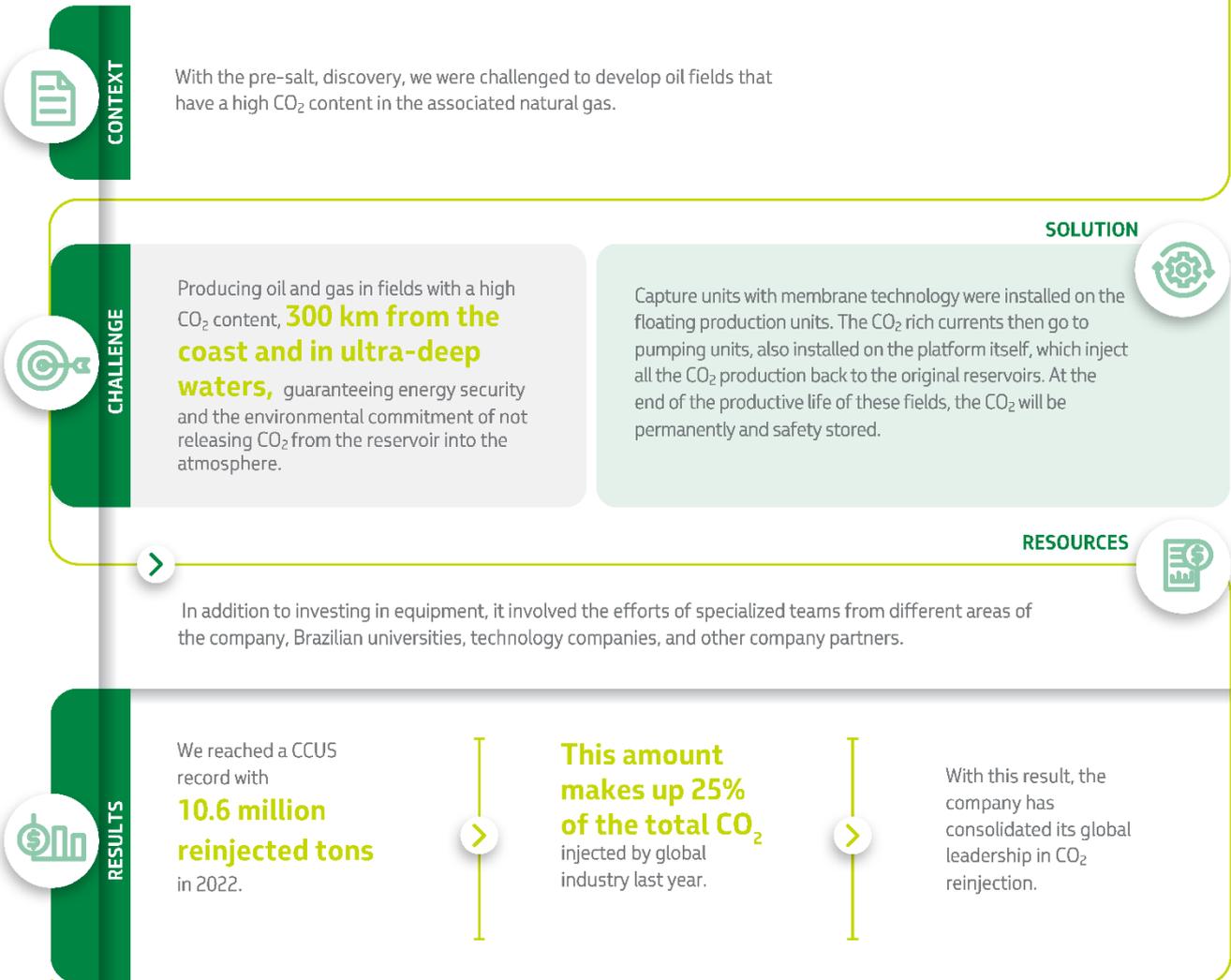
## CCUS projects in E&P

In yet another low-carbon commitment in the E&P segment, our objective is to achieve a cumulative total reinjection of 80 million tons of CO<sub>2</sub> by 2025, which will contribute to technological evolution, cost reduction and demonstration of the safety of CCUS for application in the oil and gas industry and other sectors. We emphasize that this commitment was also expanded in SP 2023-27, when, in view of the performance of recent years, we doubled our objective.

### Development and operation of the largest carbon capture, utilisation and storage (CCUS) project in the world



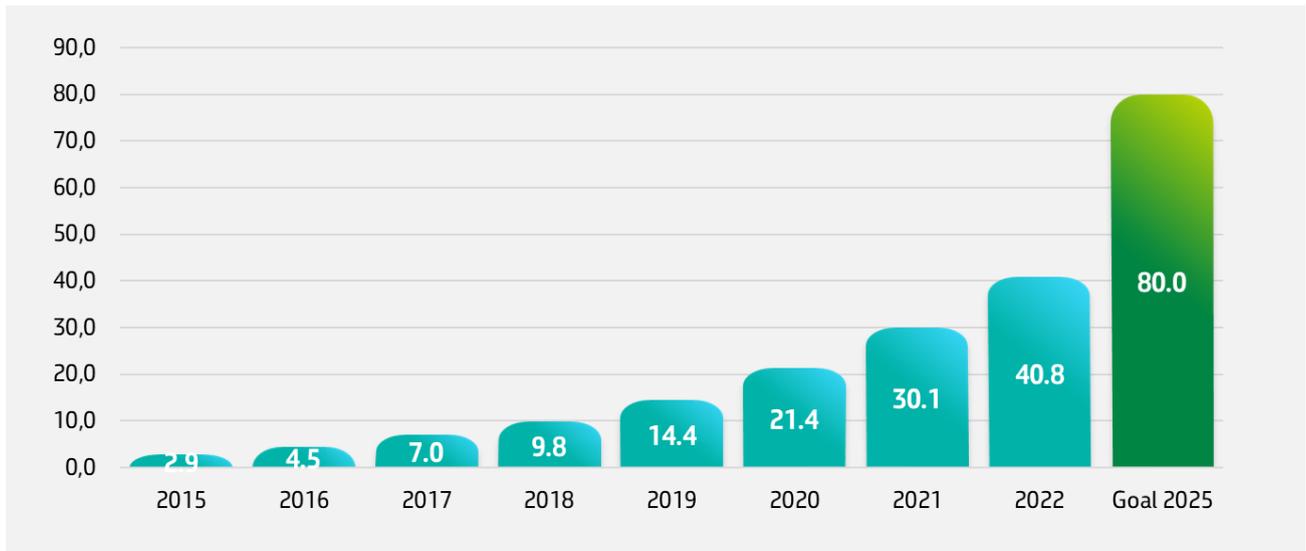
Photo: Petrobras Imagem Bank



Currently, there are 21 platforms that we operate in the pre-salt layer that incorporate CCUS technology associated with Enhanced Oil Recovery (EOR), with performance in constant evolution. By 2025, we will total 80 million tons of CO<sub>2</sub> reinjected into Pre-Salt reservoirs.



### ACCUMULATED HISTORY OF CO2 REINJECTED IN CCUS PROJECTS <sup>12</sup> (millions of tCO2)

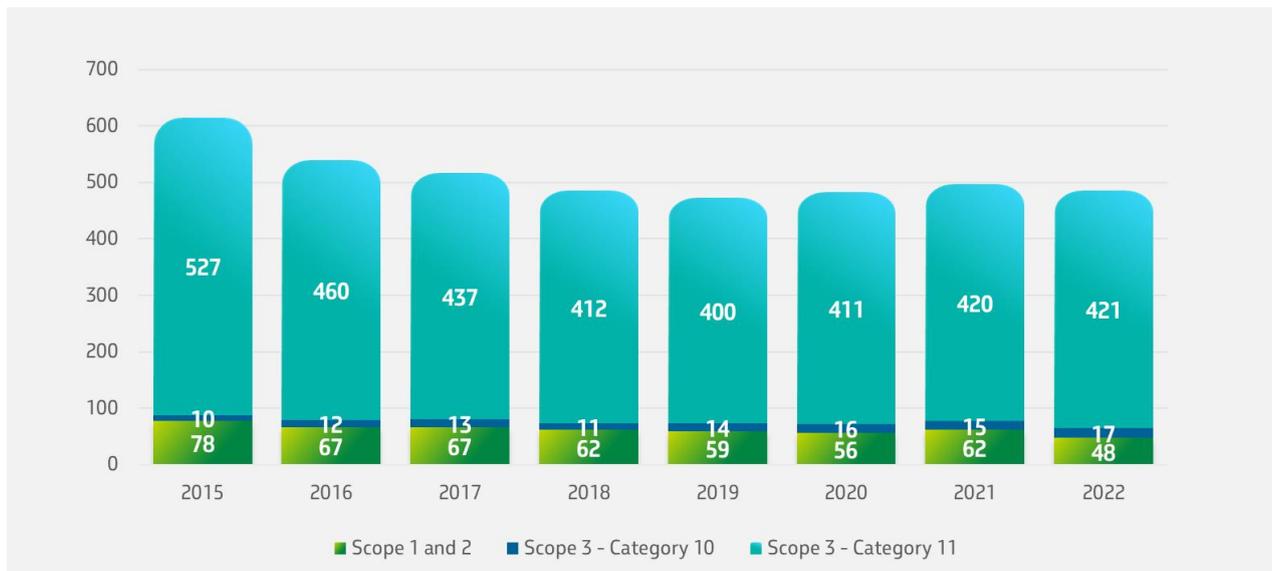


### GHG emissions from the value chain

In addition to managing emissions from our operations, we track GHG emissions from our suppliers and products, classified as Scope 3 emissions. Considering the nature of our segments, emissions related to the use and processing of our products make up the most relevant categories in our value chain.

To calculate the most relevant Scope 3 emissions, we used two categories of the GHG Protocol: indirect emissions from product processing (Category 10) and indirect emissions related to the use of products delivered to the market (Category 11). These emissions are also included in the third party verification process for our inventory. Our direct emissions (Scope 1 and 2) in 2022 corresponded to around 10% of the total value chain, considering the two categories included in our Scope 3.

<sup>12</sup>Amounts accumulated since 2008.

**GHG EMISSIONS FROM THE VALUE CHAIN<sup>13</sup>** (consolidated in millions of tCO<sub>2</sub>e)

We joined the CDP Supply Chain initiative in 2022 with the objective of mapping the emissions of a sample of our main suppliers, selected based on criteria of financial representativeness and critical role for our operations. In this first year, there was the effective participation of more than 240 suppliers, who shared information about their GHG emissions, and of these, 68% reported using some climate scenario in their business strategy, 50% reported that they have an active goal and 48% claimed to use renewable energy.

We were recognized for leadership in engaging suppliers in sustainable practices with an A- rating in the CDP assessment called Supplier Engagement Rating.

In 2023, we will carry out the second cycle of the CDP Supply Chain on Climate Change, and we will also include the topic of Water Security, in order to monitor the Management of Water Resources in our supply chain. We provide a direct channel for our suppliers to indicate their interest in participating in the CDP Supply Chain through the electronic address: [cc-suprimentosesg@petrobras.com.br](mailto:cc-suprimentosesg@petrobras.com.br).

### Other significant atmospheric emissions

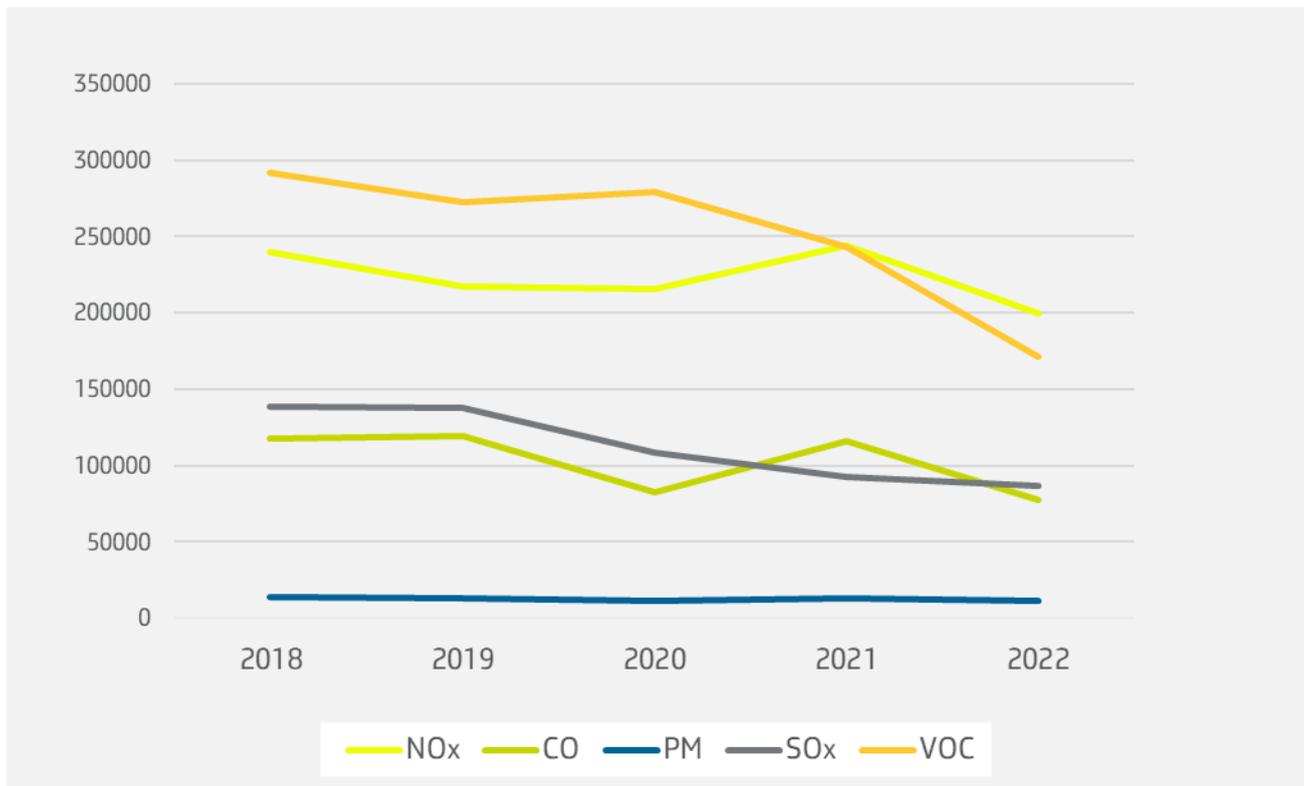
In addition to GHG emissions, in our inventory we also monitor emissions of other pollutants: sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), particulate matter (PM), carbon monoxide (CO), volatile organic compounds (VOCs) and total hydrocarbons (HCT).

The concepts described for our GHG inventory, including the source-to-source methodology and operational control approach, as well as the use of SIGEA<sup>®</sup> software, also apply to the inventory of these pollutants. In addition, the annual third-party verification process also includes these emissions.

<sup>13</sup>The following references are used as a reference for the calculation of the Scope 3 emissions presented: *Life Cycle Assessment Comparison of North American and Imported Crudes*, prepared for Alberta Energy Research Institute, 2009 e *Guidance methodology for estimation of scope 3 category 11 emissions for oil and gas companies*, Carbon Disclosure Project (CDP), updated in 2022.



## EMISSIONS OF REGULATED POLLUTANTS (ton)



The reductions in NO<sub>x</sub> and PM emissions in 2022, respectively of 18% and 13% in relation to the 2021 totals, are directly related to the lower thermoelectric dispatch requested by the National Electric System Operator (ONS), as well as to the divestment of thermal plants using liquid fuels.

The 2022 result for CO, 34% lower than 2021, mainly reflects the operation most of the time in total CO burning in the FCC units (acronym for fluid catalytic cracking) of our refineries.

SO<sub>x</sub> emissions are more significant in the Refining segment and accounted for 76% of the company's total emissions of this pollutant in 2022. For about 20 years, the indicator of absolute SO<sub>x</sub> emissions has been monitored internally with alert limits established for each refinery. In 2022, the total SO<sub>x</sub> emissions from our refining park were 1% lower than the alert limit established for the year.

Considering the company's total SO<sub>x</sub> emissions, there is a reduction of 6% between 2021 and 2022, which is mainly related to the improvement of the emissions inventory, especially with regard to the quality of data on the sulfur content of the fuels used in our maritime transport.

Emissions of volatile organic compounds showed a 30% reduction in 2022 compared to the 2021 result, mainly due to improvements in the inventory of hydrocarbon losses in oil storage in the E&P segment, in addition to reductions linked to the improvement in the quantification of fugitive emissions through the implementation of a measurement program in some of our thermal plants.

In addition to the inventory, we monitor emissions by sampling chimneys, in order to verify compliance with legal limits. We also monitor the air quality around our refining and thermoelectric generation activities with monitoring stations owned or operated by local environmental agencies. The information obtained from these follow-ups is considered in our operations and in the licensing of new units.

In our industrial processes, we prioritize the reduction of the generation of pollutants by increasing energy efficiency and reducing fuel consumption in comparison with measures to treat emissions already generated, known as "end of pipe" solutions.

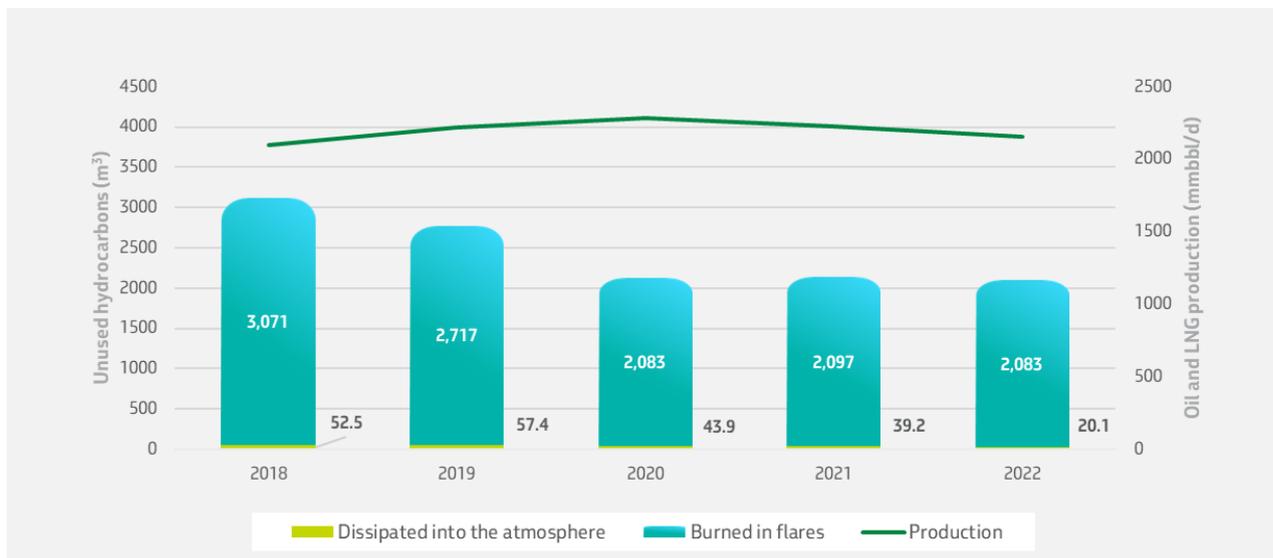


In 2022, we resumed work on the atmospheric emissions abatement unit (SNOx) at the Abreu e Lima Refinery, which seeks to reduce sulfur oxides (SOx) and nitrogen (NOx) emissions. The unit's start-up is scheduled for the second half of 2024.

In the first quarter of 2023, we stopped selling fuel oil with a maximum sulfur content of 2%, known as OCA1, and began exclusively offering OCB1, a product with a maximum sulfur content of 1%. This measure will help customers in the industrial segment to reduce their sulfur oxide emissions.

In terms of unused hydrocarbons in our operations, we have historically observed a reduction in volumes burned in flares or directly dissipated into the atmosphere. Compared to 2018, the volume of flared gas in 2022 was 32% lower. As already reported in previous items, this reduction in flaring is mainly due to the better use of gas in E&P operations. With regard to hydrocarbons dissipated directly into the atmosphere, we found a continuation of the significant reduction in 2022, mainly associated with improvements in the inventory process and loss reduction in our units.

## UNUSED HYDROCARBONS<sup>14</sup> (CONSOLIDATED)



## Energy consumed

In 2022, we consumed 705 thousand terajoules (TJ) or 328 thousand barrels of oil equivalent per day (boed) of energy, which represents a 24% decrease when compared to the previous year. This reduction is directly related to the significant decrease in thermoelectric generation in 2022, as well as reflecting improvements in efficiency and energy optimization in our processes.

<sup>14</sup> 2021 numbers were revised after third-party certification completed in July 2022, from 39.1 million m<sup>3</sup> to 39.2 million m<sup>3</sup>.

- a) We considered the records of volume of gas flared in the activities, while they are part of our portfolio, of exploration and production, refining, production of fertilizers, treatment and transport of gas.
- b) We considered records of gas released directly to the atmosphere through venting and depressurization events (fugitive emission losses in line and equipment components are not included).
- c) About 99% of the volume of flared gas occurs in Brazil.

**ENERGY CONSUMPTION WITHIN THE ORGANIZATION<sup>15</sup>** (consolidated in TJ)

	2018	2019	2020	2021	2022
Fuels from non-renewable sources	873,197	823,828	808,350	916,641	692,550
Electricity	15,362	13,740	12,811	12,185	13,615
<b>Total</b>	<b>888,559</b>	<b>837,568</b>	<b>821,161</b>	<b>930,256</b>	<b>704,735</b>

**TOTAL ENERGY SOLD<sup>16</sup>** (consolidated in TJ)

	2018	2019	2020	2021	2022
Electricity	126,743	124,756	102,488	113,183	99,401
Steam	2,279	401	1,290	1,424	7,897
<b>Total</b>	<b>129,022</b>	<b>125,157</b>	<b>103,778</b>	<b>114,607</b>	<b>107,298</b>

In 2022, we consumed 704,735 TJ of energy and sold 99,401 TJ of electricity and 7,897 TJ of steam, resulting in energy balance 597 thousand TJ of total energy consumption within the organization. It is noteworthy that we supply society, in terms of fuel sold, a total of 5.9 million TJ of energy.

Improving the energy efficiency of our processes is essential to our path towards reducing GHG emissions. Since we have a wide range of operational activities and products, we manage energy performance separately, based on the analysis of energy consumption and production results, in addition to emissions intensity indicators.

<sup>15</sup>2021 values were revised following third party certification completed in July 2022.

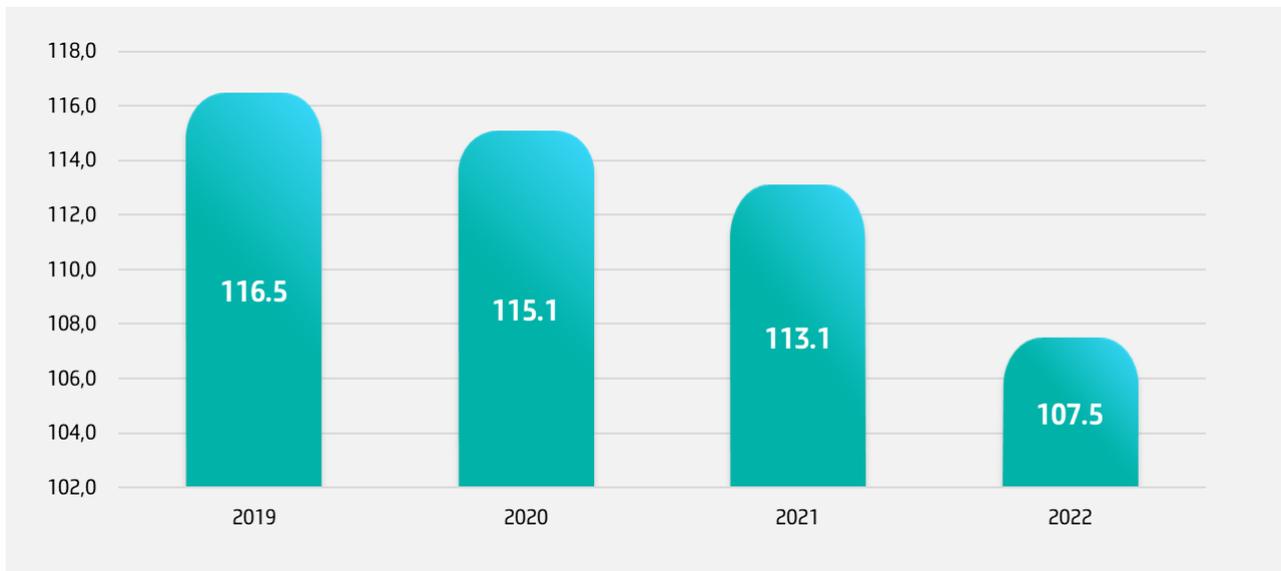
- a) The consolidation of internal energy consumption follows the approach and standards adopted for our emissions inventory, including the scope of organizational limits for direct and indirect operations.
- b) The amounts in mass or volume of fuel consumption consumed are converted to energy considering the values of calorific value by fuel type. Electricity and steam are accounted for based on the theoretical thermal equivalent (0.0036 TJ = 1 MWh).
- c) Conservatively, we consider that the total energy consumption reported is of fossil origin, since a possible consumption of energy from renewable sources has a low representation in the total, and to separate these in the report there would be a need to improve its tracking.
- d) Reported fuel consumption includes all those necessary for our various operations, including: generation of electric energy and steam for internal use, heating and cooling currents, transportation, and processes, among others.
- e) In previous reports, values of energy in the form of steam consumed by Petrobras were reported. This consumption refers to the amount of steam acquired by our refineries, but which is imported directly from Petrobras' own thermal plants. In other words, there is no consumption of energy in the form of steam from sources outside of Petrobras. In this sense, there is no energy in the form of steam consumed by third parties to be reported. Thus, we excluded the item from the table, also rectifying previous years.
- f) The volume of natural gas and liquid fuels burned through flaring in 2022, totaled 81 thousand TJ and is not considered in the calculation of energy consumption.

<sup>16</sup> We do not sell "heating" and "cooling" energy. The energy sales volumes are those of the Free Trading Environment (ACL) and Regulated Trading Environment (ACR) of the thermoelectric plants we effectively control and are the same as those already reported to the market through Form 20-F reports (filed in the U.S. Securities and Exchange Commission - SEC) and Reference Form (filed at the Securities and Exchange Commission - CVM) converted by a factor of 3,600 in the transformation from MWh to Joule. 2021 steam volumes have been revised to account for steam sales to third-party refineries.



Specifically in the Refining segment, we internally monitor the intensity of our energy consumption, considering the relationship between the total consumption of primary energy of a refinery and a standard energy consumption that takes into account the volume of processed load, the quality of the load, the complexity and severity of process units.

### REFINING ENERGY INTENSITY (consolidated)



In the E&P segment, we are expanding the use of the Energy and Carbon Panel implemented in more than 30 platforms to identify operational opportunities that may increase energy efficiency and reduce emissions at the units. The use of artificial intelligence to build more complex diagnoses and prognoses is under development. This new solution allows us, among other improvements, to better project our future emissions trajectory, including the impact of technological innovations, to fulfill commitments made in our low carbon agenda. In addition to emissions, the Panel allows real-time monitoring of energy generation and consumption on our platforms, and we plan to implement an energy performance indicator for this segment in the future.

Considering our production of oil, gas and oil products for the foreign and domestic markets, which will be used as an energy source by our customers, in 2022 we sold a total equivalent to 5.9 million terajoules (TJ) in energy products.<sup>17</sup> In terms of energy consumption, the use of our energy products, including liquid products and electricity, for various purposes such as transporting people and cargo to industrial production processes, is of the utmost importance in our supply chain, similarly to emissions related to the burning of our fuels sold on the market.

## Lower carbon products and businesses

The energy transition brings new opportunities to the business by increasing interest in low-carbon products and services. We seek opportunities that contribute to long-term sustainability, diversifying our portfolio of products and businesses.

We plan to position ourselves as a leading company in the supply of low carbon products, focusing on the BioRefino Program. The BioRefino 2030 Program includes projects for the production of a new generation

<sup>17</sup> The energy consumption of these fuels sold can occur at different points in the chain, such as in the transport of people and products. We highlight, however, that we have great integration across the segments of the oil and gas industry, therefore, the energy consumption in operations controlled by us is already included in the table "ENERGY CONSUMPTION WITHIN THE ORGANIZATION (TJ)".



of fuels that are more modern and sustainable, produced from renewable or residual raw materials. These fuels can be produced by co-processing in our refineries or in dedicated units.

### Diesel with renewable content (R)



Foto: Banco de Imagem Petrobras



#### CONTEXT

Diesel R is a fuel produced from the joint processing (co-processing) of vegetable oils, in this case soybean oil, with oil streams in a refinery. The aim is to reduce the greenhouse gas emissions associated with the burning of fuels, thus making our products more sustainable.



#### CHALLENGE

Implement co-processing of renewable streams, such as vegetable oils and fats, in hydrotreatment units used to produce low sulfur diesel fuel (S10), anticipating the supply of renewable content until the start-up of new company ventures, such as a plant dedicated to the production of green diesel (100% renewable).



#### SOLUTION

Diesel R fuel is the result of Petrobras own technology, produced after development escalation, starting from the first tests on laboratory benches at the Research Center (Cenpes) until its industrial production at the refinery. Due to its innovative nature, this technology generated patents related to the process, called HBIO™. This technology allows, over the short term, the adaptation of the existing infrastructure in its refining facilities to produce fuels with a lower carbon footprint, since the product already leaves the refinery with a renewable percentage, simultaneously guaranteeing the high quality of low sulfur diesel (S10). We carried out the first field test with Diesel R in Brazil over the course of six months in 2022, consolidating the development of this technology. Test results corroborate the drop-in characteristic of renewable diesel, that is, it is a product that can be used in the systems designed for diesel without the need for any modification to the engines and to the logistics infrastructure. Diesel R ran with reliability and good performance, with no operational occurrences such as clogging of filters, deposits in the injection system, loss of engine power or impact on the lubrication oils.



#### RESOURCES

Investments of **BRL 15 million**, the R&D project included studies in a pilot plant at Cenpes, industrial test at

Presidente Getúlio Vargas Refinery (Repar), in Araucária, and fleet testing through partnerships with a bus company, a fuel distributor,

and manufacturers of engines and injection systems in the city of Curitiba.



#### RESULTS

In September 2022, the first sale of Petrobras Diesel R was made. The production, carried out at Repar, was an important step towards regular sales and larger volume of the product. The batch sold included a statement with the reduction of greenhouse gas emissions, calculated according to the volume purchased by the distributors. We evaluated the Product Lifecycle, which contributed to the international



certification process of the renewable content of Diesel R, obtaining the ISCC (International Sustainability Carbon & Certification) Plus and ISCC EU RED certification for the production of Diesel R at Repar. The use of Diesel R allowed the reduction of CO<sub>2</sub> emissions for the renewable portion of about 75%, when compared to fossil



diesel. As presented in the PE 2023-27, we plan, through the BioRefino Program, to expand the production of diesel with renewable content to other refineries, and, in the future, to produce green diesel from a unit dedicated to processing the **100% renewable raw material**.



The main drivers behind the development of our products, which begin with the definition of their concept, are aspects related to improving air quality and health, safety, energy efficiency and suitability for use.

Maintaining product quality, from production at refineries to burning in the engine, including transport, transfers and storage, is also a requirement taken into account during R&D projects.

We comply with national and international standards regarding impacts on health and safety, in addition to emphasizing the need for compliance with our suppliers.

Our products go through stages of risk assessment for health and safety, with a view to protecting workers, neighboring communities and the final consumer. The results of the evaluations are shown in the Material Safety Data Sheets (MSDS) of our products and inputs sold in Brazil and abroad. In cases where we act as suppliers, we provide the updated MSDS to our users, which contains the main information on these chemical substances related to health, safety, and the environment. Currently, our Chemical Product File System (SFPQ) provides Material Safety Data Sheets (MSDS) for around 300 Petrobras products and around 1600 inputs.

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>> **Information about our products can be found in the products tab on our website and in the Registration, Evaluation, Authorization and Restriction of Chemical Products (REACH) tab.**

In addition, we work in national and international partnerships with oil companies, automakers, government agencies, and universities, in order to participate in actions related to the improvement of air and fuel quality. Among these partnerships, we can highlight our participation in the Oil and Gas Climate Initiative (OGCI). The OGCI, in turn, has the participation companies to BP, Chevron, CNPC, ENI, Equinor, Exxon Mobil, OXY, REPSOL, Saudi Aranco, Shell and Total, in addition to us. This initiative seeks cooperation between the participants in order to reduce the carbon footprint of the energy production chain, accelerate solutions for a low carbon economy, and make a circular carbon (CO<sub>2</sub>) model feasible. At OGCI, we actively participate in the group called "Transportation Working Stream," which focuses on the development of specific actions to reduce CO<sub>2</sub> emissions in the transportation segments, including the road, sea and air segments. In the group, actions for the use of liquid fuels with a low carbon footprint stand out, including mixtures with biofuels and the use of renewable hydrogen, as well as actions for the capture of CO<sub>2</sub> on board vessels, among other actions.

The increase in the content of renewable fuels, with the objective of reducing the emission of greenhouse gases, is evaluated with a survey of the impacts caused on the useful life of the equipment and compatibility with the circulating fleet, in order to guarantee vehicle safety and durability, in addition to avoiding the early degradation of pollutant emissions during use.

We plan to install a dedicated unit where 100% renewable diesel (Diesel R100) and sustainable aviation fuel (BioQAV) can be produced simultaneously. In 2022, phase 1 of the project for the first unit in Refinaria Presidente Bernardes (RPBC) was completed and we are studying the opportunity for a second unit.

In addition to co-processing for the production of Diesel R and the future dedicated unit for the production of renewable diesel oil and BioQAV, we also develop and offer more sustainable products, such as CAP-PRO (asphalt that can be applied at significantly lower temperatures, generating energy savings and fewer vapor emissions during application) and the bunker with renewable content. This bunker underwent the first supply test of a vessel by Transpetro. Testing continues throughout the first half of 2023.

The evaluation of diversification opportunities, especially those that are synergistic with our competencies, are the focus of the Profitable Diversification Committee. Throughout 2022, the committee evaluated several opportunities that also reduce the carbon footprints of our products and



business. Thus, after a multi-criteria analysis, three segments were selected on which we will advance in internal studies: offshore wind energy, hydrogen and carbon capture. The investment decision will depend on sustainability assessments in economic and environmental aspects.

Also considering that our Scope 3 emissions mostly refer to the processing and use of our products, it is important to develop studies that consider such emissions to support future business assessments. During 2022, we developed a methodology that allows the comparison between different projects in terms of economic return and expected Scope 3 emissions.

Another assessment that we carry out considers the impact of the development of new products on the emissions intensity of the projected value chain for the company, allowing us to compare different strategies that can support the reduction of emissions associated with our activities. We intend to refine these studies and support ongoing portfolio diversification reviews by incorporating the value chain emissions aspect into the analysis of new diversification initiatives.

## Innovation for energy and decarbonization solutions

Innovation is a relevant element to enable paths with a significant reduction in carbon intensity with energy arrangements that do not increase the cost of energy for society.

Some of the decarbonization opportunities have considerable technological challenges, which need research and development (R&D) to be overcome along our entire value chain.

We are committed to investing in low-carbon research, development and innovation. The development of low-carbon solutions has a minimum allocation of 10% of our investment in R&D.

Our research portfolio explores opportunities in the oil and gas chain and in renewables. We have been developing and evaluating technologies that contribute to achieving the established decarbonization targets, reducing emissions in internal processes and adding greater sustainability to our products, but also aiming at long-term diversification.

Are main R&D initiatives in low carbon are:

- Energy efficiency
- CCUS (carbon capture, utilization and geological storage)
- Subsea CO<sub>2</sub> separation
- Mitigation of methane emissions
- Renewable diesel, BioQAV and Biobunker
- Hydrogen
- Offshore Wind

In 2022, we invested BRL 43.7 million in R&D in Brazil in the advanced biofuels segment and BRL 20.3 million in renewable energy. Investments were made in wind and solar energy and in BioQav and renewable diesel. Totaling BRL 64 million, the amount represents approximately 1.6% of our total investment. Our technology deliveries reflect our strategy for the transition to a low carbon economy.



Transpetro has a portfolio of projects for the energy efficiency of ships with an expected investment of BRL 64 million by 2027. These projects foresee an 11% reduction during this period in emissions from burning fossil fuels used on ships. The expected reduction is around 100 thousand tons of CO<sub>2</sub> during this period. Among the energy efficiency projects we can mention those that promote the reduction in the resistance to the advance of the vessel through the installation of hydrodynamic appendices, trim optimization software (difference between the aft and forward drafts), ultrasonic devices that have the objective of preventing the growth of shellfish on the ship's side, and high-performance painting. There are also investments in projects to optimize the combustion of the main combustion engine, responsible for the ship's propulsion, in addition to projects for course control and cruise control.

Also in 2022, we offered a distance-learning course on Climate Change Mitigation in modules 1 and 2, with 148,851 participations from our workforce.

## High quality carbon credits as a complementary strategy

We believe that offsetting emissions can be used as a complementary tool in our decarbonization path. These offsets can be natural, taking advantage of the removal potential involved in restoring and preserving forests, soils, oceans and seaweed, or through technological solutions such as carbon capture, utilization and storage (CCUS) and direct CO<sub>2</sub> capture from the air (DAC). Although our strategy foresees the use of offsets, these initiatives should be thought of as additional contributions to intrinsic mitigation efforts and do not replace society's need to supply energy with lower carbon intensity.

Our operating assets are mostly installed in Brazil and we are responsible for supplying a large part of the energy consumed there. Therefore, we prioritize the acquisition of REDD+ credits (reduction of emissions from deforestation and forest degradation) as a voluntary contribution to the mitigation of national GHG emissions, at the same time that we can achieve more ambitious results than those possible with the intrinsic decarbonization of our operations.

We seek high quality credits in order to guarantee that they are actually bringing climate, socioeconomic and environmental benefits, taking advantage of the Brazilian potential in generating highly competitive natural-based credits. We are also committed to disclosing the origin and use of our carbon credits in a transparent and traceable manner.

In order to ensure the adoption of best practices in offsetting emissions and their proper inclusion in the company's decarbonization strategy, we actively participate in the Natural Climate Solutions (NCS) group of OGCI and in the International Petroleum Industry Environmental Conservation Association (Ipieca). These are international forums that discuss the best practices for the oil and gas industry, responsible principles for the use of high quality carbon credits, and guides for the management of high carbon potential environments, among other international initiatives related to this topic.

For the acquisition of carbon credits in the voluntary market, we will follow eligibility and quality assurance criteria that include both reforestation and forest preservation credits originating in Brazil. They must present internationally accepted quality certifications such as Verified Carbon Standard (VCS), Gold Standards and American Carbon Registry or other internationally credible certifiers. They must guarantee the generation of social and environmental co-benefits associated with these credits and certified by seals such as CCB Standards and Social Carbon, for example.



## Socio-environmental investment in forests

Our Social Responsibility Policy presents as a guideline investing in socio-environmental programs and projects and, as a principle, overcoming sustainability challenges related to our business, including the transition to a low carbon energy matrix. In this sense, through the Petrobras Socio-environmental Program, we voluntarily supported, in 2022, 22 projects focused on forest recovery and conservation of areas. BRL 73 million will be invested throughout these initiatives, considering contracts that started in 2018 and others that will develop their activities until 2025.

The projects in force in 2022 were active in the direct recovery or conservation of forests and natural areas in the Atlantic Forest, Amazon, *Caatinga* and *Cerrado*, contributing to the mitigation of GHG emissions. The estimated net incremental benefit of the work carried out so far by these projects is around 2.3 million tCO<sub>2e</sub>, and considers the net removal and emissions avoided by actions that prevent deforestation.

The projects also worked to strengthen the management of around 27.8 million hectares of protected areas<sup>18</sup>. This includes actions such as monitoring fires, biodiversity and sustainable management with income generation through socio-biodiversity products in indigenous lands and *quilombola* territories. These initiatives also monitored endangered terrestrial species that occur in conserved areas of the Atlantic Forest, such as the southern muriqui (*Brachyteles arachnoides*), and from the *Caatinga*, the three-banded armadillo (*Tolypeutes tricinctus*).

<sup>18</sup> Amount referring to the area covered by the set of projects active in 2022. The profile of projects and type of action affect this value and reflect the composition of the portfolio, whose dynamics can lead to annual variations.



## Floresta Viva



Photo: Petrobras Image Bank



### CONTEXT

Brazil has major potential for generating high quality carbon credits that combine climate, socioeconomic and environmental benefits. At the same time, the necessary decarbonization of energy production and use activities will require additional efforts to beyond the intrinsic mitigation actions such as energy efficiency and even new technologies arising from innovation processes.



### CHALLENGE

#### Our path towards net zero by 2050

will have to compensate for emissions that cannot be reduced with other mitigation efforts.

### SOLUTION



Enabling the generation of carbon credits through Floresta Viva initiative, in partnership with BNDES.

In 2022, we launched the first public notice, called Mangroves of Brazil, for the restoration of mangroves, sandbanks, and contributing basins. These environments have a high potential for carbon sequestration, in addition to contributing to gains in environmental restoration, climate resilience, biodiversity, and socioeconomic benefits. This public notice provides for the generation of carbon credits as one of the attributes of the projects.



### RESOURCES



Join investment with BNDES of **BRL 100 million over the next five years**

of which **BRL 44.4 million** is scheduled for the public tender notice in 2022.



### RESULTS

Recovery of strategic mangroves, sandbanks and drainage basins with expected gains in:



- > biodiversity
- > climate resilience
- > socioeconomic benefits



As well as the generation of high quality carbon credits



[3-3] [11.8.1] [11.8.2]

# Accident prevention and management

Accident prevention and management correspond to the set of strategies, plans and management practices adopted by the company to promote the safe operation of assets and maintain the readiness of emergency response systems to mitigate impacts on human life, the environment, infrastructure, and reputation. It includes the ability to perform integrated work with public authorities, partners, the community, and other actors in emergencies, such as response actions for leaks at sea to prevent them from reaching the coast or any sensitive areas.

In our activities, we produce and move large volumes of oil and oil products. For this reason, proper management of processes and activities is essential to prevent loss of containment and leaks that may result in impacts to the environment and people and are therefore included in the principles of Petrobras' Health, Safety and Environment Policy (HSE).

With this, we constantly seek to improve the integrity and reliability of our facilities and improve our processes, with our ambition being to achieve Zero Fatalities and Leaks, as disclosed in our Strategic Plan 2023–2027 (SP 2023–27).

Among the main initiatives for accident prevention, we can highlight:

- Mar Azul Program: which seeks to prevent containment losses in E&P offshore operations, incorporating lessons learned from prior events;
- Dynamic Management of Process Safety Barriers Project: a technological solution aimed at monitoring the situation of process safety barriers in an integrated, dynamic, and real-time manner, helping decision-making based on risk analysis.

In addition to these initiatives, we have an integrated response structure to respond to emergencies, enabling quick and effective actions to mitigate accidental events. Each occurrence is recorded and treated according to our corporate HSE Anomaly Management standard, including investigations, treatment, and actions to prevent the occurrence of new events.

The corporate contingency plan provides the structure and information for providing additional resources to the Emergency Response Plans (PRE) of the units, in Brazil and abroad. These additional resources are distributed in the Environmental Defense Centers (CDAs) and in advanced bases, located throughout Brazil, in addition to Transpetro's Emergency Response Centers. The leak response plans are structured at the local, regional, and corporate levels.

In addition to the structure of the CDA System, we are members of Oil Spill Response Limited (OSRL), a specialized oil spill emergency response institution. They provide support for supplementary action that requires a national or international response (Tier 3). Their resources include capping, aircraft for the application of dispersants, and chemical dispersants for source control in underwater well blowout scenarios.

In 2022, we once again became a member of Association of Oil, Gas and Renewable Energy Companies in Latin America and the Caribbean (Arpel), to improve our internal processes and share technical knowledge with other operators and regulators in Latin America.

Through our Research Center (Cenpes), we maintain permanent research in the field of chemical dispersant application, environmental monitoring, environmental impact assessment, ecotoxicity, modeling, and behavior characterization of oil at sea.

Additionally, the contingency equipment park has been continuously updated with the incorporation of more efficient devices, both for land and coastal use, as well as for offshore use. Finally, international partnerships were signed in order to allow access to innovative equipment and resources.



## Oil and oil product spills

We invest in the continuous improvement of the integrity and reliability of the facilities, in the improvement of our processes, and in operational practices that allowed us, in 2021, to achieve the best performance in the history of the indicator related to the leaked volume of oil and oil products (11.6 m<sup>3</sup>). In 2022, we register a leaked volume of 218.03 m<sup>3</sup>, which despite keeping the company in the first quartile of the industry in the historical series of five years, surpassed the alert limit of 120 m<sup>3</sup> established for the year, with the decisive influence of a single event, which was immediately responded to by a thorough investigation of the root causes, comprehensive actions for all units, review of operating procedures and reinforcement of preventive measures in our management system. Of the leaks that occurred on land — totaling 1.753 m<sup>3</sup> — 0.785 m<sup>3</sup> of condensate were recovered. For leaks that occurred in the marine environment, there was no oil recovery, as the volumes, types of oil and environmental conditions made recovery by vessel unfeasible, but we managed to monitor stains with possible mechanical dispersion when activating the PRE. However, there were no occurrences affecting marine sensitive areas.

This volume is the result of nine leaks with a volume greater than one barrel (0.159 m<sup>3</sup>). The extrapolation of the alert limit established for the year was a consequence of an event that occurred in January 2022, in the Jubarte field (UN-ES), caused by failure in the integrity of the FPSO Cidade de Anchieta tanking system, where there was a leak of 191.5 m<sup>3</sup>, around 88% of the total volume leaked for the year. The event was communicated to the relevant bodies in accordance with Brazilian legislation and the Emergency Response Plan was immediately activated, using resources to contain and disperse the leaked oil, leading to an effective response, where no impacts to sensitive coastal area were found. The event was analyzed by a multidisciplinary team and its immediate and basic causes were identified. A corporate standard was issued and is being implemented throughout the E&P area, containing the lessons learned from the event. Additionally, verification of the potential occurrence of a similar event was carried out for all owned and chartered units. As further actions, the tanks were repaired and the maintenance and inspection processes were covered, considering the following actions:

- Improvements to tracking unit conversions with regards to integrity analysis
- Review of cleaning and inspection procedures with a more thorough assessment of the conditions of the coating and the cathodic protection system;
- Inclusion of requirements to minimize mechanical damage to tanks during cleaning and inspection operations, including mitigating actions when these events are recorded;
- Review of tank washing procedures
- Revision of the tank washing project to minimize the accumulation of solids.

The other eight registered events add up to 26.53 m<sup>3</sup> of leaked oil. Among these events, there was the unloading of a tank with 0.7 m<sup>3</sup> of diesel oil in the Urucu field (UO-AM) to maintain flight safety. For this event, a multidisciplinary team was created to verify the best measure to be adopted, since waste collection would require vegetation suppression for a helicopter landing. After the accident, actions were implemented to readjust the diesel oil tanks to increase the stability of helicopters during transport. Regarding the other events, no occurrence was recorded that reached a sensitive coastal area or an unusual sensitive area.

**LEAKED VOLUME OF OIL AND OIL PRODUCTS - VAZO<sup>1</sup> (consolidated)**

Description	2022
Total number of leaks above 1 bbl	9
Total volume of leaks above 1 bbl	218.03 m <sup>3</sup>
Alert Limit (LMA)	120 m <sup>3</sup>
2022 Performance in relation to the LMA	81.7% above LMA
Average volume leaked by other oil and gas companies in 2021 <sup>2</sup>	937 m <sup>3</sup>

**CHARACTERISTICS OF OCCURRENCES PER LEAK VOLUME<sup>3</sup> (consolidated - %)**

	2022
<b>COUNTRY WHERE LEAK OCCURRED</b>	
Brazil	99.2%
Others	0.8%
<b>Product leaked</b>	
Oil Products	1.1%
Oil	98.9%
<b>Location</b>	
Sea	99.2%
Soil	0.8%
Water Body	0%
<b>Accident cause</b>	
Tube or equipment corrosion	88.3%
Equipment failure	2.8%
Valve failure	0.5%
Others	8.4%

<sup>1</sup>The volumes of oil and oil product leaked related to our operation are computed (not including clandestine derivations) from all occurrences that individually account for a volume leaked above one barrel (0.159m<sup>3</sup>) and that have reached water bodies or non-waterproofed soil. A total 218.03 m<sup>3</sup> is equivalent to 1,371 barrels. This data includes the Petrobras Parent Company, LIBRA, PEB E PIB- COL and Transpetro.

<sup>2</sup> Peer group average: data on leaked volumes resulting from operations, extracted from sustainability reports or similar documents published by companies that make up our peer group for 2021. Until the closing of this report, all data for 2022 had not been released.

<sup>3</sup> This data includes the Petrobras Parent Company, LIBRA, PEB E PIB- COL and Transpetro.



## Response measures taken in cases of significant leaks

In the case of occurrences at sea, the actions generally follow the activation of the Emergency Plan for Oil Spills (PEVO) of the respective Units, and the Organizational Response Structure (EOR) is called to coordinate the actions.

Among the global actions, we highlight the identification and blocking of the leak source, mobilization of OSRV (Oil Spill Response Vessels), for assessment and assistance with the mechanical dispersion and/or containment, collection of the leaked oil, and the sending of aircraft to do a flyover diagnosis, providing guidance for vessels deployed for mitigation.

For onshore events, the Emergency Plans are also activated and the EOR is established (operational maneuvers were carried out to interrupt the source of the leak). As part of the actions, the emergency response, property security, and cleaning teams are activated, as well as equipment to collect the spilled oil.

Subsequently, it is our practice to carry out coverage based on the recommendations resulting from the accident investigation to act preventively in other units where there are similarities in processes or equipment that are associated with the root cause of the accident, promoting process improvement, and raising the level of operational safety.

The Mar Azul Program, which was incorporated into the Commitment to Life Program, continued to cover lessons learned from events that took place since 2020, improving the integrity of protection barriers, processes, and routine activities at offshore production facilities, acting through of an active and continuous management in search of improvement opportunities.

We adopt health and safety practices that, in addition to ensuring the readiness of our contingency bases, also seek safe and efficient emergency responses, with the performance of specialized professionals.

Our subsidiary Transpetro also has computerized systems for monitoring the integrity of the asset it operates. The software helps teams to implement maintenance techniques to prevent the loss of primary containment, mitigating the risk of accidental spillage of transported products.

The leak prevention strategy adopted by Transpetro considers:

- a) inspection, maintenance, and service activities for the integrity of equipment, pipeline systems and pipeline tracks;
- b) compliance with operating procedures, training of operators and control of process variables;
- c) communication and relationship activities with communities close to the pipelines.
- d) use of a voyage management system for ships, aimed at efficiency in terms of fuel consumption and emission reduction; and
- e) implementation of pilot projects to reduce the fuel consumption of ships.

Regarding the conduct of our subsidiary Petrobras Biocombustível, a Crisis Management Guide was prepared. At its operational units, Emergency Response Plans, and a Waste Management Plan and standards to deal with anomalies, planning and execution of emergency drills, and change management were put into place. Besides these measures, Petrobras Biocombustível records and treats anomalies by the Integrated Anomaly management System (SIGA). Computed leaks are reported through strategic indicators and monitored monthly by our senior management.



## The use of technology in operations security

The development of safer technologies and the application of HSE requirements in investment projects are extremely important for our performance. We have accident rates that are a benchmark in the oil and gas industry, and even so, we challenge ourselves to further improve the safety of our employees.

Throughout 2022, the Safety Innovation Lab, located at Cenpes, developed technological innovations focused on products that contributed to our ambition to zero fatalities and other HSE impacts. The laboratory seeks to implement solutions that are developed and tested quickly, in controlled and representative environments, to prevent and mitigate risks through active monitoring of workers and the workspace. To do this, we apply technologies such as wearables, intelligent video analytics, robotics, and drones to reduce human exposure to risk.

The main deliverables include:

- Implementation of artificial intelligence to detect oil spills;
- Industrial test and validation of a firefighting robot;
- Pilot test to evaluate biomarkers for physical and mental health in 304 people;
- Implementation of systems to monitor field tasks through intelligent video analysis, with a focus on safety in 11 units; and
- Proof of concept and deployment of drones for confined space in gas spheres.

The actions developed throughout the year contributed to the safety and health of workers.

## Management of human factors in process safety

We have a broad HSE initiative aimed at highlighting the importance of human factors in building a mature safety culture. Among these initiatives, we developed the five principles of human factors. These principles were elaborated and incorporated in the revision of the HSE Policy and HSE Guidelines to facilitate the understanding and standardize the following concepts:

- Trust is key
- People create security
- How we respond to failure matters a lot
- Learning and improving is key to success
- The context directs the behavior

Also, a Human Factors Management Committee was created, which meets weekly with the participation of the five HSE general managers and specialists on the subject and monitors the communication plan to support the construction of the human factors journey.

Professionals are being trained at the graduate level in human factors, and proactive indicators for safety management are being developed. We hope that these actions will contribute to improving learning from accidents and improving the culture of learning from successful operations, changing our culture of learning from what 'went wrong' to learning from what 'works'.



## Asset integrity management

In the asset operating phase, integrity management involves the continuous monitoring and evaluation of assets, be they platforms, refineries, thermoelectric plants, or gas processing assets, to ensure that they remain adequate for their purpose. Integrity management reduces the possibility of occurrences with negative consequences that adversely impact the safety of people, facilities, and the environment; and therefore, impact asset productivity. Inspections are carried out to detect possible failures and do preventive or corrective maintenance. For this, we highlight the scheduled maintenance stops.

At intervals defined according to the characteristics of the assets, there are scheduled maintenance stops. These stops presuppose a thorough plan for the scope and contracting necessary to execute the services, which seek to guarantee the integrity of the assets, ensuring a high level of reliability during the campaign term.

In 2022, we made 61 maintenance stops of thermoelectric assets, 170 natural gas assets, and 90 refining assets. At Petrobras Biocombustível, 3 total maintenance stops were carried out at the biodiesel plants and 18 partial ones. In addition, at our exploration and production assets, we totally shut down 45 platforms and 4 onshore production facilities.

In 2023, we plan to carry out 36 full maintenance shut downs on platforms, 82 thermoelectric plants, 182 natural gas assets, 137 refining assets, and 18 at Petrobras Biocombustível, of which 14 are partial and one is a full shut down.

Our commitments to life, the environment and operational safety have always been present in our activities carried out in 2022.

Our HSE practices are based on the Corporate HSE Guidelines, in line with the Operational Safety Management System (SGSO), which consists of a set of practices prepared by the National Agency of Petroleum, Natural Gas and Biofuels (ANP) for the segments under its responsibility and which deals with guaranteeing the operational safety of industrial installations.

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[>> Information about our 15 HSE Guidelines can be found on our website.](#)

## Combating clandestine diversion

Our integration with Transpetro was further strengthened in actions to combat fuel theft in pipelines, also known as clandestine diversion.

Aiming at greater effectiveness in the fight against clandestine diversions, we strengthened ties with the communities neighboring the pipeline ranges with the expansion of social and awareness projects. We also invested in the improvement of technological solutions and strengthened relationships with public safety bodies.

These actions allowed, throughout 2022, a drop from 102 to 58 occurrences of clandestine diversions compared to last year, which represents a 43% reduction. When comparing this to the historical high in 2018 with 261 occurrences, we reduced fuel theft by 78%.

We also reduced the incidence of theft in urban areas, which minimized risks for the population and reduced the volume of products stolen, which was approximately 50% lower when compared to the previous year.

Many advances were made in the relationship with our stakeholders. We carried out a series of awareness-raising activities aimed primarily at safeguarding the health and safety of the communities surrounding our facilities, while protecting the environment. These efforts, added to investments in technology, security, and monitoring, have reduced the incidence of clandestine diversions, which put the surrounding population at risk.



One of these activities is the Permanent Community Relations Forum, carried out by Transpetro, where guidelines and corporate solutions are developed, as well as continuous debates on the most critical issues. From this initiative, technical community relationship committees were created for the specific treatment of technical demands; the Knowledge Exchange Seminar. This seminar seeks best market practices and internal cases for a better understanding of the company's operations, A training course was also established for community agents, an initiative that proposes solid and multidisciplinary training for professionals with the mission of dealing directly with this important stakeholder group.

Meetings and lectures were held on various topics such as: pipeline integrity, lane preservation and emergency drills with the involvement of the community, partner bodies such as authorities and the press, in Jardim Nair (in the East Zone of São Paulo), and with the participation of public security bodies and companies from the Campos Elísios center (in Duque de Caxias, RJ) in Parque Império.

We promoted the communication channel with stakeholders – the 168 telephone number, with the “168 in Colors” project with the communities neighboring our pipelines. The action involved local artists painting walls with themes related to telephone number 168 and pipeline safety and took place in the municipalities of Macaé (RJ), Senador Canedo (GO), Fazenda Rio Grande (PR), Canoas (RS) and São Sebastian (SP).

Transpetro has a portfolio of socio-environmental projects that has been restructured into programs directly related to its business. Throughout 2022, agreements worth BRL 18 million were made for the development of the “Clean Lane II” and “From Mangrove to Sea” projects, in addition to the Cine Transpetro project. These projects reach dozens of cities and hundreds of communities.

Throughout 2022, we worked even closer with the communities, seeking to resolve conflicts in a collaborative and participatory manner. As an example, we can mention our work in the indigenous villages of Cajuhiri Atravessado, in Coari (AM), and the action plans developed for the municipalities of São Francisco do Conde (BA) and Angra dos Reis (RJ).

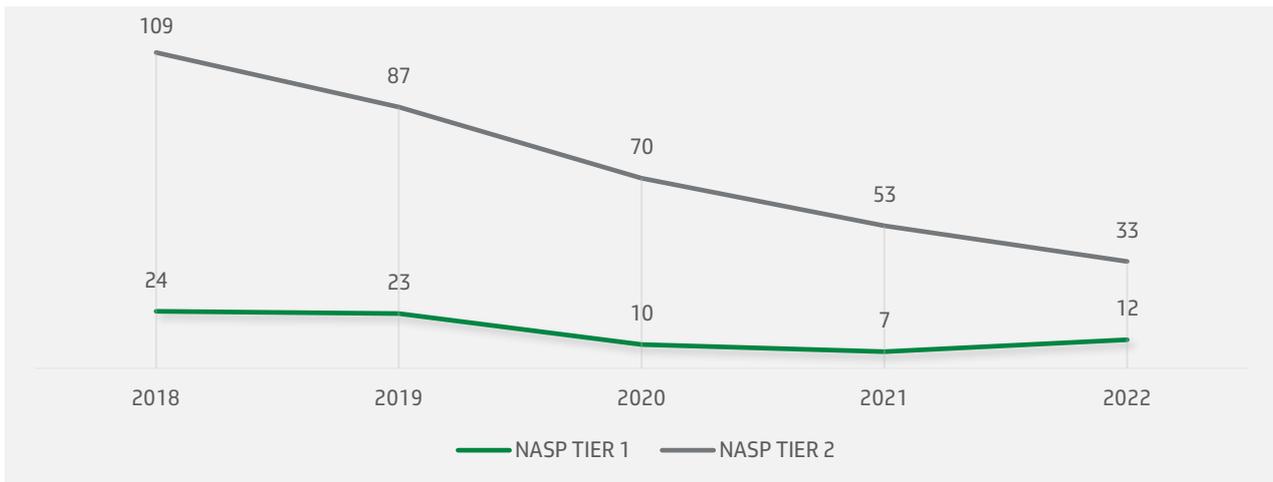
## Process safety

We monitor our Process Safety performance using indicators established in accordance with the best practices in the industry, which allows us to monitor our performance against that of our peers.

To do this, we track the Number of Process Safety Anomalies (NASP) and the Process Safety Anomaly Rate (TASP). These indicators record the occurrence of process safety accidents, which are events characterized by primary containment losses, with unplanned or uncontrolled releases of hazardous products or energy in processing facilities. Process safety accidents have the potential to cause environmental impacts, damage to facilities and to human health.

The most serious process safety accidents are classified as Tier 1, while those of lesser severity are classified as Tier 2. These indicators follow the recommendations of the API Standard RP 754 – Process Safety Performance Indicators for the Refining and Petrochemical Industries and the publication IOGP RP 456 – Process safety – Recommended Practice on Key Performance Indicators.

In 2022, we recorded 12 Tier 1 process safety accidents and 33 Tier 2 accidents. It is worth mentioning that, during the same year, the Transpetro subsidiary did not record Tier 1 and Tier 2 process safety accidents.

**EVOLUTION OF NASP TIER 1 E NASP TIER 2 INDICATORS<sup>4</sup> (consolidated)**

In addition to the Tier 1 and Tier 2 indicators, considered reactive or lagging indicators aimed at monitoring the occurrence of primary containment loss events, we continue to direct efforts towards the improvement and monitoring of Tier 3 and Tier 4 leading indicators, a set of preventive or anticipatory metrics.

Within this context, regarding the monitoring of process safety systems, it is worth highlighting the efforts to implement, within the scope of the Commitment to Life Program, technology that will enable the dynamic management of the integrity and availability of the barriers to protect against larger process accidents in our industrial facilities.

Contributing to this effort, throughout 2022, the implementation of the Dynamic Management of Barriers (GDB) program began in 17 company units. In 2023 and 2024, the implementation process will continue in the remaining company units.

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>> **Information on the dynamic management of protective barriers and the Fundamentals of Process Safety can be found in the chapter on Safety, health, and well-being.**

### Emergency preparedness and response

HSE management defines, in Guideline 11 - Contingency, that emergency situations must be foreseen and be dealt with quickly and effectively, seeking maximum reduction of their effects. In this way, contingency management provides for the assessment of accidental scenarios; the available resources and technologies; the social, environmental, and economic impacts of emergency situations; training and drills; as well as the involvement of relevant audiences such as neighboring communities.

We developed a process standard for working with communities in emergency situations, which establishes guidelines, requirements and procedures related to the prevention, mitigation, preparation, response, and recovery of emergencies with communities potentially exposed to accidents resulting from activities carried out by our business units.

The actions provided for in this standard are in line with the National Civil Defense and Protection Policy, defined by law 12,608, of April 10, 2012, which establishes the roles and responsibilities of the Federal Government, states and municipalities, indicating that companies and other social entities should support

<sup>4</sup> Data includes Petrobras S.A., Transpetro, TermoMacaé and TermoBahia



the civil defense and protection agencies. These actions are also in line with our Social Responsibility Policy, Corporate Health, Safety and the Environment Policy and Guidelines, Communication Policy and Crisis Management Guide.

In 2022, we reviewed the “Acting with Communities for Emergency Situations” process standard, making the document broader and more comprehensive for our operations. We also prepared two execution standards with specific guidelines for the E&P and Refining segments regarding the preparation of communities for emergency situations. Also in 2022, we resumed field drills with communities in a face-to-face format, after the period of restrictions due to the Covid-19 pandemic. The Social Responsibility team participated in two field drills with communities in the second half of 2022. The first took place at a dam in the community of Saracuruna (RJ) and the second took place at the Abreu e Lima refinery (RNEST) with a BLEVE Boiling liquid expanding vapor explosion scenario, which involved the local community in training. In addition to these, other drills were carried out in hybrid and remote formats throughout 2022.

### MAIN DRILLS IN 2022 (consolidated)

Business Area/company	Drill
Transpetro	São Sebastião Terminal: April 5 - 1st cyberattack drill at Transpetro Table Top, assessing the maturity of responses to cybersecurity incidents and proposing improvements
	OSVAT duct: August 16 - Emergency 168 drill – Fuel theft attempt field exercise (clandestine diversion)
	São Francisco do Sul Terminal and OSPAR pipeline: November 9 - Emergency Drill developed by the Brazilian Institute for the Environment and Renewable Natural Resources (Ibama) Rupture of the maritime section of the OSPAR 30 oil pipeline, around Babitonga Bay Area Plan, involving members of the Area Plan, Ibama, the Santa Catarina Institute of the Environment, Civil Defense, Technical Advice from the Federal Public Prosecution Office, Military Police Environment, Port Authority and Environmental Secretariats of the Municipalities of São Francisco do Sul and Itapoá.
TBG	Campinas/SP September 14 - Type 2 emergency drill - third party accident Small hole with leak without ignition and without victims
PIB-COL	Uchuva 1: May 13 - Communications drill (PRE)
	Santa Marta Base: July 13 - First aid and medical evacuation drill
	Santa Marta Base: August 17 - Spill control drill Office: September 04 - Communication and area abandonment drill
PEB	PRO-SAN (Table Top): February 9 - Condensate spill in flowline (Duct) SBL-6
	PRO/SAL (Field): September 15 - Propane leak, followed by K-801 <sup>a</sup> compressor economizer fire
PECOCO	Puente Aranda: July 29 - Drum fall drill with victim and product spillage on land
	Office: October 04 - Communication and area abandonment drill



Business Area/company	Drill
Petrobras Biocombustível	UBC: March 30 - Communication drill
	UBC: May 10 - Confined table drill
	UBC: May 10, 12, 13, 16 and 18 - Field drills by operational group, including service providers and administrative personnel
	UBC: December 26 - Abandonment drill
	UBMC: March 31 - Communication drill
	UBMC: May 30 - Table Top Drill
	UBMC: August 24 - Field drill with mobilization of resources, abandonment, communication, and participation of the Fire Department
	UBMC: September 20 - Table Top Drill
	UBMC: December 08 - Communication drill
RGN	Recap (Complete): October 11 - Imminent risk of complete collapse of the dam at Dam II, due to erosion caused by heavy rain. Evacuation of the workforce.
	UTGC (Complete): October 27 - Large release of flammable gas, forming an unconfined vapor cloud (UVCE), followed by explosion and fire with multiple victims.
	Reduc (Complete): November 5 - Elevation of the dam's water level, with the possibility of overtopping, with the potential failure of the embankment.
TDI	Cenpes (Complete): August 2 and 3 - Fire followed by total interruption of communications at the Integrated Data Processing Center (CIPD), with multiple victims.
	Imbetiba (Complete): September 20 - Diesel leak in the tanking area, with oil flowing into the sea
DP	WELLS (Complete): March 16 - Fire followed by explosion with multiple victims on a vessel (Stim Star Arabian Gulf).
	WELLS (Complete): April 26 - Fire followed by explosion with multiple victims during the well start-up operation (Probe NS-38).
	WELLS (Complete): June 8 - Fire followed by explosion on the rig (NS-44), with multiple victims.
	WELLS (Complete): August 24th and 25th - Response to a well control emergency during the drilling of the 8 ½ phase (drill with exploration in Equatorial Margin scenario)
	SUB (Complete): July 20 - Remotely operated unmanned robot (ROV) fails to communicate with the control room during a subsea maintenance operation, causing the vehicle to collide with the valve structure



Business Area/company	Drill
E&P	UN-ES (Complete): April 19 - Oil leaks into the sea from P-50, with identification of anomalous behavior in the well
	UN-BA (Complete): May 18 - Condensate leak from the separator vessel on the Manati Platform
	UN-BUZ ( <i>Tabletop</i> ): May 30 - Sensitization of pressure sensors in the gas injection well BUZ02 (P-75), indicating possible rupture of the riser
	UN-BUZ (Complete): June 21 and 22 - Oil leak into the sea on the P-75 caused by a collision with a Platform Supply Vessel.
	UN-BC ( <i>Tabletop</i> ): June 22 - Oil leaks into the sea at P-47 during an oil outflow operation in the pipeline network
	UN-BC (Complete): August 17 and 18 - Oil leak into the sea followed by fire after flange rupture on P-51
	UN-BS (Complete): September 14 - Oil leaks into the sea on the P-67 due to a fowline failure on the production line
	UN-LIBRA ( <i>Tabletop</i> ): October 5 and 6 - Fire followed by explosion with victim due to loss of containment in the production header
	UN-SEAL (Complete): October 27 - Oil spillage into the sea on the top side of the Unit (PGA-3) during intervention work to install a blockade
	UN-AM (Complete): November 29 - Aeronautical emergency due to the collision of an aircraft with a bird during landing.
	UN-ES (Complete): November 8 and 9 - Bubbling oil leak in the Christmas tree (Well JUB-48) caused by spurious disconnection followed by blowout during well intervention
	UN-RNCE (Complete): December 7 - Collision of a tugboat with the POUB-1 platform, causing rupture of the upwelling line in a well and consequently leakage of condensate into the sea

We have integrated contingency management between different organizational levels. We have emergency response plans at local, regional, and national levels. At the operational level, each facility has an Emergency Response Plan, which identifies the scenarios and measures to be adopted by the response teams to control the event and mitigate the resulting impacts. This plan is exercised and continuously improved through a robust training program and simulation exercises.

When incidents are larger, local resources are complemented by specialized corporate structures, promoting a broad expansion of the response capacity, and allowing the integrated action of different areas of the company. Whenever there are partners, they are notified and integrated into the Organizational Response Structure to monitor contingency actions.



[3-3] [11.4.1] [11.4.2] [11.4.3] [11.4.4] [11.4.5]

## Biodiversity

The material topic consists of managing biodiversity risks and impacts, seeking to avoid and minimize impacts, such as changes in air of ecosystems quality and loss of fauna and flora, and when this is not possible, recover and/or compensate for residual impacts in line with the mitigation hierarchy, throughout the life cycle of the projects. It includes programs and projects for environmental protection and restoration, contributing to the conservation and improvement of biodiversity and ecosystem services, especially in areas of high biodiversity value in terrestrial and especially marine environments, due to the greater activity in this biome.

The World Economic Forum, in its 2023 report on global risks, pointed to the loss of biodiversity and the collapse of ecosystems as the fourth greatest risk in the next 10 years, considering also that more than half of the world's Gross Domestic Product (GDP) (USD 44 trillion) is moderately or highly dependent on nature.

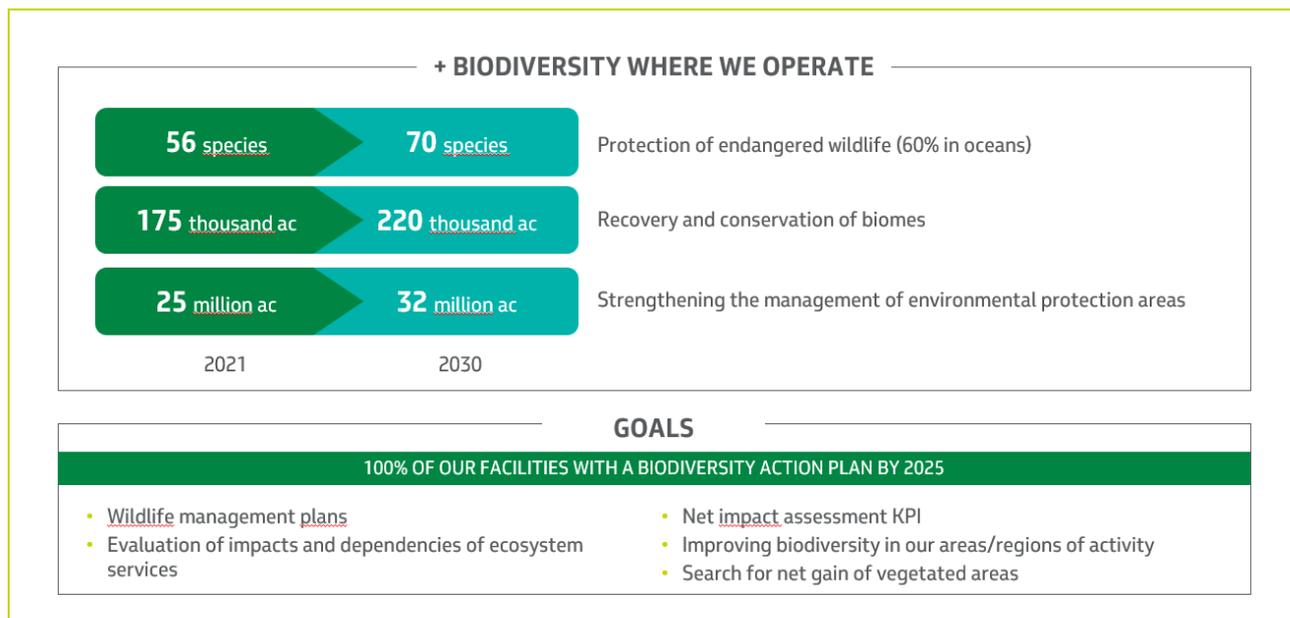
The 15<sup>th</sup> Conference of the Parties to the Convention on Biological Diversity (CBD COP15), held in 2022, resulted in the Kunming-Montreal agreement, setting new global goals for 2030, such as the restoration of 30% of the planet's degraded ecosystems. These significant steps confirm the global community's recognition that the risks associated with loss of nature, energy generation and climate change cannot be completely mitigated in isolation. In this context, there is a growing increase in stakeholder demands and requirements for biodiversity, a trend that is already reflected in a more proactive posture by industries in the oil and gas sector.

In line with the growing external demands of stakeholders, we reaffirm, within the scope of our Strategic Plan 2023-2027 (SP 2023-27), our Environmental, Social and Governance Commitment (ESG) to biodiversity, of having 100% of our facilities with Biodiversity Action Plans by 2025, detailing their scope to include pressing demands on the topic. Complementarily, we reported our social commitment to develop impact initiatives that contribute to the solution of environmental problems.

Thus, as illustrated in the figure below, we highlighted the search for biodiversity improvement in our areas of operation, contributing to the increase in the quantity and variety of fauna and flora, providing more ecosystem services, including the mitigation of climate change and provision of water, with the consequent reduction of risks to the business, whether regulatory, economic, or reputational. This component of the commitment, related to the prevention of deforestation and recovery of vegetated areas, is in line with the Decade of Ecosystem Restoration, decreed by the United Nations (UN), in addition to the search for a positive balance of nature, advocated by the new Global Biodiversity Framework.



## BIODIVERSITY GAINS



Also noteworthy is the increase in efforts to conserve biodiversity in relation to the number of endangered, protected or monitored fauna species, areas to be recovered and conserved, and the strengthening of protected areas through projects supported by the Petrobras Socio-environmental Program until 2030.

Our operations are carried out primarily in Brazil, where there are many protected areas and endemic and threatened species in different biomes, and our facilities may have interfaces with these aspects of biodiversity.

## TOTAL NUMBER AND PERCENTAGE OF SIGNIFICANT OPERATING LOCATIONS WHERE BIODIVERSITY RISK WAS ASSESSED AND MONITORED<sup>1</sup>(consolidated)

Operating Locations	Number	Percentage
Important operational sites where biodiversity risk has been assessed <sup>2</sup>	70	100%
Important operational sites exposed to significant biodiversity risk <sup>3</sup>	-	-
Key operational sites exposed to significant biodiversity risk where PABs were developed and are being implemented <sup>4</sup>	15	21%

<sup>1</sup> This data includes the Petrobras Parent Company (units in Brazil) and Transpetro.

<sup>2</sup> Important operational locations: administrative units and production flow and distribution ducts were not considered. The assessment of risks to biodiversity is carried out within the scope of the environmental licensing process. The number of important operating sites was revised due to the inclusion of units such as those operated by our subsidiary Transpetro.

<sup>3</sup> Conservatively, our biodiversity commitment calls for the development of PABs for all significant operational sites, regardless of the significance of biodiversity risk.

<sup>4</sup> Administrative units that have a PAB (3 units) were not considered.



Thus, our management of risks and impacts to biodiversity is guided by standards, norms, georeferenced information systems, and by the adoption of operational practices throughout the life cycle of our activities. We act in line with the mitigation hierarchy, aiming to avoid or minimize impacts on biodiversity, and when this is not possible, to recover and/or compensate for residual impacts.

Among the various initiatives and projects that demonstrate the application of the mitigation hierarchy, we can highlight in the table below:

## INITIATIVES AND PROJECTS AIMING TO MINIMIZE IMPACTS ON BIODIVERSITY

Initiatives and Projects	
<b>Avoid</b>	Geophysical mapping of the southern and southeastern sedimentary basins, and establishment of a georeferenced base of sensitive marine environments mapped through the use of Remote Operated Vehicles (ROVs), used to support the projects, aiming at less interference with critical marine habitats.
	Marine Biota Monitoring Project (PMBM) and Passive Acoustic Monitoring Project (PMAP), which aim to avoid the possible impacts of marine seismic surveys on marine animals. In the Marine Biota Monitoring Project, observers on board the seismic vessel monitor the presence or proximity of turtles and marine mammals during the period of seismic acquisition activity, while in the Passive Acoustic Monitoring Project, monitoring is done by acoustic detection. Whenever mammals are sighted or acoustically detected at a distance less than or equal to 1,000 m from the seismic source, the activity is interrupted. In 2022, four seismic survey activities took place, two in the Campos Basin (Albacora, Marlim and Voador; and Albacora Leste and Roncador), and two in the Santos Basin (Tupiracema and Itapu).
<b>Mitigate</b>	Elaboration of detailed digital maps to mitigate the impacts of oil and natural gas exploration and production activities in the Central Amazon, considered one of the greatest Brazilian biodiversity hotspots. The maps, developed in partnership with the Federal Rural University of Rio de Janeiro, will help in the environmental management of activities and in defining the location of new facilities, among other issues, covering an area equivalent to 60% of the state of Sergipe.
<b>Recovery</b>	Forest restoration project at Gaslub Cluster, which 3 years after its implementation, managed to reach the ecological parameters foreseen for the settlement in accordance with resolution no. 143/2017 of the State Institute of the Environment (INEA). In the maintenance phase, the project includes a total area under recovery of around 465 hectares distributed along the Permanent Preservation Area of the Macacu River, forming an important forest corridor for the region. So far, more than 80 species native to the Atlantic Forest have been planted, some of which are threatened with extinction, with emphasis on: <i>Cariniana legalis</i> , <i>Cariniana ianeirensis</i> , <i>Paubrasilia echinata</i> , <i>Dalbergia nigra</i> , <i>Euterpe edulis</i> , and <i>Melanoxylon brauna</i> .
<b>Compensate</b>	Reforestation of the Jataí Ecological Station (São Paulo), which consists of the reforestation of 390 hectares of native vegetation arising from the compensation of CO <sub>2</sub> emissions from the long-term test in the Tupi area, in the Santos Basin pre-salt complex. In its initial phase, the total reforestation of the area is being carried out over a period of 5 years, with 120 hectares already implanted. Subsequently, the development and evolution of the ecosystem will be monitored over the next 30 years. It is currently the largest forest restoration carried out within Conservation Units (UCs) in the state of São Paulo.



Our management of risks and impacts on biodiversity is continuously improved, and our actions are integrated into a georeferenced system that consolidates data and information from all our facilities. In addition, from 2023, our actions related to the achievement of our ESG Commitment in biodiversity will be incorporated into the Commitment to Life Program, monitored by the company's senior leadership.

To date, Biodiversity Action Plans have been developed for 18 units and facilities located in onshore and coastal environments. The Biodiversity Action Plans scheduled for preparation in 2022 were not finalized, due to the need for a new bidding process to prepare the plans, which was concluded at the end of the year. For 2023, our goal is to prepare (or revise) 36 Biodiversity Action Plans, when we will reach approximately 60% of our ESG Biodiversity Commitments.

Aiming to implement specific fauna management actions, preventing and mitigating risks and impacts on fauna, human health and operational safety, Fauna Management Plans were prepared for 36 units and facilities.

Still in line with our ESG Commitment to Biodiversity, we made progress in implementing actions to meet the Brazilian Business Commitment to Biodiversity, established by the Brazilian Business Council for Sustainable Development (CEBDS), defining the scope and timeframes for achieving the three goals to which we adhere:

- Apply the mitigation hierarchy throughout the life cycle of projects;
- Develop and encourage studies, research projects, technology and innovation that contribute to the conservation of biodiversity and ecosystem services;
- Be familiar with the biological diversity of the company's areas of activity and, whenever possible, monitor and measure impacts and dependencies.

In addition to all the projects, studies, and management tools, we are recognized for supporting voluntary projects for the conservation of habitats and species, in line with public policies for the conservation of biodiversity. Regarding Ocean related action in the Petrobras Socio-environmental Program, which focuses on the conservation of marine biodiversity, 92% of the projects collaborate with the National Action Plans for the Conservation of Endangered Species. Participation takes place through the executive coordination of these plans, participation in technical advisory groups as articulators, or execution of their strategic actions.

To expand knowledge and exchange experiences on the subject, we participate in external forums related to biodiversity, such as:

- CEBDS Thematic Chamber on Biodiversity and Biotechnology;
- National Confederation of Industry (CNI) Biodiversity Network;
- Ipeca's Biodiversity and Ecosystem Services Working Group (BESWG);
- Working Group on Biodiversity of the International Chamber of Commerce (ICC).

In 2022, we joined the CNI delegation at the UN CBD COP 15, in Montreal (Canada), where the new Global Biodiversity Framework was established. On this occasion, we launched our Biodiversity Journal - a publication that brings together some of the actions and projects we have supported or developed, which contribute to the knowledge and conservation of biodiversity in Brazilian biomes. During the conference, we presented our biodiversity strategy, focusing on the public commitments assumed and the actions underway to achieve them.

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>> [Information about the Biodiversity Supplement can be found in the Biodiversity tab on our website.](#)



We invested approximately BRL 70.9 million in research projects and the development of technological solutions and methodologies aimed at improving the management of biodiversity associated with our operations. The ongoing projects include environmental characterizations, mitigations, or the reduction of effects on biodiversity, as well as the recovery of degraded environments through reforestation projects, restoration of native species, and other measures.

In the terrestrial environment, research is being carried out to optimize the results of forest restoration, through the Functional Forest Restoration project, in partnership with the Federal University of Rio de Janeiro. We developed a methodology for evaluating, monitoring, and redirecting the ecological restoration of forests, through functional trajectory analysis, with the aim of optimizing the restorations carried out in these environments. Thus, it is possible to monitor whether the area under restoration is resuming the provision of ecosystem services, such as water retention and increased carbon capture, among others. The preliminary results obtained are promising and indicate that the application of this methodology will contribute to a full recovery of biodiversity in the restored environments.

Furthermore, in the marine environment, there was an implementation of a monitoring program that will carry out four projects to monitor deep-water coral ecosystems in the Marlim-Voador fields (Campos Basin). The projects will involve monitoring through imaging with ROVs and evaluation of environmental samples both in the implementation stages of new projects and in the decommissioning of subsea systems. In addition, one of the projects provides for the installation of underwater observatories in this region.

In the coastal area, the largest waterway terminal in Brazil for loading and unloading tankers and handling oil and oil products - the Almirante Barroso Terminal (Tebar), became the first Terminal Friendly to the Whales in the South Atlantic by publishing the Recommendations guide of Safe Navigation, to minimize the risk of collisions between ships and large cetaceans in the region. The guide was prepared by Humpback Whale Institute and supported by the Baleia à Vista Project and by the Great Whale Conservancy, with our support, and guides how ships can minimize the risk of collision with humpback whales (*Megaptera novaeangliae*), when arriving and leaving the terminal. Since July 2022, around 50 ships have been notified monthly, helping to avoid collisions with cetaceans. Furthermore, in the last migratory season, six humpback whales were sighted on four occasions in the Tebar area. At each sighting, during maneuvers, the captains of ships and harbor tugs were warned of the presence of cetaceans, in order to comply with safety recommendations and contribute to the conservation of these species.

In addition to these initiatives, we have the Petrobras Socio-Environmental Program that structures our socio-environmental investments and includes, in the Environmental dimension, Forests and Ocean action lines, which contribute to the conservation and recovery of biodiversity in several biomes. In 2022, 40 environmental projects were supported, operating in the Amazon, *Caatinga*, *Cerrado* and Atlantic Forest biomes, in addition to coastal and marine environments.

In addition, we also held courses related to the topic, which had 22,395 participations from our workforce, with emphasis on the following courses:

COURSES RELATED TO BIODIVERSITY TAKEN BY EMPLOYEES<sup>5</sup>

Course	Participation
Environmental Education Project for Workers (basic course)	14,990
Project for Monitoring the Impacts of Platforms and Vessels on Birds (distance learning model)	3,346
Environmental Management in the E&P Segment (introductory module)	2,213
Environmental Education Project for Workers - (basic course)	1,846
<b>TOTAL</b>	<b>22,395</b>

## Protected areas

The spatial distribution and the variety of our operations make the interface with protected and sensitive areas frequent, especially considering that we operate mainly in Brazil, a mega-diverse country with many protected areas. The identification of these areas is for the prevention and mitigation of risks and associated impacts and is carried out by crossing information from our operations with the data from the World Database on Protected Areas, made available by the World Conservation Monitoring Center of the United Nations Environment Program according to the following table.

INTERSECTION OF UNITS WITH PROTECTED AREAS<sup>6</sup> (consolidated – km<sup>2</sup>)

Types of units	Types of operations	Types of areas	Total Area of units <sup>7</sup> (km <sup>2</sup> )	Total area intersection with UCs (km <sup>2</sup> )	Position in relation to UCs
Production activity area	Extraction	Subsuperficial	2,198.45	114.60	Intersection
Storage	Production	Superficial	0.87	0.15	Intersection
Emissary	Production	Subsuperficial	3.91	0.20	Intersection
Station	Production	Superficial	0.73	0.87	Intersection
Pipeline lane	Production	Superficial	274.23	62.78	Intersection
Refinery	Production	Superficial	59.92	8.59	Intersection
Thermal plant	Production	Superficial	1.77	0.69	Intersection
Terminal	Production	Superficial	7.63	3.96	Intersection
UTG	Production	Superficial	0.23	0.01	Intersection

<sup>5</sup> The data includes company and outsourced workers, in Brazil and abroad.

<sup>6</sup> Consolidated data from Petróleo Brasileiro S.A. and units operated by Transpetro

<sup>7</sup> Until 2021, the area of refining and thermoelectric facilities was estimated by a buffer starting 2 km from the central point of the unit. As of 2022, we began to use the georeferenced limits of the units. For E&P activities, replacing the area of exploratory blocks that was used in 2021, we started to adopt a buffer of 1km from the facility consolidation areas.



In 2022, we supported the protected areas listed below, in compliance with the licensing conditions that deal with the Law on the National System of Nature Conservation Units (SNUC), through contributions to the Environmental Compensation Fund. The amount allocated to these conservation units was BRL 66.5 millions.

## PROTECTED AREAS SUPPORTED

Conservation Unit	Category
Estação Ecológica dos Tupiniquins	full protection
Estação Ecológica Tupinambás	full protection
Parque Nacional da Tijuca	full protection
Parque Nacional da Lagoa do Peixe	full protection
Parque Nacional da Serra Geral	full protection
Parque Nacional de Aparados da Serra	full protection
Refúgio de Vida Silvestre de Una	full protection
Estação Ecológica do Taim	full protection
Parque Nacional de Jericoacoara	full protection
Parque Nacional do Descobrimento	full protection
Lençóis Maranhenses National Park	full protection
Refúgio de Vida Silvestre Rio dos Frades	full protection
Reserva Biológica do Lago Piratuba	full protection
Estação Ecológica de Tamoios	full protection
Parque Nacional Marinho dos Abrolhos	full protection
Parque Nacional Marinho de Fernando de Noronha	full protection
Parque Nacional da Serra da Bocaina	full protection
Reserva Biológica União	full protection
Monumento Natural das Ilhas de Trindade, Martim Vaz e do Monte Columbia	full protection
Monumento Natural do Arquipélago de São Pedro e São Paulo	full protection
Estação Ecológica de Mata Preta	full protection
Parque Nacional da Serra das Lontras	full protection
Parque Nacional do Cabo Orange	full protection
Parque Nacional Guaricana	full protection



Conservation Unit	Category
Reserva Biológica Bom Jesus	full protection
Estação Ecológica da Terra do Meio	full protection
Parque Nacional da Serra do Divisor	full protection
Parque Nacional da Serra do Itajaí	full protection
Parque Nacional de São Joaquim	full protection
Parque Nacional do Superagui	full protection
Parque Nacional Grande Sertão Veredas	full protection
Refúgio de Vida Silvestre de Santa Cruz	full protection
Reserva Biológica de Una	full protection
Área de Proteção Ambiental Costa das Algas	sustainable use
Reserva Extrativista Lago do Cedro	sustainable use
Reserva Extrativista do Extremo Norte do Tocantins	sustainable use
Reserva Extrativista da Mata Grande	sustainable use
Reserva Extrativista de Recanto das Araras de Terra Ronca	sustainable use
Parque Nacional do Monte Pascoal	full protection
Reserva Biológica de Comboios	full protection
Refúgio de Vida Silvestre do Arquipélago de Alcatrazes	full protection
Monumento Natural do Arquipélago das Ilhas Cagarras	full protection
Parque Nacional Marinho das Ilhas dos Currais	full protection
Parque Nacional do Pau Brasil	full protection
Reserva Biológica Atol das Rocas	full protection
Parque Nacional Montanhas do Tumucumaque	full protection
Parque Nacional da Serra de Itabaiana	full protection
Reserva Biológica de Saltinho	full protection
Reserva Biológica Guaribas	full protection
Reserva Extrativista Acaú-Goiana	sustainable use
Reserva Extrativista Marinha do Delta do Parnaíba	sustainable use
Reserva Extrativista Ipaú-Anilzinho	sustainable use
Refúgio de Vida Silvestre da Ilha dos Lobos	full protection



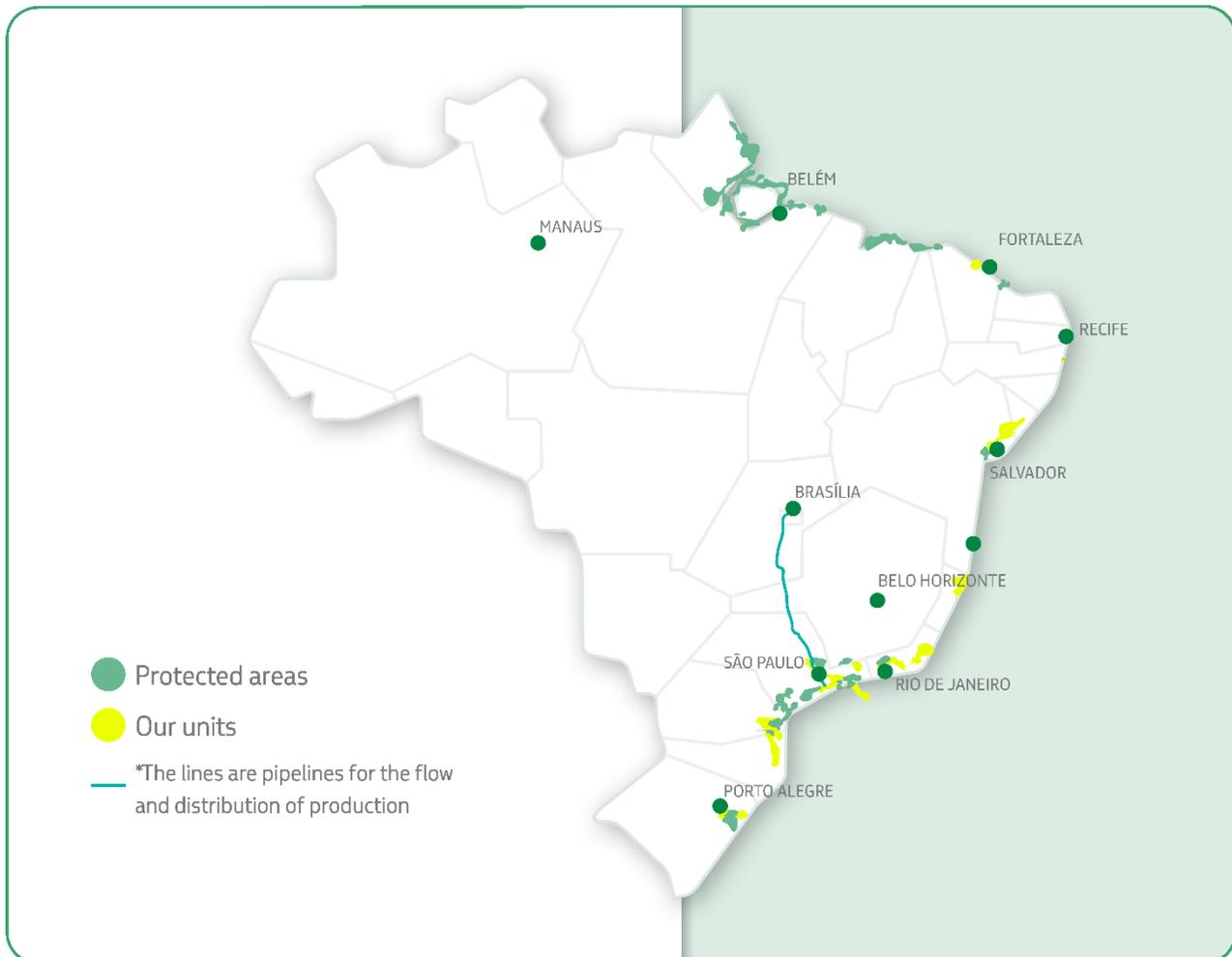
Conservation Unit	Category
Reserva Extrativista de Cassurubá	sustainable use
Reserva Extrativista Marinha do Corumbau	sustainable use
Reserva Extrativista do Mandira	sustainable use
Reserva Extrativista de Canavieiras	sustainable use
Floresta Nacional da Restinga de Cabedelo	sustainable use
Reserva Extrativista Baía do Tubarão	sustainable use
Reserva Extrativista Itapetininga	sustainable use
Reserva Extrativista Arapiranga-Tromaí	sustainable use
Reserva Extrativista Marinha de Gurupi-Piriá	sustainable use
Reserva Extrativista Araí-Peroba	sustainable use
Reserva Extrativista Marinha de Caeté-Taperaçu	sustainable use
Reserva Extrativista Mãe Grande de Curuçá	sustainable use

## QUANTITY OF PROTECTED AREAS OVERLAPPING OPERATIONS<sup>8</sup> (consolidated)

Type of protected area	Environment	Areas overlapping with operations
Environmental Protection Area	Terrestrial	35
Significant Ecological Interest Area	Terrestrial	3
Park	Terrestrial	19
RAMSAR (Wetlands of international importance)	Terrestrial	1
Wildlife Refuge	Terrestrial	2
Biological Reserve	Terrestrial	2
Sustainable Development Reserve	Terrestrial	1
Extraction Reserve	Terrestrial	1
Private Natural Heritage Reserve	Terrestrial	1
Indigenous Lands	Terrestrial	7
Natural Heritage (natural or mixed)	Terrestrial	1
<b>TOTAL</b>		<b>73</b>

<sup>8</sup> Consolidated data from Petróleo Brasileiro S.A. and units operated by Transpetro

**LOCATION OF FACILITIES INTERSECTING WITH PROTECTED AREAS<sup>9</sup> (consolidated)**



**Equatorial Margin**

As disclosed in SP 2023-27, we plan to invest around BRL 15 billion in the Brazilian Equatorial Margin, over the next five years, which represents 49% of Capex in E&P, with an expectation of drilling 16 exploratory wells in the region. It is located in the north and northeast of the country, between the states of Amapá and Rio Grande do Norte, extending for more than 2,200 km. The Equatorial Margin is considered an important exploratory frontier in deep and ultra-deep waters.

Our first well of the Equatorial Margin is the Morpho location (1-APS-57), in the FZA-M-59 exploratory block in ultra-deep waters in the state of Amapá, in the mouth of the Amazon, approximately 176 km from the coast in a water depth of 2,883 meters. However, on 05/17/2023, the Brazilian Institute for the Environment and Renewable Natural Resources (Ibama) rejected the environmental licensing process for block FZA-M-59.

We are making every effort to make the drilling of this first well possible. In 2022, we started mobilizing the necessary resources for the Pre-Operational Assessment, which is imminent and a requirement of the environmental licensing process. It includes the simulation of an accidental event involving an oil leak at sea, in order to evaluate the effectiveness of the Individual Emergency Plan for the drilling activity. More than 450 people are involved in this activity.

<sup>9</sup> Consolidated data from Petróleo Brasileiro S.A. and units operated by Transpetro



Logistical and operational issues, especially in the Amapá Deep Waters region, are extremely challenging, and we emphasize that we work to ensure that our operations comply with safety standards. For the drilling of the Morpho location, several support bases in the municipalities of Belém (state of Pará), Macapá and Oiapoque (state of Amapá) were already mobilized to provide assistance.

During the environmental licensing period for block FZA-M-59, 47 meetings were held in 22 municipalities, in addition to three public hearings in the municipalities of Oiapoque, Macapá and Belém. These meetings had ample participation from entities representing indigenous and *quilombola* populations, fishermen associations and villages, representatives of extractive reserves, and public bodies from the affected municipalities, as well as research institutions and universities, among other stakeholders. We also held another 18 meetings, two of which were expanded, in the municipalities that make up the area influenced by the activity, regarding drilling and its impacts, in addition to providing stakeholders with information on the environmental licensing process.

More recently, a meeting was held with the Council of Chiefs of the Indigenous Peoples of Oiapoque (CCPIO). On this occasion, in addition to legal counsel, indigenous leaders (of the four indigenous peoples, distributed in three indigenous territories and five regions) and partner associations, the Brazilian Institute for the Environment and Renewable Natural Resources (Ibama, the Indigenous Research and Training Institute (Iepé), the National Foundation for Indigenous Peoples (FUNAI) and the Extraordinary Secretariat for Indigenous Peoples of Amapá, participated in the meeting.

We plan to develop socio-environmental projects in the region, to adopt solutions connected with the best ESG practices, combining innovation, efficiency and reduction of the carbon footprint. There are plans for this region to implement technologies that use state-of-the-art algorithms, data intelligence and high-performance computers; expansion of remote operation, considerably reducing possible environmental risks; efficient use of seismic, geological and well data, from the initial phases of the exploratory project to field development, with the aim of reducing interventions; and optimization of the number of specialized vessels and drilled wells, with the aim of maintaining operational safety and, consequently, reducing the impacts of exploration and production activities.

Additionally, considering the commitments to prepare Biodiversity Action Plans; applying the mitigation hierarchy, developing and encouraging research that contributes to the conservation of biodiversity and ecosystem services and to be familiar with the biological diversity of our operation areas, we reaffirm that our operations in these regions will be guided by robust criteria and procedures regarding the protection of biodiversity.

We will continue to pursue this license and exercise our right to seek administrative reconsideration.

We reiterate that we strictly complied with all the requirements of the licensing process and all the resources mobilized in Amapá and Pará to carry out the Pre-Operational Assessment (simulated to test the emergency response plans) were made strictly in compliance with the decisions and approvals of Ibama.

The development of this block is a commitment made by Petrobras with the ANP, and the company remains committed to the development of the Brazilian Equatorial Margin, recognizing the importance of new frontiers to ensure the country's energy security and the necessary resources for a fair and sustainable energy transition. To supply Brazil's future demand for oil, the country will have to look for new sources, in addition to the pre-salt layer.



We thus reiterate our commitment to dialogue, ethics and transparency in communication and relationship actions, as well as our concern for the protection of people, the environment and safety in operations.

## Impacts to biodiversity

We identify and assess impacts to help define preventive, mitigating, and compensatory measures during the installation, operation, and deactivation phases of our projects. We have developed several studies and projects to assess biodiversity risks and establish action plans that depend on the life cycle stage, the types of operations, environmental factors, legal requirements, and environmental agency requirements (when there are license restrictions), among other factors.

Despite all our efforts, in 2022 we recorded nine events involving spills of oil and oil products with a volume greater than one barrel (which is equivalent to 159 liters). Of these leaks, six occurred in an offshore environment, and three occurred in onshore environments.

Regarding the accident that occurred in the Jubarte field (UO-ES), in which 191 m<sup>3</sup> of oil was discarded into the sea, the Emergency Response Plan was immediately activated, monitoring the slick, while attempting to contain and collect the oil. These attempts were not feasible due to the volume, type of oil, and environmental conditions, thus a mechanical dispersion strategy was adopted, and no damage to the community, fauna and flora was found.

Another event took place in the Urucu field (UO-AM), when during air transport by helicopter it was necessary to unload a diesel tank with 700 liters of diesel to maintain flight safety. A multidisciplinary group was created to evaluate the best measure to be adopted, since waste collection would have required vegetation suppression to allow a helicopter landing. After the accident, actions were implemented to readjust the diesel tanks to increase helicopter stability during transport.

For the other events, no significant impacts were observed, as they were leaks with a local and temporary scope. None of the spills reached sensitive areas from a biodiversity point of view.

For all events, immediate contingency measures were taken after the Emergency Response Plan was activated, and an assessment was done to analyze the overarching causes to prevent further occurrences. Events were communicated to public bodies in accordance with applicable legislation.

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>> **Information on leaks can be found in [Accident prevention and management chapter](#).**

Environmental risk assessments are also carried out within the scope of environmental studies prepared in the environmental licensing processes for all drilling and offshore production activities. In these assessments, accidental scenarios that result in the release of hydrocarbons and chemical products into the sea are identified, and their causes, probability of occurrence, severity and risks are analyzed. For each identified risk, preventive measures (Maintenance and Inspection Plans, compliance with operational safety procedures, and the respective training of workers, among others) and mitigation measures (Emergency Plans and respective Plans for the Protection of Fauna and Vulnerable Areas) are defined, according to the environmental risk assessment for each activity.



In 2022, the portfolio of projects voluntarily supported through the Petrobras Socio-environmental Program included projects that worked in the direct recovery or conservation of approximately 254,000 hectares of forests and natural areas in the Atlantic Forest, Amazon, *Caatinga* and *Cerrado*. These projects contribute to the net reduction and mitigation of greenhouse gas (GHG) emissions, and collaborate, in particular, with the Sustainable Development Goals SDG13 (Climate action) and SDG15 (Life on land). In addition, the projects worked to strengthen 27.8 million hectares of protected areas, including surveillance and monitoring actions by environmental agents of the traditional communities and indigenous peoples, monitoring of biodiversity and sustainable management of socio-biodiversity products to maintain the standing forest.

With a view to an adequate area rehabilitation process after drilling wells without exploratory success, or during production operations and road logistics, we developed a pioneering reforestation procedure in the Amazon region based on the use of native species, considering different conditions of water availability and degradation of each area.

We have developed a nursery with a production capacity of approximately 120,000 seedlings, produced from the collection of seeds from previously mapped matrices, using local labor and an epiphyte, in which orchids and bromeliads collected from areas that have undergone vegetation suppression are reproduced and maintained, until insertion into areas with good ecological conditions for their introduction.

For the process of environmental recomposition, we installed a forest of species protected by law (chestnut, rubber, andiroba and copaíba) gathering 2,484 seedlings, to contribute to reducing the threat of extinction of these species. In addition, we created rustic nurseries in the work areas, avoiding the need to transport seedlings by helicopter, reducing the number of trips and corresponding GHG emissions.

## NUMBER OF SPECIES IN HABITATS LOCATED IN AREAS INFLUENCED BY OUR OPERATIONS

Threat Category	National List	International List (IUCN)
Vulnerable	120	73
In danger	57	32
In critical danger	46	26
Near threatened	28	55
Minimally concerning	245	1099
<b>TOTAL</b>	<b>496</b>	<b>1285</b>

Our operations are concentrated in Brazil, and due to the fact it is a mega-diverse country, there are species categorized as threatened in all types of environments, both natural and man-made. The potential occurrence of these species and the associated risks are mapped and managed by the company, through various conservation projects, management practices, and compliance with environmental licensing conditions. Throughout 2022, we continued to improve the collection for and updating of our databases.

We executed a set of important regional projects to increase knowledge, mitigate and monitor the impacts and risks identified in environmental studies. These projects sought to conserve endangered marine species and biodiversity in our areas of operation, a commitment made for federal environmental licensing from Ibama for offshore exploration and production activities. In 2022, we invested approximately BRL 220.8 million in more than 80 environmental monitoring programs and projects dedicated to assessing the health of the marine environment using various methodological approaches and including different groups of fauna (cetaceans, birds, turtles, among others) and other environmental components.



As a highlight, we carried out the “Cetacean Monitoring Project of the Santos Basin” (PMC-BS) in coastal and oceanic areas of this basin in southeastern Brazil, covering 272,567 km<sup>2</sup> and reaching distances of up to 350 km from the coast and at depths greater than 2,000 m. Long-term monitoring of cetacean populations seeks to assess potential impacts of oil and natural gas exploration, production and disposal activities, and contribute to their conservation.

In the first six years of the project, there were 3,151 visual detections and 1,394 acoustic detections of cetaceans groups. The data obtained are stored in the Data System (SisPMC), which can be accessed on the [website](#). We also identified 27 species of cetaceans, seven of which are classified as facing some degree of endangerment on the red list of Brazilian fauna.

In addition, the cetacean movement data provide unprecedented information on large whale migrations between feeding and breeding areas, such as the first information on blue whale movements in the South Atlantic.

We did Beach Monitoring Projects (PMPs), on a continuous and regional basis in the Santos (PMP-BS), Campos and Espírito Santo (PMP-BC/ES), Sergipe-Alagoas (PMP-SEAL) and Potiguar Basins (PMP-BP), along 3,000 km of the coast of 10 states, with the objective of evaluating the interference of our E&P activities on birds, turtles and marine mammals, by monitoring beach strandings. The project maintains a network of 33 veterinary care facilities for the rehabilitation of debilitated rescued animals, while dead animals are necropsied, seeking to identify the cause of death. The Beach Monitoring Projects also contribute with valuable information about 25 endangered species, which acts as input for the actions of the National Action Plans for Endangered Species, coordinated by ICMBio. In 2022, Beach Monitoring Projects recorded 30,138 animals, of which a majority were deceased. Among the live animals, more than 1,000 were rehabilitated and returned to nature, contributing to the conservation of their populations. All information registered by the projects is available for public access in the SIMBA system.

## Main investments and socio-environmental results

Within the scope of voluntary socio-environmental investments, we support projects carried out by civil society organizations, with the aim of boosting the production of relevant knowledge for the business and promoting positive social and environmental transformations in society.

The Petrobras Socio-environmental Program supports initiatives focused on the ocean and forests, providing benefits such as job creation and increased income, food security, quality education and social development.

Among the main accumulated results of the environmental projects portfolio in force in 2022, we can highlight:

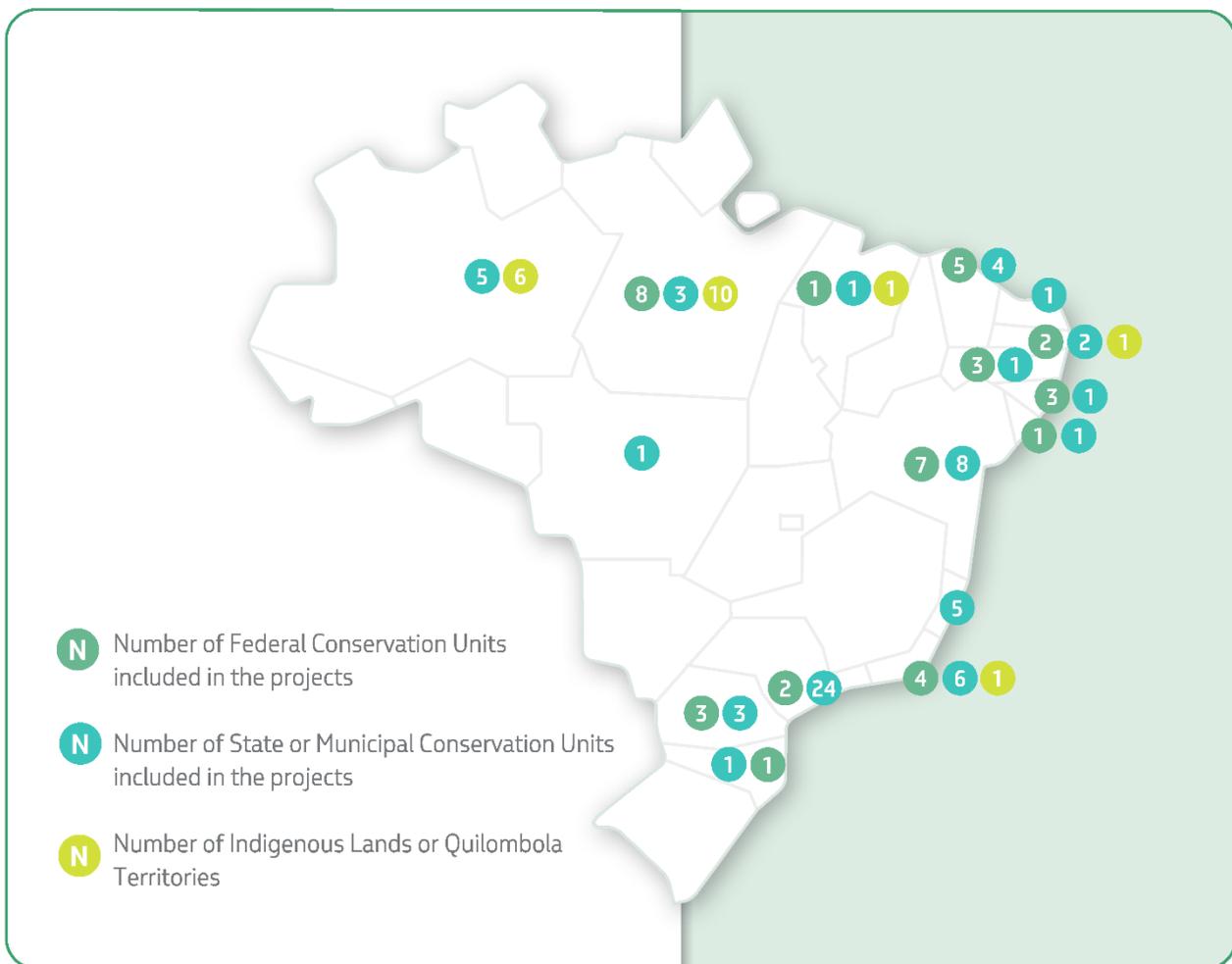
- More than 540 researchers participating in project activities and 317 publications, including articles, books, supplements, and publications in technical and scientific events. Involvement of more than 70 thousand direct participants in the actions carried out.
- 236 species of fauna are monitored, studied, or protected, of which 58 are threatened with extinction, including the puma, tapir, three-banded armadillo, southern muriqui, in addition to species of whales, corals, birds, fish and turtles.
- 402 species of flora in actions of protection, monitoring, research and by planting and collecting seeds.
- More than two million participants in awareness-raising actions and more than 42 thousand benefited from training actions.

- More than 22 tons of waste collected in cleaning actions on beaches and rivers.
- Recovery or direct conservation of around 254 thousand hectares of forests and natural areas of the Atlantic Forest, Amazon, *Caatinga* and *Cerrado* and actions to strengthen protected areas in around 27.8 million hectares.

These initiatives covered 106 terrestrial and marine conservation units (UCs), including categories such as National Parks, Sustainable Development Reserves, Extractive Reserves, Ecological Stations, Environmental Protection Areas, among others, in addition to 20 Indigenous Lands (TIs) and *Quilombola* Territories (TQs).

The next figure illustrates the distribution of protected areas covered by our current socio-environmental investment in 2022, by state.

### MAP OF PROTECTED AREAS COVERED BY SOCIO-ENVIRONMENTAL PROJECTS<sup>10</sup>



With the aim of expanding our investments in a portfolio of projects focused on nature-based solutions that are in line with our strategic objectives and commitments, we established an unprecedented partnership with the National Bank for Economic and Social Development (BNDES), through Living Forest matchfunding.

<sup>10</sup> Map illustrating the number of protected areas covered by our socio-environmental investment in effect in 2022. It is noteworthy that the same project can cover several protected areas, just as the same protected area can cover more than one state of the Federation.



For joint financial support for reforestation projects of native species in Brazilian biomes, we intend to follow the path of generating carbon credits. We will invest BRL 50 million from 2022 to 2026 and the initiative will have the Brazilian Biodiversity Fund (FUNBIO) as a managing partner, with the role of making selections, contracting and monitoring the projects.

Within the scope of Floresta Viva, we launched, in November 2022, the Mangroves of Brazil Public Notice, the first of the initiative. BRL 44.4 million will be made available, with resources from Petrobras and the BNDES, for up to nine ecological restoration projects for mangroves, salt marshes, sandbanks, and their drainage basins. We believe in the importance of this notice as a step forward in this frontier of knowledge, especially in Brazil, which has one of the largest expanses of mangroves in the world. This initiative will reinforce the performance of our socio-environmental investments in blue carbon.

In the project portfolio of the Petrobras Socio-environmental Program in force in 2022, we have six supported projects that contribute to the conservation or recovery of mangroves.



## Biodiversity Action Plan (PAB) for the Gaslub cluster - actions for conservation of species and habitats



Photo: Petrobras Image Bank



### CONTEXT

Recognizing the importance of biodiversity for our internal management and stakeholders, we are committed to having **"100% of our plants with a Biodiversity Action Plan (PAB) by 2025"**.

In 2022, with the support of an external consulting company, a Biodiversity Action Plan was developed, on a pilot basis, for Gaslub cluster, located in Itaboraí, Rio de Janeiro, Brazil.



### CHALLENGE

Gaslub cluster includes **45 km<sup>2</sup>** with a natural gas processing plant and is located in a region dominated by agricultural and livestock activities. In the locality there are also several protected areas, relevant hydrographic basins, and Guanabara Bay, an area whose surroundings are highly urbanized, but which have great ecological relevance.

The methodology used to prepare the Biodiversity Action Plan included a thorough examination of all available documents and data related to biodiversity, the definition of criteria for designating the study area, the identification of risks associated with its operation, and evaluation of programs for ongoing biodiversity. Subsequently, the biodiversity baseline was assessed, including the identification of endangered species, mapping of protected areas, and areas of relevant interest. This analysis allowed the classification of critical habitats and the selection of prioritized target species for further conservation measures.



### SOLUTION

Among the most significant actions to comply with the Biodiversity Action Plan, a partnership was signed with the ASA Institute, through the Guapiáçu Project, aiming at:

- mangrove restoration to strengthen coastal protection and biomass provision, contributing to artisanal fisheries and biodiversity of the Guanabara Bay;
- recovery of the ombrophilous forest located in the Guapi-Macacu river basin, creating ecological corridors, allowing fauna transit and water supply preservation;
- reintroduction of the tapir - locally extinct until the start of this project
- monitoring of endangered mammal species, with a key ecological role in the Atlantic Forest: tapir (*Tapirus terrestres*), jaguar (*Puma concolor*), paca (*Cuniculus paca*) and miqui (*Brachyteles arachnoides*).

For each action of the Biodiversity Action Plan, indicators, goals and a hierarchy of protocols was established.



### RESOURCES

The Biodiversity Action Plan was prepared by an external consulting firm, with our support. The Guapiáçu Project is a social-environmental investment project that includes other actions that go beyond the plan. The project is carried out by an NGO and is supervised by us, with a team that monitors its implementation.



### RESULTS

The Guapiáçu IV Project, whose activities began at end of 2022, has already carried out, with the leadership of Refauna, the reintroduction of three new tapirs in the Guapiáçu Ecological Reserve, in Cachoeiras de Macacu, which will join the only tapir population in the state of RJ, which has 14 animals, 4 born in the wild and the other 10 from previous reintroductions. The reintroduction of the species into nature is of paramount importance given the fact that tapirs are classified as endangered, and, in Rio de Janeiro, they became completely extinct more than 100 years ago.

The project also monitored fauna using camera traps, and, in the case of reintroduced tapirs, by radio telemetry.

There were **9,809 photographic records** of animals in the region, with **21 species** recorded, of which **17 were native and 4 domestic** (bull, horse, dog, and cat).

Of the totals, **the tapirs were photographed 6,748 times** and pumas (*Puma concolor*) were recorded **114 times**, another endangered species especially in the state of Rio de Janeiro. Other captured images show the occurrence of lesser anteaters, otters, wild cats, pacas, nine-banded armadillos, among others.



[3-3] [11.6.1] [11.6.2] [11.6.3] [11.6.4] [11.6.5]

# Water and effluents

The availability of water quantity and quality is essential for our operations. We use water directly for our oil, gas and oil products production and processing units; for steam generation; refrigeration; human consumption; among others. As a result, practically all of our activities generate domestic and industrial effluents, such as produced water.

Therefore, we undertake efforts to continuously improve the management of water resources and effluents, considering our value of respect for the life and integrity of our facilities.

We believe that this subject is very relevant and strategic for the sustainability of our businesses both upstream and mid/downstream, whether in operations on land or in an offshore environment. The topic includes variation in the availability or quality of water in our areas of influence due to withdrawal and/or disposal associated with the company's activities, including produced water. It covers negative impacts on biodiversity and human health in the case of water scarcity for withdrawal or for assimilating our effluents, and positive impacts such as the return of water resources with better quality than those withdrawn, or in the implementation of projects for the conservation and recovery of springs and riparian forest.

Potential impacts related to water and effluents may occur through our activities, both on land and at sea.

On land, the main potential impacts are:

- the excessive withdrawal of fresh water, from surface or underground sources, which could compromise the availability of that water for the multiple uses of society, or the integrity and ecological functions of those water bodies ;
- impacts related to the discharge of effluents that are not included in the legal discharge parameters or that are not compatible with the supporting capacity of the receiving body, and thus can cause water pollution; and
- occasional spills of oil or oil products in water bodies.

At sea, the impacts are more related to:

- effluent discharges that may be non-compliant, causing maritime pollution;
- any spills of oil or oil products.

If they occur, such impacts may affect the environment, people - including compromising the universal human right to access water in adequate quality and quantity - and economic activities (agriculture, livestock, industry, etc.) in impacted river basins. For these reasons, it is very important to guarantee proper management mechanisms for water resources and effluents, in addition to objectives for continuous improvement in this area.

In addition to our direct activities, possible impacts may eventually arise from our supply chain. At the end of 2022, we started the necessary procedures to consult 250 of our main suppliers regarding their management mechanisms, their performance, possible impacts, and risks related to water security, through the CDP Supply Chain questionnaire, a widely recognized benchmark for this topic.

## Management of water resources and effluents

Our water resource management has as its basic principle to constantly seek the rational use of water, which allows us to ensure the necessary supply for our activities, and to contribute to its conservation (quantity and quality) and availability in the areas influenced by our facilities. In this sense, we seek the adoption of low-intensity water use technologies, the minimization of its use in operations and processes,



and the reuse and the identification of alternative supply sources , always considering the local water availability and the technical-economic and environmental feasibility of the activities.

Regarding the effluents generated, we seek to minimize discarded polluting substances, through segregation, treatment, and adequate disposal of streams, also observing aspects related to the assimilation capacity of the receiving water bodies and the technical-economic feasibility of the measures, with the objective of avoiding or mitigating possible environmental impacts.

We use several tools for the management of water resources and effluents, the results of which are monitored by senior management. We develop process standards and specific technical guidelines, which establish requirements that must be observed and deployed by all our business areas and serve as a reference for our other companies.

Regarding the systematization of information, we have a corporate database in which information related to the management of water resources and effluents is recorded, consulted, and processed. It is through this system that we annually carry out our inventory, which, in 2022 included 311 facilities that use water and generate effluents.

In addition, we invested approximately BRL 21 million in research and development projects related to the management of water resources and effluents, through internal research and in partnership with universities and technological institutes. The research lines sought to optimize our effluent treatment processes, including produced water, bringing greater reliability and efficiency, in addition to enabling the advancement of reuse in our onshore facilities, and the reinjection of produced water in offshore units.

In 2022, we completed studies to assess current and future water availability, as well as the identification of alternative withdrawal sources, in 16 hydrographic basins from which 26 of our facilities withdraw or receive water. Priority was given to areas with greater risk of stress or water scarcity, to contribute to the mitigation of these risks.

We also updated our Sustainability Commitment on water security to a 40%<sup>1</sup> reduction in our freshwater withdrawals by 2030.

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<sup>1</sup> Percentage of reduction calculated compared to the 2021 base year, updating the previously used base year (2018). Between 2018 and 2021, we reduced our withdrawal by 17%.

**FRESH WATER WITHDRAWAL** (consolidated in megaliters)

In order to reach the commitment, we considered the divestments foreseen in the company's portfolio management, as well as a dynamic portfolio of actions and projects developed for this purpose, currently composed of around 40 actions and projects. These actions focus on reuse, along with measures to reduce water losses or adopt alternative water sources. Its evolution is periodically monitored by our HSE Governance structure and by the Executive Board.

So far, 21 portfolio actions have been implemented, representing a potential reduction in freshwater withdrawal of up to approximately 5,900 megaliters (5.9 million m<sup>3</sup>), depending on the operating conditions of the facilities involved, such as greater or lesser dispatch of thermoelectric plants, or volume of oil load processed in refineries. This volume of fresh water represents approximately 4% of the 2021 collection, the base year of the commitment.

In addition to this portfolio, the socio-environmental projects supported by the company that involve recovery of springs and riparian forests contribute to fulfilling the commitment.

Based on this commitment, we established our annual targets for the Fresh Water Withdrawn (ADC) indicator, which continued in 2022 as part of the basket of indicators that make up the Profit Sharing of the company's employees.

As mechanisms for receiving complaints for possible matters involving water and effluent resources, we have our Ombudsman's Office, which is easily accessible via our website. The content of any complaints is analyzed and directed to our specific technical areas that have the capacity to assist, resolve and answer the claimant.

We routinely evaluate our environmental performance in water resources and effluents through the calculation, and monthly monitoring of three corporate indicators: Volume of Fresh Water Withdrawn; Volume of Reused Water and Volume of Discharged Effluent. Critical analyzes of the Fresh Water Withdrawn and Volume of Reused Water indicators are monitored by senior management.

Although water is essential for use in our operations, our products do not incorporate significant levels of this resource in their composition. In our activities, the main share of water consumption (volumes that are withdrawn and do not return to the water bodies) is in the form of evaporation in the cooling systems. Therefore, in our internal management, consumption is not an indicator that is systematically monitored.

Annually, we outline actions related to these topics in the Commitment to Life Program, to improve specific points in our management system and in our performance. The execution of the actions of this



program is also measured and monitored by senior management. In 2022, the program enabled the diagnosis, review of operating and maintenance procedures, and the implementation of improvements related to the treatment of sanitary effluents on 29 platforms. In addition to these results, 12 platforms received real-time monitoring installations to control the quality of produced water disposal.

As a form of external assessment of our water management, we annually participate in the evaluation process of the Dow Jones Sustainability™ World Index (DJSI World) and CDP Water Security. Within this aspect, in 2022, we obtained the highest score in the DJSI World in the criterion “Water-Related Risks” for the fourth consecutive year, and we also stood out in the criterion of “Operational Eco-efficiency”. At CDP Water Security, we achieved the A- (Leadership) rating for the second consecutive year. Such acknowledgments reinforce the quality of our management in this area.

Our management system and our governance structure periodically evaluate the effectiveness of our actions in different forums, from the technical level to the top management level, to critically analyze the results obtained and incorporate the lessons learned in future planning cycles.

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>> [Information about our governance structure can be found in the Risk management and corporate governance chapter.](#)

## Water as a shared resource

We withdraw water from surface sources (rivers, lakes, etc.), underground sources (phreatic or artesian wells), receive water from third parties (public utilities or other companies), and generate produced water when we extract oil and gas from their formations.

In Brazil, the maximum limits for fresh water withdrawal from the environment are established by public bodies responsible for the management of water resources, and consider hydrological criteria and the multiple human and ecological uses of water within a hydrographic basin. It is illegal to withdraw more water than authorized by the competent body. We also continuously invest in assessment of the impacts of our activities, observing protected and sensitive areas mapped in the regions influenced by our units, based on a specific and standardized internal process for this purpose. In 2022, we did not identify significant quantitative or qualitative impacts on water sources resulting from our direct water withdrawal processes.

The main types of disposal include industrial effluents (generated in the most varied activities of the oil and gas industry), sanitary effluents (in significantly lower amounts) and discarded produced water (main effluent from the oil production process). It should be noted that effluents are subject to the disposal standards established in environmental legislation. Such effluents can be disposed of in surface water sources, underground environments (eg: septic tanks, for sanitary effluents), sent to utility companies or third parties, or reinjected (in the case of produced water) in oil and gas reservoirs for the purposes of secondary recovery.

The discharged effluents were previously treated to meet the quality standards for discharge established in the environmental legislation. In 2022, we did not identify any significant quantitative or qualitative impacts on the water bodies where our effluents are discharged.



We work continuously to minimize all socio-environmental impacts of our activities, including water related impacts. When intending to develop new operations, we go through the Environmental Licensing process, which can occur at the municipal, state, or federal level. In this process, several studies are required so that the activity can be developed while mitigating impacts, such as those related to water use and effluent disposal. In these studies (the most broad and complex example of which is the Environmental Impact Study/Environmental Impact Report - EIA/RIMA), we identify and evaluate the socio-environmental impacts throughout the life cycle of the projects to support the definition of preventive, mitigating, and compensatory measures in their phases of installation, operation, and deactivation. When licensed by Brazilian environmental agencies, our activities are subject to a series of conditions (license conditions) established by licensing agencies to ensure the minimization or compensation of such impacts, as well as the prevention of damage. Compliance with these conditions is monitored periodically by environmental agencies.

In addition, all of our new development projects undergo several review rounds where environmental criteria are evaluated, such as water use; generation, treatment and disposal of effluents; possible impacts on water sources; and mitigation, prevention and potential compensation measures.

For the continuity of our operations, as well as for society and stakeholders, it is extremely important that we manage the risks of water scarcity. We assess such risks using different tools, such as:

- World Resources Institute (WRI) Aqueduct Water Risk Atlas;
- Water Scarcity Risk Index (internal and specific tool that we developed in partnership with the Federal University of Rio de Janeiro, used in the company since 2016)
- Studies to assess water availability and alternative sources for strategic hydrographic basins (carried out by the company since 2002).

The Water Scarcity Risk Index considers the susceptibility of operational units to water scarcity and other factors, such as the vulnerabilities of the hydrographic basins where they are located and their internal resilience actions. The last round of Water Scarcity Risk Index application took place in 2021, covering 45 facilities, which correspond to approximately 96% of the freshwater withdrawal of our operating units in Brazil. The results of the index make it possible to understand and compare water risk levels for different facilities, as well as to identify the most important sites and facilities to target with detailed local water availability studies, in addition to mitigation and risk management actions.

Any environmental impacts that may occur to water bodies due to our activities will receive the resources and efforts for maximum damage mitigation, and if necessary, in conjunction with the public authorities. As an example of our readiness to minimize impacts, we can mention the existence of our Environmental Defense Centers (CDAs), which are ready to act in case of spills of oil, oil products or chemicals in bodies of water.

By understanding that water is a shared resource, our engagement activities with stakeholders on the subject are an important subsidy for us to understand the main demands of society, how we should position ourselves, and what requirements we should incorporate in our water and effluent management so that we can act harmoniously with the needs of multiple actors. Among the relationship activities with stakeholders, we can highlight:

**Engagement with industry and business sectors in strategic forums:** We are a member of the Water Thematic Chamber of the Brazilian Business Council for Sustainable Development (CEBDS), of the Action Platform for Water of Brazilian Network of the Global Compact, of the Water Resources Network of the National Confederation of Industry (CNI) and of the Water Working Group of Ipieca (global oil and gas association dedicated to advancing environmental and social performance across the energy transition), forums in which we can articulate with other major water users, assess trends and synergies, discuss best practices in the subject, standardize positions, anticipate and resolve potential conflicts;



**Engagement with local communities and civil society organizations through investment in socio-environmental initiatives and local environmental education programs:** our Petrobras Socio-environmental Program supports civil society initiatives aimed at environmental protection and the promotion of ecological awareness, to create conciliatory dialogue with society. In 2022, we supported 22 projects aimed at the conservation and restoration of forests and natural areas integrated with water preservation through actions for the reversal of degradation of springs and water streams, restoration of riparian forest, and management of watersheds. These were in addition to initiatives aimed at strengthening resilience and the ability to adapt to water scarcity and extreme events. Of these projects, three were started in 2022, with the aim of making a positive contribution to the watersheds surrounding some of our operations. They included:



**Reforestation: Water and Carbon  
(Rio de Janeiro - Gaslub and Reduc)**

Carried out by the Pro-Management Association of the Waters of the Hydrographics Basin of the Paraíba do Sul River (Agevap), it focuses on the conservation of the Guandu river basin, which supplies the metropolitan region of Rio de Janeiro.

**Keeping an Eye on the Rivers  
(São Paulo - Replan)**

Implemented by Mata Ciliar Association, it associates environmental recovery and agro-forestry production in the watersheds of the Atibaia and Jaguari rivers, important sources for the Cantareira System, which supplies most of São Paulo and the metropolitan region.

**Guará Vermelho  
(São Paulo – RPBC)**

In Cubatão, this initiative, developed by Nudaer (Entre Rios Environmental and Educational Defense Center), aims to promote the recovery, conservation and preservation of the Cubatão and Casqueiro rivers, including some of its tributaries.

In 2022, we received the BNDES – Sustainability Award, in the Water category, with the “Planting Water” project, sponsored since 2013. The initiative is carried out by the Ecological Research Institute (IPÊ) and operates in the Cantareira System region, within the limits of eight municipalities in São Paulo and Minas Gerais. The project seeks to engage landowners, producers, and rural successors, inviting them to rethink the use of the soil, with the planning of rural properties involving the legal adaptation of the properties in view of the Forest Code guidelines. The proposal is for land use to connect the need for conservation with economic potential.

**Integration with the government and regulatory bodies:** We maintain relationships with representatives from different spheres of the Executive, Legislative and Judiciary powers. Interactions with ministries, state and municipal departments, regulatory agencies, and councils, among others, are related to health, safety, and environment issues, including water and effluents.

**Participation in water resources forums, mainly in hydrographic basin committees:** Hydrographic Basin Committees are normative, consultative, and decision making forums where the management of water resources in the hydrographic basin is discussed, and which involve different stakeholders (local community associations, NGOs, government, large users, civil society entities, etc.).

**Engagement with the supply chain:** In 2022, we held the Petrobras Best Suppliers Award, including a special ESG (Environmental, Social and Governance) award, which covered aspects related to water use, such as reduction, reuse, identification of water stress and effluent disposal. In addition, we started procedures for requesting that our main suppliers complete the CDP Supply Chain Water Safety questionnaire.



## Management of effluent related impacts

Resolution of the National Council for the Environment (CONAMA) No. 430/2011 provides for the conditions and standards for effluent discharge, complements and amends CONAMA Resolution No. 357/2005. Thus, throughout Brazil, there are requirements to be met for the effluent streams to be discharged, as well as water quality requirements of the receiving body that cannot be violated (even if the discharged effluent stream is compliant). In other words, there is a double requirement: that the discharged effluent stream be within the discharge standards, and that the receiving body of this stream also remains with its water quality compatible with the requirements of its classification.

Some effluents have specific legal requirements, such as produced water, whose offshore disposal must comply with the provisions of CONAMA Resolution No. 393/2007. Effluents from offshore activities are also regulated by the technical note of the Brazilian Institute of the Environment and Renewable Natural Resources (Ibama) n°. 01/2011, which brings the requirements of the Pollution Control Project, at a national level, for maritime oil and gas exploration and production projects.

It is within this framework that we act in relation to the quality of our effluents: respecting the release standards and respecting the classes of the receiving bodies. When operating in other countries, we obey the current disposal standards.

## Total water withdrawal

Our total water withdrawal in 2022 can be seen in the table below:

**TOTAL WATER WITHDRAWAL<sup>2</sup>** (consolidated in megaliters)

Type	Description	All areas	Water Stressed Areas <sup>3</sup>	%
Water withdrawal by source	(1) Surface water	143,372	11,936	8
	Fresh (salinity <sup>4</sup> ≤ 0.5 ‰)	134,732	11,936	9
	Brackish/saline (salinity > 0.5‰)	8,640	0	0
	(2) Underground water	5,924	714	12
	Fresh (salinity ≤ 0.5‰)	5,508	714	13
	Brackish/saline (salinity > 0.5‰)	416	0	0
	(3) Sea water (saline)	2,589,387	0	0
	(4) Produced water (saline) <sup>5</sup>	134,810	17,109	13
	(5) Water from third parties (Petrobras Facilities) <sup>6</sup>	7,244	5	0
	Fresh (salinity ≤ 0.5‰)	7,195	5	0
	Brackish/saline (salinity > 0.5‰)	50	0	0
	(6) Water from third parties (utilities and other companies) <sup>6</sup>	8,383	257	3
	Fresh (salinity ≤ 0.5‰)	8,377	257	3
Brackish/saline (salinity > 0.5‰)	7	0	0	
Total water withdrawal	<b>(1) + (2) + (3) + (4) + (5) + (6)</b>	2,889,121	30,020	1

**Fresh water use and reuse**

During 2022, we withdrew 122,167 megaliters of fresh water for our operational and administrative activities, 19% below our target (maximum limit) of 151,700 megaliters.

<sup>2</sup> Includes cooling water.

<sup>3</sup> Water stress according to the criteria of the World Resources Institute "Aqueduct Water Risk Atlas": ratio between the "total annual water withdrawal" and the "total annual available renewable water supply" (i.e. Baseline Water Stress) being high (40- 80%) or extremely high (> 80%). The analysis took place using the locations of the facilities themselves as inputs and not of their water withdrawal points. This is an approximation, but we believe that the result achieved was satisfactory, since, in general, the intake points are not located in basins other than the basin where the installation itself is located.

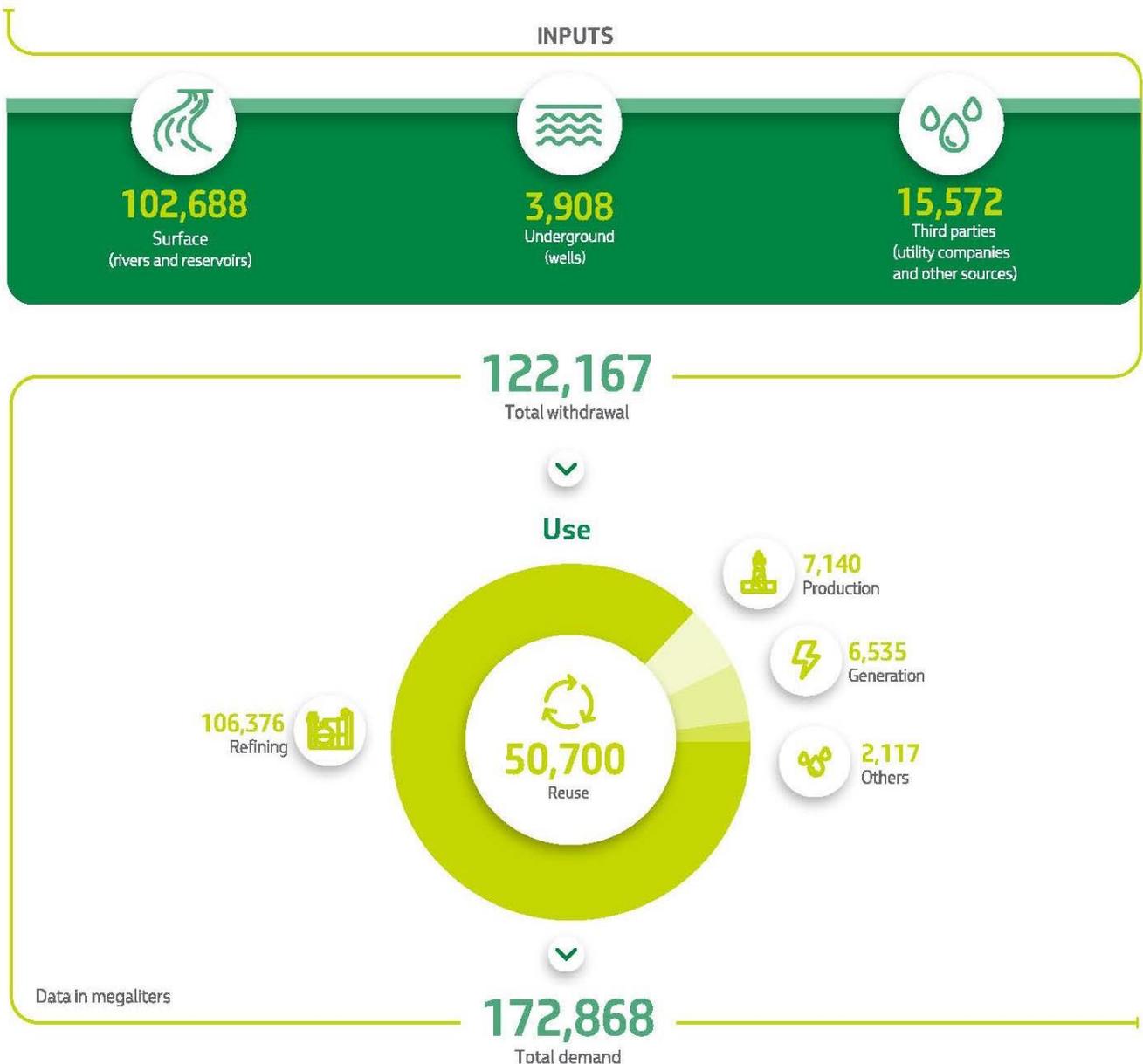
<sup>4</sup> Although the GRI requests the division of withdrawals into "fresh water" (≤1,000 mg/L Total Dissolved Solids) and "other water" (> 1,000 mg/L Total Dissolved Solids), we have chosen to follow the criterion to separate fresh water from brackish/saline water adopted in Brazil by CONAMA Resolution no. 357/2005.

<sup>5</sup> Produced water generation values are estimated based on the BSW (Basic Sediments and Water) of the producing wells.

<sup>6</sup> Due to our calculation system, when one of our facilities receives from another Petrobras facility or from a Petrobras subsidiary, this is calculated as "water from third parties." GRI requests a breakdown of 'Water from third parties at Water-Stressed Areas' (262 megaliters) by type of original withdrawal source by suppliers, but such detailing is not available, due to the variety of suppliers.



### FRESH WATER USE AND REUSE (megaliters)



- a) The numbers presented are obtained by consolidating direct measurements in the units (2022 Inventory of Water Resources and Effluents).
- b) In this diagram, open circuit cooling water values is not included.
- c) The volumes of rainwater harvested and used are not accounted for in the diagram, as per revision of the identity of the Fresh Water Withdrawn indicator. In 2022, this stream total of 179 megaliters.
- d) The volume of fresh water received from Petrobras facilities or subsidiaries is accounted for in the "Third parties (Utility companies and other sources)" category, due to the defined calculation system.
- e) The volumes counted for reuse do not include condensate recovered in thermal cycles and recirculated cooling water. On the other hand, they include produced water reinjected for secondary recovery in onshore fields, replacing fresh water.



A significant part of our investments in rationalizing the water use has been directed towards developing reuse projects. Among the benefits achieved, we obtained a reduction in our global needs for “new water” withdrawal.

In 2022, the total volume of reuse was 50,700 megaliters, which corresponds to 29.3% of our total fresh water demand. This reused volume would be enough to supply, for example, a city of approximately 1 million inhabitants for one year. Based on these reuse actions, we estimate an annual savings of approximately BRL 16 million in water withdrawal costs.

### TOTAL VOLUME OF REUSED WATER<sup>7</sup> (consolidated data in megaliters)

Description	2019	2020	2021	2022
Reuse <sup>8</sup>	82,216	73,943	69,093	50,700
Fresh water withdrawal	156,864	146,251	150,749	122,167
Demand: reuse + fresh water withdrawal	239,080	220,194	219,842	172,868
Reuse in relation to demand (%)	34.4	33.6	31.4	29.3

### FRESH WATER USE AND REUSE AT- UPSTREAM (consolidated data in megaliters)

Description	All areas	Water stressed areas <sup>9</sup>
Reuse	26,785	9,377
Fresh water withdrawal	7,140	347
Demand: reuse + fresh water withdrawal	33,925	9,724
Reuse in relation to demand (%)	79.0	96.4

### FRESHWATER USE AND REUSE –AT DOWNSTREAM (consolidated data in megaliters)

Description	All areas	Water stressed areas <sup>9</sup>
Reuse	23,455	1,598
Fresh water withdrawal	107,384	2,742
Demand: reuse + fresh water withdrawal	130,839	4,340
Reuse in relation to demand (%)	17.9	36.8

<sup>7</sup> The data source used for the calculations was the Inventory of Water Resources and Effluents 2022.

<sup>8</sup> The volumes of produced water reinjected for secondary recovery of oil and gas in onshore fields, which would otherwise need to use fresh water, are counted as reuse. The reduction in reuse volumes between 2019 and 2022 is justified by the decrease in production activities in onshore fields.

<sup>9</sup> Water stress according to the criteria of the World Resources Institute “Aqueduct Water Risk Atlas”: ratio between the “total annual water withdrawal” and the “total annual available renewable water supply” (i.e. Baseline Water Stress) being high (40- 80%) or extremely high (> 80%). The analysis took place using the locations of the facilities themselves as inputs and not of their water intake points. This is an approximation, but we believe that the result achieved was satisfactory, since, in general, the intake points are not located in basins other than the basin where the installation itself is located.



Both in the upstream and downstream, the practice of reuse is more representative in water-stressed areas. The sum of the Fresh Water Use and Reuse at Upstream and at Downstream tables does not result in our total amounts of freshwater withdrawn and reused because we have assets of other types, such as thermoelectric plants and administrative buildings. In these other assets, the volume of fresh water withdrawn in 2022 was 7,644 megalitres and the reuse was 460 megalitres.

### Leadership in using reused water in Brazil



Photo: Petrobras Image Bank



#### CONTEXT

We have industrial refining activities (Duque de Caxias Refinery - Reduc), thermoelectric power generation (TermoRio Plant), and gas processing (UPGN Route 3, from Gaslub Cluster) in the metropolitan region of Rio de Janeiro/RJ, the second largest in Brazil and among the 20 largest in the world, where a large population (about 13 million inhabitants) and other stakeholders demand fresh water.



#### CHALLENGE

Reduce the volume of freshwater withdrawal from water bodies, in a region of high use of the resource, contributing to the continuity of supply for the population and stakeholders, and to the maintenance of ecosystems.

#### SOLUTION



Replace the withdrawal of "new fresh water" for industrial purposes with reused water.



We formalized with Águas do Rio, the company responsible for water supply and sewage in 27 municipalities in the state of Rio de Janeiro, an intention agreement of the parties to advance in understandings for it to supply reused water to Reduc and TermoRio Plant.

With the signing of the contracts, it will be possible, as of 2024, **annual usage of approximately 29,000 megaliters** reused water in our

operations, and Reduc will start to exclusively use reused water in its industrial processes, without water withdrawn from water bodies in the region.



#### RESULTS

In addition, we signed a memorandum of understanding with the same company to negotiate the supply of up to **approximately 34,000 megaliters** per year of reused water for the Gaslub Cluster.



These are the largest projects for the use of reused water for industrial purposes in Brazil, in line with our ambitious and our ESG commitments in the 2023-2027 Strategic Plan.





## Total water and effluent disposal

Our total water/effluents disposal in 2022 can be seen in the table below:

### TOTAL WATER/EFFLUENT DISPOSAL<sup>10</sup> (consolidated data in megaliters)

	Disposal/Destination	All areas
Water/effluent disposal by destination	(1) for surface water	100,783
	(2) for underground water bodies <sup>11</sup>	206,516
	(3) to the sea	2,489,367
	(4) to third parties (total)	835
	(4.a) for third party reuse	0
Total water/effluent disposal	<b>(1) + (2) + (3) + (4)</b>	2,797,500

The total value of water and effluent discharge was 2,797,500 megaliters, where 20,656 megaliters (0.7%) were in water stressed areas.

## Management of the main effluents

In upstream activities, the main pollutants contained in our effluents are oils and greases, present in produced water and in oily effluents. An important impact that can be considered in environmental studies, for example, is bioaccumulation across the food chain, which can affect ecosystems and human health. In mid/downstream activities, the main pollutants released by our effluents are those that contribute to the Chemical Oxygen Demand and ammonia. The main possible impacts associated with such pollutants are oxygen depletion and eutrophication of water bodies, which may cause losses or imbalances in biodiversity and ecosystems. In studies and licensing process for activities, the control and mitigation measures for the assessed impacts are defined and implemented during the installation and operation phases.

We treat our effluents for the pollutants described above and for an much wider set of other parameters, according to CONAMA Resolutions no. 430/2011, no. 357/2005 and no. 393/2007. Our disposal limits were defined based on the legal limits practiced in Brazilian legislation.

Our Discarded Effluent Volume (EHD) indicator, routinely monitored by management, does not include the disposal of cooling water in an open circuit, nor the injection or reinjection of water in reservoirs for the purposes of secondary recovery. Therefore, Discarded Effluent Volume allows us to have a better view of the effluents that could potentially pollute the environment. Therefore, Discarded Effluent Volume includes our discarded industrial and sanitary effluents, as well as produced water (observing the legal limits). In 2022, the volume of these effluents was 235,221 megaliters.

<sup>10</sup> Including disposal of cooling water.

<sup>11</sup> In order to be in line with the definition of the CDP Water Security questionnaire, the injected water (or produced water reinjected) in the oil and gas reservoirs for secondary recovery purposes is considered underground water disposal. If we don't consider injected/reinjected water, the number would be 2,917 megaliters.



## Produced Water

We manage our offshore produced water discharges in accordance with CONAMA Resolution 393/2007, which is the Brazilian regulation that provides for the continuous disposal of production water on offshore platforms. In this resolution, the daily and monthly limits for the disposal of Oil and Grease Content (TOG) are described, which correspond to 42 mg/L and 29 mg/L, respectively.

The monitoring of Oil and Grease Content in offshore disposal is carried out daily, however the monitoring of salinity is carried out every six months, in compliance with the provisions of article 10 of CONAMA Resolution No. 393/2007. In addition, the produced water discarded on the platforms is previously treated in treatment plants, commonly equipped with hydrocyclones and flotation equipments.

In both onshore and offshore environments, we also carry out the reinjection of produced water for the secondary recovery of oil in the reservoirs. Thus, we no longer withdraw “new water” from the environment, which is particularly relevant in terrestrial installations, which would otherwise need to withdraw fresh water for this purpose.

In 2022, we discharged around 76,873 megaliters of produced water into the environment and re-injected around 53,207 megaliters for secondary oil recovery purposes. These volumes correspond to approximately 59% and 41% of the disposed volume, respectively. The total load of oils and greases in the discarded produced water was approximately 1.3 thousand tons.

Our trend for the coming years is for an increase in the volume of produced water reinjected offshore, due to the expansion of reinjection practices. For onshore fields, the tendency is to reduce the volumes of reinjected produced water, due to divestments. Regarding the load of oils and greases, despite the general trend towards an increase in the generation of produced water due to the maturation of the producing fields, a reduction in the discharged load is expected in the coming years.

## Nonconformities related to water use

Despite all our efforts related to the management of water resources and effluents, and the continuous improvement of this management, some incidents of non-compliance resulted in sanctions in 2022. For the upstream, there were 6 sanctions considered significant (value greater than or equal to BRL 1 million) related to discharges, and for downstream, there was one sanction considered significant.



[3-3] [11.5.1] [11.5.2] [11.5.3] [11.5.4] [11.5.5] [11.5.6] [11.7.1] [11.7.2] [11.7.3] [11.7.4]

# Waste management and decommissioning

Waste management covers measures for the proper management of solid waste throughout the lifecycle of our businesses, including circular economy practices, which seek to prevent generation, reduce, reuse, recycle, treat hazardous and non-hazardous waste and environmentally appropriate disposal of waste to value materials and resources while avoiding or mitigating possible impacts to the environment and human health. This material topic includes the decommissioning process related to dismantling, transportation and disposal of equipment, structures, and waste, as well as its risks and opportunities. It also includes the proper planning and execution of studies and projects, all while seeking sustainability, environmental protection, safety, and care for people.

The linear production model has placed great pressure on the environment and natural capital, generating impacts related to the extraction of natural resources and the generation of solid waste. In view of this, we have undertaken efforts to continuously improve the management of our products throughout their life cycle and have sought to close our processes in light of the circular economy, reinserting waste into the production cycle in order to minimize its final disposal in the environment and the need for raw material extraction.

We recognize the relevance of sustainability for our business throughout the production chain. Therefore, we have advanced in relation to our previous commitment of zero growth in the generation of waste from processes by 2025, and we are now committed to a 30% reduction in the generation of solid waste from processes by 2030, with the allocation of 80% of this waste to routes for use, recycling and recovery (RRR) by 2030.

To this end, we have developed circularity actions to allow the reuse of our waste as raw material for petroleum products, and in other production processes. The effectiveness of these initiatives is monitored through indicators that measure the amount of waste generated and the percentage destined for use, recycling, and recovery routes.

Our activities generate solid waste that may contain mixtures of hazardous and non-hazardous substances; therefore, when not properly managed, they can be sources of potential adverse impacts on human health and the quality of the environment, such as:

- Pollution of soil and surface or underground water sources, due to the environmentally inadequate disposal of waste, which may compromise the availability of ecosystem services for use by society, productive sectors and biodiversity;
- Decrease in the useful life of landfills due to the disposal of waste subject to RRR, reducing the area available for the disposal of waste that does not have an economically or technologically available route at the time of its disposal.

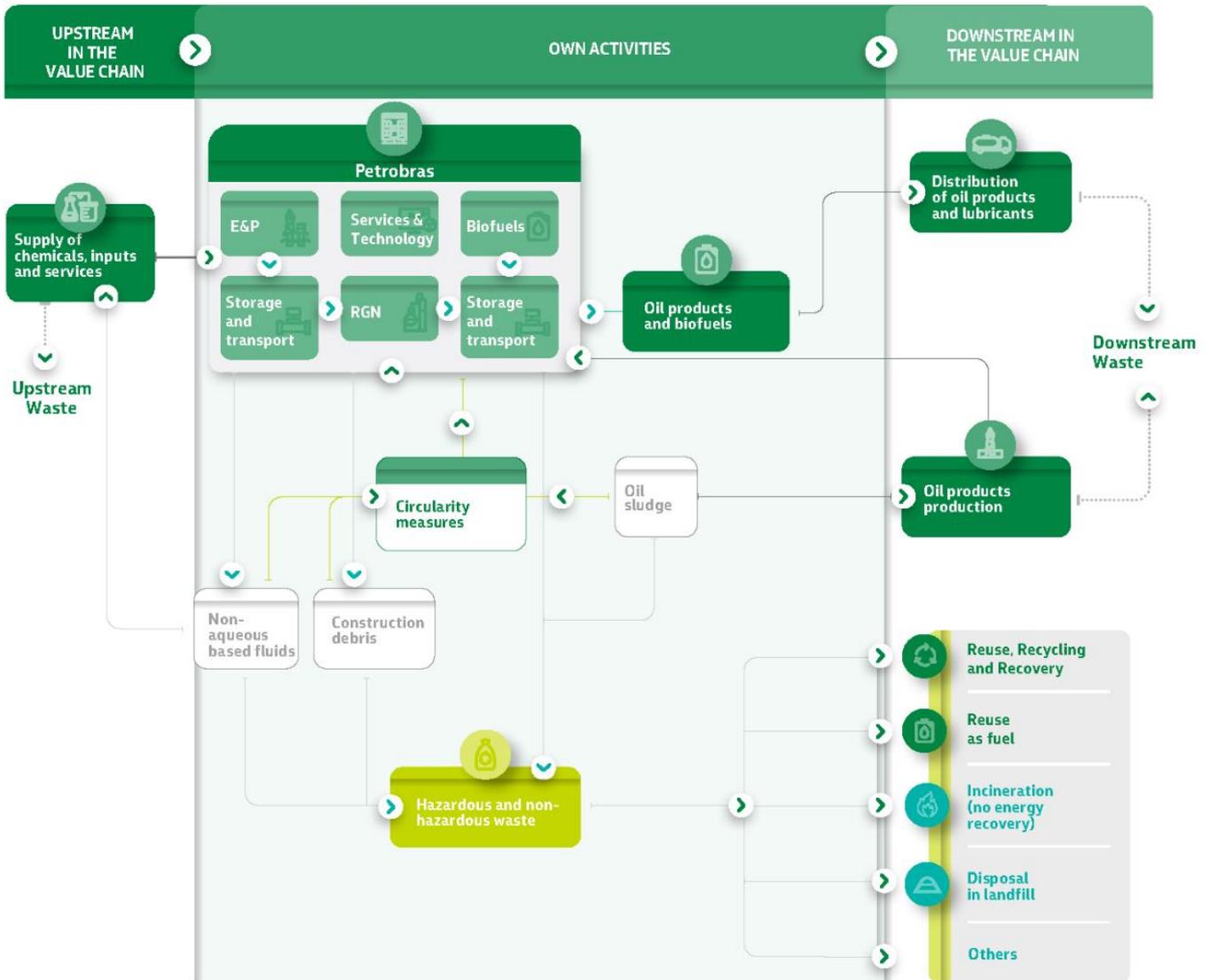
Our supply chain may also occasionally be responsible for possible impacts due to inadequate waste management, which is why, in addition to seeking only suppliers licensed by the competent environmental authorities, audits are planned for qualification in the contracting and inspection process during the execution of the services.

As an example of waste generated in our processes, we have: oily sludge, drilling fluids and cuttings, industrial effluent station sludge, catalysts, used lubricating oils, spent acidic or basic solutions, fuel filtering elements, paper, plastics, wood and debris from civil construction. In our units, the sources of waste generation are the activities of production and processing of raw materials and intermediate currents, effluent treatment, preventive and corrective maintenance processes of equipment,



engineering works, as well as administrative activities. The figure below illustrates the simplified process flow of inputs, activities and outputs related to waste management.

### PROCESSES FLOW FOR INPUTS, ACTIVITIES AND OUTPUTS RELATED TO WASTE MANAGEMENT



### Management of waste-related impacts

Proper waste management in accordance with current legislation and good practices in the oil and gas industry is part of the principles of our Health, Safety, and Environment Policy, and our environmental, social and governance (ESG) position to protect the environment, highlighting the theme “Circular Economy with a focus on waste minimization” present in our Strategic Plan 2023-2027 (SP 2023-27).

Our solid waste management follows the waste management hierarchy established in current legislation: non-generation, reduction, reuse, recycling, and treatment of solid waste, and environmentally appropriate final disposal of waste, with the aim of avoiding or mitigating possible environmental impacts.

Since 2013, we have adopted circular economy practices in our activities to prevent the generation of solid waste, with emphasis on the reuse of oily sludge in the production of shale oil and green petroleum coke. These practices made it possible to reduce the generation of hazardous waste by more than half, from



260,000 tons to 98,800 tons in nine years, minimizing any negative impacts on the environment and people<sup>1</sup>.

As for non-hazardous waste, in 2022 we internally recycled 569 m<sup>3</sup> of construction debris for the purpose of using these recycled aggregates in paving access roads and topographic conformation at the Gaslub Cluster works site.

### Internal recycling of construction waste at the Gaslub cluster



Photo: Petrobras Image Bank



<sup>1</sup> In this chapter, information on waste is presented in thousands of tons, for a better understanding of the quantitative data.



In our operations in the Amazon, proper segregation of organic waste and carrying out the composting process, allowed us to recycle waste using the compost generated in reforestation activities and recovery of degraded areas in the oil province of Urucu.

More recently, we changed the contractual model for supplying non-aqueous-based drilling fluids from marine wells for servitization (products as a service), so that the fluid is returned to the manufacturer after use, further favoring the reuse that was already practiced internally.

In 2022, three social projects focused on the collection and proper disposal of recyclable solid waste were addressed through a pilot public selection process carried out with a focus on the metropolitan region of Rio de Janeiro. Together, the projects add up to an investment of BRL 8.9 million to be disbursed over the next three years.

Through this partnership, we will allocate recyclable and reusable solid waste generated by four of our properties in the metropolitan region of Rio de Janeiro to three cooperatives who won the bid, with the potential to receive around 600 tons of recyclable materials per year. In addition to the materials, the cooperatives will receive resources to be invested in training and improving the schooling of the collectors, the maintenance of vehicles, sheds, and equipment, and in environmental education actions.

Additionally, to mitigate the potential adverse impacts generated by waste, we implemented preventive and corrective actions described in our process standards and specific internal technical standards on the subject, in addition to following Brazilian and international technical standards.

For the development of new projects, we use the Front-End Loading (FEL) methodology for planning and approval of each phase of the project based on technical, economic, and environmental feasibility, in which technical criteria related to minimizing the generation and optimization of the destination of waste. Routinely, several studies are carried out as part of the environmental licensing process to identify and assess the socio-environmental impacts throughout the development's life cycle, thus mitigating impacts related to solid waste management. Preventive, mitigating, and compensatory measures are defined in the installation, operation, and decommissioning phases of the projects.

We also invested around BRL 3 million in research and development projects on topics related to the minimization, reuse, and environmentally sustainable disposal of waste at our Research Center (Cenpes). We made progress in studies of solutions that make it possible to use our waste as an input for high-value-added products, such as the use of oily sludge to produce asphalt products, which are in the planning phase for pilots on an industrial scale.

Information related to solid waste management is recorded in proprietary information systems that cover all stages of management, maintaining an up-to-date corporate database that is used to carry out our annual inventory.

We routinely assess our environmental performance in waste management through the monthly assessment and monitoring of four indicators Process Generated Hazardous Solid Waste (RSPG), Process Generated Non-Hazardous Solid Waste (RSNPG), Hazardous Solid Waste Destined for RRR routes (RSPD RRR) and Non-Hazardous Solid Waste destined for non-RRR routes (RSNPD NRRR).

Our performance is periodically evaluated by our management system and governance structure, from the technical level to senior management, as described in the Risk Management and Corporate Governance chapter. Critical analysis of the results allows us to incorporate lessons learned into subsequent action planning cycles.

As one of the forms of external evaluation of our solid waste management and performance, we participate annually in the evaluation process of the Dow Jones Sustainability™ World Index (DJSI World). Within this aspect, in 2022, we obtained the highest score in the DJSI World in questions related to Waste Disposal and Hazardous Waste of the "Operational Eco-efficiency" criterion. This recognition reinforces the quality of our management for this topic.



## Generated waste

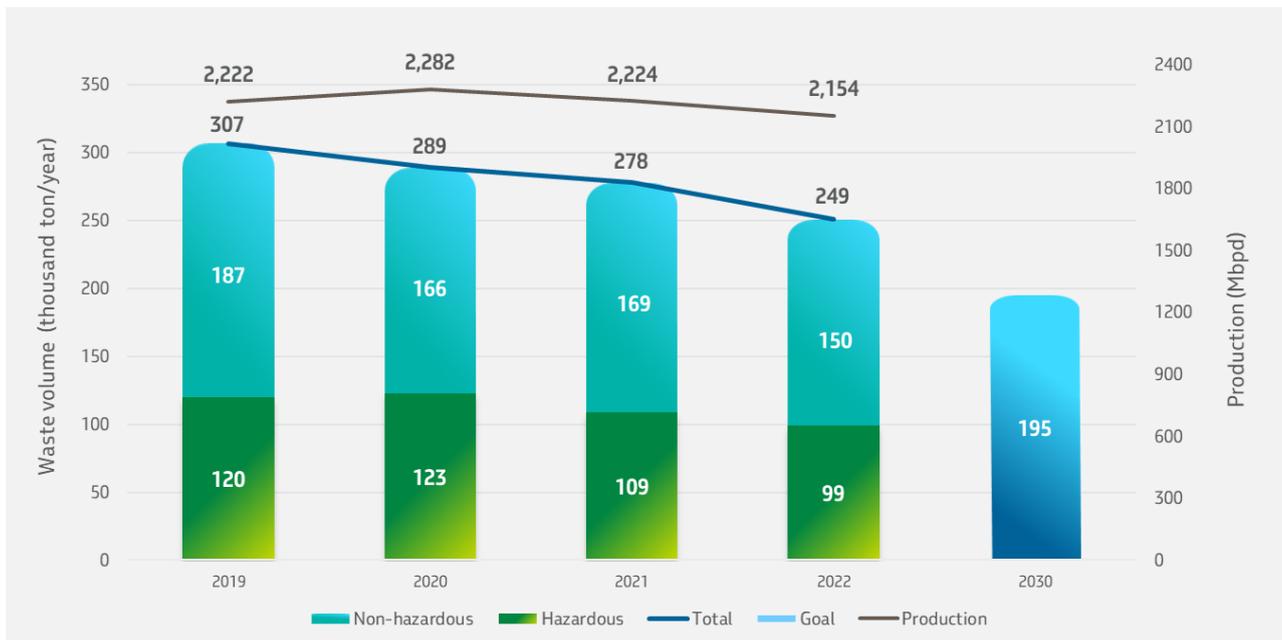
We adopt the system of classifying waste as hazardous or non-hazardous following the protocols reported by the Brazilian Association of Technical Norms (ABNT), Norma Brasileira (NBR) 10004, which is based on the Code of Federal Regulation – Title 40, Protection of Environmental – Part 260-265, Hazardous waste management. It should be noted that Law No. 12305/2010, which establishes the National Solid Waste Policy, also adopts the same criteria for classifying waste as hazardous and non-hazardous, excluding radioactive waste.

In 2022, the generation of hazardous and non-hazardous solid waste in our processes was 98.8 thousand and 150.0 thousand tons, respectively, totaling 248.8 thousand tons of waste. The generation of waste from processes in 2022 was the best performance in the last four years, the result of the sum of the circular economy actions implemented and the occasional reduction in non-continuous cleaning and maintenance activities.

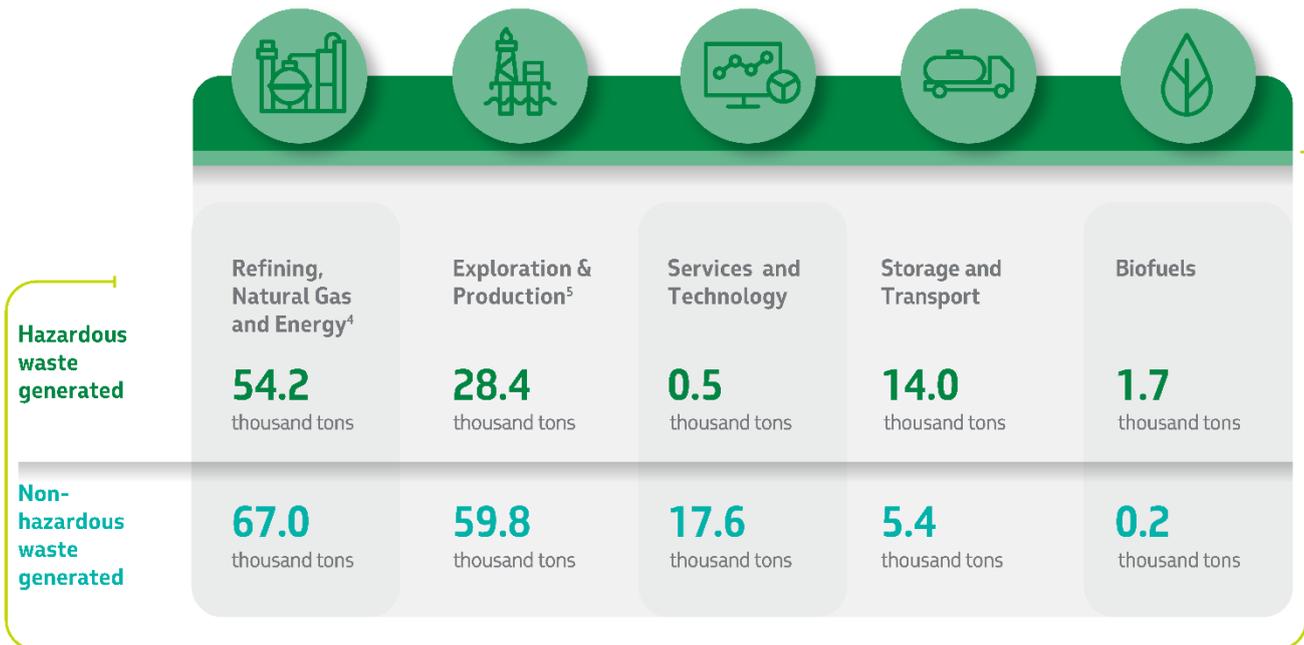
In order to achieve our new ESG waste commitment, we are planning new circularity actions, operational optimizations, sustainable hiring, and workforce training and awareness, to reach 2030 generating a maximum of 195 thousand tons of process waste.

In 2022, we held the “Sustainability Journey – Conscious Consumption and Waste” training, with 3,072 participations from our workforce.

### PRODUCTION OF OIL, NGL AND CONDENSATE vs WASTE GENERATED FROM PROCESSES<sup>2</sup> (consolidated)



<sup>2</sup> Data include Petrobras Parent Company (units in Brazil and abroad), Transpetro and Petrobras Biocombustível.

**HAZARDOUS AND NON-HAZARDOUS WASTE GENERATED<sup>3</sup> (consolidated)**

Regardless of the classification, the waste mass is determined by direct weighing or estimation considering technical and engineering criteria (density and volume). When they are estimated, we try to make conservative estimates by overestimating the masses, which are later corrected after weighing them at the time of shipment for final disposal, which may occur from one year to the next. Finally, in 2022, the result of hazardous solid waste generation was 18% below the established internal limit of 120.0 thousand tons and the generation of non-hazardous solid waste was 27% below the target of the internally established limit of 204.8 thousand tons.

## Waste disposal

In 2022, we disposed 110.3 thousand hazardous and 161.8 thousand non-hazardous tons of waste from our processes<sup>6</sup>. The proper management of our solid waste allowed 88% of the hazardous waste mass generated in the processes to be sent to RRR routes. The total hazardous waste from processes destined for non-RRR routes was 13.1 thousand tons, therefore, lower than the established limit for the year (22.2 thousand tons).

Also in 2022, 68% of the mass of non-hazardous solid waste from the process was destined for RRR routes. The disposal of non-hazardous waste from processes for non-RRR routes was 51.8 thousand tons, therefore, lower than the established limit for the year (91 thousand tons).

In total, 76% of the mass of hazardous and non-hazardous solid waste from the process was destined for RRR routes, which reiterates our efforts to adopt circular economy practices and puts us on track for our new ESG commitment to dispose of 80% of waste process solids for RRR routes by 2030.

<sup>3</sup> Data include Petrobras Parent Company (units in Brazil and abroad), Transpetro and Petrobras Biocombustível.

<sup>4</sup> Considers engineering works in the Refining, Natural Gas and Energy units.

<sup>5</sup> Considers the Production Development activities.

<sup>6</sup> The disposal of non-hazardous waste in 2022 includes 5,433 tons of rubble disposed for reuse in 2021 that were recorded in 2022 due to improvements in the process of measuring the indicators.



We determine waste disposal methods and enter into contractual agreements with contractors who are specialized and licensed by the environmental authorities for this purpose, and who must follow our regulations and standards.

All the disposed hazardous and non-hazardous waste was transported to allow for the environmentally appropriate treatment or final disposal to take place. We employ, both for the transport and disposal stages, authorized suppliers licensed by the competent authorities (environmental, transport, and health inspection). In 2022, 110.3 thousand tons of hazardous waste and 161.8 thousand tons of non-hazardous waste from our processes were transported nationwide. In the year in question, we did not make any international waste shipments<sup>7</sup>.

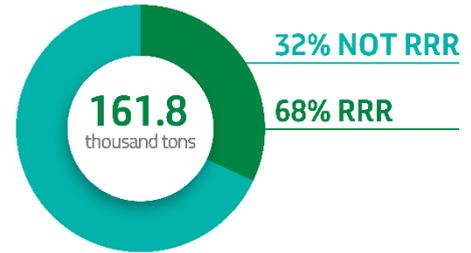
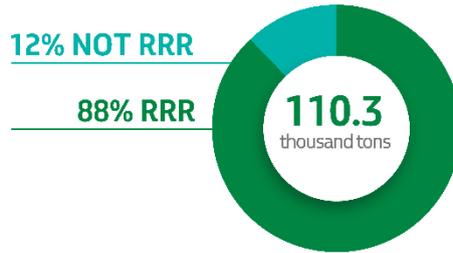
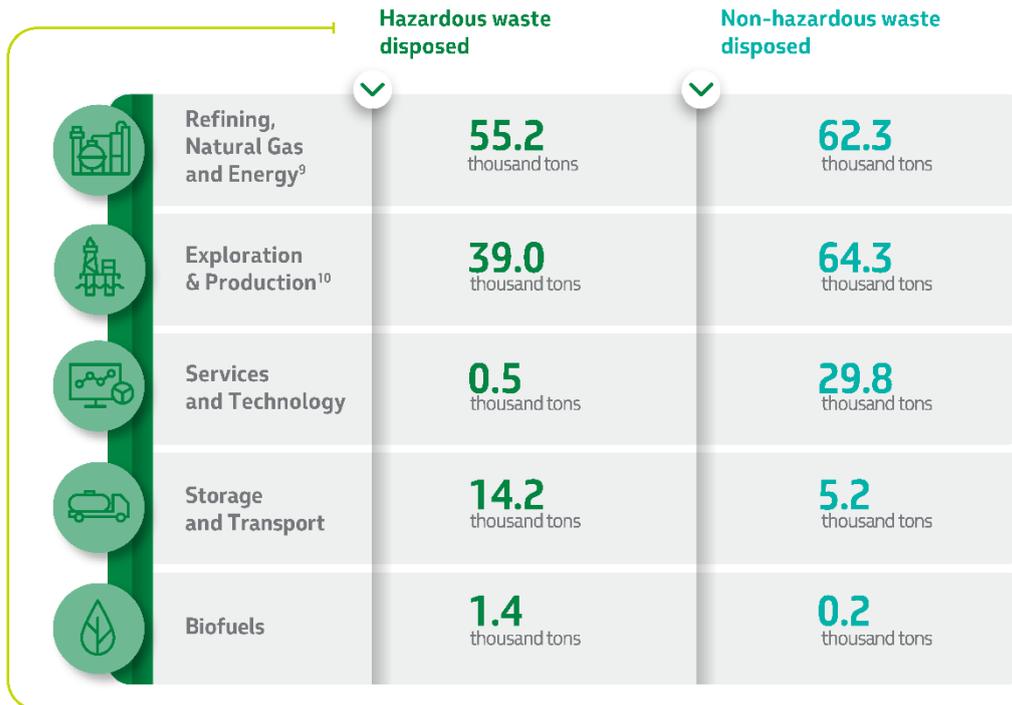
The difference between the mass of waste generated and disposed of occurs as part of proper waste management, since a portion is temporarily stored safely in our units to await disposal where normally batches are formed for transport and may occur from year to the next.

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<sup>7</sup> Law no. 12.305/2010, which establishes the National Solid Waste Policy, does not cover radioactive waste that is treated with specific regulations (for example, the norm of the National Nuclear Energy Commission (CNEN) No. 8.01/2014). Despite this, in 2022, approximately 551 tons of Class 2.2 radioactive waste, according to CNEN standard No. 8.01/2014, containing naturally occurring radioactive material (NORM) were disposed of by a licensed company in Texas-USA. There was no obstacle for this process by CNEN and the transport plan was licensed by Brazilian Institute for the Environment and Renewable Natural Resources (Ibama) and by CNEN.



## HAZARDOUS AND NON-HAZARDOUS WASTE DISPOSAL AND DISPOSAL TECHNOLOGIES<sup>8</sup>



DISPOSAL TECHNOLOGY	Hazardous waste		Non-Hazardous waste	
	Mass (thousand tons)	Percentage	Mass (thousand tons)	Percentage
<b>RRR</b>				
Reuse as fuel	68.0	61.7%	6.4	3.9%
Recovery, recycling, and reuse	29.2	26.5%	103.6	64.0%
Incineration (with energy recovery)	0.0	0.0%	0.0	0.0%
<b>NOT RRR</b>				
Biological treatment	2.6	2.3%	6.7	4.1%
Incineration (without energy recovery)	2.7	2.5%	0.4	0.3%
Disposal in landfills	6.2	5.6%	39.1	24.2%
Others <sup>11</sup>	1.6	1.4%	5.6	3.5%

<sup>8</sup> Data include Petrobras Parent Company (units in Brazil and abroad), Transpetro and Petrobras Biocombustível.

<sup>9</sup> Considers engineering works in the Refining, Natural Gas and Energy units.

<sup>10</sup> Considers the Production Development activities.

<sup>11</sup> Waste submitted to unconventional disposal technologies or to more than one type of treatment.



## Drilling fluids

We adopt actions related to operational efficiency in line with the practices of the offshore oil & gas industry, maximizing the use of the inputs used and minimizing landed waste. Some practices allow increasing the useful life of non-aqueous-based fluids, such as solids control and storage for evaluation of characteristics to allow their reuse in other projects. In addition, the use of dryers to reduce the content of adhered organic base has allowed the classification of gravels for environmentally adequate disposal in accordance with current legislation and the determinations of the competent authorities.

In 2022, we generated 2.6 thousand tons and disposed of 2.1 tons of cuttings and water-based fluids from exploration and production processes in land operations or landed from offshore operations<sup>12</sup>. We also generated and disposed of 4.7 tons of cuttings and non-aqueous based fluids. We adopted alternatives for environmentally appropriate treatment or final disposal of these materials.

### TECHNOLOGIES FOR DISPOSAL OF WATER-BASED FLUIDS (WBF) and NON-WATER-BASED FLUIDS (NWBFF)<sup>13</sup> (consolidated)

Disposal technology	Cuttings and WBF		Cuttings and NWBF	
	Mass (thousands tons)	Percentage (%)	Mass (thousands tons)	Percentage (%)
Multiphase separation	0.53	25.8	4.09	87.2
Recovery, recycling, and reuse	0.01	0.1	0.00	0.0
Incineration (without energy recovery)	1.36	66.3	0.01	0.2
Disposal in landfills	0.06	2.9	0.58	12.4
Others	0.10	4.9	0.01	0.2

## Oily sludge

Oily sludge is one of the main hazardous wastes generated in the oil & gas industry, mainly in cleaning activities of storage tanks for oil and oil products and effluent drainage and treatment systems. As reported in this chapter, in recent years we have adopted circular economy practices for reusing and valuing this waste.

In 2022, 38.7 thousand tons were generated, and 41.5 thousand tons of oily sludge were destined for disposal. For this portion that is not reused as raw material for petroleum products, environmentally appropriate treatment or final disposal alternatives are adopted.

<sup>12</sup>The total waste of gravel and water-based fluids reported refers to those that land as hazardous waste in accordance with NBR 10004.

<sup>13</sup>Data include Petrobras Parent Company, Transpetro and Petrobras Biocombustível.

**OILY SLUDGE DISPOSAL TECHNOLOGIES<sup>14</sup>** (consolidated)

Disposal technology	Oily sludge	
	Mass (thousands/tons)	Percentage (%)
Recovery, recycling, and reuse	39.90	96.1
Biological treatment	0.10	0.1
Incineration (without energy recovery)	0.20	0.6
Disposal in landfills	0.60	1.4
Others	0.70	1.8

## Divestment processes

In 2022, we continued the plan for the transition of the units that make up our portfolio management to ensure full compliance with all the units' emergency preparedness and response requirements. This way, a culture of contingency and accident prevention was reinforced to prepare the teams involved with this new scenario.

We have systems for decommissioning and divestment of assets and companies, in addition to HSE policies, guidelines and standards, which establish procedures for planning and executing these activities in offshore and onshore assets. Accident and leak prevention actions are carried out on all assets in which we are operators or have a stake, throughout the entire life cycle of the project, from planning to decommissioning, including the asset sale processes (divestments). This is always done under the supervision and with the participation of control and inspection bodies.

In the case of divestments, strict criteria are applied in the selection of potential buyers to ensure the technical, financial, and operational capacity to provide business continuity. Compliance with all commitments, requirements and accident and leak prevention programs are disclosed to potential buyers and maintained by us throughout the process until the asset is transferred to the new operator and the transaction is closed (closing). The new operator, upon receiving the asset, takes on the responsibility for all commitments and requirements related to the prevention of accidents and spills. These commitments and requirements are established and supervised by various control bodies (National Agency of Petroleum, Natural Gas and Biofuels - ANP), Brazilian Institute for the Environment and Natural Resources (Ibama), Brazilian Navy, Fire Department, state agencies environment, among others), that participate in the divestment process.

## Decommissioning process

The E&P portfolio active management process must take into account issues related to the decommissioning of assets. This is a legal requirement when the life cycle of the production system ends, or within the scope of area revitalization projects, replacing old systems with new ones. It is thus a natural process within the production cycle of the oil and gas industry.

<sup>14</sup> Data include Petrobras Parent Company, Transpetro and Petrobras Biocombustível.



Once the need for decommissioning has been confirmed, we plan and carry out activities in compliance with current regulations, following strict safety standards and carrying out multiple criteria analysis (environmental, technical, safety, social and economic), which allows us to objectively identify the alternative that best reconciles the various criteria considered.

In this analysis, we also consider a vast material of studies and guidelines on the best practices of the oil and gas industry worldwide.

In compliance with resolution no. 817/2020 of the ANP, the Facilities Decommissioning Programs (PDI) are evaluated and approved by the ANP, Ibama and the Navy, within the limits of their attributions. In summary: Ibama analyzes the solution for decommissioning and disposal of structures from an environmental point of view; the ANP verifies the technical compliance of the proposed solutions, confirming their alignment with the industry's best practices; and the Navy examines whether issues related to navigation safety and other uses of the sea are ensured.

The Facilities Decommissioning Programs contain information regarding the company's social responsibility management system, which includes: social diagnosis; social responsibility plan (with measures to mitigate identified risks) and initiatives supported under the Petrobras Socio-environmental Program. The adoption of these actions supports the entire business lifecycle, demonstrating our commitment to carrying out decommissioning activities safely. The social risks of decommissioning projects are evaluated, and mitigating measures are implemented, according to the internal standard Manage Social Risks throughout the Business Life Cycle.

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**>> Information on the minimum notice period for operational changes and programs for improving employee skills and career transition assistance can be found in the Labor practices and equality of opportunity chapter.**

Closing operations and decommissioning activities can impact the environment and communities located around the sites due to the processes of dismantling structures and facilities. During the execution of these activities, waste is generated such as plastic and metal scrap inherent to lines, subsea equipment, and platforms, as well as debris, oily sludge, cleaning residues contaminated with oil and hydraulic fluids.

To mitigate these possible impacts, we have systems for the development of asset decommissioning projects, in addition to HSE policies, guidelines and standards, which establish guidelines, processes and activities to plan and execute decommissioning of offshore and onshore assets. Compliance with decommissioning obligations involves various activities carried out in accordance with the decommissioning program approved by regulatory bodies and in accordance with applicable legal requirements.

In 2022, an Executive Decommissioning Committee was created to monitor the evolution of the best global practices and assist with the creation of strategic guidelines for implementing the decommissioning projects.

In 2022, we obtained approval from the Brazilian regulatory bodies for the decommissioning of FPSO Capixaba, in the Jubarte field, in Espírito Santo, as well as completing the unmooring of the P-07 platform in February. In addition, we have progressed with approval stages for decommissioning of other production systems, such as the P-33 and P-26, and we continue to carry out disconnection operations and removals of subsea equipment already approved for decommissioning projects underway in the Campos Basin, highlighting those related to the project to revitalize the Marlim field. We also abandoned 13 wells and disconnected 50 risers.

Over the next five years, we plan to decommission 26 platforms, 360 offshore wells and approximately 2,500 km of risers and flowlines, and we want to become a global reference for this activity, focusing on sustainability, safety and care for people and the environment.



It should also be noted that since 2022, the strategy for the disposal of our floating platforms that will undergo decommissioning has been implemented. This process considers a green recycling policy for these units, in line with the best global industrial ESG practices with a focus on sustainability, in order to guarantee the appropriate recycling process with protection of the environment and human rights. The P-32, a unit with interrupted production, will be the pilot project of this new policy, which has the following guidelines:

- Implement actions to minimize waste generation, prevent impacts on biodiversity, as well as reuse equipment and encourage the circular economy;
- Recycling in shipyards equipped with technological solutions, such as dry docks or impermeable land with an effective drainage system, which guarantee the containment of contaminants resulting from dismantling activities, preventing their release into the environment; do a prior inventory of the existing materials on the vessel, to ensure the proper preparation of a recycling plan by the shipyard;
- Recycle the fleet of vessels safely, protecting the environment and people working in the recycling yards;
- Consider quality certificates, requirements of resolution no. 1257/2013 of the European Union Ship Recycling in the case of international shipyards, and/or in the case of Brazilian ones, the operating licenses and compliance with applicable legislation, rules and regulations on the environment, safety, and health of workers, including management of subcontractors;
- Act in accordance with agreed upon commitments, including measures to control corruption and respect for internationally recognized human rights

### Onshore decommissioning processes

As with offshore decommissioning activities, the abandonment of assets located on land is subject to the same corporate system, obeying the same criteria to ensure the execution of the best alternative to the dismantling of onshore installations.

In the case of onshore assets, the process involves several stages such as inspections, cleaning and decommissioning of pipelines, permanent plugging of wells, razing and environmental recovery of locations with authorization from regulatory bodies and in accordance with applicable legal requirements.

Analogously to offshore assets, we submit all our decommissioning projects to the ANP, however, the environmental licensing for decommissioning projects in onshore environments needs to be authorized by state environmental agencies, linked to the State Environmental Secretariats.

In 2022, we decommissioned 44 onshore wells in several concessions.



# Social



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# Local and traditional communities

The material topic local and traditional communities corresponds to the economic and social development of communities, directly or indirectly, resulting from the installation of the company and/or the implementation of local development programs, social inclusion and reduction of inequalities, investment in infrastructure and services for the community, as well as the company's approach in the community relationship process.

The topic includes negative impacts on communities associated with investment and divestment processes, social disturbances in general, risk of human rights violations in the community, and direct and indirect impacts such as: noise, odor, soot, demographic increase, increase of worker and vehicle traffic flow, and rising cost of living. Other aspects to be considered include impacts on indigenous and traditional communities such as fishing communities due to restriction zones, seismic surveys, support vessel traffic, and leaks.

It also includes impacts from the company's efforts to raise community awareness of accidents, including those caused by third parties, such as fuel theft, and to prevent violence or violation of human rights by the company's security forces in conflict situations. It also addressed positive impacts such as security and protection for local communities through dialogue between communities and public security forces.

## Local communities

Our activities can have an impact on the social dynamics of the communities where we operate. These changes may occur in one or more of the following: livelihoods, economy, culture, community, political system, environment, health and well-being, individual and property rights, and people's fears and aspirations.

We manage the socioeconomic impacts and risks that may affect the communities located in the areas where our activities are carried out through environmental licensing or through the management of social and environmental risks and local Social Responsibility plans.

## Environmental licensing

Environmental licensing is a legal obligation, in which we strictly follow all the guidelines and rules for its execution, such as Federal Law 6,938/81, Complementary Law no 140/2011 and CONAMA Resolutions nº 001/86 and no 237/97.

The environmental licensing process includes an analysis of the potential socioeconomic impacts in the region, considering the survey of all aspects of the activities and their respective impacts, according to the environmental impact studies and current regulations. For those impacts identified as negative, mitigation, monitoring or compensation measures are developed and implemented, while for positive impacts, actions are defined to enhance them.

The impact assessment is carried out for each venture or group of ventures, and the starting point is the identification of the activities inherent to each phase (Design, Installation, Operation and Decommissioning), characterizing the socioeconomic environment, qualifying the environmental risk, and proposing the respective monitoring, mitigation, or compensation measures, in addition to the Environmental Compensation provided for in the SNUC Law.



As part of the environmental licensing process, the environmental agency involves social participation in a consultative manner, aiming at the analysis aimed at issuing the license. Social participation takes place through public hearings held by us and with the participation of various bodies and communities located in the areas of influence of the enterprise or activity.

In these meetings, based on the disclosure of the environmental study, all sectors of society can express their doubts and, mainly, make proposals to be incorporated into the environmental licensing process, to mitigate and compensate for negative impacts and maximize positive ones.

Throughout the life cycle of the licensed enterprise, society's participation continues through the conditions of environmental licenses.

Among the constraints, the Environmental Education Programs (PEA) stand out, which are aimed at communities in the area of influence and are based on critical, dialogical and emancipatory training, as well as the Social Communication Programs (PCS), which maintain communication channels (Call Center, 0800 Channel and online information portals) that provide information on operational activities, and the social and environmental projects developed.

We currently have 175 assets undergoing installation or in operation. Of this total, 94% (165 assets) did some type of community consultation. These consultations may take place through public hearings or public meetings upon project implementation and/or through community committees or other social communication programs during the operation of the assets. Among the projects under development, we have 44 projects being implemented, of which 93% (41 projects) had their Environmental Impact Reports, for the purpose of public hearings, made available by the Brazilian Institute for the Environment and Renewable Natural Resources (Ibama), at the state environmental agencies and/or Petrobras website, in addition to having been distributed in the places indicated by the environmental agencies, such as city halls, Public Prosecution Offices, or Conservation Units, depending on the phase of the licensing process.

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>> [Information on environmental licensing processes can be found in our Human Rights and Corporate Citizenship Supplement.](#)



## Petroleum Territories Project



An example of a project developed under the PEA is the Petroleum Territories Project. When mapping the social problems in the spaces they inhabit, the communities seek public authorities and enable solutions to these problems. Simply put, this is the purpose of the recently launched Social Atlas of Petroleum Territories publication, which makes one of the project's work methodologies tangible, with the objective of mitigating misinformation about royalties and special participations. The Environmental Education Project – Petroleum Territories (PEA-TP) is developed by Petrobras as part of the federal environmental licensing process, conducted by **Ibama**.

The social atlas considers the physical space alongside cultural heritage, and ways for a community to intervene in these spaces. In the specific case of Social Atlas TP, in different stages, the positive and negative impacts of the arrival of royalties and special participations in each municipality were detected and action plans

were generated for each community to act together with public bodies. The printed version of the atlas was made available to members of the Citizen Vigil Centers in the 10 municipalities that are part of the project: Armação dos Búzios, Arraial do Cabo, Campos dos Goytacazes, Cabo Frio, Carapebus, Casimiro de Abreu, Macaé, Quissamã, Rio das Ostras and São João da Barra. PEA – Petroleum Territories directly targets the following stakeholders: *quilombolas*, fishermen, teachers, community leaders, government representatives, rural workers, and settlers, among others. It indirectly targets representatives of trade associations, cooperatives, trade unions and associations representing civil society, teachers' associations; university student associations, whether they are directly impacted or not, but they may support active roles in the productive and social scope of the selected municipalities. The digital version can be accessed through the project website: <https://territoriosdopetroleo.eco.br/>

## Management of social and environmental risks in projects

In addition to the legal obligations of the environmental licensing process, we develop social and environmental risk management processes throughout the life cycle of our businesses. The main objective of processes for managing social and environmental risks is to prevent negative impacts resulting from the interaction between our activities, society, and the environment.

Social and environmental risks can also interfere with business objectives and the social license to operate. Although it is not a formal document like the environmental license, the social license refers to the acceptance of the company's practices and business by stakeholders and public opinion in general, obtained through approximation, creation, and maintenance of bonds of trust.

***Social and environmental risk analyzes are carried out at all stages of the business life cycle.***

Examples of social and environmental risks are: inappropriate use of onshore pipelines by community members, inconvenience caused by possible emissions, maintenance stoppages involving a significant number of workers, inconvenience due to increased traffic, as well as the exaggerated expectation of job creation by the community.



In 2022, 23 investment projects were submitted to Social Responsibility and HSE evaluation for the phase change, contemplating 100% of non-operated Joint Ventures (JVs), in the project phase, with Petrobras (WI) participation above USD 300 million for projects in the E&P segment and over USD 25 million for projects in the refining segment.

The analysis of investment projects and the consequent recommendations and risk identification happens through mitigation actions that are materialized, as the case may be, in changes to the project and procedures, in emergency response plans, in the process of monitoring occurrences and complaints from the community, in actions to promote the projects, and operational activities.

We also have specific systems for the decommissioning and divestment of assets, partnerships, and companies.

>> More detailed information about our social and environmental risk management process can be found in our [Human Rights and Corporate Citizenship Supplement](#).

### Strengthening of social actors in a divestment project in Carmópolis -SE (UN-SEAL)



Photo: Petrobras Image Bank





## Local social responsibility plans

The diagnosis and social analysis of the communities in the areas covered by our operations are important tools for identifying and analyzing the possible socioeconomic impacts of our operations on the communities. In 2022, we finalized the socioeconomic diagnoses of communities and municipalities that were started in 2021 in the areas covered by REVAP and UN-BC. We carried out the diagnosis at RECAP, to provide input for social responsibility management, identifying and analyzing territorial potential and weaknesses, history of social impacts (positive and negative), and prospecting future scenarios associated with our activities in these territories.

The socioeconomic diagnosis consists of a translation of the reality experienced by a population in a given geographic space through the use of reliable and valid indicators that can be desegregated, and which permeate several dimensions of social reality. During this process, municipal socioeconomic indicators are consulted, as well as specific data from the communities mapped in the territory, such as social actors, traditional peoples and communities, the existence of conflicts, and the existence of impacts and risks arising from our activities. We also include the collection of primary data, through focus groups, survey research, social cartography and perception studies.

Real or potential reason for conflicts with communities are also pointed out. These included complaints about air pollution, noise, odors, and soil contamination; intrusion into areas and waterways; daily interferences, especially traffic and dust, including blocking access routes by communities; protests and complaints resulting from the generation of expectations, such as jobs, local improvements, financial compensation for communities; and clandestine diversion. One of our Sustainability Commitments is that 100% of our operations have socioeconomic diagnoses reviewed and finalized by 2025.

With the systematization of this information, social responsibility and community relationship plans are drawn up to provide answers to community questions from the business units. The plans are annual, and the process also provides for periodic reviews and updates. The actions provided for in the plans seek to respond to the social risks identified in the diagnosis and to increase the level of engagement of the communities with us, seeking to maintain permanent dialogue and expand community participation in the planning of actions.

In 2022, 23 local social responsibility plans were implemented, covering 100% of the refining, exploration, and production units. These plans were prepared by the multidisciplinary teams (coordinated by Social Responsibility and with the participation of partner areas in the units) and approved by the highest ranking positions of the units. The planned actions are monitored through a management system (JIRA), which tracks the percentages planned and carried out, in addition to allowing the insertion of evidence. Periodically, management meetings are also held with the head of the unit to report on the progress of activities and outline strategies for correcting deviations, if necessary. Through these practices, we were able to ensure that 98% of the planned activities were executed, surpassing the management established goal by 3 percentage points.

**ACHIEVEMENT OF SOCIAL RESPONSIBILITY PLANS (2022)**

Description	Achievement Goal	Percentage Accomplished	Performance <sup>1</sup>
Improve knowledge about communities and strengthen community relationships	95%	97.0%	102%
Promote actions to prepare communities for emergency situations	95%	94.2%	99%
Manage the treatment of conflicts and critical issues arising from operations, integrating our assets into the coverage area	95%	99.4%	105%
Manage social risks across the business lifecycle	95%	100%	105%
Enable socio-environmental projects as an instrument of community relationship	95%	100%	105%
Promote the dissemination of Social Responsibility culture through the involvement of the workforce	95%	99.3%	105%

The management of socioeconomic impacts of our subsidiary Transpetro also includes risk management and community relationship actions. The pipeline lanes are very present in the communities, since they are in the open, interacting with the environment, through cross streets and highways, as well as environmental, urban, rural, industrial, and densely populated areas. In addition, several sections of the pipeline lanes are located very close to different communities. In this context, community relations are essential, seeking engagement with communities through continuous and transparent dialogue, creating synergy and integration, as well as increasing the security of the facilities and their surroundings.

In the Pipeline Protection Program, a diagnosis was carried out to map the main communities to prioritize in Transpetro's Communication and Social Responsibility action plan, taking into account criteria such as population density and the critical nature of the transported products.

To build relationships with the communities in the places where we have assets, we carry out periodic activities involving residents and other stakeholders of the local society. These include drills with community participation, face-to-face communication with visits by representatives of Transpetro to the residents surrounding pipeline lanes, meetings at schools and community association sites, events for information and engagement on pipeline safety, and the relationship channel with Transpetro (dial 168), informational brochure distribution in the communities, and dissemination through an advertising campaign with sound cars, radio, and billboard ads. We also launched a new and extensive advertising campaign to increase public awareness of this type of risk, which encouraged the population to collaborate through the communication channel, telephone number 168, effectively reporting criminal actions.

In addition, we maintained our focus on exercising our crisis procedures and responding to emergencies caused by fuel theft from pipelines, by conducting the first integrated crisis drill between Petrobras and Transpetro. We seek to use these activities to keep communities aware of our operations and understand that the transportation of fuels by pipeline is a safe activity as long as there are no unauthorized

<sup>1</sup> Percentage of goal achieved.



interventions in the assets. We expect the communities neighboring the pipeline lanes will be engaged in fighting clandestine derivations and will cooperate by making complaints by dialing 168.

## More Employment Program



An example of action developed in the communities is the “More Employment” program implemented in 2022, with the support of the National Service for Industrial Learning – SENAI and making use of the right to matching financial contributions in this institution. With the program, we distributed more than 1100 free vouchers throughout the country to train more than 20 groups of short professional qualification classes.

Allied to the need for skilled labor for our businesses, we prioritized the needs of the communities

within or activity coverage area focusing especially on unemployed people with no professional or income prospects.

Free training seeks to provide the minimum technical requirements required to carry out activities in the industry. The program is also a development, within the scope of the Social Responsibility Executive Management, of the Petrobras Strategic Plan 2022-2026, in line with our value of contributing to the economic development of communities.

## Communities and Security Forces

An important concern regarding the communities in the coverage area of our operational units is the interaction between our security forces and the communities. In order to prevent possible conflicts, Corporate Intelligence and Security (ISC) management, in the preparation of its studies and other products, complies with legislation and regulations related to human rights. We always recommend that unit managers involve representatives from the Social Responsibility area in situations that require interaction with the community.

In order to contribute to the internal development of our employees, we offer a cycle of virtual lectures on human rights for the entire Corporate Intelligence and Security workforce, with the participation of specialists from Corporate Intelligence and Security, Compliance, Labor Law and Social Responsibility. The topics addressed were: discrimination, moral and sexual harassment at work, sexual diversity and racial diversity.

>> Information about the performance of our security forces can be found in our [Human Rights and Corporate Citizenship Supplement](#).



## Traditional communities

In our Local Social Responsibility Plans, we prioritize the so-called traditional peoples and communities of fishermen, *caiçaras*, *quilombolas*, indigenous peoples, riverside communities and *terreiro* peoples. The identification of traditional communities and peoples covered in this section considers the legally established concepts. This scope was anchored in the identification established in Decree 6040/2007, which institutes the National Policy for the Sustainable Development of Traditional Peoples and Communities.

The relationship with indigenous peoples and traditional communities takes place both through mandatory actions arising from environmental licensing constraints (such as the Environmental Education Project, Characterization Project for Traditional Territories, and compensation projects for fishing activities), and through actions of a voluntary activities such as corporate social responsibility projects and socio-environmental investments.

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>> [Information about our approach to traditional communities can be found in our Human Rights and Corporate Citizenship Supplement.](#)

## Claims and complaints

We provide direct contact channels to register claims and complaints, such as 0800 728 9001 (Customer Service) and an institutional e-mail directed to the social responsibility teams that serve the Business Units. Regarding claims and complaints from the communities present in the coverage area, the records are made via Customer Service and through the Ombudsman's Office. We provide assistance through toll-free phones with 24-hour service coverage, seven days a week, through contact channels widely disseminated in the communities where we operate.

This information is categorized by unit and by topic and is monitored by the SAC Panel. In 2022, 1,380 requests were received through this channel. We emphasize that we address 100% of complaints.

In 2022, our Ombudsman's Office received 397 statements from local communities. Of this total, 58 were reports (12 confirmed, 20 unconfirmed, 14 dismissed and 12 pending); 166 were complaints (116 completed, 49 archived and 1 in progress); 146 were requests (112 completed, 33 dismissed and 1 in progress); in addition to 27 suggestions, opinions, and compliments. These reports included invasion or irregular occupation of Petrobras areas, impacts on the health of the community surrounding the facilities, and environmental impacts and irregularities in projects maintained by the company. The other statements were regarding the gas cylinder donation program, requests for sponsorships and donations, land issues, pipelines, and installations.

We seek to respond and deal with recurring requests from communities through actions planned in the social responsibility plans of the business units. In addition, we present and discuss these issues through community committees, which take place in our operating units. We also develop several voluntary socio-environmental projects with the objective of responding to the recurring demands of the communities in the territories where we operate. These projects are presented below in the topic Socio-environmental investments and sponsorships.

## Environmental and socioeconomic compliance

Even with the adoption of several control initiatives regarding the environmental and socioeconomic compliance of our operations and projects, in 2022 we suffered administrative sanctions related to these topics, as reported in the following table:



## ADMINISTRATIVE SANCTIONS RELATED TO ENVIRONMENTAL AND SOCIOECONOMIC COMPLIANCE IN 2022<sup>2</sup> (in millions of BRL)

Type/Environmental Agency	Amount
Fines related to Environmental licensing/ Ibama	8.1
Fines related to oily appearance/ Ibama	1.2
Fines related to miscellaneous discharges/ Ibama	8.0
Fines related to water resources/Various environmental agencies	25.0
<b>Total number of fines</b>	<b>10</b>

We also highlight that we had no record of administrative labor fines more than BRL 1 million in 2022.

>> [Information about our channels for claims and complaints and the mitigation and repair actions adopted can be found in our Human Rights and Corporate Citizenship Supplement.](#)

## Socio-environmental investments and sponsorships

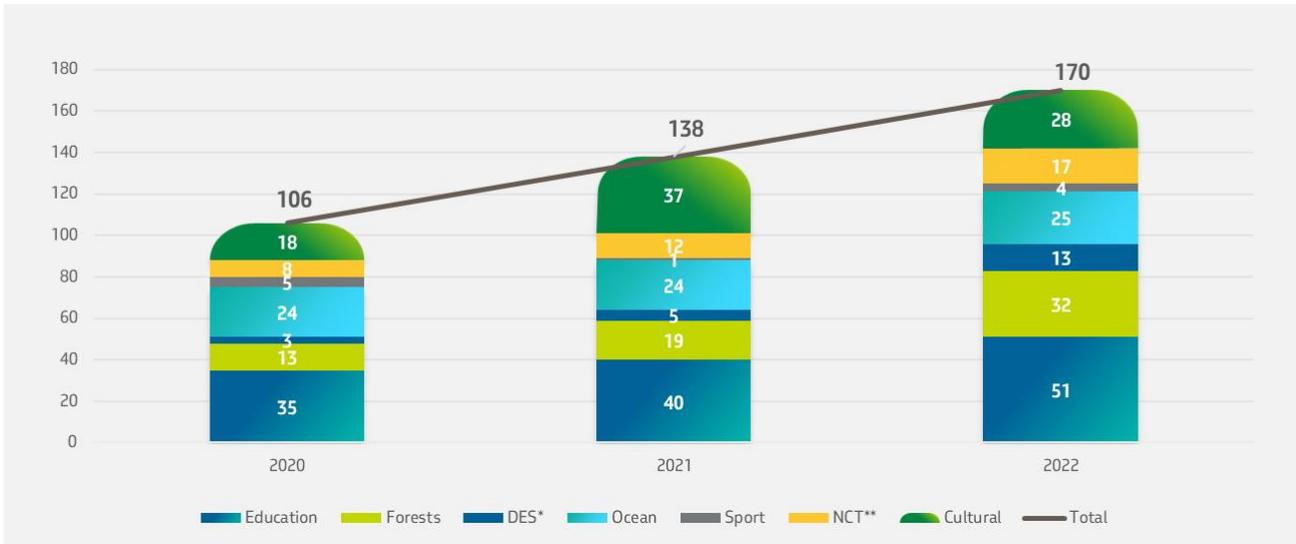
We also develop several socio-environmental projects and sponsorships, with the aim of responding to the demands of communities in the territories where we operate, achieving positive socio-environmental transformations, consolidating the relationship with our stakeholders, and strengthening our reputation.

The distribution and development of socio-environmental investments and in cultural, sports, and business, science and technology sponsorship over the past three years can be seen in the graph below.

<sup>2</sup> Fines received by the company with an amount greater than or equal to BRL 1 million



### SOCIO-ENVIRONMENTAL SPONSORSHIP INVESTMENTS AND IN CULTURE, SPORTS, AND BUSINESS, SCIENCE AND TECHNOLOGY (millions BRL)



\*DES = Sustainable economic development

\*\*NCT = Business, science and technology

Of this total investment, BRL 47.4 million were invested via the tax incentive law.

In addition to our socio-environmental investments and sponsorship projects, to increase our contribution to society, in 2022 we made several donations to help families in socially vulnerable situations through the donation of BRL 263 million that contributed to the purchase of cooking gas, accompanied when possible by the delivery of food items.

In addition, we donated BRL 9 million for emergency actions to support the acquisition of inputs and the recovery of locations affected by floods in the states of Bahia, Minas Gerais, Pernambuco, and the municipality of Petrópolis-RJ. With this, we reached the BRL 272.4 million in donations during 2022.

>> Detailed information on all donations made can be found in the appendix to this report – Donations.

### Voluntary social and environmental Investments

Our voluntary social and environmental investment, structured within the scope of the Petrobras Socio-environmental Program, complies with the Strategic Plan 2023-2027 as a tool to support the sustainability of our business.

In 2023 we will complete 20 years since the first integrated multi-annual corporate socio-environmental investment programs. At the end of 2013, we launched the Petrobras Socio-environmental Program, based on the experience of social and environmental initiatives, uniting these dimensions in the same program.

The current priorities of the Program are Education, Sustainable Economic Development, and Ocean and Forests. They all use the recurring demands of the territories where we operate, the strategy of transition to a low-carbon economy and offshore operations as drivers. This is how we prioritize our contribution to four Sustainable Development Goals (SDGs): (4) Quality Education, (8) Decent Work and Economic Growth; (14) Life below Water and (15) Life on Land. Early childhood, innovation and human rights are among the cross-cutting themes to be considered in all projects that make up the portfolio of socio-environmental projects that we support.



Our Education and Sustainable Economic Development lines are intrinsically related to the demands of the communities and territories where we operate, in addition to supporting the treatment of social risks of our operations and risks of human rights violations in areas where our business units are located.

Through these initiatives, we support projects related to the development of professional skills and the expansion of

opportunities for professional inclusion of young people and adults. We also support initiatives focused on the development of local vocations, job and income opportunities, and entrepreneurship. Another important focus of our projects are complementary educational initiatives whose purpose is to improve learning, digital inclusion, and holistic development, in addition to providing training for educators.

In this sense, our current projects have trained around **25,000 participants** through education actions for the job market and education to improve the quality of education in these places.

Participants with an increase in income account for around **1,100 people**, and with scholarships provided, account for **2,301 people**.

In line with our strategy of prioritizing investment in children from **0 to 6 years** of age in the area covered by

our operations, we developed initiatives to mobilize the protection network for children and adolescents, in addition to educational activities for children in early childhood and their parents and guardians, with the aim of strengthening family ties and to complement educational and to complement educational actions. These actions accounted for **7,265 direct participants**.

Initiatives focused on protecting children and adolescents, that Todos includes early childhood, accounted for **3,794 participants** referred to the Unified Social Assistance System.

**All of our projects, that is, 100% of the social projects supported by us operate directly in the area covered by our operations.**

In the Forests activity line, the projects operate in the Amazon, Cerrado, Caatinga and Atlantic Forest biomes, and important ecosystems such as mangroves. A total of **463 species** of flora and fauna were covered in actions of protection, monitoring, study and by planting and collecting seeds. Of these, 14 are endangered fauna species, including the puma, tapir, three-banded armadillo, and the southern muriqui. Endangered flora includes species such as juçara, araucaria, Brazil nut tree, and jequitibá-açu, some of which, besides having great ecological value, have economic value for many traditional communities and indigenous people.

Initiatives in this line of action benefited more than **38,000 people** who perform restoration activities while providing support for communities, continued education and training actions, among others. Of these, approximately **10,000 participants** were children ages **0 to 6 years old** who had access to environmental education actions promoted in schools and public spaces, including access to green spaces.

In training activities, there were more than **31,000 participants** in courses and workshops related to restoration methods, implementation of agroforestry systems, structuring of production chains, among others. Actions focused on environmental awareness reached over **236,000 people**, including commemorative events, river cleaning efforts, and access to visitor centers.

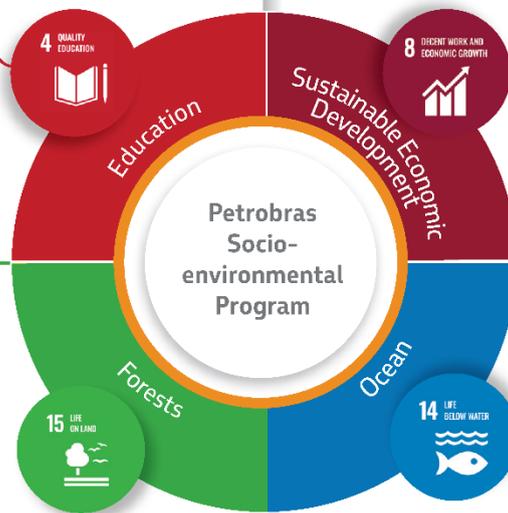
Projects in force in 2022 produced more than **187 technical and scientific publications**, had more than **155 researchers** participating in their activities and provided more than **100 scholarships**.

In the Ocean line of action, the projects covered **182 species** in protection, monitoring or study activities. Of these, **44** are endangered fauna species, such as whales, corals, birds, fish and turtles. These initiatives have benefited more than **39,000 people**, including training, continuing education activities and research support. Of these, approximately **11,000 participants** were children from **0 to 6 years** old who had access to environmental education actions promoted in schools and public spaces. In the training activities, there were more than **11,690 participants** and, in actions focusing on environmental awareness, reaching over

**1,860,000 people** in workshops, beach cleaning efforts, and access to visitor centers, among others.

One of the action fronts of the projects in this line is the reduction of the multiple stressors in marine and coastal environments, whether through education focused on conscious consumption or direct actions to clean these environments. Projects in force in 2022 have already collected more than **22 tons** of waste in joint efforts to clean up rivers and beaches.

Collaborating for the generate technical and scientific knowledge, in line with the objectives of the UN Decade of Ocean Science and SDG 14, the Program contributed to the 2022 projects producing more than **130 technical and scientific publications**, providing **90 scholarships**, and having more than **392 participating researchers**.





Public selections and the contracting process for projects from new civil society organizations are periodically part of our strategy to strengthen non-profit institutions, provide new institutions with access to company resources, and carry out customized projects to meet the demands of the territories along with business challenges.

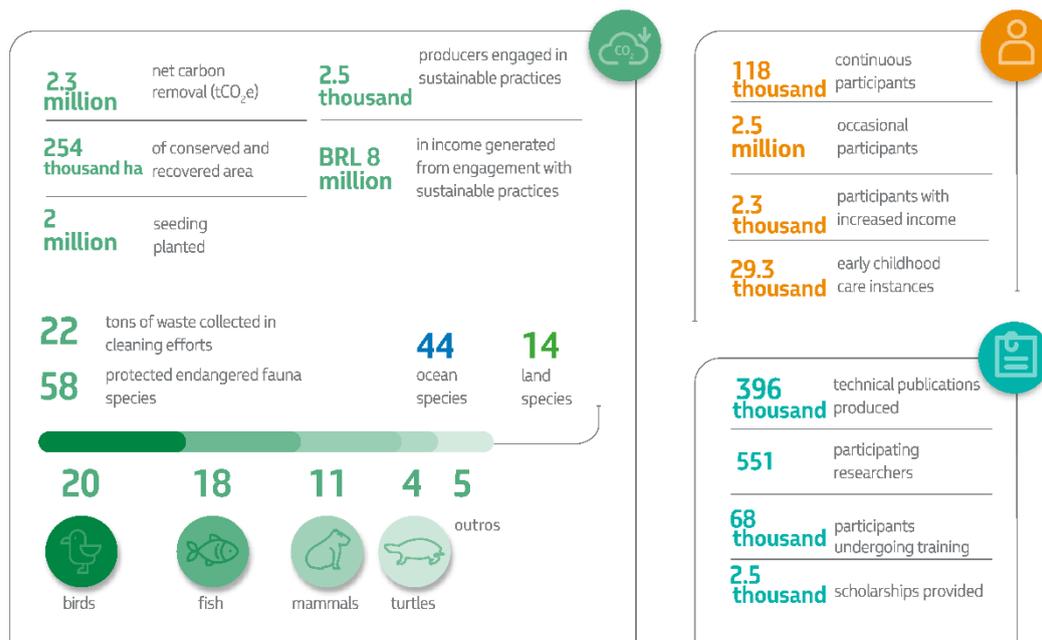
**In 2023, we launched the largest public selection process in the history of Petrobras' socio-environmental investments. The selection process will be divided into two stages and, in total, BRL 432 million will be invested in more than 50 projects. In the first stage of selection, which began in February, the company will invest in socio-environmental initiatives in the North, Northeast, Midwest and South regions, and the estimate is to contract more than 20 projects that will develop their activities for a period of three years.**

In 2022, the socio-environmental investments of our subsidiary Transpetro also grew significantly, with the contracting of two projects through an agreement: Clean Strip 2 and From Mangrove to Sea, in addition to the continuation of the Cine Transpetro in the Communities Project - Cinema in Motion, a sponsorship action.

Our socio-environmental projects have targets and indicators established at contracting, which allow periodic performance evaluation.

The schedule of this evaluation is defined at the beginning of each project, as well as the means of verification. The collection of information can vary for each project, generally covering information about the intended audience, engagement in planned activities, and the results obtained in socio-environmental actions. We highlight some of these results below:

### RESULT INDICATORS OF SOCIAL AND ENVIRONMENTAL PROJECTS





The numbers mentioned above reflect the results of the socio-environmental projects in 2022. Considering the dynamic nature of the portfolio, the profile of the projects and the degree of contract maturity, annual variations may occur. In 2022, there was a 17% increase in the number of projects that had their results evaluated, as well as an increase in the execution time of the others.

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>> **Information on our socio-environmental projects and their results can be found in our [Human Rights and Corporate Citizenship Supplement](#).**

### **Investment in sponsorships for culture, sports, and business, science, and technology**

In 2022, we were also present in society through our sponsorships. We work with the current portfolio of projects and new projects were carried out in the cultural, sports and business, science, and technology segments. Sponsorships are selected using the “direct choice” or “public selection” modalities. Each and every sponsorship opportunity undergoes an internal analysis, based on predefined criteria, in order to guarantee the transparency and compliance of the decision.

Among the projects of various sizes and in different cities carried out during the year, we highlight the calls for public tender “Call for Petrobras Multiple Cultural Expressions” and sponsorships for the Petrobras Symphony Orchestra, the Petrobras Team, the Supertech web series on the Manual do Mundo digital channel, our participation at the events Rio Oil & Gas, in Rio de Janeiro, and Ceraweek, and Offshore Technology Conference (OTC), in Houston.

In the cultural sphere, sponsorships are related to innovative Brazilian projects that are innovative, with potential for return, and alignment with our brand strategy.

***The sponsored cultural projects focus on music, performing arts, audiovisual and multiple expressions. The public selection process added 15 new projects, aimed at valuing the Brazilian culture in museums and cultural spaces in 10 Brazilian states.***

In sports sponsorships, the highlight was the continued support for the training of Olympic sports athletes who form the so-called Petrobras Team and will represent Brazil at the Olympic and Paralympic Games in Paris 2024.

Sponsorships for business, science and technology events intensify relationships with partners, investors, customers, and the academic and scientific community, among others. We sponsor several initiatives that arouse curiosity and promote experimentation and conversations on topics related to innovation and the changing world. Among the sponsorships in this sense are Rio2C, Campus Party Brasil (Brasília, Goiânia and São Paulo), Rio Innovation Week, Rec’n’Play, Brazilian Science Olympiad, Brazilian Robotics Olympiad, Mostratéc and Hacktudo.



We also sponsor projects related to energy business activities, with a focus on oil and gas, and in the corporate world, with emphasis on issues related to governance, compliance and excellence in technological development. Among these sponsorships, it is worth mentioning the Brazil Investment Forum, Mec Show, Brazilian Congress of Innovation in Industry, Brazil Oil, Gas & Energy Summit, Argus Americas Crude Summit, ECO Award, Abrasca Award for Best Annual Report and Transparency Trophy.

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>> **Information about our cultural, sports and business, science and technology sponsorships can be found in our [Human Rights and Corporate Citizenship Supplement](#).**



[2-7] [2-8] [2-20] [2-21] [2-30] [3-3] [11.10.1] [11.10.2] [11.10.3] [11.10.4] [11.10.5] [11.10.6] [11.10.7] [11.10.8] [11.10.9] [11.11.1] [11.11.2] [11.11.3] [11.11.4] [11.11.5] [11.11.6] [11.11.7]

# Labor practices and equality of opportunity

The material topic labor practices and equal opportunities corresponds to employment opportunities and positive impacts on workers by the employment practices adopted and their influence on the supply chain. It includes impacts on employees, on their careers and development, and on the organizational environment due to the level of transparency in communication and the establishment of dialogue, especially in career advancement processes, and the company's policies and practices in relation to the promotion of non-discrimination, diversity, equity, inclusion, and equality of opportunity.

## Employment practices

The labor world continues to evolve, and the business context is undergoing accelerated transformation with the opening of the market in Brazil and the global energy transition, demanding even more collaboration and innovation from our employees. The management of people in the company is fundamental for the execution of our strategies and achievement of the expected results. Our Human Resources (HR) area works with a focus on valuing professionals and creating the necessary conditions for everyone to realize their full potential, seeking to be a reference in HR practices and strengthen our brand.

In this way, HR has been implementing solutions aligned with the strategic challenges of each business segment and making people management processes more agile and efficient, compatible with the best market practices, offering employees and leaders a better experience.

It should be noted that the Strategic Plan 2023-2027 presents a major HR challenge to increase productivity, considering the preparation of the workforce for business sustainability while strengthening our cultural evolution.

In addition, our ESG (environmental, social and governance) objective is to contribute to the socioeconomic development of the country, with an emphasis on promoting well-being and human rights. To this end, we seek to advance in diversity and inclusion actions, especially about people with disabilities, as well as with racial and gender issues.

We will also preserve and strengthen valuable aspects of our culture, such as the ability to innovate and overcome challenges, and to focus on producing with excellence in the technical and economic fields, acting as a single team to generate value. We will do all this with full respect for people and the environment, as safety is our greatest value.



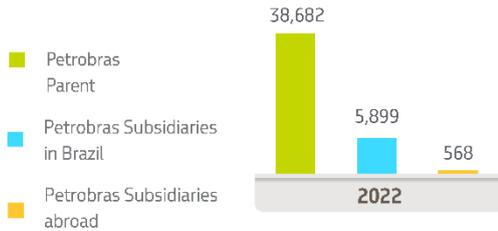
### Employee profiles

#### Total Employees of Petrobras

  
**45,149**

#### Total employees of Petrobras Parent Company

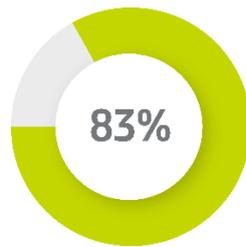
**38,682**



Business area	2022
Exploration & Production	12,969
Refining, Transport and Trade	8,773
Gas and Energy	1,523
Others	15,417
<b>Total</b>	<b>38,682</b>

  
**32,123**

MEN

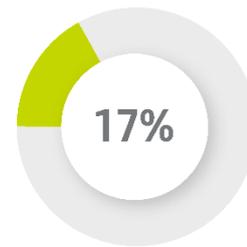


#### CORPORATE POSITION

Manager	<b>11.3%</b>
Supervisor	<b>5.9%</b>
Specialist	<b>2.5%</b>
Other	<b>80.3%</b>

  
**6,559**

WOMEN



Manager	<b>13.7%</b>
Supervisor	<b>3.6%</b>
Specialist	<b>2.7%</b>
Other	<b>80.0%</b>

### Work hours

At Petrobras Parent Company, all employees are hired for an indefinite period, and the contractual workload is eight hours or six hours a day, depending on the employee's position. All 38,673 employees of the Petrobras Parent Company were hired according to the Consolidation of Labor Laws (CLT). Throughout 2022 we had no significant changes in our number of employees. Additionally, we have nine officers who are statutory and governed by our bylaws, all men, totaling 38,682 employees as of December 31, 2022, which represents 86% of total employees. We do not use temporary contracts for hiring at the Petrobras Parent Company.

With the aim of providing better quality of life for our employees, in addition to being another tool for adapting the workforce, in 2017, an optional reduction in the daily workday from eight to six hours was implemented, with a proportional reduction in compensation of 25% for employees in an administrative regime with flexible hours who do not have additional payment for leadership/management position. In addition, in 2018, an optional weekly workload reduction with proportional reduction of 20% was implemented, which enabled employees to reduce their work days per week from five to four, after negotiating the rules with labor unions. The reduction of days was offered to employees who work in the administrative regime with flexible and fixed hours with a work day of eight hours a day and in the



administrative regime of differentiated category (social workers) whose daily work hours are six hours, as long as they did not perform a paid function. Part time employees have the same benefits as regular employees.

## NUMBER OF EMPLOYEES PER WORK REGIME<sup>1</sup> (Parent Company)

Region	Statutory <sup>2</sup>		CLT			
	Executive Board		Full-time permanent regime		Part-time permanent regime <sup>3</sup>	
	Female	Male	Female	Male	Female	Male
Midwest	0	1	52	96	1	0
Northeast	0	0	498	2,868	11	13
North	0	0	67	573	0	1
Southeast	0	8	5,505	27,127	204	141
South	0	0	221	1,291	0	4
<b>TOTAL</b>	<b>0</b>	<b>9</b>	<b>6,343</b>	<b>31,955</b>	<b>216</b>	<b>159</b>

In the Brazilian subsidiaries, 98% of employees are hired with an indefinite-term contract (5,752) and 2% are hired for a fixed-term period (147, of which 7 are statutory), with no part time employees hired in these companies. In the foreign subsidiaries, 96% of employees hired for an indefinite period of time (548) and 4% of the employees are hired for a fixed period of time (20). In terms of working hours, we have 12 employees on reduced hours, 3 men and 9 women, and the remaining 556 employees from companies abroad (98%) work full time.

### Our hybrid work model

In August 2020, in the context of the coronavirus pandemic, the Executive Board approved the permanent telecommuting model for up to three days a week. Optional participation was made available to employees by signing a Participation Agreement, which serves as an addendum to the employment contract, which contains the rules that must be observed. The return to face-to-face work, and the effective application of the permanent telecommuting model, for up to three days a week, was implemented in waves as of October 2021, observing the context of the pandemic.

With the last wave of return to face-to-face work that took place in May 2022, the Petrobras Parent Company administrative employees who adhered to the permanent teleworking model began to perform their activities in a hybrid manner, which represents 87% of total employees in the administrative regime.

In the Brazilian subsidiaries, 30% of employees use the hybrid model (1,775 employees), with the same rule of the parent company for the number of days telecommuting and in person.

<sup>1</sup> The calculated numbers correspond to employees registered in the system under the regime on 12/31/2022, allocated in the equivalent regions; therefore, it does not consider fluctuations in joining or leaving, since it is data from the company's profile on a specific date and not an average of the period.

<sup>2</sup> The members of the Executive Board (officers and CEO) are governed by the company's bylaws and also by the Brazilian Corporate Law, not being subject to the CLT.

<sup>3</sup> Administrative regime in reduced working hours (part-time) with a reduction of 20 or 25% of the working hours.



In foreign subsidiaries, 67% of employees (378) work in a hybrid model. Subsidiaries abroad followed the market rules of the country where they are to maintain post-pandemic telecommuting. At the end of 2022, the majority had the possibility of 2 to 3 days of telecommuting, depending on the employee's position.

### Profile of contractors

We do not define the number of employees that contracted companies must use to execute their contracts, only that deliveries that must be carried out as provided for in the contractual agreement. As a result, information related to gender or any other information about professional service providers, including the scale of work, belongs to their respective employers. We have the information available in our corporate access system. Thus, in December 2022, we accounted for 105,397 employees of service providers working in our units, with 97,734 service providers working at Petrobras Parent Company, classified into groups of activities and geographic areas, as shown in the table below:

#### NUMBER OF SERVICE PROVIDERS OPERATING IN OUR UNITS BY GEOGRAPHIC REGION<sup>4</sup> (%)

Type of Activity	Midwest	Northeast	North	Southeast	South	Total
Administrative Support	931	1,313	302	7,186	587	10,319
Direct and Indirect Operations Support	3,376	13,225	2,436	35,013	4,318	58,368
Maintenance Stoppage	72	149	13	3,346	1,811	5,391
Works	313	3,042	147	27,185	356	31,043
<b>Total</b>	<b>4,692</b>	<b>17,729</b>	<b>2,898</b>	<b>72,730</b>	<b>7,072</b>	<b>105,121</b>
Foreign service providers <sup>5</sup>	-	-	-	-	-	276
<b>Consolidated total</b>	<b>4,692</b>	<b>17,729</b>	<b>2,898</b>	<b>72,730</b>	<b>7,072</b>	<b>105,397</b>

Our suppliers must provide their employees with decent working conditions, ensuring compliance with current labor legislation. This obligation is provided for both in our draft contract and in our Petrobras Ethical Conduct Guide for Suppliers. Therefore, based on this guide and on internal standards with guidelines for the inspection of contracts for goods and services, compliance with labor obligations is sought, requiring monthly submission of the necessary documentation to prove compliance with labor, pension obligations and payment of the Severance Indemnity Fund (FGTS), when applicable. Failure to comply with these obligations allows us to apply fines and other penalties provided for in the contracts.

**>> Information on contracting new suppliers and negative social impacts on the supply chain and measures taken can be found in our Human Rights and Corporate Citizenship Supplement.**

<sup>4</sup> Employees of contracted companies registered in the Service Provider Data Management System with activities classified as internal in the facilities of the Petrobras Parent Company or in areas under the responsibility of the company (assessment of 12/31/2022). The Brazilian subsidiaries listed the service providers at their facilities by type of activity and region on 12/31/2022. We had no significant changes in the number of service providers that operated at Petrobras Parent Company throughout 2022.

<sup>5</sup> Foreign subsidiaries reported the total number of service providers in their facilities, but without breaking down the information by type of activity.



## Petrobras Young Apprentice Program



One way to encourage and attract young people to our industry is the Petrobras Young Apprentice Program (PPJA), which in 2022 at Petrobras Parent Company included 1,392 young people distributed across 16 Brazilian states<sup>6</sup>. Throughout 2022, we trained 667 Young Apprentices. In October 2022, we admitted the young people selected for the new learning cycle. The selection process considered quotas for adolescents in foster care - institutional or family (15%), adolescents who had been involved in child labor (10%) and for people with disabilities (10%). In December 2022 we had 725 active young people.

The Petrobras Young Apprentice Program complies with Law 10,097 2000 and Decree 9,579/2018, which determines that establishments of any type should employ and enroll a number of apprentices equivalent to at least five percent and as much as fifteen percent of the workers in each establishment that require professional training. The Petrobras Young Apprentice Program learning classes last up to two years.

Even considering the pandemic, the Petrobras Young Apprentice Program wasn't halted. When necessary, assisted technology was used to carry out the learning courses.

## Non-discrimination and equal opportunities

When we talk about diversity, we embrace inclusion and fairness to foster an environment favorable to the expression and recognition of employee identities and the consolidation of relationships based on respect and trust. Diversity management is carried out through the principles of respect for differences, equal opportunities, and non-discrimination.

Our diversity management is guided by corporate references such as:

<sup>6</sup> Data on the Petrobras Young Apprentice Program were obtained considering the two direct hiring cycles and the young people active in the current agreements.



### Value

Respect for life, people, and the environment.



### Guideline 3 of the Social Responsibility Policy

Respect human rights, seeking to prevent and mitigate negative impacts on our direct activities, supply chain and partnerships, and fight against discrimination in all forms.



### Code of Ethical Conduct

It is Petrobras' duty to respect, raise awareness, prevent violations and promote human rights in its activities and act in compliance with human rights as protected by international treaties and conventions, in addition to repairing possible losses resulting from damages caused to people or communities impacted by its activities as quick as possible. This observance should also take place in the company's internal and external online environments and channels.



### Guideline 7 of the Human Resource Policy

Provide employees with a good working environment that promotes diversity and relationships based upon trust and respect and do not tolerate any form of harassment or discrimination.



### Human Rights Guidelines

- \_ Provide decent working conditions and a diverse, inclusive, safe, and healthy environment.
- \_ Promote diversity, guaranteeing respect for differences and equal opportunities in access, compensation, and job promotions.
- \_ Fight prejudice and discrimination as a result of race, skin color, ethnic origin, nationality, social position, age, religion, gender, sexual orientation, personal aesthetics, physical, mental or psychological condition, marital status, opinion, political conviction, gender identity, or any other individual differentiating factor.

>> Information about our actions to promote diversity and inclusion can be found in our [Human Rights and Corporate Citizenship Supplement](#).



### Diversity at Petrobras

It is known that more diverse teams tend to make better decisions and provide companies with greater results, both due to the ability to consider different points of view in decision-making, and due to the welcoming organizational climate, that allows employees to participate more and be proactive. Therefore, we are advancing in actions that seek to increase the participation and inclusion of underrepresented groups in line with our values, and what has been requested by the market in relation to ESG practices. Promoting a greater number of people with a diverse profile implies encouraging more women, black people, people with disabilities and other minority groups to be part of our company via the public selection process.

In addition to seeking to attract more diversity to our teams, we are investing in actions that promote a more inclusive environment. In other words, an environment in which all people can genuinely experience their identity, express themselves and work without bumping into prejudices or any type of bias or limiting beliefs, thus enhancing their performance.

Below is some of the main diversity information regarding our teams:

### DATA ABOUT SEX<sup>7</sup> (consolidated)



In May 2023, 11% of the Executive Board of the Petrobras Parent Company was made up of women. Underrepresented social groups<sup>10</sup> made up 11%. As for age group, there were three members between 51 and 55 years old, four between 56 and 60 years old and two 61 years old or older.

<sup>7</sup> The calculated numbers correspond to employees registered in the system in the regime on 12/31/2022.

<sup>8</sup> Employees without additional payment for leadership/management position.

<sup>9</sup> Executive Board: includes president and chief officers.

<sup>10</sup> By underrepresented social groups we mean political minorities related to color/race; LGBTQIA+; disabled; gender identity.

**PERCENTAGE OF WOMEN** (consolidated data - %)

2022	Total employees	STEM career <sup>11</sup>	General leadership <sup>12</sup>	1st Level management <sup>13</sup>	Upper management <sup>14</sup>
General	45,149	31,722	5,047	3,922	67
Women	7,670	3,840	1,000	777	14
<b>Result</b>	<b>17%</b>	<b>12%</b>	<b>20%</b>	<b>20%</b>	<b>21%</b>

We have specific goals for the participation of women in the Petrobras Parent Company. In 2022, we ended the year with women representing 17% of our employees. In managerial positions, which include coordination, sector manager, managers, general manager, assistant, executive manager, and executive board (CEO and officers), women represent 19.9% and in supervisory roles were 10.9%. Considering the managerial and supervisory roles together, women represent 17%. In revenue-generating departments<sup>15</sup>, where we have the majority of employees in STEM positions (82%), women in managerial roles represent 14.5% of managerial roles (an increase of 1.5% compared to the previous year).

**GOALS AND PERCENTAGE OF WOMEN** (Parent Company - %)

2022	Total employees	STEM Career	General leadership	1st Level management	Upper management	Managers in revenue generating areas
<b>Goal</b>	<b>17%</b>	<b>12%</b>	<b>20%</b>	<b>20%</b>	<b>28%</b>	<b>13%</b>
General	38,682	30,740	4,528	3,558	52	2,975
Women	6,559	3,710	901	700	14	431
<b>Result</b>	<b>17%</b>	<b>12%</b>	<b>20%</b>	<b>20%</b>	<b>27%</b>	<b>15%</b>

In accordance with Guideline 7 of our **Human Resources Policy** and with item 4.2.a of our **Code of Ethical Conduct**, our Career and Compensation Plan (PCR) makes no gender distinction regarding the compensation between men and women who occupy the same position or function. Thus, considering the same position, salary level, time with the company, regime and working conditions, the ratio of the average compensation between women and men is equal to 1.

However, when we analyze it broadly, it is clear that the special work regimes, which have specific additional compensation, impact the average ratio between the compensation of women and men, indicating a small difference. It should also be clarified that there is a male predominance in activities associated with these regimes in the oil and gas industry. Despite this, also from this perspective, we are managing to reduce the difference. In 2022, the ratio between the compensation of women and men at Petrobras was 0.97.

<sup>11</sup> Positions related to the STEM careers - Science, Technology, Engineering and Mathematics.

<sup>12</sup> General leadership are the management functions that include: coordinator, sector manager, manager, general manager, assistant, executive manager, officers and the CEO.

<sup>13</sup> 1st Level management includes? coordinator and sector manager.

<sup>14</sup> Upper management includes? executive manager, officers and the CEO.

<sup>15</sup> Revenue generating areas include: Sales and Logistics; Production Development; Exploration and Production; and Refining and Natural Gas.

**RATIO OF COMPENSATION BETWEEN WOMEN AND MEN** (consolidated)

Scope	Workforce	Ratio
Petrobras Parent Company	38,682	0.96
Brazilian Subsidiaries	5,899	1.01
Foreign Subsidiaries	568	0.90
<b>Consolidated</b>	<b>45,149</b>	<b>0.97</b>

When we analyze the detailed data for the Petrobras Parent Company only, we find the following ratios by functional unit and level:

**RATIO OF SALARY AND COMPENSATION BETWEEN WOMEN AND MEN<sup>16</sup>** (Parent Company)

Relevant operational units	Job category*	High school	Higher education
Exploration and Production Executive Officer (DE&P)	with additional position payment	0.82	0.89
	without additional position payment	0.77	0.93
Refining and Natural Gas Executive Officer (DRGN)	with additional position payment	0.81	0.91
	without additional position payment	0.84	0.93
Trading and Logistics Executive Officer (DC&L)	with additional position payment	0.66	0.90
	without additional position payment	0.84	0.97
Production Development Executive Officer (DDP)	with additional position payment	0.81	0.88
	without additional position payment	0.81	0.86
Other executive officers	with additional position payment	0.90	0.96
	without additional position payment	0.86	1.01
Total <sup>17</sup>	with additional position payment	0.82	0.92
	without additional position payment	0.78	0.93
Total		0.78	0.93

\*With/without additional payment for leadership/management position.

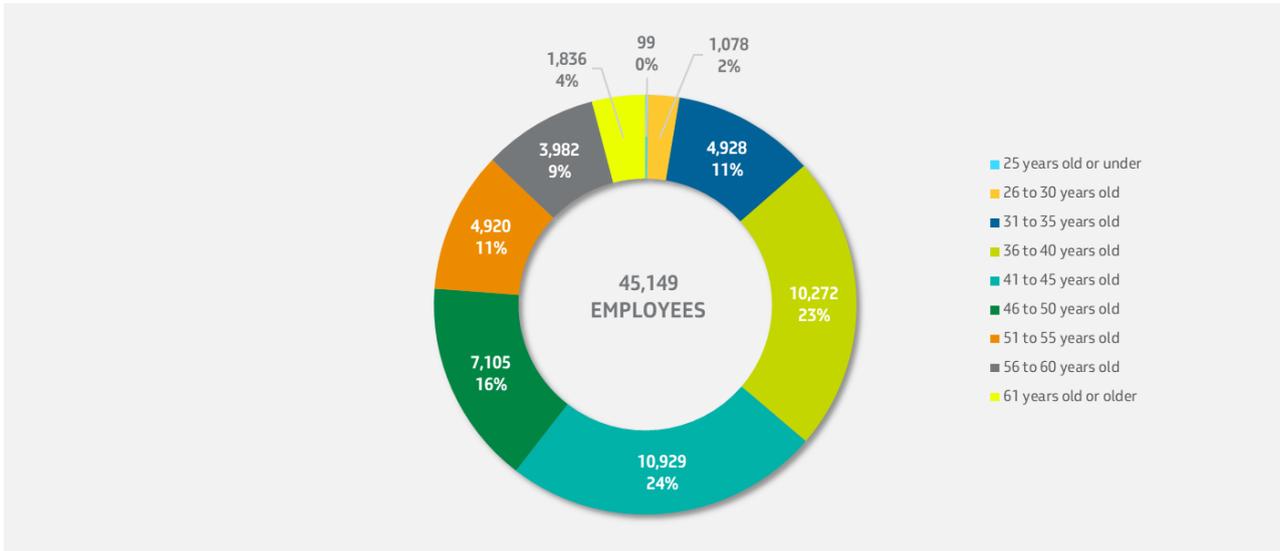
<sup>16</sup> We classify the areas directly related to our core business in "Relevant Operating Units": Trading and Logistics; Production Development; Exploration and Production; and Refining and Natural Gas. The other operating units and administrative units are part of the item "other departments." The ratio considers the average compensation for women divided by the average compensation for men, for each group. We have a salary table with different levels of basic salary, all applicable to both men and women. However, when calculating compensation, basic and additional wages are considered, such as transportation vouchers, childcare allowances, etc. In order to avoid erroneous calculation trends, nine employees classified in the following cases were removed from the parent company numbers: on leave without pay, with suspended contracts, reinstated, dismissed due to contractual nullity and retired through the INSS and on leave without pay.

<sup>17</sup> The ratios equivalent to the lines "Total" and "General total" show similar results, considering that more than 80% of employees do not occupy position with additional payment for leadership/management and that the percentages reported in the table are calculated based on the average compensation of employees.



When we analyze the age profile data of our employees, we see that we have a great age diversity.

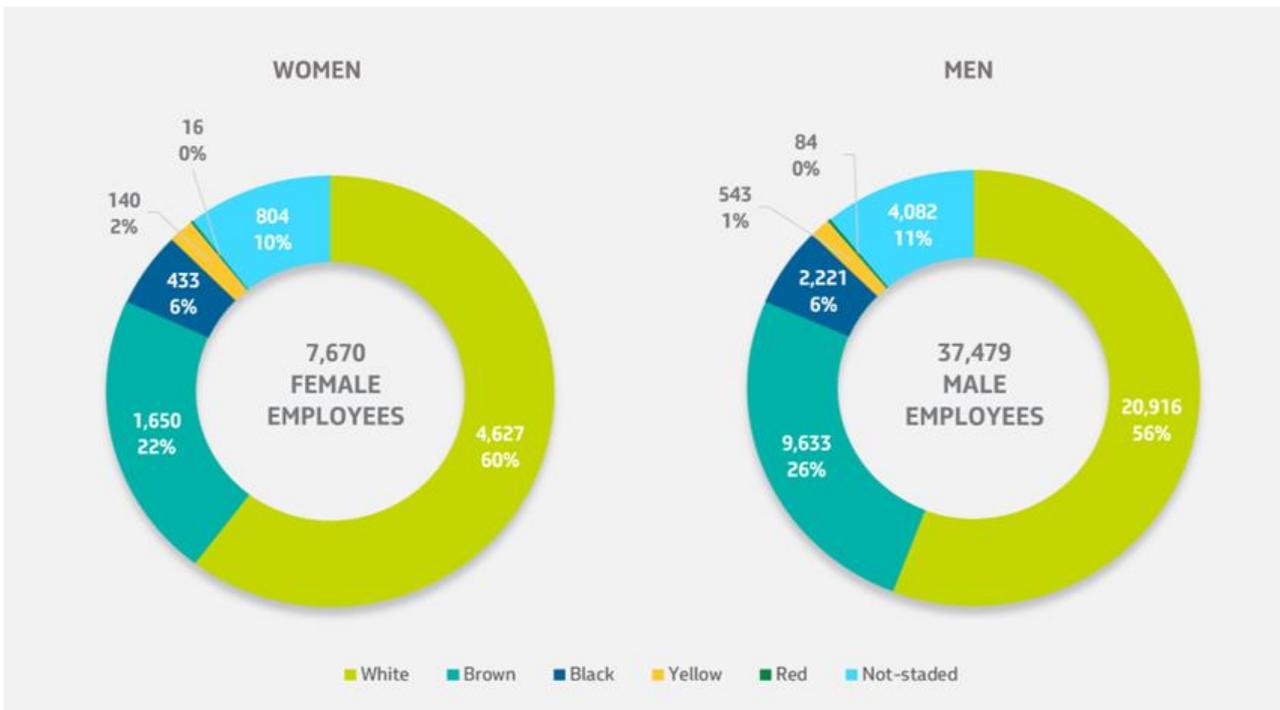
### PROFILE BY AGE (consolidated)



Information on the ethnic-racial profile of our employees is shown in the chart below. In order to propose the structuring of a program to promote racial equity to be implemented by the company, in 2022 we created the Racial Equity Working Group, an action provided for in our Human Rights Action Plan.

>> Information on our Human Rights Action Plan can be found in our Human Rights and Corporate Citizenship Supplement.

### ETHNIC-RACIAL PROFILE<sup>18</sup> (consolidated)



<sup>18</sup> The scope of this information is for the parent company, subsidiaries in Brazil and the following foreign subsidiaries: Petrobras Netherlands B.V., Petrobras America INC., Petrobras Singapore Private Limited, Petrobras Operaciones S.A., Petrobras Oil & Gas B.V. – Turkey branch, Petrobras International Braspetro B.V.). For cultural reasons in some countries, this information cannot be obtained and consolidated for all companies abroad.



At the Petrobras Parent Company, we have more detailed information on the ethnic-racial profile of our employees by level, as shown in the table below:

### ETHNIC-RACIAL PROFILE (Parent Company)

	Management position				Other APL/MP <sup>19</sup>				Employees without APL/MP			
	Female	% of the total	Male	% of the total	Female	% of the total	Male	% of the total	Female	% of the total	Male	% of the total
<b>White</b>	644	1.66%	2,406	6.22%	254	0.66%	1,486	3.84%	3,161	8.17%	14,045	36.31%
<b>Brown</b>	144	0.37%	673	1.74%	87	0.22%	664	1.72%	1,146	2.96%	6,640	17.17%
<b>Black</b>	20	0.05%	125	0.32%	18	0.05%	151	0.39%	322	0.83%	1,618	4.18%
<b>Yellow</b>	7	0.02%	49	0.13%	5	0.01%	37	0.10%	87	0.22%	401	1.04%
<b>Red</b>	2	0.01%	5	0.01%	1	0.00%	4	0.01%	12	0.03%	72	0.19%
<b>Not - stated</b>	84	0.22%	369	0.95%	46	0.12%	352	0.91%	519	1.34%	3,026	7.82%
<b>TOTAL</b>	<b>901</b>	<b>2.33%</b>	<b>3,627</b>	<b>9.38%</b>	<b>411</b>	<b>1.06%</b>	<b>2,694</b>	<b>6.96%</b>	<b>5,247</b>	<b>13.56%</b>	<b>25,802</b>	<b>66.70%</b>

## Staff management

One of the main challenges for HR management is to ensure ideal staff size for our business portfolio. In this sense, Petrobras Parent Company has adopted the planning methodology called Optimal Headcount (HO), whose objective is to define the ideal need for employees to support the Strategic Plan. The executive departments are protagonists in defining the assumptions used for sizing, in compliance with safety, business continuity, implementation of new projects and optimization opportunities.

The analysis of the projected headcount for the coming years, associated with the historical evolution and turnover of our staff, guide the initiatives for adapting personnel to the company's strategies.

Improving internal personnel mobility practices is essential to support portfolio management projects in a flexible and dynamic way. In addition, Petrobras analyzes the staff profile and implements strategies for refreshing the staff, seeking better adherence to the company's needs and challenges. This is supported by structured planning of employee entrances and exits, training and continuing education programs, and analysis of impacts and costs, creating conditions for the maintenance of critical knowledge, entry of new knowledge, and gradual change in the profile of the workforce.

<sup>19</sup> APL/MP = additional payment for leadership/management position (comprises the positions supervisor and specialist).



## Employee recruitment and selection

Employees are one of our most important intangible assets and the ability to attract qualified and talented employees, as well as retain and nurture internal talent, is critical to our success and sustainability. In 2022, 857 new employees were admitted to Petrobras, according to the distribution shown below:

### ADMISSIONS IN 2022 (consolidated)

Scope	Number of admissions
Petrobras Parent Company	735
Brazilian Subsidiaries	97
Foreign Subsidiaries	25
<b>Consolidated</b>	<b>857</b>

As one of the measures adopted to promote the gradual refreshing of our workforce, and in line with our Strategic Plan, after three years without public selection processes (PSP) for the Petrobras Parent Company, in 2021 a new public selection process was opened with 757 vacancies for various positions requiring higher education, in addition to forming a reserve register. Of the total vacancies, 8% were reserved for people with disabilities (percentage above the minimum required by law) and 20% for blacks. More than 160,000 candidates completed their enrollment in the aforementioned process.

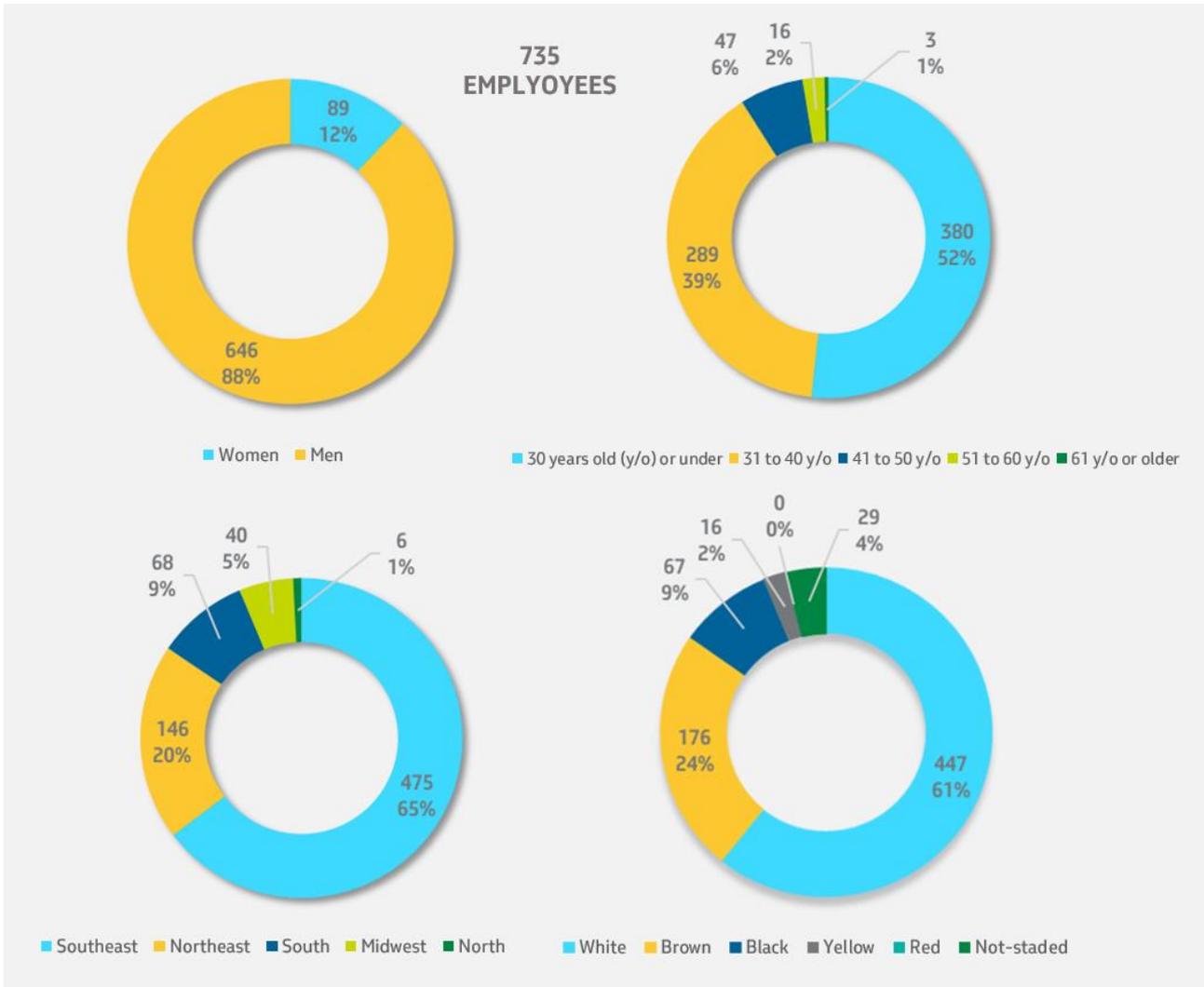
Our employees in Brazil are hired through a public selection process. However, as provided for in Art. 50 of the Bylaws, the functions of Senior Management may, exceptionally, and at the discretion of the Board of Directors, be assigned to technicians or specialists who are not part of our permanent staff, through freely appointed positions. As defined in the Basic Organization Plan (PBO), Senior Management is composed of: positions with additional payment for leadership filled by the heads of the organizational units of the general structure; consultants and advisors to the CEO; and executive technical assistants to the CEO, Board of Directors, Fiscal Council and executive officers. For heads within the general structure, the hiring of professionals who are not part of our permanent staff is limited to 40% of the total number of general structure heads.

In 2022, a total of 735 people were admitted to Petrobras Parent Company, 89 women and 646 men, the majority (92.38%) participating in public selection processes from previous years. Of those admitted, 8 went on to senior management positions and 727 were employed without additional payment for leadership/management position. The average cost of external hires by Petrobras Parent Company in 2022 was BRL 5,173.86, and the rate of new contracting was 1.90%. The internal hiring rate was 89.7%.

The distribution of entries by gender, age group, region and race is shown in the graphs below.



## NUMBER OF EMPLOYEES WHO JOINED IN 2022 BY AGE GROUP, GENDER, ETHNIC-RACIAL PROFILE AND REGION (Parent Company)



The average cost of external hires by Petrobras Parent Company in 2022 was BRL 5,173.86, and the rate of new contracting was 1.90%. The internal hiring rate was 89.7%.

### CONTRACTING (Parent Company)

	2019	2020	2021	2022
Total number of new admissions	288	73	90	735
Percentage of vacancies filled by internal candidates (internal hiring)	88.81%	99.55%	98.80%	89.71%
Average costs of external admissions	BRL 10,535.66	BRL 28,306.56	BRL 6,542.86	BRL 5,173.86



In Brazilian subsidiaries, 97 admissions were registered, with the Southeast Region responsible for 95% of admissions (92), followed by the South Region (2), Northeast Region (1) and Midwest (2). Of this total, 79 were male and 18 were female, with 59 new employees of up to 45 years of age.

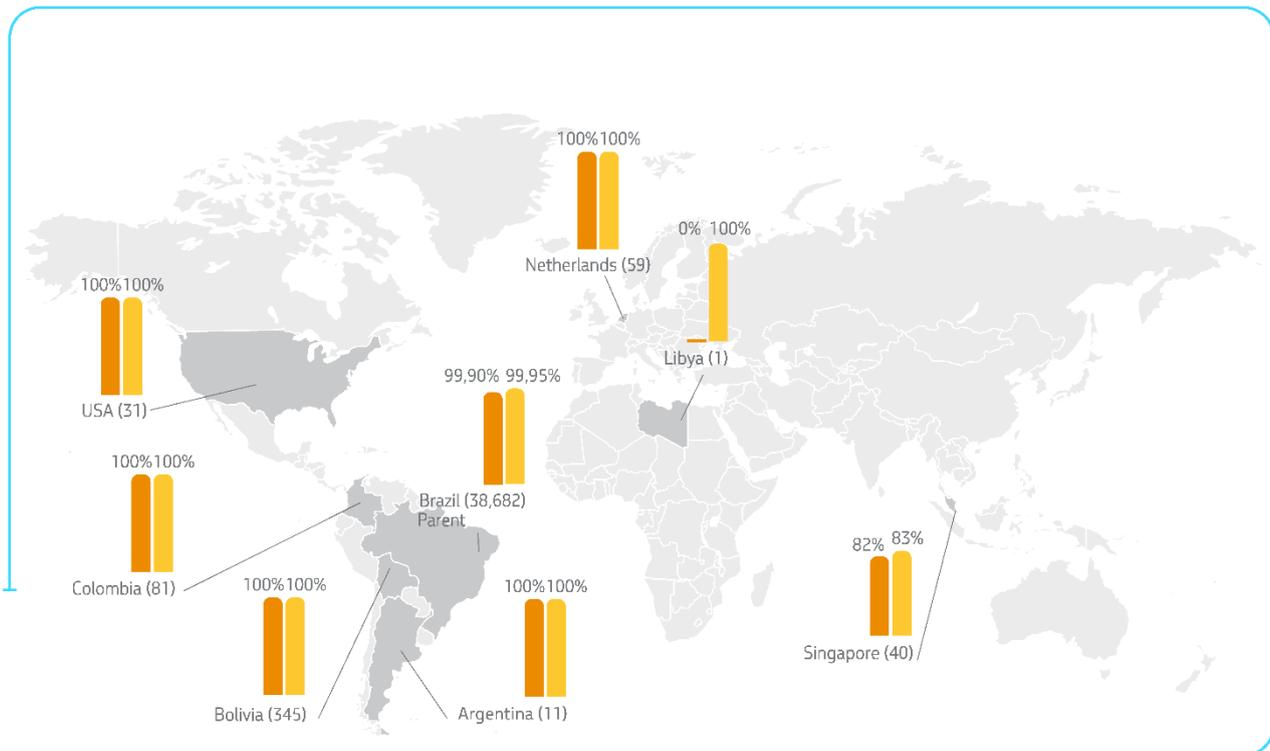
In subsidiaries abroad, there was a total of 25 new employees in 2022 (8 males and 17 females), with 21 new employees of up to 45 years of age.

### Hiring local employees

Our admissions in Brazil are made through public selection processes, in accordance with article 37 of the Federal Constitution of Brazil and the current job and salary plan. In compliance with the principles of publicity and transparency, the Notice of the Public Selection Process is published in the Official Gazette (DOU) and on the websites of Petrobras and the event organizer. After these publications, the process is also widely publicized in different media. To participate, it is necessary to pay the registration fee and the candidate's registration will only be confirmed after payment. Exemption from the registration fee may be requested if the candidate is supported by the requirements of Law nº 13.656/2018 (people who are registered in the Federal Government's Single Registry for Social Programs - CadÚnico, whose monthly family income per capita is less than or equal to half the national minimum wage, and bone marrow donor candidates to entities recognized by the Ministry of Health).

One of the basic requirements demanded for admission, among others, is that the candidate has Brazilian or Portuguese nationality (when supported by the statute of equality between Brazilians and Portuguese, under the terms of paragraph 1, article 12, of the Federal Constitution and the Treaty of Friendship, Cooperation and Consultation, enacted in Brazil through Decree No. 3927/2001). Foreign individuals are allowed to be members of the Executive Board if they are national residents, as provided for in our Bylaws. In 2022, Brazilians were 99.95% of our employees at the Parent Company, including senior management.

In our companies abroad, we adopt a policy of prioritizing labor from local residents.



■ Percentage of local employees among employees with no additional payment for leadership/management position.  
■ Percentage of local employees among with additional payment for leadership/management position (consultants, supervision, managers and chief officers). Data from December 31, 2022



## Mobility

We seek to attract the best talent without forgetting our internal talent who grew up with the company, understand the organization, its mission and culture. To meet the needs of adapting the workforce, we combined the hiring of new employees who were admitted through a public selection process, with internal movement processes to retain talent and optimize external hiring costs. Our internal mobility has several mobility solutions applied to our needs, among them the Mobility Program, which takes place through a structured internal recruitment and selection process to meet personnel needs.

In addition to the Mobility Program, vacancies open throughout the year can also be filled through direct negotiation between management (origin and destination) and employees. In 2022, we had 7,143 vacancies open at the Petrobras Parent Company and 6,408 were filled through internal transfers, representing 89.7% of the total. It should be noted that internal mobility takes place within the same position (Medium Level Petrobras Professional and Superior Level Petrobras Professional), with the possibility of changing emphasis within the same position and mobility between positions prohibited by law.

In moments of transformation, our focus is always on the professionals involved. Along with safety and operational continuity, attention and respect for people are fundamental principles that we apply in all of our actions. In this context, in 2022, in compliance with Portfolio Management projects, structured actions were planned and executed, within the scope of the HR tool called Personnel Plan, for the reallocation of employees from the units covered. Petrobras, in respect and care for its employees, sought to reconcile, whenever possible, the company's needs with the interests of its employees.

Because we believe in the autonomy of our employees and transparency as a basis for decision-making, we have adopted an integrated change management journey for employees covered by collective transfers. The objective is to manage the various aspects involved in the transition, seeking to reconcile business interests and the diversity of individual situations in this process. This must consider the execution of specific actions for the allocation, movement and adaptation of employees, communication activities and involvement of stakeholders, occupational health actions, organizational climate surveys and studies of the labor impact, as well as training courses.

Communication to employees of plans related to portfolio management occurs four to six months in advance. The execution includes several actions, such as:

- 1) communication to employees about the opening of the Personnel Plan (demobilization and reallocation)
- 2) relocation (communication to the employee at least 60 days in advance of the effective date, in cases of change of municipality and domicile)<sup>20</sup>
- 3) specific termination and relocation programs
- 4) qualification and change of emphasis of employees, when applicable

This process also includes a moment of individual reception by the Health area, which aims to map cases of exceptionality that may impact the transfer due to socio-family and health aspects. The consultations are performed by health professionals and treated by a multidisciplinary committee composed of doctors, psychologists and social workers. The results are confidential, out of respect for people's privacy.

The actions of the Personnel Plans are monitored by the Change Management Committee for Portfolio Management. This committee was instituted as part of the agreement entered into between Petrobras and the Public Labor Prosecution Office (MPT), ratified in the case file No. 0000673-48.2019.5.05.0006, on 12/17/2019, whose objective was to regulate the legal limits regarding the process of collective transfers of employees impacted by Petrobras' Active Portfolio Management. Among its attributions is to act as an advisory body on issues related to the management of change in units undergoing decommissioning,

<sup>20</sup> Collective transfers as a result of personnel plans are carried out in quarterly windows.



disinvestment, sale, hibernation, or leasing of assets, or in collective transfers of employees. The committee has equal composition, with half of its members representing the company and the other the employees.

The Personnel Plan and the Integrated Journey from Change Management to Active Portfolio Management represent our commitment to our employees at all stages of the process.

### Employee dismissal

In addition to new hires, headcount was impacted by the departure of employees during the 2022 financial year, as shown below. In the year, 1,144 employees were dismissed. Our consolidated turnover rate, considering total dismissals, was 2.53%.

#### DISMISSALS IN 2022 (consolidated)

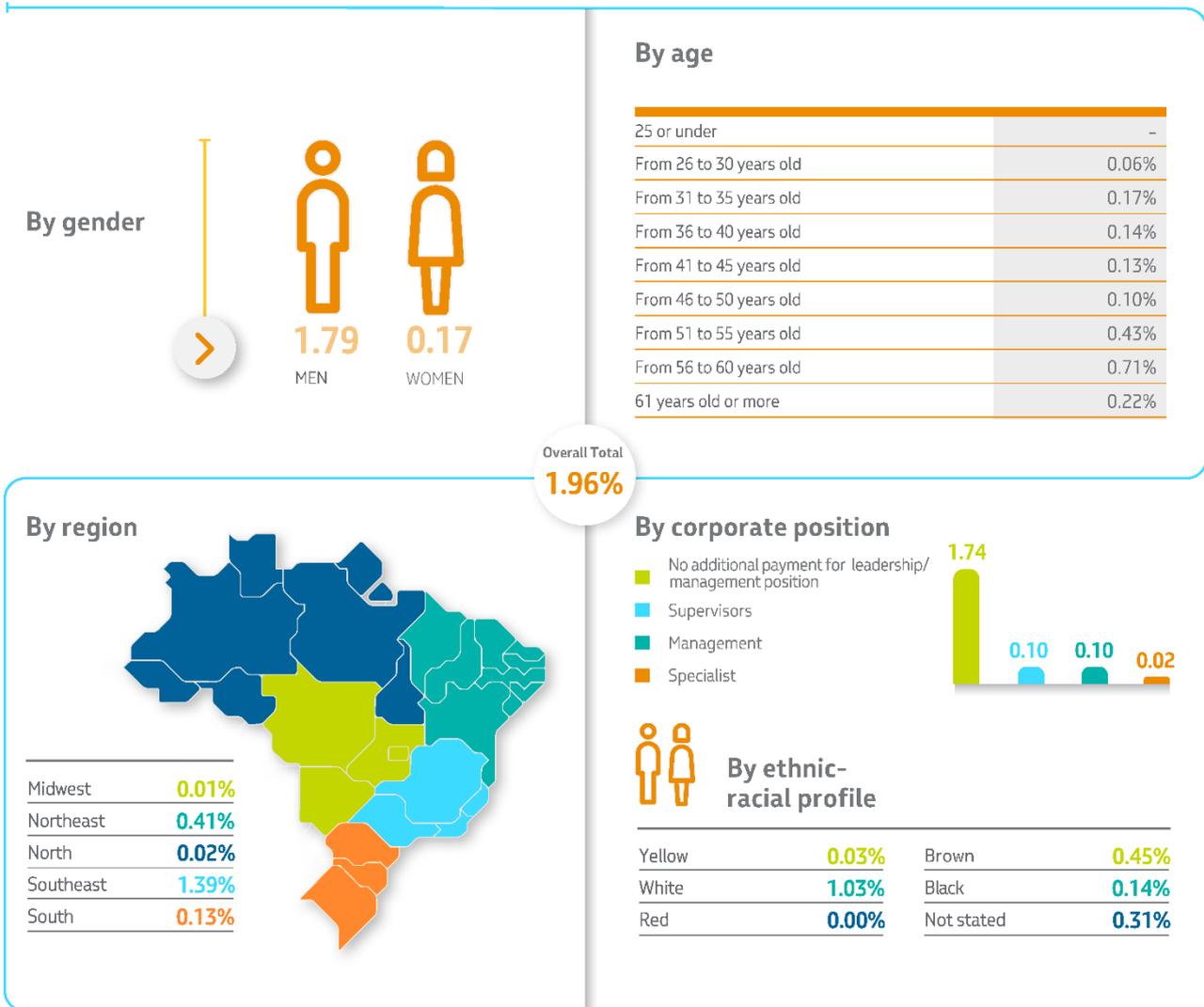
Scope	Number of dismissals
Petrobras Parent Company	756
Brazilian Subsidiaries	310
Foreign Subsidiaries	78
<b>Consolidated</b>	<b>1,144</b>

At Petrobras Parent Company, the workforce was impacted by the departure of employees enrolled in the new cycles of the Voluntary Retirement Programs (PDVs) launched until 2019. In 2022, 756 employees were dismissed from the company, 533 due to voluntary termination (includes PDVs and other types of dismissals).

Historically, at Petrobras Parent Company, our turnover rate has been at low levels, except for 2014, 2016 and 2017, due to the voluntary termination programs carried out. In 2022, the observed employee turnover rate was 1.93%, considering admissions and terminations throughout the year. Considering only dismissals, the turnover rate for total dismissals was 1.96%, and for voluntary dismissals it was 1.38%.



## TURNOVER RATE PETROBRAS PARENT COMPANY (%)



In the Brazilian subsidiaries, the number of admissions was 97 and of dismissals was 310 throughout 2022. Considering an average workforce of 6,050 during the year, this generated a turnover rate of 3.36%. If we consider only voluntary terminations (PDV and upon request), the turnover rate was 1.08% for subsidiaries in Brazil.

For Foreign subsidiaries, the number of admissions was 25 and 78 dismissals throughout 2022. Considering the average headcount of 587 employees, the turnover rate was 8.77%. If we consider only voluntary terminations (PDV and upon request), the turnover rate was 12.15% for subsidiaries abroad.

### Freedom of association and collective bargaining

Petrobras follows the conventions of the International Labor Organization (ILO) ratified by Brazil, in addition to being, since 2003, signatories of the United Nations Global Compact, whose third principle provides for the effective recognition of the right to collective bargaining and freedom of association.

In line with our strategic positioning and as an expression of labor relations management permeated by dialogue, valuing employees, respect for their representations and the balance between their aspirations and corporate objectives, we affirm our policy of constructive dialogue and permanent negotiations with unions. This happens through Collective Bargaining Agreements (ACTs), where the objective conditions of labor relations are set out in social and economic clauses.



All Petrobras Parent Company employees are represented by independent unions, and 42% are union members. We have a Collective Bargaining Agreement in force with all unions representing employees, with 96% of our own workforce covered by a Collective Bargaining Agreement and 4% by an Individual Labor Agreement (AIT), which has the same benefits as the Collective Bargaining Agreement. As provided by art. 457 of the Consolidation of Labor Laws (CLT), these agreements include social clauses related to work, security conditions and benefits.

Transpetro, Petrobras Biocombustível, Termobahia, Termomacaé and TBG, Petrobras subsidiaries that have their own employees, also respect the effective right to collective bargaining and the right to freedom of association. All employees of these subsidiaries are represented by independent unions, which hold periodic meetings to address issues such as work regime, benefits, compensation and other issues covered by the Collective Bargaining Agreement. In general, the subsidiaries work together with the Parent Company in the negotiations of the Collective Bargaining Agreement around a single agenda of the unions, even if the agreed terms are different, based on the realities and limitations of each company. Regarding coverage, 100% of employees at Transpetro, Petrobras Biocombustível, Termobahia, Termomacaé and TBG are covered by Collective Bargaining Agreements.

>> Information about our approach to freedom of association and collective bargaining, as well as the percentage of employees covered by collective bargaining agreements, can be found in our [Human Rights and Corporate Citizenship Supplement](#).

## Performance analysis

The individual performance analysis of employees takes place through the Performance Management (GD) process, which assesses skills and goals. Petrobras competencies were built based on the challenges inherent to our Strategic Plan, which spell out the behaviors expected of our employees, in order to achieve superior results in different situations and scenarios, with a view to creating value for the company. The current model contemplates the notion of complexity, with different levels of descriptions according to the function performed. For senior management positions, a multidimensional assessment is applied, incorporating peer and superior opinions, as well as self-assessment. The targets are based on objective metrics, derived from the senior management scorecard. Based on these metrics, established through the unit scorecards, we seek to ensure that individual and shared goals are deployed by management to the teams, contributing to the achievement of our top metrics. This process is carried out in a four-step cycle: planning, monitoring, and feedback, reviewing goals, and assessment.

On the date of the preparation of this report, the 2022 evaluation cycle had not yet ended; therefore, the data presented refer to the 2021 evaluation cycle (carried out in the first quarter of 2022) where 100% of employees eligible for the performance management process were evaluated.

## PERCENTAGE OF EMPLOYEES RECEIVED PERFORMANCE AND CAREER DEVELOPMENT ANALYSIS IN 2022 (consolidated)

Scope	Percentage of employees
Petrobras Parent Company	99.9%
Brazilian Subsidiaries	99.6%
Foreign Subsidiaries	97.3%
<b>Consolidated</b>	<b>99.8%</b>



As a way of recognizing the contribution of our employees at Petrobras Parent Company, reflected in the performance management process the annual professional career progression program was applied in 2022. It's called Increase by Merit, which aims to promote a culture of meritocracy by recognizing and rewarding employees with differentiated performance. It considers deliveries and behaviors in the different levels of complexity required and levels of compensation.

In this edition, more than 14,700 employees occupying mid-level and higher-level positions in the Career and Compensation Plan (PCR) were considered, observing the financial resources to contemplate 25% of the total number of eligible employees. For employees with additional payment for leadership/management position, according to the resources made available to cover 10% of those eligible, 1,039 employees were contemplated with salary progression in the tables of the respective additional payment for positions (managerial, specialist or supervision).

Additionally, as established in the PCR rules, more than 29,700 employees were also contemplated with the automatic increase (in 60 months).

In the set of employees that were considered, the proportion of men and women was very similar to the pattern found in the company's total workforce, so that asymmetries or expressive systematic biases were not found.

## Compensation and benefits

Petrobras has a Compensation Policy, approved by the Board of Directors, which is directly related to the organizational strategy, focusing on attracting, engaging and retaining talent. It is competitive in relation to the players that operate in the market where it is inserted and aligned with its performance culture, providing the construction of value in the medium and long term, taking into account the organizational and individual performances. Our job plan and variable compensation programs are derived from this policy.

The readjustment of the compensation tables is the result of negotiations between the company and the unions representing Petrobras employees, during the Collective Bargaining Agreement renewal campaign. The salary adjustment proposals offered by the Company during the negotiation are examined by the employees in meetings convened by the unions. Thus, the compensation tables are readjusted due to the terms negotiated and agreed in the Collective Bargaining Agreement.

The Career and Compensation Plan establishes our structure of positions and careers, with their respective descriptions of attributions and responsibilities, requirements of their occupants, evaluations, and respective salary ranges. In line with our strategic objectives, the Career and Compensation Plan is the instrument that support the planning and management of our employees, supporting our policies for employee attraction and retention, recognition and reward processes, career progression, and professional development.

The Career and Compensation Plan (PCR) is the job position plan officially in force at Petrobras. It was implemented in 2018, replacing the Position Classification and Evaluation Plan (PCAC), which is in the process of being phased out. Currently, the PCR reaches 88% of our employees since the migration to this job plan is optional. Admissions of employees occurring after the beginning of the effectiveness of the PCR will occur exclusively in this plan.

Our positions and emphases are classified based on the score resulting from the position evaluation process, conducted by a specialized consultancy and independent from management, correlated to the result of the compensation survey. Regarding direct compensation, market surveys are conducted annually, conducted by specialized consulting companies, such as Willis Towers Watson and the Korn Ferry Hay Group. The results show that the salaries we pay are in line with the best practices in the oil and gas market. This position has remained stable since 2007. The salary amounts, without any distinction regarding region,



gender, or ethnicity, are reviewed and corrected annually through negotiation with unions representing each professional category.

We also have a variable compensation program, the Performance Award Program (PPP), for all employees, which has the following objectives: aligning the interests of shareholders, executives, occupants of paid positions and employees without additional payment for leadership/management position; encourage results-oriented behavior; reward people for the results achieved; compensate differently for differentiated delivery; and contribute to attracting and retaining talent.

In fiscal year 2021, the PPP was activated after meeting the minimum established prerequisites:

- declaration and payment of compensation to the shareholder, referring to the fiscal year considered, approved by the Board of Directors, and
- obtain positive net income during the period.

For the calculation of the 2022 Variable Compensation (PPP 2022), the 2021 triggers for its activation were maintained and some incremental adjustments were made to the indicators of our top metrics, seeking alignment with the Strategic Plan 2022-2026.

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>> **Information on the PPP can be found in the Risk management and corporate governance chapter.**

In addition to the PPP, we have a collective agreement in effect for the Profit Sharing Program (PLR) for the period 2021-2022 for all employees without additional payment for leadership/management position (managers, specialists and supervisors). The Profit Sharing Program is governed by the result of negotiations between the company and the unions representing the employees, with the Collective Bargaining Agreement proposal evaluated by the employees in a deliberative assembly. For the PLR payment to occur, the following conditions must be met:

- approval of dividend distribution by the Annual General Shareholder Meeting;
- calculation of net income for the reference year; and
- achievement of an average percentage (weighted) of at least 80% for target indicators established by the Board of Directors in the PLR agreement.

Based on the calculation of the results for fiscal year 2021, which indicated the fulfillment of the conditions (triggers) established in the PLR agreement, the payment of approximately BRL 568 million was made during 2022.

For the 2022 fiscal year, the monitoring of the results achieved until the third quarter indicated the achievement of the triggers provided for in the PLR agreement: payment of compensation to the shareholder, projection of net profit for 2021 and projection of the average achievement of the PLR indicators of 100%. In view of this, as provided for in the PLR regulation, in January 2023 an advance payment was made in the amount equivalent to 1/3 of the premium to which each eligible employee is entitled.

The relationship between the total annual compensation of the highest paid individual and the average salary of all other employees is 5.10, where the highest paid person is the CEO. In 2022, the company's salary adjustment was 8.73% in the salary tables for permanent positions and 7.85% in the position tables to employees with additional payment for leadership/management, reaching 8.67% in the average employee. Executive Board members (CEO and Officers) had no readjustment in the year. The minimum entry wage is BRL 5,563.90 and is equivalent to 4.59 times the current national minimum wage, without any differentiation by gender.



In subsidiaries in Brazil, the ratio between the total annual compensation of the highest paid individual and the average salary of all other employees<sup>21</sup> is 4.85. In the year 2022, the average salary adjustment of Brazilian subsidiaries was 8.66%. The minimum entry wage is BRL 4,509.75 and is equivalent to 3.72 times the current national minimum wage, without any differentiation by gender.

In Foreign subsidiaries, the ratio between the total annual compensation of the highest paid individual and the average salary of all other employees<sup>21</sup> is 2.88. It was not possible to calculate the average entry salary in relation to the local minimum salary, because several companies are in countries where there is no local minimum salary and entry compensation is made considering the market, experience, and knowledge of the employee.

The ratio between the total annual compensation of the highest paid individual and the average salary of all other employees in the consolidated total of all companies<sup>21</sup> is 5.04.

### Other benefits

Multidisciplinary Health Care Plan (AMS) is a healthcare benefit offered by Petrobras, which operates in the dimensions of health promotion, prevention, and recovery. The benefit is available to our active employees, retirees, pensioners, and their family groups. The care segmentation of the plan covers outpatient health care services, hospital care with obstetrics and dentistry, with national coverage and individual hospitalization accommodations. In 2022, the Multidisciplinary Health Care Plan ended the year with 263,867 beneficiaries distributed across all states of the federation. The benefit expense ratio was 60% for the employer and 40% for the employees, as defined in ACT 2020-2022.

For ACT 2022-2023, the current cost ratio was maintained. Our AMS Plan has been operated since 2021 by the Petrobras Health Association (APS). Since then, improvements in the management of the health plan have been implemented, with emphasis on:

- Expansion of the accredited network with the inclusion of the indirect network, totaling more than 125,000 accredited suppliers throughout Brazil
- 30% increase in the Beneficiary Satisfaction Index in an independent survey carried out by the IBRC – Instituto Ibero Brasileiro de Relationship with the Customer
- Implementation of projects for analysis of procedures with orthoses, prostheses and special materials (OPME), responsible for savings of BRL 184 million in 2022

The telemedicine service which, with improved communication, has established itself as an alternative for the search for diagnosis used by beneficiaries of the AMS Plan. In 2022, there were 44,066 calls, paying a total of BRL 5.9 million for the availability and use of the service.

The AMS Plan also provides coverage for supplementary programs, such as the Care program and the Pharmacy Benefit program. The Pharmacy Benefit program provides coverage for medications for the treatment of chronic or psychiatric illnesses, in addition to other medications considered high-cost.

We also offer educational benefits, aiming to contribute to the education and education of employees' children. These benefits do not cover our managers on the Board of Directors or Executive Board. They also do not include Fiscal Council members. The educational benefits are financial amounts granted for reimbursement with educational expenses.

<sup>21</sup> We had used the weighted average for the ratio between total annual remuneration of the highest paid individual and the average salary of all other employees, considering the headcount of each company.



In addition to the benefits mentioned above, we have implemented other measures aimed at the well-being of our employees, such as the granting of hourly allowances to employees with disabilities and employees who have children with disabilities, who are enrolled in the Special Assistance Program (PAE) and that need assistance with medical appointments and/or therapies. The allowance for employees who have children with disabilities has been extended to up to 240 non-cumulative hours per year. In 2022, 224 employees received the aforementioned bonus.

In the case of medical leave due to health reasons, we supplement sick pay and the ACT benefit for 48 months if it is work-related and 36 months if not, the first for employees on sick pay and the second for retired employees away for medical reasons for more than 15 days. Part time employees have the same benefits as regular employees.

### Pension plans

We sponsor six post-employment benefit plans, operated by Fundação Petrobras de Seguridade Social (Petros), with pension characteristics:

- Petros Plan of the Petrobras Renegotiated System (PPSP-R)
- Petros Plan of the Petrobras Non-Renegotiated System (PPSP-NR)
- Petros Plan of the Petrobras Renegotiated System Pre-70 (PPSP-R Pre-70)
- Petros Plan of the Petrobras Non-Renegotiated System Pre-70 (PPSP-NR Pre-70)
- Petros Plan 2 (PP-2)
- Petros Plan 2 (PP-3)

Together, these plans cover 96% of our employees, considering that the plans are offered to all employees and adherence is optional.

Until March 16, 2018, there were only two pension plans sponsored by Petrobras: Plano Petros do Sistema Petrobras (PPSP), which is a defined benefit plan closed to new members, and Plano Petros-2 (PP-2), a variable contribution plan, available to the workforce since 2007, both managed by Petros.

In April 2018, the PPSP was separated into two new plans: the Renegotiated PPSP (PPSP-R), made up of participants who adhered to the plan's new rules in 2006, 2007 and 2012, and the Non-Recontracted PPSP (PPSP-NR), composed of participants who did not adhere to the new rules.

In December 2019, the PPSP-R and PPSP-NR plans were again split into two new plans, separated into participants who were admitted before 1970 and by those who were admitted after 1970, forming the PPSP-R plans, PPSP-NR, PPSP-R Pre-70 and PPSP-NR Pre-70, in other words, the original PPSP was converted into four new plans.

In PP-2, a plan that operates in the variable contribution modality and is currently open to new entries, the same amount is collected by the sponsor (in the case of sponsored participant) and by the participant, who can contribute with percentages according to their age that vary between minimum of 6% and a maximum of 11%.

In August 2021, Petros started operating the Petros-3 Plan (PP-3). The PP-3 is a defined contribution plan, originating from the voluntary migration option of the participants of the PPSP-R and PPSP-NR plans, both their active and assisted participants.



## PPSP deficit equation plans



In March 2020, the new Deficit Equation Plan (called Novo PED when launched and now called PED 2018), prepared by Petros in accordance with the rules in force for the PPSP-R and PPSP-NR Plans, was approved by the Petrobras Board of Directors.

The New PED was structured to replace PED 2015, as well as to cover the deficit recorded in 2018, and to take into account the actuarial results obtained by the plans in 2019. The New PED required changes in the regulations of the PPSP-R and PPSP-NR, in order to provide a reduction in extraordinary contributions for most participants and beneficiaries, with a review of the settlement period for the longevity of benefit plans, as well as improvement of the plan's rules in accordance with regulatory standards, seeking to mitigate the needs of future deficit settlements.

The remaining amount of the contracted equated obligation related to the 2018 PED for the PPSP- R and PPSP-NR, the responsibility of Petrobras, was BRL 14.5 billion on December 31, 2022, according to Petros' Financial Statements.

In 2021, due to the adverse economic scenario, the profitability of some pension plans sponsored by Petrobras performed below the respective actuarial targets.

Therefore, considering that the PPSP-R presented a deficit above the permitted actuarial deficit limit, in November 2022, Petros approved the plan to solve the deficit registered by the PPSP-R in 2021 (PED-2021).

The PED-2021 was considered by the Executive Board of Petrobras on 11/30/2022, by the Board of Directors shortly thereafter, and then submitted for approval by SEST, with collection of new extraordinary equal and lifetime contributions from April 2023. The effects of PED-2021 for the PPSP-R Plan were recorded on 12/31/2022, according to Petros' Financial Statements, in the total present value of extraordinary contributions of BRL 8.5 billion, of which Petrobras is responsible for approximately BRL 4 billion.

## Parenting

All employees who have proven the birth or adoption of a child are eligible to take maternity (primary caregiver) or paternity (secondary or non-primary caregiver) leave. In addition to the legal determination, our employees have the right to extend maternity leave, reaching a total of 180 days, and to extend paternity leave, reaching a total of 20 days. The extension of maternity leave is also guaranteed in case of hospitalization of the mother or baby, for the duration of the hospitalization.

In 2022, 1,157 male employees went on paternity leave in the consolidated total, 377 female employees went on maternity leave and 1 female employee went on paternity leave.

At Petrobras Parent Company, 1,017 male employees went on paternity leave, 343 female employees went on maternity leave and 1 female employee went on paternity leave, making up a total of 100% of employees entitled to maternity/paternity/adoption leave, and the rate of return to work and employee retention was 99.6% in 2022.

We have 21 breastfeeding support rooms, distributed in operational units and administrative facilities.



### Training

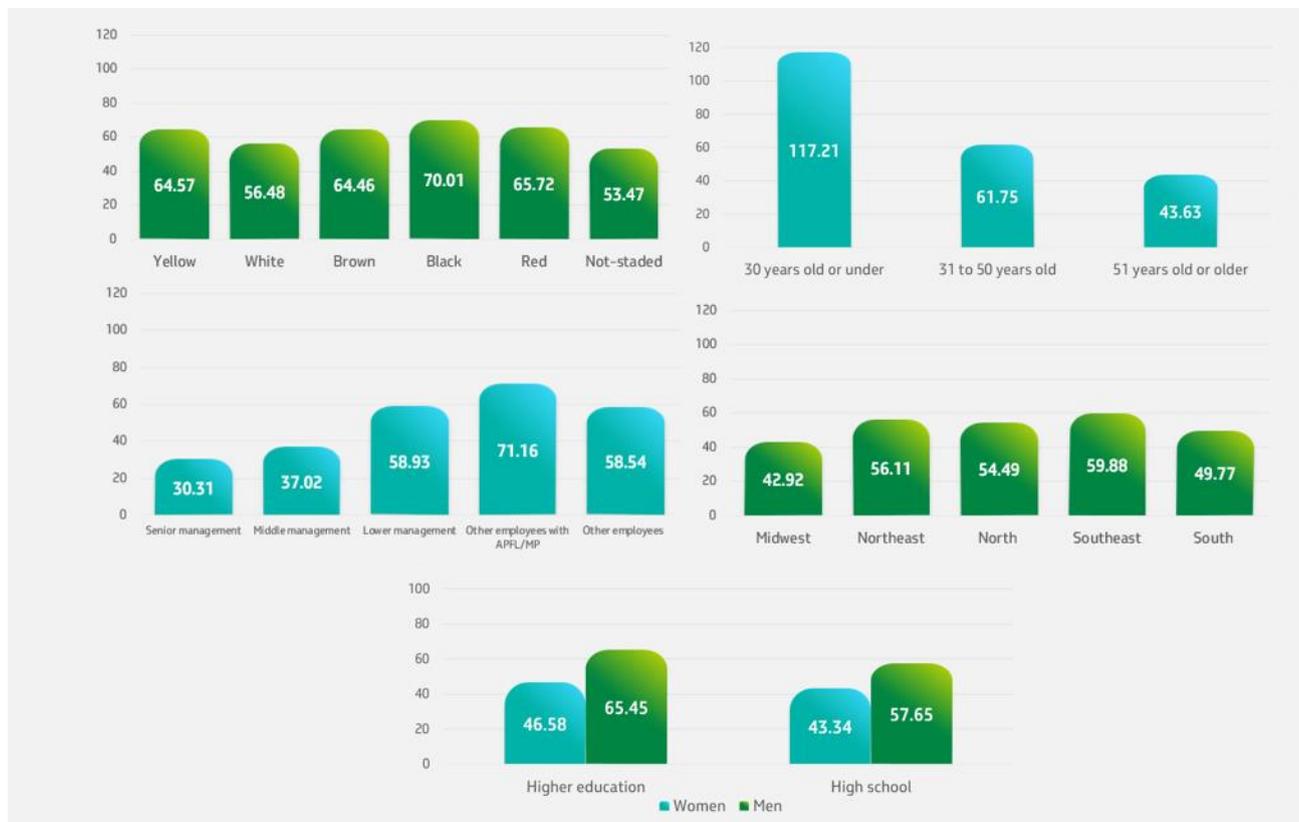
Organizational culture is one of our strategic HR drivers and the basis for developing a series of actions aimed at people management. Structured on the basis of carrying out a broad diagnosis with employees, the pillars of Petrobras' Culture Day are working as a single high performance team, resilience and innovation. We value the example of leadership and highlight aspects such as respect for people and valuing diversity.

In this sense, in 2022, a work plan was structured that included leadership training and engagement, initiatives aimed at operational areas (culture advisory services) and actions for all employees. These included the marathon of online events in celebration of Petrobras' anniversary, the One Team Petrobras Week: Soft Skills. The strengthening of relationships of trust, based on leadership, and the appreciation of positive examples were some of the aspects emphasized.

Our Human Resources area is responsible for providing guidance for planning and execution of training courses. We provide an internal infrastructure for training at Petrobras University and at our units across the country, in addition to providing methodologies and teaching technologies to assist with the application and access to employee content. We invested BRL 101.7 million in training during 2022.

Based on the performance evaluation and on our Strategic Plan (SP), training needs are identified. Annually, training is negotiated between the manager and each employee to achieve the expected results for the business during the evaluation period. Considering Petrobras' consolidated data, the average hours of training per employee in 2022 was 56.9. When we analyze data from Petrobras Parent Company separately, we find that in 2022, 974,000 people participated in courses, 489,000 of which were employees, with an average of 59 hours of training per employee in that year, distributed as detailed in the graphs below.

#### AVERAGE HOURS OF TRAINING (Parent Company)





## Academy Leadership and Competencies



We have a Leadership and Skills Academy focused on developing more than 6,600 managers and supervisors, in addition to the non-technical skills of all company employees. This academy is responsible for training leaders at all levels of the organization, offering training in partnership with renowned institutions, such as Fundação Dom Cabral, the 9th best business school in the world according to the executive education ranking of the Financial Times newspaper, and Harvard University.

The academy is coordinating two major leadership development programs, in partnership with the Dom Cabral Foundation: U-LEAD, for senior management and Make it Happen, for middle management and operational managers, including coordinators and supervisors.

U-LEAD was started in November 2021. It seeks to use disruptive learning to qualify leaders to act with protagonism, a critical sense adjusted to transformations of their mental model, and new forms of management. They are to consider a view towards diversity, equity, inclusion, and sustainability, while sharing experiences and knowledge in the quest to meet Petrobras' strategic demands, using new capabilities needed for digital transformation. In 2022, more than 400 leaders were trained, accounting for a total of more

than 3,400 participations in the various disciplines offered through remote and in person classes.

Make it Happen, which started in July 2022, seeks to develop leadership skills focused on the target culture defined by Petrobras: a single high-performance, innovative, and overcoming team. It is a program composed of modules that can be chosen according to the interest/need of the manager. All modules together total 180 hours of training. In 2022, more than 1,600 leaders participated in some program course, with more than 11,000 participations in the various offered courses.

The Academy of Leadership and Skills also works to develop soft skills of company's employees. In November 2020, Petrobras' Soft Skills Development Program was launched. With optional participation, and open to all company employees, the program has already dealt with topics such as emotional intelligence, communication, engagement and the meaning of work, creativity and innovation, stress management, diversity, and career management, among others.

The program offers online courses – with more than 2,800 participations in 2022 – and thematic dialogues on topics mediated by internal facilitators – with more than 1,900 participations over the last year.

Petrobras University has a network of more than 13 academies, focusing on the company's various business areas. These academies prepare and make available specific programs and development actions for the entire body of work, always seeking alignment between the actions offered and the company's Strategic Plan.

Considering all academies, we highlight the following training/development actions carried out in 2022:



- **Corporate Challenges for Leaders 2022:** Training carried out by leaders with the objective of improving decision-making on corporate issues, through the simulation of situations related to essential Leadership themes. In 2022, we had a total of more than 6 thousand participations. We cover the following topics in both course modules: Moral Harassment, Intelligence and Corporate Safety, Culture Journey, Social Responsibility, Supplies, Digital Transformation, Occupational Health Certificate, Climate, Communication and Brands, Governance and HSE (Health, Safety and the Environment).
- **Onboarding of New Petrobras Leaders:** It seeks to sensitize new managers at Petrobras in relation to what is expected of them in their new role. This is done through dialogue with more experienced leaders. The objective of the training is to make the new leader feel familiar with HR, HSE, Culture, Strategy topics and be welcomed to fully fulfill their role with their teams. It is a training course for designated employees at the beginning of their managerial careers, in which 229 leaders were trained in 2022.
- **Leader 4.0:** Petrobras leadership development course (managers, coordinators, supervisors, and consultants) with topics related to situational self-awareness, mindfulness, mental health, diversity, active listening, empathy, compassion, intergenerational dialogue, flexibility, socioeconomic changes and complexities. In 2022, we had more than 1,000 participations.
- **Training on personal data protection (LGPD in Practice):** Training on personal data protection (LGPD in Practice): It aims to present day-to-day situations related to the topic, reinforcing the role of the organization and each employee in preventing this risk, strengthening the culture of privacy. Training is mandatory for all employees and chief officers, and is also available for service providers. On December 31, 2022, this e-learning training course was completed by around 66,000 people, of which 38,388 are employees, representing 99.2% of this group.
- **Analytics and Data Science Development Program:** Provides training and certifications that develop employee skills to extract value from data and improve the decision-making process, directly strengthening the organizational strategy related to Digital Transformation. Additionally, this academy, in partnership with Centers of Excellence, is responsible for mapping demands, as well as prospecting and implementing development solutions for topics such as artificial intelligence and analytics, agility on an industrial scale, internet of things, cloud, robotization and digitization. More than 50 training programs for new roles (reskilling) have already been developed, as well as more than 100 free courses (upskilling), organized into nine areas of knowledge. Until September 2022, more than 1,400 employees completed training programs. In the same period, more than 21,000 training courses were completed in free courses.
- **Petrobras Well Control Certification and Training Program:** Its objective is to provide training and certification in well control to all Petrobras personnel directly involved in operations related to the construction (drilling and completion) and maintenance of wells (workover). This program has been instrumental in reducing the number of incidents/accidents in onshore and offshore environments. The program helped reduce the blowout rate (explosion per 1,000 wells drilled) from 2.24 in 1988 to 1.120 in December 2022. Also considering the rate of offshore blowouts, we estimate an avoided financial loss of between 0.43 and 1.63 billion dollars per non-event. From June 1996 to December 2022, there were 13,610 participations. Between January and December 2022, the program certified 218 employees, which represents approximately 0.56% of the company's staff.

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>> Information on other ethics and integrity training courses can be found in the Business integrity chapter.



Regarding the training of our suppliers, aiming to strengthen the relationship and partnership with a focus on continuous improvement and the improvement of sustainable contracting practices, we started the ASG Journey for Suppliers in 2022. Its objective is to promote the engagement of suppliers in ESG themes, through distance learning programs (EAD) associated with human rights, compliance, health, safety, climate, and quality, which can be accessed through our [Supplier Channel](#).

## Knowledge management

In order to promote the development of our employees, we adopt knowledge management practices that also contribute to the sharing of experiences and knowledge and to the creation of new knowledge and its application in the company's business processes.

Among the actions carried out in 2022, the following stand out:

- 2,489 Workplace Training activities, totaling 2,741 hours of training;
- 165 mentoring activities, totaling 7,920 hours of training
- 176 tutoring actions, totaling 2,147 hours of training
- 27 technical rotations, totaling 9,000 hours of training
- 8 managerial rotations, totaling 1,192 hours of training

A highlight in the area of Knowledge Management is the Refining Workplace Training Program. The program is carried out in our Refining segment with the objective of training and updating the operating technicians, to guarantee the operational continuity, safety and reliability of the units. The practice encompasses all of the Refining's operational departments, encompassing around 3,000 training courses distributed across nearly 600 jobs.

Since its implementation in 2012, more than 60,000 training sessions have been given to an audience of approximately 6,000 people. Through the program, we increased the number of employees trained to operate the units, resulting in a decrease in personnel costs and an increase in operational efficiency, ensuring success in the challenge of processing our reservations.



## Digital Transformation and Innovation in Corporate Education

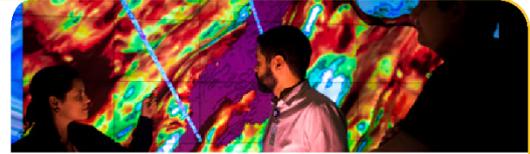


Photo: Petrobras Image Bank





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# Safety, health, and well-being

The topic of safety, health and well-being is part of the company's approach to achieving healthy and safe working conditions, including efforts to prevent physical and mental damage to workers and to promote health, seeking to avoid negative impacts such as fatalities, workplace accidents and occupational disease.

Our Health, Safety and Environment Policy states that our health, safety, and environment activities include five principles and 15 guidelines that guide and support the decision-making process and behavior of all employees. The principles are:

- HSE as a value
- Respect for life
- Risk based management
- Business sustainability
- Performance excellence and transparency

The 15 guidelines address important topics for health, safety, and environment related performance:

1. Leadership and Responsibility
2. Legal Compliance
3. Risk Analysis and Management
4. Investments and Divestments
5. Operations and Maintenance
6. Change Management:
7. Acquisition of Goods and Services
8. Continuous Learning
9. Information Management
10. Communication
11. Contingencies
12. Relationship with the Community
13. Accident and Incident Analysis
14. Product Management
15. Continuous Improvement Process

Each of these guidelines is broken down into standards with details on the company's ways of operating.

In our Strategic Plan 2023–2027 (SP 2023–27), we maintain respect for life, people, and the environment as one of our values. Thus, we work constantly to continue as a global safety benchmark in the sector, pursuing a Total Recordable Injuries below 0.7 and a zero fatality rate.

In addition, we integrated ESG elements (environmental, social and governance issues) into a single vision in our plan, summarizing the company's position on the subject. More than a concept, ESG is a risk/return view of how the company should act to mitigate risks and ensure its sustainability for the future, using the best environmental, social and governance practices.

Our ESG mandala guides planning and engagement with stakeholders and is aligned with the company's strategic elements and objectives. In it, four key ideas are highlighted, one of which is caring for people. In this area, one of the commitments assumed involves the promotion of safe operations, based on the protection of life, training 100% of the leadership in mental health, and working to promote the well-being of more than 38 thousand employees. Our goal is that, at the end of their work day, each employee can return healthy and safe to their family, and for this reason, in October 2016, we launched the Commitment to Life Program. The Program is composed of structuring projects defined based on the critical analysis of Health, Safety, and the Environment (HSE) management, with reference to the best market practices, and its sixth cycle was initiated and developed throughout 2022, with the following highlights:



- Health 365: comprehensive health care 365 days a year, strengthening employee engagement and leadership.
- Dynamic Management of Barriers: strengthening of Process Safety with a focus on technical training and the adoption of best practices and technological solutions that guarantee the integrity and reliability of facilities.
- HSE in Service Provision: improvements in the selection processes for service providers and inspection of contracts, taking HSE aspects into account.
- Water Management: reduction of freshwater withdrawal and improvement of the effluent management process, making it more proactive and preventive.
- Mar Azul: prevention of containment losses, in offshore operations, with an impact on people and the environment.
- Pró-Dutos: mitigate risks related to loss of containment resulting from clandestine diversions, strengthening operational continuity, reducing impact on people and the environment.
- Human Factors: implement the Petrobras Human Factors Journey, strengthening mutual trust, a just culture focused on learning, making the company increasingly resilient.
- SAP HSE: integrate information, standardize and simplify processes, as well as streamline decision-making based on analytical data, with greater reliability.

## COMMITMENT TO LIFE PROGRAM





The actions planned for the Commitment to Life Program are reported monthly. The progress of the program is monitored at various organizational levels, culminating in the evaluation by Executive Board and the HSE Committee of the Board of Directors.

One of the priorities of HSE management is to prevent the occurrence of accidents and damage to the health of workers and to promote respect for the environment, the communities surrounding our facilities and all stakeholders with whom we have a relationship. Such actions seek to ensure that HSE is a value in all our activities, to contribute to the sustainability of our businesses.

Currently, our more than 38,000 employees (100%) are covered by our Health, Safety and Environment (HSE) management system. Our service providers also make use of this system when they are on the company's premises and are even evaluated by the Health, Safety, and the Environment Management Assessment Process (HSE-MAP). Among the premises for its execution are the legislation in force and resolutions of the regulatory bodies, such as the Regulatory Norms (NRs) of the Ministry of Labor and Pensions, the resolutions of the Sanitary and Epidemiological Surveillance, the resolutions of the councils of health professionals, the Law General Data Protection Regulation, Pension Legislation and the resolutions of the National Agency of Petroleum, Natural Gas and Biofuels (ANP), among others.

In addition, every service provision contract has an HSE attachment with the health and safety requirements that contracted companies must comply with regarding their employees. Compliance with these obligations is monitored through contractual management and HSE-MAP assessments, which include mechanisms for evaluating and improving HSE performance throughout the company. The treatment of points for improvement identified in the periodic evaluations of the HSE-MAP contributes to the continuous improvement of our HSE management system.

## Employee health

The risks related to the processes and activities carried out in our operations are controlled and described in the Risk Management Program (PGR) and in the Occupational Health Medical Control Program (PCMSO), standardized by NR-7 (Regulatory Standard 7 of the Ministry of Labor and Pensions). We have corporate occupational health guidelines with the establishment of requirements for the development of the PCMSO.

We systematically and periodically monitor the health of our employees with integration between the areas of Occupational Health, Occupational Safety, Occupational Hygiene and Ergonomics, with the main objective of protecting and preserving the health of employees. For the management and guarantee of legal compliance, tools were developed to control occupational health certificates, production of campaigns and materials to encourage employees to play a leading role in carrying out occupational assessments, improvement of processes to improve the employee experience and engagement actions and training of leaders in ensuring compliance with legal and regulatory provisions on health and safety at work. In addition, reaffirming our commitment to HSE, Petrobras' Code of Ethical Conduct establishes the duty of our employees to carry out occupational medical examinations by the established deadline.

Among the health services available to employees, we highlight the Health Journey, which is currently made up of health actions offered to employees 365 days a year throughout their working life. It is based on three main pillars: periodic evaluation, with the Occupational Health Certificate update; health promotion actions, to monitor the employee's health; and urgent and emergency care. During occupational exams, guidance is provided related to identified occupational risks, work organization and work environment, as well as general and specific guidance on health promotion.

The monitoring of workers' health seeks to discover any type of organ dysfunction, biological system or work-related mental disorder expressed through signs and symptoms of health problems as early as possible. We have a corporate standard with guidelines for our technical staff for the prevention, investigation, diagnosis, and monitoring of occupational diseases in line with current standards and legislation.



Absenteeism for health-related reasons is monitored using the Percentage of Time Lost indicator (PTP-S), which measures the prevalence of hours lost due to illness or accidents based on the regime and expected workload. We believe that work occupies a central place in the construction of an individual's identity, their personal fulfillment, in the formation of relationships, in the evolution of coexistence and in the culture. For this reason, we offer employees on leave for health reasons for more than 15 days, the Rescuing Labor Potential Program. The Program's premise is to monitor employees on medical or dental leave in an interdisciplinary manner, with a view to evaluating and developing strategies to recover their work potential and reinsert them into work whenever possible. Among the strategies adopted, we have the identification of biopsychosocial and organizational aspects that impact the health of licensed employees, including in situations of recurrence, with a view to preventing injuries and contemplating their skills and interests, seeking their reintegration into work with quality of life.

Licensed employees receive systematic monitoring by a multidisciplinary team in the routine of our health services. In addition to assistance provided by a technical team, we monitor all stages of leave and carry out training for health professionals and leaders in topics such as pension legislation, corporate benefits, absenteeism management, among others. We also entered into a cooperation agreement with INSS (National Social Security Institute) to provide online access to services for employees on pension leave.

We develop and offer continuous health actions that enable the adoption of healthy attitudes and behaviors, encouraging protagonism and bringing the employee to the center of care. We work to identify health risks and vulnerabilities through an epidemiological analysis of the health profile of our employees and the general population, thus establishing strategic guidelines for prioritizing health promotion initiatives. Our health promotion programs focus on promoting quality of life and well-being and reducing risks and vulnerabilities to workers' health and include individual, collective and environmental actions. Among them, we highlight: Better Living Program; Actions to control non-transmissible chronic diseases (NCDs); Healthy Eating Promotion Program; Physical Activity Promotion Program; Program for the prevention, approach, and monitoring of the treatment of problems related to the use of alcohol, tobacco and other drugs; Pregnancy Care Program; and Mental Health Program.



## Mental Health and Well-being Program



Photo: Petrobras Image Bank



### CONTEXT

According to WHO data, mental disorders are the main cause of disability in the world. It is estimated that the costs of losses from mental disorders will reach US\$6 trillion by 2030. In Brazil, 23 million people (12% of the population) need mental health care. At Petrobras, the incidence of cases of mental disorders follows the global growth trend, leading to the need to review the Mental Health Program, as well as the development of actions focused on the inclusion of well-being commitments in Petrobras culture.



### CHALLENGE

Promoting employee mental health and well-being with a focus on individual protagonism and organizational culture.



### SOLUTION

The Mental Health Program was revised in 2021, seeking to establish health promotion, prevention, follow-up and mental health readiness strategies in a more comprehensive and interdisciplinary way, since the theme of mental health and well-being in the organizational environment involves the integrated performance of several areas of the company. After holding an inter-sectoral and multidisciplinary workshop, the HSE Executive Manager decided to set up the 1st Petrobras Inter-sectoral Committee for Organizational Well-being, which aims to monitor and propose actions to foster organizational well-being, helping Petrobras to be reference in this area. The topic of well-being was incorporated into the Commitment to Life Program and from this initiative actions for continuous improvement were derived, focusing on the needs of the actors involved in the processes. Among the actions carried out, the highlight is on raising awareness and training leaders on the subject, training of health professionals, research will employees to obtain data on psychosocial factors related to work and well-being, and the launc of 24-hour psychological support services for employees.



### RESOURCES

#### For the review of the Mental Health Program and the Promotion of the Culture of Well-being, the following actions were put into place:

- › Hiring a consulting company focused on mental health and corporate well-being;
- › Partnerships with the different business areas of Petrobras,

with a focus on surveying the difficulties and opportunities for improving the Mental Health Program and actions aimed at well-being;

- › Communication strategy, involving leaders and employees.

#### Actions:

- › 2021 – Workshop to Review the Mental Health Program;
- › 2022 – Mental Health and Well-being Srvey; Culture of Well-being Workshop for Leaders; Livestream about Mental Health and Valuing Life for all employees; and

- › Launch of the Psychological Support Office;
- › 2022/2023 – Training of Leaders in Mental Health;
- › 2023 – Training of Health Professionals in Mental Health; and Joining the Mind in Focus Movement.



### RESULTS

More than de **10,000 people** responded the Mental Health and Well-Being Survey carried out from May to June 2022, corresponding to approximately 25% of the company's employees. By December 2022, we trained 29% of leaders in mental health, with a commitment to reach 100% by June 2023.

The result was consolidated in March 2023 by joining the Mind in Focus Movement, an initiative

of the UN Global Compact, which aims to treat mental health not only as an emergency measure, but in a preventive and humanized way, as a perennial theme that is a part of the corporate business strategy - an advance in SDG 3 (Good Health and Well-Being). It should also be noted that in 2022 Petrobras received the National Quality of Life Award in the Management Excellence category, recognizing the relevance of the actions that have been built in this regard.

>> Information on employee access to health services, health promotion programs offered by the company and actions to prevent and control Covid-19 can be found in our [Human Rights and Corporate Citizenship Supplement](#).



## Health actions related to portfolio management

We reiterate our full attention and care for employees, with an emphasis on those who are in assets undergoing the divestment process. With this objective in mind, the Health Journey in Portfolio Management Project was developed over the last four years. In this project, actions are taken to welcome and care for employees, health professionals, and managers who will be transferred to other units.

Our employees are involved in educational activities with topics regarding the importance of precautions and health care in changing situations, stress management, the role of support networks, and financial education tips, among others. In addition, all employees go through a process of listening and welcoming when they are treated individually and their biopsychosocial issues are carefully evaluated by a multidisciplinary health team, seeking recommendations regarding the times and movements of the transfer.

We also rely on local occupational health services, which throughout the process systematically monitor the health conditions of these employees through regular occupational assessments, spontaneous demands, and emergency care.

## Employee participation

### Health and safety participation, committees, and commissions

All of our employees are represented on formal health and safety committees. In our operating units and administrative facilities, the Internal Commissions for the Prevention of Accidents and Harassment (CIPAs) are responsible for reporting risk conditions in the workplace and contributing to the preservation of the health, well-being and physical integrity of employees. These commissions discuss HSE issues for company employees and contractors, with annual meetings held with representatives of the unit's CIPAs and the contractors that work there (integrated SIPAT). The members of the committees receive training, follow routines to verify the safety conditions of the facilities and the actions implemented to improve these conditions and participate in accident investigations.

Employees are also present through their union representatives. We invest in permanent and effective dialogue with unions. An example of this are the periodic, local, and corporate meetings held exclusively to address issues of health and safety at work. During 2020, 2021 and mid-2022, we held almost weekly meetings with unions about Covid-19, the purpose of which was to present the measures adopted by the company to mitigate the effects of the pandemic among our employees. It is also through union representation that the health and safety clauses that will be part of the Collective Bargaining Agreement are taken to the employees for deliberation in meetings, reinforcing the company's commitment to life, people, and the environment.

From an ESG perspective, with a focus on promoting mental health and well-being, Petrobras Inter-sectoral Committee for Organizational Well-being is responsible for monitoring and proposing actions to foster organizational well-being, helping Petrobras to be a reference in this field. It was created in 2021 and is made up of a multidisciplinary and intersectoral team, with representatives from different areas of the company: Human Resources; Health, Safety and the Environment (HSE); Legal; Ombudsman's Office; Communication; Strategy; Finance; Digital Transformation; Social responsibility; and Petrobras Health (APS).

## Safety

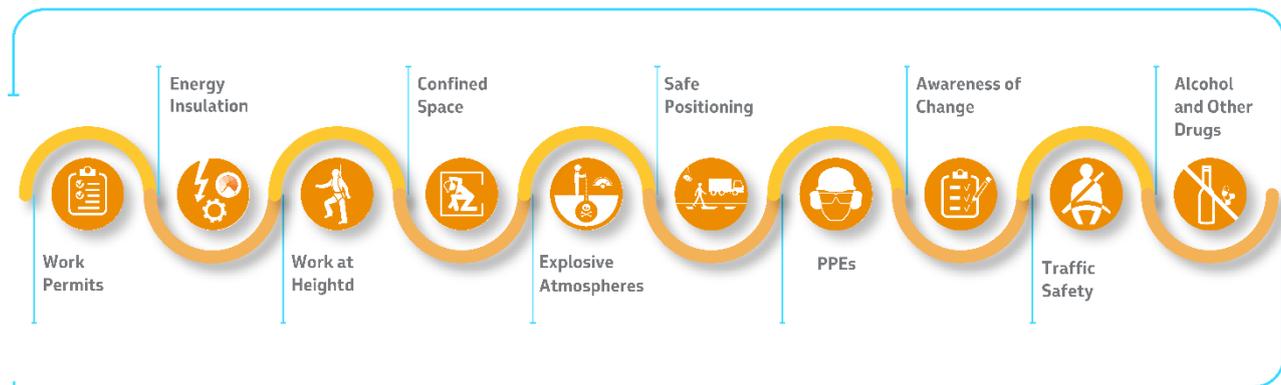
Our Safety Management System is based on the best practices of companies in the sector, being in line with the main management standards and regulations of regulatory bodies such as the National Agency of Petroleum, Natural Gas and Biofuels (ANP), which deals with ensuring safety operating industrial facilities.

Aiming at the continuous improvement of our HSE management system, specific structuring programs and initiatives are developed, such as the Commitment to Life Program, the Golden Rules, and the Fundamentals of Process Safety.

Since the launch of the first Commitment to Life Program in 2016, we had a significant reduction in the Total Recordable Injuries (TRI) from 2.15 to 0.68. We are working to have a high performance culture, which demands health, safety, and respect for the environment.

The Commitment to Life program also plays a decisive role in guaranteeing the results required for portfolio management, as it contributes to the continuous improvement of our HSE indicators. The Program promotes increased awareness among employees about caring for life, through training and qualification of teams and structuring actions.

In order to support a culture of safety, in 2016, ten Golden Rules of safety were defined based on the most recurrent accidents in the oil and gas industry and in our history. Training in the Golden Rules, mandatory for all our employees in Brazil and abroad, is one of the actions provided for in the Commitment to Life Program.



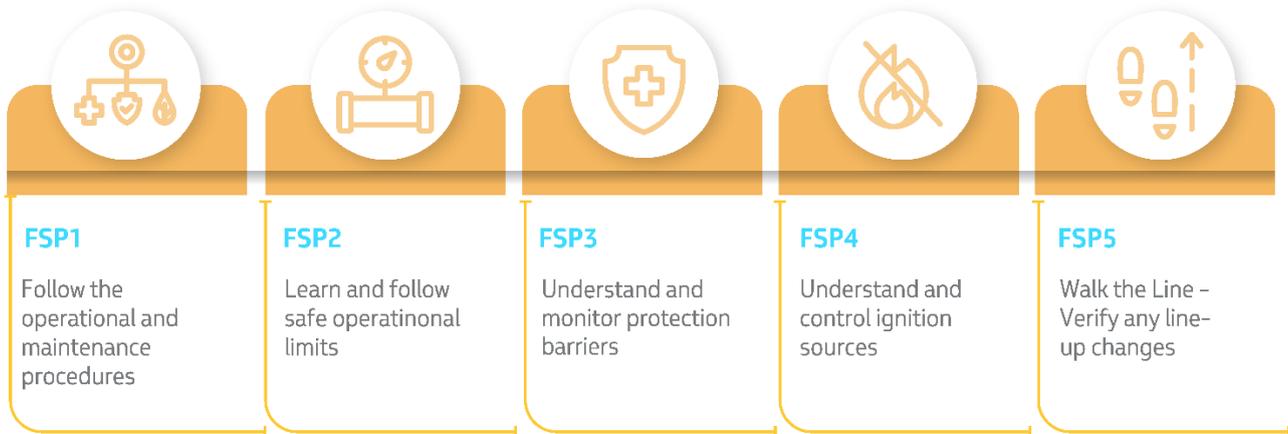
Before each activity, the employees involved are presented with the HSE risks inherent to the activities to be performed, and depending on the nature of the activities, Work Permits (PT) are released. In addition, on site and at the time of execution of the work, there is the practice of Task Safety Analysis (AST). If any situation appears to be risky, the work must be stopped, and if there is an unforeseen event that poses a risk to safety or life, the employee can and must exercise his right of refusal to proceed. In these situations, employees are instructed to interrupt the activity and report the occurrence to the hierarchical superior, who must suspend the activities until the situation is normalized, if a serious and imminent risk is found. Due to the fact that the Safety, Health and Environment Policy establishes HSE as a value and as one of its principles is that all activities are duly supervised and must comply with our HSE standards, there is support from the company that reprisals cannot occur against workers who ensure safer operations. In any case, we provide the Reporting Channel for cases of reprisals and retaliation, and whistleblowers can choose to remain anonymous.

>> Information about the Reporting Channel can be found in the Business integrity chapter.

Also, the process accident analysis indicated that the application of a set of “Process Safety Fundamentals” (FSP) would have the potential to eliminate a significant portion of these events. This result highlighted the importance of this accident prevention strategy and led to efforts to implement this initiative within the scope of the Commitment to Life Program.

Process Safety Fundamentals reinforce good practices, already known on operational fronts, so that they are followed by teams and supported by supervisors and leaders. We expect the dilemmas faced by the operational fronts to comply with Process Safety Fundamentals are raised, and that process safety issues become a daily conversation with the leaders involved.

Process Safety Fundamentals complement the Golden Rules, focusing on Process Safety issues. Five Fundamentals were then defined and brought together in our Process Safety Fundamentals Manual. They include:



During the implementation of the Process Safety Fundamentals, several actions were carried out, such as raising awareness among leaders, establishing focal points for the theme at the units and training the operational fronts in the distance learning modality. The Process Safety Fundamentals are already included in the company's HSE management system.

Also, within the scope of the Commitment to Life Program, the Dynamic Management of Barriers (GDB) project deserves to be highlighted, for technical training and the adoption of best practices and technological solutions that optimize the management of the integrity and availability of protection barriers against the most significant process accidents in our industrial facilities. In 2021, the process was standardized, and two pilots were carried out using a commercial software tool. In 2022, implementation began at 17 of the company's units and, by 2024, the project will be expanded to other industrial facilities, both onshore and offshore.

Also noteworthy was the creation of an emphasis on process safety in the company's job structure, with the opening of a public selection process in 2022 to attract professionals in this area, to strengthen this focus in the Commitment to Life Program. The training of these professionals includes:

Theoretical period: specific internal training with graduate status recognized by the Ministry of Education (MEC).

Experiential period: experimental training at the company's units.

Complementarily, a market graduate course was planned for professionals working in the area of process safety.

HSE is in our vision, in our purpose and in our values. More than part of our culture, it is present in everything we do on a daily basis: from the uniform and personal protective equipment we use, to the Golden Rules we follow and the care we take with each other to keep us safe at all times.



Our commitment to employee safety is also reflected in the management of transport vehicle contracts. In 2022, vehicles used in cargo and passenger transport contracts traveled more than 110 million kilometers, transporting employees from operating units, machinery, and equipment for our operations. These activities are regulated by a corporate road transport safety standard, to guide safety management in exclusive transport contracts at the service of Petrobras, both for people, products and cargo. This standard covers the management of road transport risks associated with people, vehicles and the surrounding environment on major routes. Each Petrobras area responsible for transporting people or cargo has standards that detail the specific requirements for its activity.

In 2022, aviation safety audits were carried out at 10 airlines, 130 helidecks of maritime units and 14 airports, to guarantee the safety conditions of aircraft and facilities. Our fleet of 55 aircraft transported more than 772,000 passengers for Petrobras and contractors, on approximately 34,000 flights, a total of 67,300 flight hours, transporting more than 92,000 cargo items with approximately 800 tons in all.

## Health and safety training

In addition to the mandatory safety and health training provided and automatically assigned to employees, in accordance with external legislation, internal standards and procedures, more than 20 development tracks were developed and made available for guided self-learning in critical HSE topics, including non-technical skills linked to factors human and digital skills. There are more than 200 educational solutions in safety and health available in the Integrated Human Resources System (SIRH), with management and implementation control in control panels for leaders, their delegates and by the employees themselves. HSE distance learning solutions are available with audio and subtitles for employees with visual and/or hearing impairments, in line with the company's accessibility guidelines, and are also translated into English and/or Spanish when required by the areas, according to the target audience.

Considering the need to continue training in operational safety and health and isolation and social distancing due to the pandemic, we developed new solutions and transformed face-to-face educational solutions into distance solutions. In 2022, with the gradual resumption of face-to-face work, we also began reviewing and creating hybrid educational solutions.

The application of new digital teaching-learning tools boosted exchanges between HSE technical networks and enabled employees to play a leading role in its development process, with digital content curation. The modalities of distance courses are divided into asynchronous, without the presence of the instructor, and synchronous, with the presence of the instructor.

Below are some numbers of HSE contents, in different formats, made available in these new teaching-learning and awareness tools:

HSE Content Portal: centralized repository of HSE content in the cloud with more than 6,000 contents with intelligent search capabilities;

Streams: more than 30 channels according to HSE development and internal conference tracks, containing videos, recordings of webinars, synchronous sessions, interviews and videocasts about HSE;

Workplace Petrobras: 13 thematic groups on the internal social network.

The strengthening of organizational learning in HSE is a strategic driver and was manifested through different actions. We highlight the delivery, follow-up and continuous updating of more than 20 development tracks in critical HSE and Climate themes, namely: Contaminated Areas; Explosive Atmosphere; Audit for Lead Auditors; Audit for Audited; HSE Evaluation in Projects; Biodiversity and Degraded Areas; Contingency and Emergency Response; Atmospheric Emissions and Climate; Human Factors and Ergonomics; HSE Management in Contracts; Occupational Safety Management; Occupational hygiene; Licensing and Environmental Compliance; Decommissioning, Licensing and Environmental Compliance; Maintenance of Licenses, Licensing and Environmental Compliance; Obtaining Licenses; Water Resources and Effluents; Solid Waste; Comprehensive Health; Occupational Health; Health Surveillance;



Health Management; Contingency and Response to Health Emergencies; Process Safety and Safety in Diving Activities.

The purpose of the tracks is to develop structured knowledge management, mapping the topics and critical knowledge relevant to the areas, identifying the technical references for knowledge, and accelerating learning through the combination of different educational solution formats. The tracks were prepared using andragogical methodologies that favor the strengthening of collaboration networks. To facilitate the user experience, the tracks were automated and made available on the corporate system for employees, according to their time availability and through any mobile device.

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>> [Information about our health and safety training can be found in the appendix Health and safety training.](#)

## Occupational health and safety indicators

To assess the HSE management system, the Health, Safety, and the Environment Management Assessment Process (HSE-MAP) is used. This process is based on verifying compliance with the standards derived from the [15 HSE Corporate Guidelines](#) and legal requirements. The HSE-MAP aims to reduce the risks of accidents and incidents and their impacts on industrial processes, people, and the environment, promoting learning and continuous improvement of HSE performance.

One of our top metrics is the Total Recordable Injuries (TRI) per million man-hours. Since the launch of the first *Compromisso pela Vida* (Commitment to Life) Program, we have had a significant TRI reduction, from 2.15 in 2016 to 0.68 in 2022. Even though the performance was above the one achieved in 2021, when we had reached a TRI of 0.54, it was still below the alert limit (0.70) defined for the year 2022. Under our continuous improvement guideline, we continue to strengthen our management practices and enhance our efforts on the lessons learned from these events, ensuring its coverage for the entire company, in order to foster a safety culture.

We had 40 recordable injured employees and 204 recordable injured contractors, generating a TRI of 0.45 and 0.75, respectively. Of that total number of accidents with leave, 35 were employees and 131 were contractors, making up a Lost Time Injury Frequency Rate (LTIF) of 0.39 and 0.48, respectively. In 2022, there were five fatal accidents, all involving employees of contracted companies, in the execution of contracts with Petrobras, resulting in an index of 1.391. In all five cases, the contracted companies involved took over the management of the funeral costing process and support for the family (financial and psychological) and Petrobras monitored this support so that everything was carried out properly. All accidents were analyzed, and a multidisciplinary team identified the underlying causes and established blocking actions to prevent further incidents. Lessons learned were implemented in all units and contributed to the advancement of preventive measures in our management system.

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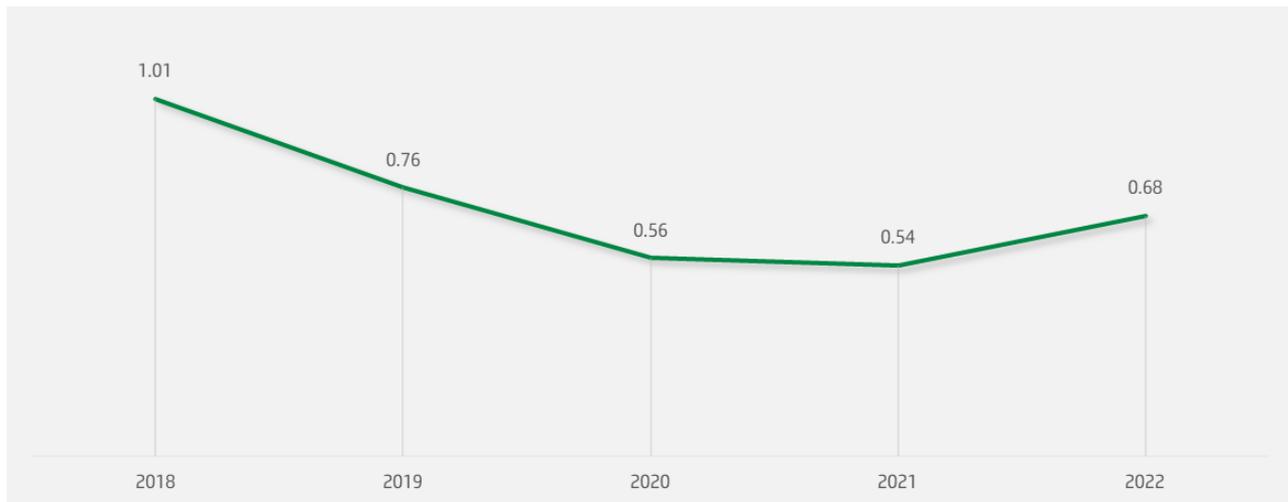
>> [Information about the constant improvement of the integrity and reliability of the company's facilities and improvement of our processes can be found in the Accident prevention and management chapter.](#)

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<sup>1</sup> Ratio between the number of deaths by the number of hours worked, multiplied by 100,000,000.



## TOTAL RECORDABLE INJURIES (TRI)<sup>2</sup>



The company monitors the incidence of occupational diseases through its Petrobras TIDO indicator<sup>3</sup> (Petrobras Occupational Disease Incidence Rate), which since 2019 has been zero.

## OCCUPATIONAL HEALTH AND SAFETY INDICATORS<sup>4</sup>

Indicator	2018	2019	2020	2021	2022
Total Recordable Injuries (TRI) <sup>5</sup> - Total	1.01	0.76	0.56	0.54	0.68
Total Recordable Injuries (TRI) - Employees	0.82	0.71	0.31	0.27	0.45
Total Recordable Injuries (TRI) - Contractors	1.08	0.78	0.66	0.64	0.75
Lost Time Injury Frequency Rate (LTIF) <sup>6</sup> - Total	0.57	0.48	0.35	0.34	0.46
Lost Time Injury Frequency Rate (LTIF) - Employees	0.61	0.62	0.25	0.19	0.39
Lost Time Injury Frequency Rate (LTIF) - Contractors	0.56	0.43	0.39	0.40	0.48
Occupational Disease Frequency Rate (TIDO) <sup>7</sup> - Employees	0.02	0	0	0	0
Average work related days lost per employee <sup>8</sup> - Employees	0.18	0.15	0.11	0.15	0.15
Percentage Time Lost - PTP/PTP-S <sup>9</sup> (% - Employees)	2.42	2.37	1.53	1.83	2.28

<sup>2</sup> Number of recordable injuries per million man-hours of risk exposure. It includes typical cases of injuries without leave (excluding first aid cases), injuries with leave, occupational diseases, and fatal accidents.

<sup>3</sup> The company does not monitor the rates of occupational diseases of service providers, since, from a legal point of view, we cannot manage the health information of outsourced workers; therefore, we do not have this information in our systems, except for emergency situations.

<sup>4</sup> Data from parent company, Libra, Petrobras Bolivia, Petrobras International Braspetro – Colombia branch and Transpetro.

<sup>5</sup> Number of recordable injuries per million man-hours of risk exposure. It includes typical cases of injuries without leave (excluding first aid cases), injuries with leave, occupational diseases, and fatal accidents.

<sup>6</sup> Number of injury victims that take leave from work resulting from typical accidents or cases of occupational disease per million man-hours of risk exposure.

<sup>7</sup> Total number of new cases of occupational diseases, per 1,000 employees, characterized by the company. The Workplace Accident Communication issued by court decision and the characterizations by the INSS are not computed, when contested for being in disagreement with the company's professional technical evaluation.

<sup>8</sup> Number of days lost per company employee to absences due to work-related health causes – work accident and occupational disease. The calculation considers the days from the day after the injury to the day before the return.

<sup>9</sup> Total hours not worked due to illness and injury accumulated during the period, divided by the total planned hours accumulated during the period, multiplied by 100. As of 2020, this indicator will be called Percentage of Time Lost - Health - PTP-S. We decided to make an adjustment in the calculation of the Percentage Lost Time indicator - PTP, in order to remove hours referring to vacation from the total planned hours of work, as well as data related to assigned employees. As a result, it was necessary to adjust its calculation formula, as well as to establish a target for 2021 based on the new parameters.



Occupational health and safety indicators meet industry standards and practices. To prevent accidents, we comply with regulations and adopt strict operating standards and procedures. We are trained to operate safely, and in case of any doubts during the execution of a procedure, we are instructed to stop it immediately.



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# Main associations

Association	Participation	Basic Membership Fee (BRL)
Brazilian Petroleum, Gas, and Biofuel Institute (IBP) <sup>1</sup>	1957	0.00
Brazilian Geological Society (SBG)	1957	46,481.60
Brazilian Association of Publicly Traded Companies (ABRASCA)	1984	65,000.00
Brazilian Association of Automotive Engineering (AEA)	1984	51,400.00
International Association of Oil and Gas Producers (IOGP)	1988	467,998.27
Camara Boliviana de Hidrocarburos Energía (CBHE)	1996	93,382.78
Camara Brasileira Boliviana	1996	3,478.08
Brazilian Association of Technical Standards (ABNT)	1998	21,370.00
Camara de Industria y Comercio (CAINCO)	2000	32,381.83
Asociación Colombiana de Petróleo (ACP)	2015	112,175.64
Camara de Empresas Productoras de Hidrocarburos (CEPH)	2016	37,960.56
Ethos Institute <sup>2</sup>	2000	51,000.00
Brazilian Committee on Materials, Equipment and Oceanic Structures for the Oil and Natural Gas Industry of the Brazilian Association of Technical Standards (ABNT/CB-50)	2002	15,000.00
Brazilian Institute for Corporate Governance (IBGC) <sup>3</sup>	2002	42,726.00
Brazilian Investor Relations Institute (IBRI)	2002	25,000.00
International Gas Union (IGU)	2003	30,438.00
Brazil Network of the United Nations Global Compact	2003	159,060.00
Brazilian Association of Energy Traders (ABRACEEL)	2004	76,680.00
American Petroleum Institute (API)	2005	0.00
National Association of Research and Development of Innovative Companies (ANPEI)	2005	33,600.00
Well Testing Network (WTN)	2005	35,444.63
International Petroleum Industry Environmental Conservation Association (IPIECA)	2006	343,390.24
Electric Power Research Institute (EPRI)	2007	0.00
International Committee for Coal and Organic Petrology (ICCP)	2008	0.00
Center for Chemical Process Safety (CCPS)	2009	182,567.80
Brazilian Association of Thermoelectric Generators (ABRAGET)	2011	898,209.52

<sup>1</sup> IBP receives funds through the Brazilian Association of Exploration and Production (ABEP) and the Brazilian Downstream Association (ABD).

<sup>2</sup> We were part of Ethos from 2000-2008 and then again in 2018.

<sup>3</sup> We were part of IBCG from 2002-2015 and then again in 2021.

Association	Participation	Basic Membership Fee (BRL)
Brazilian Exploration and Production Association (ABEP)	2013	1,391,716.63
International Association of Drilling Contractors (IADC)	2014	262,620.01
Pipeline Technology Center (CTDUT)	2015	146,000.00
National Compact for the Eradication of Slave Labor (InPacto)	2015	11,321.54
Vale do Paraíba Integrated Emergency Network (RINEM)	2015	11,822.00
CDP Benchmark Club <sup>4</sup>	2017	47,344.50
World Economic Forum	2017	884,454.64
American Society for Testing and Materials (ASTM)	2018	1,994.13
Brazilian Association of Licensing Executives (Les Brasil)	2018	600.00
National Scientific Computing Laboratory (LNCC)	2018	0.00
The Welding Institute (TWI)	2018	479,921.70
The Open Group	2018	160,446.87
University of Tulsa (TULSA)	2018	283,217.00
Fieldcomm Group	2019	7,714.95
Enterprise Equality Initiative - NGO Afrobras and Zumbi dos Palamares College	2019	0.00
International Chamber of Commerce (ICC Brasil)	2019	49,806.00
Association for Supply Chain Management (ASCM)	2019	77,817.00
Brazilian Downstream Association (ABD)	2020	1,359,417.00
Brazilian American Chamber of Commerce (BRAZILCHAM)	2020	30,451.20
American Chamber of Commerce in RJ (AMCHAM)	2020	36,897.00
Brazilian Association of Institutional and Governmental Relations (ABRIG)	2021	0.00
Brazilian Center for International Relations (CEBRI)	2021	55,000.00
Oil Spill Response Limited (OSRL)	2021	7,858,740.00
Brazil-China Business Council (CEBC)	2022	87,200
Electric Energy Research Center (CEPEL)	2022	600,000.00
The Sprint Robotics Collaborative (SPRINT ROBOTICS)	2022	166,488.00
Association of Oil, Gas and Renewable Energy Companies in Latin America and the Caribbean (ARPEL)	2022	94,412.50

The reported associations correspond to entities considered strategic for Petrobras business (national or international), through which the company and its representatives can exert influence and/or acquire relevant information and knowledge on various topics of interest by participating in debates, technical groups, projects, commissions, events, exchange of best practices, among other forms of participation. These entities may or may not contain a formal member of Petrobras in their governance structure.

<sup>4</sup> We participate in this association since 2017, except for in 2020.

# Donations

Donating Company	Beneficiary	Project/Purpose	Amount in BRL
PETRÓLEO BRASILEIRO S.A.	ABC MARBAS - ASSOCIACAO BENEFICENTE DOS CATADORES DE MATERIAL RECICLÁVEL DA BAIXADA SANTISTA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 1,953,600.00
PETRÓLEO BRASILEIRO S.A.	AÇÃO ECOLÓGICA GUAPORÉ - ECOPORÉ	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 1,502,820.00
PETRÓLEO BRASILEIRO S.A.	AÇÃO SOCIAL PAULO VI – ASPAS	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 100,740.00
PETRÓLEO BRASILEIRO S.A.	ACTIONAID BRASIL	Financial donation for the acquisition and distribution of food assistance and LPG 2022 for families in socially vulnerable situations	BRL 791,208.00
PETRÓLEO BRASILEIRO S.A.	AFEC ASSOCIAÇÃO DE APOIO E FOMENTO À ECONOMIA CRIATIVA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 292,400.00
PETRÓLEO BRASILEIRO S.A.	AGÊNCIA DO BEM	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 976,800.00
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO BENEFICENTE O PEQUENO NAZARENO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 5,943,660.95
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO CAATINGA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 1,267,200.00
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO CASA FAMILIAR RURAL - CFR SÃO MATEUS DO SUL/PR	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 468,864.00
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO CELEBREIROS	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 897,600.00
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO DAS CATADORAS DE MANGABA E INDIAROBA - ASCAMAI	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 545,054.40
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO DE MULHERES DO MULTIPLICAR	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 3,037,848.00
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO DE PROTEÇÃO À INFÂNCIA VOVÔ VITORINO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 2,825,000.00
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO EXPERIMENTAL DE MÍDIA COMUNITÁRIA – BEM TV	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 1,845,175.20
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO PESTALOZZI DE ITABORÁI	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 175,824.00
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO RAIZES	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 43,956.00
PETRÓLEO BRASILEIRO S.A.	CAPDEVER-MOTUMBAXÉ	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 390,400.00

Donating Company	Beneficiary	Project/Purpose	Amount in BRL
PETRÓLEO BRASILEIRO S.A.	CDM COOPERAÇÃO PARA O DESENVOLVIMENTO E MORADA HUMANA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 2,315,992.80
PETRÓLEO BRASILEIRO S.A.	CECP	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 897,600.00
PETRÓLEO BRASILEIRO S.A.	CENTRO DE ASSESSORIA AO MOVIMENTO POPULAR CAMPO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 643,711.20
PETRÓLEO BRASILEIRO S.A.	CENTRO DE TEATRO DO OPRIMIDO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 175,824.00
PETRÓLEO BRASILEIRO S.A.	CINEMA NOSSO	Financial donation for the acquisition and distribution of food assistance and LPG 2022 for families in socially vulnerable situations	BRL 1,010,988.00
PETRÓLEO BRASILEIRO S.A.	CINTERCOOP - CENTRO INTERNACIONAL DE COOPERAÇÃO PARA O DESENVOLVIMENTO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 2,585,000.00
PETRÓLEO BRASILEIRO S.A.	FIOTEC - FUNDAÇÃO PARA O DESENVOLVIMENTO CIENTÍFICO E TECNOLÓGICO EM SAÚDE	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 7,211,714.40
PETRÓLEO BRASILEIRO S.A.	FUNDAÇÃO GOL DE LETRA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 976,035.00
PETRÓLEO BRASILEIRO S.A.	FUNDAÇÃO GUIMARÃES DUQUE - FGD	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 500,198.40
PETRÓLEO BRASILEIRO S.A.	FUNDAÇÃO MAMÍFEROS AQUÁTICOS (FMA)	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 2,770,747.20
PETRÓLEO BRASILEIRO S.A.	FUNDAGRES INOVAR - FUNDAÇÃO DE DESENVOLVIMENTO E INOVAÇÃO AGRO SOCIOAMBIENTAL DO ESPÍRITO SANTO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 5,380,874.71
PETRÓLEO BRASILEIRO S.A.	IACAS - INSTITUTO DE ASSISTÊNCIA À CRIANÇA E AO ADOLESCENTE SANTO ANTÔNIO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 868,375.20
PETRÓLEO BRASILEIRO S.A.	INSTITUTO CANARINHOS DA TERRA DE EDUCAÇÃO CULTURA E ESPORTE	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 1,066,648.00
PETRÓLEO BRASILEIRO S.A.	INSTITUTO CULTURAL E ASSISTENCIAL SÃO FRANCISCO DE ASSIS - ICASFA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 556,800.00
PETRÓLEO BRASILEIRO S.A.	INSTITUTO DE DESENVOLVIMENTO SOLIDARIO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 234,432.00
PETRÓLEO BRASILEIRO S.A.	INSTITUTO DE PESQUISAS AMBIENTAIS LITTORALIS	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 49,816.80
PETRÓLEO BRASILEIRO S.A.	INSTITUTO RAMACRISNA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 1,288,399.20
PETRÓLEO BRASILEIRO S.A.	INSTITUTO RUMO NÁUTICO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 195,360.00
PETRÓLEO BRASILEIRO S.A.	INSTITUTO SECI - SOCIOESPORTIVO, EDUCACIONAL, CULTURAL E INOVADOR	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 4,587,052.80

Donating Company	Beneficiary	Project/Purpose	Amount in BRL
PETRÓLEO BRASILEIRO S.A.	IPEC - INSTITUTO DE PESQUISAS CANANÉIA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 167,916.00
PETRÓLEO BRASILEIRO S.A.	LUTA PELA PAZ	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 1,465,200.00
PETRÓLEO BRASILEIRO S.A.	MISSÃO SALESIANA DE MATO GROSSO (MSMT) – CENTRO JUVENIL JESUS ADOLESCENTE	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 2,585,000.00
PETRÓLEO BRASILEIRO S.A.	MOVIMENTO DE MULHERES EM SÃO GONÇALO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 7,277,160.00
PETRÓLEO BRASILEIRO S.A.	PAULÍNIA RACING BICICROSS	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 234,432.00
PETRÓLEO BRASILEIRO S.A.	SASFRA – SERVIÇO ASSISTENCIAL SALÃO DO ENCONTRO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 2,442,000.00
PETRÓLEO BRASILEIRO S.A.	SERVIÇO SOCIAL DA INDÚSTRIA, DEPARTAMENTO REGIONAL DA BAHIA - SESI/DR/BA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 293,040.00
PETRÓLEO BRASILEIRO S.A.	FUNDAÇÃO AMAZONAS SUSTENTÁVEL - FAS	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 1,172,160.00
PETRÓLEO BRASILEIRO S.A.	ASSOCIACAO CULTURAL COMPANHIA DE ARUANDA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 976,800.00
PETRÓLEO BRASILEIRO S.A.	OBRAS SOCIAIS NOSSA SENHORA DA PENHA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 2,542,610.40
PETRÓLEO BRASILEIRO S.A.	IPPCAMI - INSTITUTO PROTETOR DOS POBRES E CRIANÇAS ABRIGO MARIA IMACULADA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 201,840.00
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO SUPER ECO DE INTEGRAÇÃO AMBIENTAL E DESENVOLVIMENTO DA CRIANÇA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 931,163.40
PETRÓLEO BRASILEIRO S.A.	FIA - FUNDAÇÃO INSTITUTO DE ADMINISTRAÇÃO	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 1,459,339.20
PETRÓLEO BRASILEIRO S.A.	ASSOCIAÇÃO DOS PROTETORES DO MAR	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 10,120,000.00
PETRÓLEO BRASILEIRO S.A.	AS-PTA ASSESSORIA E SERVIÇOS A PROJETOS EM AGRICULTURA ALTERNATIVA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 507,936.00
PETRÓLEO BRASILEIRO S.A.	FEST - FUNDAÇÃO ESPÍRITO-SANTENSE DE TECNOLOGIA	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 3,167,762.40
PETRÓLEO BRASILEIRO S.A.	FUNDENOR	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 2,099,143.20
PETRÓLEO BRASILEIRO S.A.	ISAC - INSTITUTO SOCIOAMBIENTAL E CULTURAL DA VILA DOS PESCADORES	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 976,800.00
PETRÓLEO BRASILEIRO S.A.	APAE - ASSOC DE PAIS E AMIGOS DOS EXCEPCIONAIS EM SÃO FRANCISCO DO CONDE	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 4,078,140.00



Donating Company	Beneficiary	Project/Purpose	Amount in BRL
PETRÓLEO BRASILEIRO S.A.	FAPESE - FUNDAÇÃO DE APOIO À PESQUISA E EXTENSÃO DE SERGIPE	Financial donation for the acquisition and distribution of food aid and LPG 2022 to families in socially vulnerable situations	BRL 10,449,806.40
PETRÓLEO BRASILEIRO S.A.	CENTRAL ÚNICA DAS FAVELAS DO RIO DE JANEIRO - CUFA	Financial donation for the acquisition and distribution of LPG 2022 assistance for families in socially vulnerable situations	BRL 46,546,170.00
PETRÓLEO BRASILEIRO S.A.	ASSOCIACAO COMITE RIO DA ACAO DA CIDADANIA CONTRA A FOME, A MISERIA E PELA VIDA	Financial donation for the acquisition and distribution of LPG 2022 assistance for families in socially vulnerable situations	BRL 47,000,000.00
PETRÓLEO BRASILEIRO S.A.	INSTITUTO GERANDO FALCOES	Financial donation for the acquisition and distribution of LPG 2022 assistance for families in socially vulnerable situations	BRL 30,000,000.00
PETRÓLEO BRASILEIRO S.A.	INSTITUTO DA CRIANÇA	Financial donation for the acquisition and distribution of LPG 2022 assistance for families in socially vulnerable situations	BRL 29,733,000.00
PETRÓLEO BRASILEIRO S.A.	ASSOCIACAO INCUBADORA SOCIAL GASTROMOTIVA	Financial donation for the acquisition and distribution of GLP 2022 aid to community kitchens to distribute meals to the homeless and vulnerable population	BRL 339,346.43
PETRÓLEO BRASILEIRO S.A.	FUNDAÇÃO BANCO DO BRASIL	Financial donation for emergency situations caused or aggravated by the floods that occurred in the states of Bahia and Minas Gerais, to support the acquisition of inputs necessary for the response and recovery of the affected locations and assistance for people suffering from social vulnerability.	BRL 4,260,000.00
PETRÓLEO BRASILEIRO S.A.	SERVICO SOCIAL DA INDUSTRIA - SESI	Financial donation for emergency situations caused or aggravated by the floods that occurred in Petrópolis-RJ, to support the acquisition of inputs necessary for the response and recovery of the affected locations and assistance for people suffering from social vulnerability.	BRL 1,000,000.00
PETRÓLEO BRASILEIRO S.A.	INSTITUTO DA CRIANÇA	Financial donation for the acquisition and distribution of resources for emergency response and recovery actions and assistance for people in situations of social vulnerability in the locations affected by the floods that occurred in Pernambuco.	BRL 4,000,000.00
PETRÓLEO BRASILEIRO S.A.	ESCOLA FEDERAL DE CUBATÃO	Donation of 40 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	INSTITUTO FEDERAL FLUMINENSE - CAMPUS QUISSAMÃ	Donation of 40 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA ESTADUAL DE EDUCAÇÃO DE ARRAIAL DO CABO	Donation of 6 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA ESTADUAL DE EDUCAÇÃO DE DUQUE DE CAXIAS	Donation of 64 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA ESTADUAL DE EDUCAÇÃO DE ITABORAÍ	Donation of 14 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA ESTADUAL DE EDUCAÇÃO DE MAGÉ	Donation of 22 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA ESTADUAL DE EDUCAÇÃO DO RIO DE JANEIRO	Donation of 8 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00



Donating Company	Beneficiary	Project/Purpose	Amount in BRL
PETRÓLEO BRASILEIRO S.A.	SECRETARIA ESTADUAL DE SÃO PAULO	Donation of 1193 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE ANGRA DOS REIS	Donation of 100 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE ARRAIAL DO CABO	Donation of 92 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE CARAGUATATUBA	Donation of 64 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE CASIMIRO DE ABREU	Donation of 62 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE COSMÓPOLIS	Donation of 110 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE CUBATÃO	Donation of 145 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE ANCHIETA	Donation of 20 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE ARACRUZ	Donation of 82 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE ARMAÇÃO DOS BÚZIOS	Donation of 48 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE CABO FRIO	Donation of 77 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE CAMPOS DOS GOYTACAZES	Donation of 85 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE DUQUE DE CAXIAS	Donation of 130 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE GUAPIMIRIM	Donation of 53 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE ITABORAÍ	Donation of 86 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE ITAPEMIRIM	Donation of 115 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE LINHARES	Donation of 80 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE MACAÉ	Donation of 60 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE NITERÓI	Donation of 25 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00



Donating Company	Beneficiary	Project/Purpose	Amount in BRL
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE PIÚMA	Donation of 110 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE QUISSAMÃ	Donation of 58 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE RIO DAS OSTRAS	Donation of 22 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE RIO DE JANEIRO	Donation of 186 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE SÃO FRANCISCO DE ITABAPOANA	Donation of 120 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE SÃO JOÃO DA BARRA	Donation of 21 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE SÃO MATEUS	Donation of 99 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE SERRA	Donation of 40 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE VILA VELHA	Donation of 20 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE EDUCAÇÃO DE VITÓRIA	Donation of 100 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE MAGÉ	Donation of 88 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE MANGARATIBA	Donation of 73 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE PARATY	Donation of 10 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE PAULÍNIA	Donation of 150 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE SANTO ANDRÉ	Donation of 80 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE SÃO SEBASTIÃO	Donation of 243 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE SAQUAREMA	Donation of 55 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETRÓLEO BRASILEIRO S.A.	SECRETARIA MUNICIPAL DE UBATUBA	Donation of 256 computers/laptops to public schools, carried out in conjunction with the Windows for Tomorrow Project	BRL 0.00
PETROCONNECT	FUNDAÇÃO NEOTRÓPICA DO BRASIL	Destined exclusively for the actions of the True Parrot Project in the Adopt a Nest Campaign, carried out in partnership with the Parrots of Brazil Program.	BRL 5,000.00

Donating Company	Beneficiary	Project/Purpose	Amount in BRL
PETROCONNECT	ASSOCIAÇÃO COMITÊ RIO DA AÇÃO DA CIDADANIA CONTRA A FOME, A MISÉRIA E PELA VIDA	Donation to purchase a basic food basket in support of the 2022 Christmas Without Hunger Campaign	BRL 8,002.60
PETROCONNECT	CASA DE APOIO A CRIANÇA COM CÂNCER SANTA TERESA	Purchase of a basic food basket at Christmas, with the exclusive social interest purpose of contributing to philanthropic, charitable and non-profit entities.	BRL 3,500.00
PETROCONNECT	PROVÍNCIA CARMELITANA DE SANTO ELIAS - ASSOCIAÇÃO BENEFICENTE SÃO MARTINHO	Donation of 20 office chairs	BRL 0.00
PETROCONNECT	PROJETO SEMEANDO O AMANHÃ	Donation of 15 office chairs	BRL 0.00
PETROCONNECT	ASSOCIAÇÃO DOS MORADORES DO MORRO DO CRUZ	Donation of three laptop computers (HP PROBOOK 440)	BRL 0.00
PETROCONNECT	PROVÍNCIA CARMELITANA DE SANTO ELIAS - ASSOCIAÇÃO BENEFICENTE SÃO MARTINHO	Donation of 4 notebooks (HP PROBOOK 440), 6 telephones (AVAYA), 1 videoconferencing camera (POLYCOM HDX 7000), 1 videoconferencing station (POLYCOM HDX 7000) and 1 telephone for audioconferencing (POLYCOM)	BRL 0.00
PETROCONNECT	ASSOCIAÇÃO BENEFICENTE AMIGOS PELA CARIDADE	Donation of three laptop computers (HP PROBOOK 440)	BRL 0.00
PETROCONNECT	ONG É POR AMOR	Donation of blankets for people in situations of social vulnerability.	BRL 987.40
PETROCONNECT	PROJETO SEMEANDO O AMANHÃ	Donation of boxes of chocolates for children in situations of social vulnerability.	BRL 447.44



[11.9.6]

# Health and safety training

<b>Distance Learning Risk Factors</b>	
Objectives: to identify mechanisms that encourage the perception of risk, related to the activities performed by workers, helping in the collective development of safety awareness, inside and outside the professional environment.	
Audience: all employees	35,811 participants in 2022
<b>Distance Learning Return to In Person Work</b>	
Objectives: to recognize the main health and safety protection measures when returning to in person work.	
Audience: all employees	18,667 participants in 2022
<b>Distance Learning Hand Care</b>	
Objectives: to understand the importance of hand care in the most common situations in our activities.	
Audience: all employees	34,810 participants in 2022
<b>Distance Learning Process Safety Fundamentals (FSPs)</b>	
Objectives: to understand Petrobras' FSPs, their importance, what is expected with their implementation, connecting each of the good practices that the fundamentals reinforce to their operational realities.	
Audience: operational area employees	5,802 participants in 2022
<b>Fundamentals and Management of Ergonomics</b>	
Objectives: train people to work in the Ergonomics Program and carry out simplified assessments in their organizational units.	
Audience: employees who will work with ergonomics in their organizational units	33 participants in 02 classes in 2022
<b>ICS 100</b>	
Objectives: Provide participants with a basic understanding of ICS 100 – Introduction to Incident Command System. Prepare them to identify and recognize basic ICS characteristics, ICS functions, standardized facilities, and common responsibilities.	
Audience: Members of the Organizational Response Structure (EOR) and professionals involved in contingency planning	4,226 participants in 2022
<b>ICS 200</b>	
Objectives: to present the fundamentals and principles of the reactive phase of incident management, describing its concepts and dynamics, training for the initial incident response, analysis of the event's complexity, interpretation and use of the ICS 201 form – Initial Incident Report.	
Audience: EOR members and professionals involved in contingency planning	3,002 participants in 2022
<b>ICS 300</b>	
Objectives: To introduce members of the EOR Incident Management Group to the fundamentals and principles of proactive planning for medium-magnitude incidents.	
Audience: EOR staff, Incident Management Group, and professionals who assume a supervisory position during escalating incidents	542 participants in 19 classes in 2022
<b>ICS 320</b>	
Objectives: To introduce members of the EOR Incident Management Group to the fundamentals and principles of proactive planning for medium-magnitude incidents.	
Audience: EOR staff, Incident Management Group, and professionals who assume a supervisory role during escalating incidents	124 participants in 4 classes in 2022



<b>NR-37 (Services in High Voltage Electrical Installations) - Safety and Health on Oil Platforms</b>	
Objectives: to act in accordance with the requirements contained in Regulatory Standard No. 37 regarding the execution of services in electrical installations energized with high voltage.	
Audience: workers who require training to perform services in electrical installations energized with high voltage on board oil platforms operating in the Brazilian Jurisdictional Waters	36 participants in 10 classes in 2022
<b>Electrical Installations in Explosive Atmospheres</b>	
Objectives: to recognize the risks of equipment and installations in explosive atmospheres throughout their operating cycle.	
Audience: employees who work in the operation, design, installation, inspection, maintenance and supervision of electrical installations in explosive atmospheres	195 participants in 4 classes in 2022
<b>BOW TIE Methodology - Fundamentals and Applications at Petrobras</b>	
Objectives: apply the Bow Tie methodology to perform risk analysis.	
Audience: Employees at Petrobras and its corporate holdings	31 participants in 2022
<b>Training Leaders in APR, HAZOP and LOPA</b>	
Objectives: train leaders in Preliminary Risk Analysis (APR), HAZOP (Hazards and Operability) and LOPA (Layers of Protection Analysis).	
Audience: employees assigned to work on risk studies in the management phases of changing E&P facilities	23 participants in 2022
<b>NR-10 (Basic Recycling) - Safety in Electricity Installations and Services</b>	
Objectives: to identify the risks to the safety and health of workers who interact with electrical installations and services involving electricity, and a refresher on the concepts of safety, firefighting and first aid contained in NR-10.	
Audience: employees involved with interventions in electrical systems that require recycling of the Basic NR-10 course	1,803 participants in 2022 (held every 2 years and whenever there is one of the situations provided for in the NR)
<b>NR-20 (Basic Update) - Occupational Health and Safety with Flammable and Combustibles</b>	
Objectives: to promote the updating of the training of employees who carry out their work activities in accordance with the requirements contained in Regulatory Standard 20, which deals with the management of safety and health at work and the risk factors for accidents arising from activities of extraction, production, storage, transfer, handling, and manipulation of flammable and combustible liquids.	
Audience: workers of class I, II or III facilities in activities with flammable and combustible liquids according to item 20.11.4 of NR-20 and who need updating according to item 20.11.13 of NR-20	387 participants in 2022 (performed every 3 years and whenever one of the situations provided for in the NR occurs)
<b>NR-20 (Intermediate Update) - Occupational Health and Safety with Flammable and Combustibles</b>	
Objectives: to promote the updating of the training of employees who carry out their work activities in accordance with the requirements contained in Regulatory Standard 20, which deals with the management of safety and health at work and the risk factors for accidents arising from activities of extraction, production, storage, transfer, handling, and manipulation of flammable and combustible liquids.	
Audience: workers who work in accordance with items 20.11.5 and 20.11.6 of NR-20 and need the refresher course	619 participants in 2022 (performed every 2 years and whenever one of the situations provided for in the NR occurs)
<b>Distance Learning NR-20 (I Update) - Occupational Health and Safety with Flammable and Combustibles</b>	
Objectives: to promote the updating of the training of employees who carry out their work activities in accordance with the requirements contained in Regulatory Standard 20, which deals with the management of safety and health at work and the risk factors for accidents arising from activities of extraction, production, storage, transfer, handling and manipulation of flammable and combustible liquids.	
Audience: workers who work in accordance with item 20.11.7 of NR-20 and need the refresher course	102 participants in 2022 (held each year and whenever one of the situations provided for in the NR occurs)



<b>Distance Learning NR-20 (II Update) - Occupational Health and Safety with Flammable and Combustibles</b>	
Objectives: to promote the updating of the training of employees who carry out their work activities in accordance with the requirements contained in Regulatory Standard 20, which deals with the management of safety and health at work and the risk factors for accidents arising from activities of extraction, production, storage, transfer, handling and manipulation of flammable and combustible liquids.	
Audience: employees of class III facilities, in activities with flammable and combustibles according to item 20.11.8 of NR-20 and who need updating according to item 20.11.13 of NR-20	5,191 participants in 2022 (held every year and whenever one of the situations provided for in the NR occurs)
<b>Petrobras Golden Rules</b>	
Objectives: get to know Petrobras' Golden Rules and recognize the importance of acting in accordance with said rules.	
Audience: employees at Petrobras and its corporate holdings	11,213 participants in 2022
<b>Distance Learning Safe Driving Tools</b>	
Objectives: to promote safe behavior in traffic, using safe driving tools when driving vehicles and to spread this knowledge to their work teams.	
Audience: professionals responsible for raising the awareness of drivers of vehicles weighing up to 3.5t and carrying up to eight passengers at the service of Petrobras	5,023 participants in 2022
<b>Distance Learning Emergency Response Plan - EDISEN Building</b>	
Objectives: learn about the Emergency Response Plan (PRE) of the Senado Building (EDISEN), identify emergency scenarios and available resources, and learn about abandonment procedures and the importance of drills and floor monitors.	
Audience: EDISEN employees	11,320 participants in 2022
<b>Distance Learning Emergency Response Plan - EDISE Building</b>	
Objectives: learn about Emergency Response Plan of the Petrobras headquarters Building (EDISE), identify emergency scenarios and available resources, and learn about abandonment procedures and the importance of drills and floor monitors.	
Audience: EDISE employees	33 participants in 2022
<b>Distance Learning Emergency Response Plan - EDIHB Building</b>	
Objectives: to learn the Emergency Response Plan of the Building Gen. Horta Barbosa (EDIHB), identify emergency scenarios and available resources and learn about abandonment procedures and the importance of drills and floor monitors.	
Audience: EDIHB employees	1,203 participants in 2022
<b>PEODIVE Platform and Familiarization of the HSE Alert Tool - Safety Rank</b>	
Objectives: promote the familiarization of the employees involved with the technical details of the operations in the HSE Alerts tool - Safety Rank.	
Audience: employees involved with technical details of diving operations	27 participants in 2022
<b>IMCA Good Practices and Safety Recommendations Course for Diving Operations</b>	
Objectives: to instruct Petrobras' Technical Operational and Inspector Support team in the IMCA Guidelines (acronym for International Association of Maritime Contractors, in English) aimed at improving performance in terms of quality and safety in diving operations.	
Audience: professionals working in operational technical support for diving and diving inspectors at Petrobras	25 participants in 2022
<b>General Aspects of Human Diving Operations</b>	
Objectives: to know the main concepts of operations (maintenance and inspection) with human diving applied to subsea systems.	
Audience: Petrobras employees, especially those who interface with subsea systems	15 participants in 2022
<b>Security for activities in environments with H2S</b>	
Objectives: to promote the training of workers who work in areas with the potential for the formation of an IPVS atmosphere by H2S regarding the prevention of accidents, as well as the monitoring of environments where there is an incidence of this gas and the correct use of protective equipment.	
Audience: workers who work in areas with potential for the formation of an IPVS atmosphere by H2S	232 participants in 2022



<b>Distance Learning Respiratory Protection Program (PPR) - Theoretical Refresher</b>	
Objectives: to understand the importance of preventing exposure to toxic chemical agents and that the PPR is a set of coordinated measures to prevent health problems related to chemical agents that exceed the levels established by current legislation.	
Audience: Petrobras employees who use respiratory protection equipment and who are eligible to participate in the PPR	9,512 participants in 2022
<b>NR-6 Personal Protective Equipment (PPE)</b>	
Objectives: to know the main PPE, importance of use, hygiene and storage recommendations.	
Audience: Petrobras employees that use PPP	2,109 participants in 2022
<b>NR-35 (Theoretical - Training) Working at Heights</b>	
Objectives: act in accordance with Regulatory Standard No. 35.	
Audience: Petrobras employees who carry out activities at heights (above 2m) and who are at risk of falling	925 participants in 2022
<b>EAD NR-35 (Refresher) – Working at Heights</b>	
Objectives: act in accordance with the requirements contained in Regulatory Standard No. 35.	
Audience: Petrobras employees who carry out activities at heights (above 2m) and who are at risk of falling, and whenever any of the situations provided for in the NR occur	4,508 participants in 2022
<b>Mini-Laboratory of Human Factors</b>	
Objectives: to develop knowledge of human factors applied to the O&G industry, encouraging discussions and the construction of an evolved vision regarding safety in work environments and activities.	
Audience: managers, consultants and Petrobras professionals from corporate units and segments involved with initiatives related to human factors	499 participants in 2022
<b>Prevention of Problems Related to the Use of Alcohol and Other Drugs</b>	
Objectives: to identify, approach and sensitize the employee regarding the consumption of alcohol and other drugs, guide and accompany the employee in treatment, act as a facilitator in the employee's reinsertion to his work activity and advise managers and supervisors in the employee's reinsertion process to work activities.	
Audience: healthcare professionals	99 participants in 2022
<b>Portfolio Management - Health Journey: Managers' Awareness</b>	
Objectives: raise awareness and guide managers involved in portfolio management projects, providing self-reflection and sharing strategies for managing teams in times of change.	
Audience: managers, coordinators, and supervisors	151 participants in 2022
<b>Mental Health for Health Professionals: Mental Health, Listening and Welcoming</b>	
Objectives: to expand knowledge on topics related to mental health, and to develop listening and welcoming skills to build care in this field.	
Audience: healthcare professionals	92 participants in 2022
<b>Internal Audit Process of Health, Safety and Environment Management (HSE-MAP).</b>	
Objectives: to strengthen the training of internal auditors in HSE-MAP audit processes and interactions with regulatory bodies.	
Audience: lead auditors, auditors, and audit facilitators	174 participants in 2022
<b>Mental Health for Leaders</b>	
Objectives: expand knowledge in relation to mental health and equip managers with dealings related to this topic, in the relationship with the team, in reducing stigma and building an environment of psychological safety, strengthening the principles of holistic healthcare.	
Audience: Petrobras leaders	1,725 participants in 2022



<b>Health for Leaders</b>	
Objectives: disseminating holistic health promotion concepts and actions for care of self and others, as well as working to strengthen the company's health culture.	
Audience: managers, coordinators and supervisors	36 participants in 2022
<b>Biological Monitoring</b>	
Objectives: update and revise the content of NR-7 regarding toxicology regarding biological monitoring.	
Audience: professionals involved in the planning and execution of the Occupational Health Medical Control Program (PCMSO)	31 participants in 2022
<b>Control Measures for Health and Ergonomic Risks</b>	
Objectives: identify some health control measures related to ergonomic risks and guidelines for conducting anamnesis and physical examination.	
Audience: physicians and professionals working in Occupational Health	104 participants in 2022
<b>Inclusion of People with Disabilities at Petrobras</b>	
Objectives: learn about the main concepts and raise awareness about acting as a promoter of the inclusion of people with disabilities in the company.	
Audience: everyone who works to include people with disabilities in the company	36 participants in 2022
<b>The importance of the Patient Experience for Urgent and Emergency Services: Excellence in the Health Care Journey</b>	
Objectives: create awareness among health professionals to identify points of contact with the user within the health care journey, thus seeing opportunities to promote welcoming, human, and valuable service for the customer.	
Audience: health professionals	92 participants in 2022
<b>PRPL Workshop for Leaders</b>	
Objectives: to promote the leader's role as protagonist and agent of health care and management; provide guidance on Labor Potential Restoration Program flows; provide support to managers in their role in monitoring employees on medical leave and managing absenteeism.	
Audience: unit managers in the E&P and Refining areas	296 participants in 2022
<b>Update on Pension Legislation and PRPL (Professional Rehabilitation, Benefit for Temporary Disability, Technical Social Security Nexus, and Update on Absenteeism Pattern for Health Reasons)</b>	
Objectives: to promote the alignment of the Health Services professional team regarding Professional Rehabilitation, Benefit for Temporary Disability, Pension Technical Nexus, and Update on Absenteeism Pattern for Health Reasons.	
Audience: healthcare professionals	309 participants in 2022



# Auditors' limited assurance report



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## Independent auditors' limited assurance report on non-financial information included in the Sustainability Report

(A free translation of the original report in Portuguese, containing the Assurance Report).

To the Board of Directors and Shareholders  
Petróleo Brasileiro S.A. – Petrobras  
Rio de Janeiro - RJ

### Introduction

We have been engaged by Petróleo Brasileiro S.A. ("Petrobras" or "Company") to present our limited assurance report on the non-financial information included in the "Sustainability Report 2022" of Petrobras ("Report"), for the year ended December 31, 2022.

Our limited assurance does not extend to prior period information or to any other information disclosed in conjunction with the Sustainability Report, including any embedded images, audio files or videos.

### Responsibilities of Petrobras's management

The management of Petrobras is responsible for:

- select and establish appropriate criteria for the elaboration of the information contained in the Sustainability Report;
- prepare the information in accordance with the criteria and guidelines of the Global Reporting Initiative (GRI - Standards);
- design, implement, and maintain internal control over information relevant to the preparation of Sustainability Report that is free from material misstatement, whether due to fraud or error.

### Responsibility of the independent auditors

Our responsibility is to express a conclusion on the non-financial information included in the Sustainability Report 2022, based on the limited assurance engagement conducted based on NBC TO 3000 - Assurance Engagements other than Audits and Reviews, issued by the CFC, which is equivalent to international standard ISAE 3000 - Assurance engagements other than audits or reviews of historical financial information, issued by the International Auditing and Assurance Standards Board (IAASB). These standards require compliance by the auditor with ethical requirements, independence, and other responsibilities relating to it, including the application of the Brazilian Quality Control Standard (NBC PA 01) and, therefore, the maintenance

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of a comprehensive quality control system, including documented policies and procedures on compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

Additionally, the standards require that the work be planned and performed with the objective of obtaining limited assurance that the non-financial information in the Sustainability Report 2022, taken as a whole, is free from material misstatement.

A limited assurance engagement conducted in accordance with NBC TO 3000 (ISAE 3000) mainly consists of inquiries to Petrobras's management and other Petrobras's professionals who are involved in the preparation of information, as well as the application of analytical procedures to obtain evidence that enables us to conclude, in a limited assurance manner, on the information taken as a whole. A limited assurance engagement also requires the performance of additional procedures when the independent auditor becomes aware of matters that lead him to believe that the information disclosed in the Sustainability Report, taken as a whole, may present material misstatements.

The procedures selected were based on our understanding of the aspects relating to the compilation, materiality and presentation of the information contained in the Sustainability Report 2022, other circumstances of the engagement and our consideration of areas and the processes associated with the material information disclosed in the Sustainability Report 2022 where material misstatements could exist. The procedures comprised, among others:

- a. planning the work, considering the materiality of the aspects for Petrobras's activities, the relevance of the information disclosed, the volume of quantitative and qualitative information and the operating and internal control systems that served as a basis for the preparation of the information contained in the Sustainability Report 2022.
- b. the understanding of the calculation methodology and the procedures for the compilation of the indicators through inquiries with the managers responsible for the preparation of the information;
- c. the application of analytical procedures on the quantitative information and inquiries on the qualitative information and its correlation with the indicators disclosed in the information contained in the Sustainability Report 2022; and
- d. for the cases in which the non-financial data correlate with indicators of a financial nature, the confrontation of these indicators with the accounting statements and/or accounting records.
- e. analysis of the processes for preparing the Report and its structure and content, based on the Content and Quality Principles of the Sustainability Reporting Standards of the Global Reporting Initiative - GRI;
- f. evaluation of the sampled non-financial indicators;
- g. understanding the calculation methodology and the procedures for the compilation of the indicators through interviews with the managers responsible for the preparation of the information;

The limited assurance work also comprised adherence to the guidelines and criteria of the GRI - Standards elaboration framework applicable in the preparation of the information included in the Sustainability Report 2022.

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We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our limited assurance conclusion.

#### Scope and limitations

The procedures performed in limited assurance work vary in nature and timing, and are smaller in extent than in reasonable assurance work. Consequently, the level of assurance obtained in limited assurance work is substantially lower than that which would be obtained if reasonable assurance work had been performed. If we had performed reasonable assurance work, we could have identified other issues and possible distortions that may exist in the information contained strictly in the Report, not including other supplements and reports referred to in it. Therefore, we do not express an opinion on this information.

Non-financial data are subject to more inherent limitations than financial data, given the nature and diversity of the methods used to determine, calculate or estimate these data. Qualitative interpretations of materiality, relevance, and accuracy of the data are subject to individual assumptions and judgments. Additionally, Petrobras's process to determine its materiality was not scope of this assurance, given that GRI does not provide criteria but guidance to determine material topics, we also did not perform any work on data reported for prior periods, nor in relation to future projections and targets.

The preparation and presentation of sustainability indicators followed the GRI - Standards criteria and, therefore, are not intended to ensure compliance with social, economic, environmental or engineering laws and regulations. These standards do, however, provide for the presentation and disclosure of any non-compliance with such regulations when significant sanctions or fines are incurred. Our assurance report must be read and understood in this context, inherent to the selected criteria (GRI - Standards).

#### Conclusion

Based on the procedures performed, described in this report and the evidence obtained, nothing has come to our attention that causes us to believe that the non-financial information included in the Sustainability Report for the year ended December 31, 2022 of Petrobras, have not been prepared, in all material respects, in accordance with the Sustainability Reporting Standards of the Global Reporting Initiative - GRI.

São Paulo, June 23<sup>th</sup>, 2023

KPMG Auditores Independentes Ltda.  
CRC 2SP014428/O-6

Original report in portuguese signed by

Sebastian Yoshizato Soares  
Accountant CRC 1SP257710/O-4

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# GRI content index

<b>Usage statement:</b>	Petróleo Brasileiro S.A. reported based on the GRI Standards for the period from 01/01/2022 to 12/31/2022
<b>Publication date:</b>	06/23/2023
<b>GRI 1 used:</b>	GRI: Foundation 2021
<b>Applicable sector standards:</b>	GRI 11: Oil and Gas Sector 2021

## GENERAL DISCLOSURES

SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPIECA CORRELATION	ASSURANCE
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### ORGANIZATIONAL PROFILE, STRATEGY AND GOVERNANCE

GRI Standards 2021 (GRI 2)	<b>2-1</b>	Organizational details	Petróleo Brasileiro S.A. Rio de Janeiro/RJ p. 10 to 11				Yes
GRI Standards 2021 (GRI 2)	<b>2-9</b>	Governance structure and composition	p. 37 to 40			GOV-1	Yes
GRI Standards 2021 (GRI 2)	<b>2-10</b>	Nomination and selection of the highest governance body	p. 40 to 41	5 and 6			Yes
GRI Standards 2021 (GRI 2)	<b>2-11</b>	Chair of the highest governance body	p. 38	16			Yes



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 2)	<b>2-12</b>	Role of the highest governance body in overseeing the management of impact	p. 39 to 43	16		GOV-1	Yes
GRI Standards 2021 (GRI 2)	<b>2-13</b>	Delegation of responsibility for managing impacts	p. 39 to 42				Yes
GRI Standards 2021 (GRI 2)	<b>2-16</b>	Communication of critical concerns	p. 43 to 45				Yes
GRI Standards 2021 (GRI 2)	<b>2-17</b>	Collective knowledge of the highest governance body	p. 45				Yes
GRI Standards 2021 (GRI 2)	<b>2-18</b>	Evaluation of the performance of the highest governance body	p. 45 to 46				Yes
GRI Standards 2021 (GRI 2)	<b>2-19</b>	Remuneration policies	p. 46 to 47				Yes
GRI Standards 2021 (GRI 2)	<b>2-22</b>	Statement on sustainable development strategy	p. 3 to 5				Yes
GRI Standards 2021 (GRI 2)	<b>2-23</b>	Policy commitments	<b>Human Rights and Corporate Citizenship Supplement</b> p. 6 to 9	16	10	SOC-1	Yes



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPIECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 2)	<b>2-24</b>	Embedding policy commitments	p. 41 and 43; 48 to 57				Yes
GRI Standards 2021 (GRI 2)	<b>2-25</b>	Processes to remediate negative impacts	<b>Human Rights and Corporate Citizenship Supplement</b> p. 60 to 65				Yes
GRI Standards 2021 (GRI 2)	<b>2-27</b>	Compliance with laws and regulations	<b>Financial Statements 2022</b> p. 51 to 56 and 73 to 74 <b>Form 20-F 2022</b> p. 298 to 305 and 389 to 398	16	8		Yes
GRI Standards 2021 (GRI 2)	<b>2-29</b>	Approach to stakeholder engagement	p. 21 to 30			SOC-6	Yes

#### REPORTING PRACTICE

GRI Standards 2021 (GRI 2)	<b>2-2</b>	Entities included in the organization's sustainability reporting	p. 6 and <b>Financial Statements 2022</b> p. 77 to 78				Yes
GRI Standards 2021 (GRI 2)	<b>2-3</b>	Reporting period, frequency and contact point	p. 6 and 269				Yes
GRI Standards 2021 (GRI 2)	<b>2-4</b>	Restatements of information	p. 6				Yes



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPIECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 2)	<b>2-5</b>	External assurance	p. 6; 244 to 246 and <b>Reference Form 2021</b> , p. 5 and 6				Yes
GRI Standards 2021 (GRI 2)	<b>2-14</b>	Role of the highest governance body in sustainability reporting	p. 6				Yes
GRI Standards 2021 (GRI 3)	<b>3-1</b>	Process to determine material topics	p. 12 to 20				Yes
GRI Standards 2021 (GRI 3)	<b>3-2</b>	List of material topics	p. 12 to 20				Yes



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPECA CORRELATION	ASSURANCE
<b>MATERIAL TOPICS</b>							
<b>ECONOMIC IMPACTS</b>							
GRI Standards 2021 (GRI 3)	<b>3-3</b>	Management of material topics	p. 59 and 61	1, 5, 8, 9, 10, 16 and 17			
GRI Standards 2021	<b>11.14.1</b>	Topic 11.14 Economic impacts	p. 59 and 61	1, 5, 8, 9 and 10			
GRI Standards 2021 (GRI 11)	<b>11.21.1</b>	Topic 11.21 Payments to governments	p. 59	1, 16 and 17			Yes
GRI Standards 2021 (GRI 11)	<b>11.14.2</b> <b>11.21.2</b>	Direct economic value generated and distributed	p. 62 to 65	1, 5, 8, 9, 10, 16 and 17			
GRI Standards 2021 (GRI 11)	<b>11.14.3</b>	Proportion of senior management hired from the local community	The information presented on page 205 is incomplete, as it was not possible to survey the nationality of the officers of all the subsidiaries during the time period available.	1, 5, 8, 9 and 10			
GRI Standards 2021 (GRI 11)	<b>11.14.4</b>	Infrastructure investments and services supported	p. 73	1, 5, 8, 9 and 10			



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPIECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 11)	<b>11.14.5</b>	Significant indirect economic impacts	p. 71 to 72	1, 5, 8, 9 and 10		SOC-13	
GRI Standards 2021 (GRI 11)	<b>11.14.6</b>	Proportion of spending on local suppliers	p. 69 to 70	1, 5, 8, 9 and 10		SOC-14	
GRI Standards 2021 (GRI 11)	<b>11.21.3</b>	Financial assistance received from government	p. 65	1, 16 and 17			Yes
GRI Standards 2021 (GRI 11)	<b>11.21.4</b>	Approach to tax	p. 65 to 66 and <b>Tax Report 2022</b> p.4 to 8	1, 16 and 17			Yes
GRI Standards 2021 (GRI 11)	<b>11.21.5</b>	Tax governance, control, and risk management	p. 65 to 66 and <b>Tax Report 2022</b> p.28 to 29	1, 16 and 17			Yes
GRI Standards 2021 (GRI 11)	<b>11.21.6</b>	Stakeholder engagement and management of concerns related to tax	p. 67 to 69	1, 16 and 17			Yes
GRI Standards 2021 (GRI 11)	<b>11.21.7</b>	Country-by-country reporting	p. 66 to 67 and <b>Tax Report 2022</b> p.27	1, 16 and 17			Yes
GRI Standards 2021 (GRI 2)	<b>2-6</b>	Activities, value chain and other business relationships	p. 8 to 11; 59 to 61				Yes



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPIECA CORRELATION	ASSURANCE
<b>BUSINESS INTEGRITY</b>							
GRI Standards 2021 (GRI 3)	<b>3-3</b>	Management of material topics	p. 74 to 75; 78 to 81; 84 to 85; 89 to 94	12 e 16	10	GOV-2 e 3	
GRI Standards 2021 (GRI 11)	<b>11.20.1</b>	Topic 11.20 Anti-corruption	p. 74 to 75; 78 to 81; 84 to 85; 89 to 94	12 e 16	10		Sim
GRI Standards 2021 (GRI 11)	<b>11.20.2</b>	Operations assessed for risks related to corruption	p. 84	12 e 16	10	GOV-3	Sim
GRI Standards 2021 (GRI 11)	<b>11.20.3</b>	Communication and training about anti-corruption policies and procedures	p. 81 to 83	12 e 16	10	GOV-3	Sim
GRI Standards 2021 (GRI 11)	<b>11.20.4</b>	Confirmed incidents of corruption and actions taken	p. 92 to 95	12 e 16	10		Sim
GRI Standards 2021 (GRI 11)	<b>11.20.5</b>	Additional sector disclosures	p. 80	12 e 16	10		Sim
GRI Standards 2021 (GRI 2)	<b>2-15</b>	Conflicts of interest	p. 85 to 87				Sim
GRI Standards 2021 (GRI 2)	<b>2-26</b>	Mechanisms for seeking advice and raising concerns	p. 75 to 78; 89 to 91	16	10		Sim



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 2)	<b>2-28</b>	Membership associations	p. 81; 229 to 230				Yes
<b>CLIMATE RESILIENCE, GHG EMISSIONS AND OTHER GASES</b>							
GRI Standards 2021 (GRI 3)	<b>3-3</b>	Management of material topics – Climate resilience, GHG emissions and other gases	p. 97 to 98; 101 to 102; 117 and <b>Climate Change Supplement 2022</b> p. 15 e 16	1, 3, 7, 8, 9, 11, 12, 13, 14 and 15		CCE-1, 2 and 3 and ENC-5	
GRI Standards 2021 (GRI 11)	<b>11.1.1</b>	Topic 11.1 GHG emission	p. 97 to 98; 101 to 102; 117 and <b>Climate Change Supplement 2022</b> p. 15 and 16	13 and 14		CCE-2 and 3 and ENC-5	Yes
GRI Standards 2021 (GRI 11)	<b>11.2.1</b>	Topic 11.2 Climate adaptation, resilience, and transition	p. 98 to 99; 102 to 103 and <b>Climate Change Supplement 2022</b> p. 15 to 16	1, 7, 8, 9, 12 and 13			Yes
GRI Standards 2021 (GRI 11)	<b>11.3.1</b>	Topic 11.3 Air emissions	p. 97				
GRI Standards 2021 (GRI 11)	<b>11.1.2</b>	Energy consumption within the organization	p. 112 to 113	13 and 14	8		
GRI Standards 2021 (GRI 11)	<b>11.1.3</b>	Energy consumption outside of the organization	p. 114	13 and 14	8		
GRI Standards 2021 (GRI 11)	<b>11.1.4</b>	Energy intensity	p. 113 to 114	13 and 14			



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPIECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 11)	<b>11.1.5</b>	Direct (Scope 1) GHG emissions	p. 101 to 103	13 and 14	7 and 8	CCE-5	
GRI Standards 2021 (GRI 11)	<b>11.1.6</b>	Energy indirect (Scope 2) GHG emission	p. 101 to 103	13 and 14	7 e 8		
GRI Standards 2021 (GRI 11)	<b>11.1.7</b>	Other indirect (Scope 3) GHG emissions	p. 109 to 110	13 and 14	7 and 8		
GRI Standards 2021 (GRI 11)	<b>11.1.8</b>	GHG emissions intensity	p. 104 to 108; 114 to 115	13 and 14	8	CCE-4	
GRI Standards 2021 (GRI 11)	<b>11.2.2</b>	Financial implications and other risks and opportunities due to climate change	p. 98 to 99; 118 to 119	1, 7, 8, 9, 12 and 13	7		Yes
GRI Standards 2021 (GRI 11)	<b>11.2.3</b>	Reduction of GHG emissions	p. 101 to 103	1, 7, 8, 9, 12 and 13	8 and 9		Yes
GRI Standards 2021 (GRI 11)	<b>11.3.2</b>	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	p. 110 to 112	3, 11 e 15	7 e 8	ENV-5	
GRI Standards 2021 (GRI 11)	<b>11.3.3</b>	Assessment of the health and safety impacts of product and service categories	p. 116 to 117	3, 11 and 15			



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPIECA CORRELATION	ASSURANCE
<b>ACCIDENT PREVENTION AND MANAGEMENT</b>							
GRI Standards 2021 (GRI 3)	<b>3-3</b>	Management of material topics – Accident prevention and manager	p. 121 to 122; 124 to 125; 127 to 131	11 e 14		ENV-6	
GRI Standards 2021 (GRI 11)	<b>11.8.1</b>	Topic 11.8 Asset integrity and critical incident management	p. 121 to 122; 124 to 125; 127 to 131	11 and 14			
GRI Standards 2021 (GRI 11)	<b>11.8.2</b>	Significant spills	p. 122 to 123; 127 to 128	11 and 14			
<b>BIODIVERSITY</b>							
GRI Standards 2021 (GRI 3)	<b>3-3</b>	Management of material topics – Biodiversity	p. 132	6, 12, 14 and 15			Yes
GRI Standards 2021 (GRI 11)	<b>11.4.1</b>	Topic 11.4 Biodiversity	p. 132	6, 12, 14 and 15			Yes
GRI Standards 2021 (GRI 11)	<b>11.4.2</b>	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	p. 137 to 141	6, 12, 14 and 15	8	ENV-4	Yes
GRI Standards 2021 (GRI 11)	<b>11.4.3</b>	Significant impacts of activities, products and services on biodiversity	p. 141 to 144	6, 12, 14 and 15	8		Yes



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 11)	<b>11.4.4</b>	Habitats protected or restored	p. 144	6, 12, 14 and 15			Yes
GRI Standards 2021 (GRI 11)	<b>11.4.5</b>	IUCN Red List species and national conservation list species with habitats in areas affected by operations	p. 144 to 148	6, 12, 14 and 15	8		
<b>WATER AND EFFLUENTS</b>							
GRI Standards 2021 (GRI 3)	<b>3-3</b>	Management of material topics – Water and effluents	p. 149 to 151	6, 12, 14 and 15			Yes
GRI Standards 2021 (GRI 11)	<b>11.6.1</b>	Topic 11.6 Water and effluents	p. 149 to 151	6, 12, 14 and 15			Yes
GRI Standards 2021 (GRI 11)	<b>11.6.2</b>	Interactions with water as a shared resource	p. 152 to 155	6, 12, 14 and 15	7 and 8	ENV-1	
GRI Standards 2021 (GRI 11)	<b>11.6.3</b>	Management of water discharge-related impacts	p. 155 to 156	6, 12, 14 and 15	8		Yes
GRI Standards 2021 (GRI 11)	<b>11.6.4</b>	Water withdrawal	p. 157 to 158	6, 12, 14 and 15	8		Yes
GRI Standards 2021 (GRI 11)	<b>11.6.5</b>	Water discharge	p. 159 to 160	6, 12, 14 and 15			Yes



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPIECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 11)	<b>11.6.6</b>	Water consumption	In our activities, the main share of water consumption is in the form of evaporation of the cooling systems. Therefore, consumption is not a systematically monitored indicator.	6, 12, 14 and 15	8	CCE-6	Yes
<b>WASTE MANAGEMENT AND DECOMMISSIONING</b>							
GRI Standards 2021 (GRI 3)	<b>3-3</b>	Management of material topics – Waste management and decommissioning	p. 162; 171 to 173	3, 4, 6, 8, 11, 12, 14 and 15		ENV-8	
GRI Standards 2021 (GRI 11)	<b>11.5.1</b>	Topic 11.5 Waste	p. 162	3, 6, 12, 14 and 15			Yes
GRI Standards 2021 (GRI 11)	<b>11.7.1</b>	Topic 11.7 Closure and rehabilitation	p. 162; 171 to 173	4, 8, 11, 14 and 15			
GRI Standards 2021 (GRI 11)	<b>11.5.2</b>	Waste Generation and significant waste-related impacts	p. 162 to 163	3, 6, 12, 14 and 15	8		
GRI Standards 2021 (GRI 11)	<b>11.5.3</b>	Management of significant waste-related impacts	p. 163 to 166	3, 6, 12, 14 and 15	8		Yes
GRI Standards 2021 (GRI 11)	<b>11.5.4</b>	Waste generated	p. 166 to 167	3, 6, 12, 14 and 15	8		Yes



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 11)	<b>11.5.5</b>	Waste diverted from disposal	p. 167 to 170	3, 6, 12, 14 and 15			Yes
GRI Standards 2021 (GRI 11)	<b>11.5.6</b>	Waste directed to disposal	p. 167 to 171	3, 6, 12, 14 and 15			Yes
GRI Standards 2021 (GRI 11)	<b>11.7.2</b>	Minimum notice periods regarding operational changes	p. 172 to 203	4, 8, 11, 14 and 15			
GRI Standards 2021 (GRI 11)	<b>11.7.3</b>	Programs for upgrading employees skills and transition assistance programs	p. 172; 203 to 205; 213 to 216	4, 8, 11, 14 and 15			
GRI Standards 2021 (GRI 11)	<b>11.7.4</b>	Additional sector disclosures	p. 172 to 173	4, 8, 11, 14 and 15		ENV-8	

**LOCAL AND TRADITIONAL COMMUNITIES**

GRI Standards 2021 (GRI 3)	<b>3-3</b>	Management of material topics – Local and traditional communities	p. 175 to 188 e <b>Human Rights and Corporate Citizenship Supplement</b> p.38 to 52 and 60 to 64	1, 3, 5, 6, 11 and 16		SOC-3 and 9	
GRI Standards 2021 (GRI 11)	<b>11.15.1</b>	Topic 11.15 Local communities	p. 175 to 181; 183 to 188 and <b>Human Rights and Corporate Citizenship Supplement</b> p.38 to 45 and 60 to 64	1, 3, 5, 6 and 16			



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPEICA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 11)	<b>11.17.1</b>	Topic 11.17 Rights of indigenous peoples	p. 175 and 182 and <b>Human Rights and Corporate Citizenship Supplement</b> p.46 to 52	1, 3, 5, 11 and 16			
GRI Standards 2021 (GRI 11)	<b>11.18.1</b>	Topic 11.18 Conflict and security	p. 175 and 181 and <b>Human Rights and Corporate Citizenship Supplement</b> p.53 to 55	16			
GRI Standards 2021 (GRI 11)	<b>11.15.2</b>	Operations with local Community engagement, impact assessments, and development programs	p. 175 to 188	1, 3, 5, 6 and 16			
GRI Standards 2021 (GRI 11)	<b>11.15.3</b>	Operations with significant actual and potential negative impacts on local communities	p. 175 to 181	1, 3, 5, 6 and 16			
GRI Standards 2021 (GRI 11)	<b>11.17.2</b>	Incidents of violations involving rights of indigenous peoples	p. 182 and <b>Human Rights and Corporate Citizenship Supplement</b> p. 52	1, 3, 5, 11 and 16			
GRI Standards 2021 (GRI 11)	<b>11.17.3</b>	Additional sector disclosures	p. 182 and <b>Human Rights and Corporate Citizenship Supplement</b> p. 48	1, 3, 5, 11 and 16			
GRI Standards 2021 (GRI 11)	<b>11.18.2</b>	Security personnel trained in human rights policies or procedures	p. 181 and <b>Human Rights and Corporate Citizenship Supplement</b> p.54	16			



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPECA CORRELATION	ASSURANCE
<b>LABOR PRACTICES AND EQUALITY OF OPPORTUNITY</b>							
GRI Standards 2021 (GRI 3)	<b>3-3</b>	Management of material topics – Labor practices and equality of opportunity	p. 189 to 190; 195; 200 to 201; 203 and <b>Human Rights and Corporate Citizenship Supplement</b> p.19 to 22	1, 4, 5, 8, 10 and 16		SOC-5	
GRI Standards 2021 (GRI 11)	<b>11.10.1</b>	Topic 11.10 Employment practices	p. 189 to 190; 200 to 201; 203	1, 4, 5, 8 and 10			
GRI Standards 2021 (GRI 11)	<b>11.11.1</b>	Topic 11.11 Non-discrimination and equal opportunity	p. 189; 195 and <b>Human Rights and Corporate Citizenship Supplement</b> p.19 to 22	4, 5, 8, 10 and 16			Yes
GRI Standards 2021 (GRI 11)	<b>11.10.2</b>	New employee hires and employee turnover	p. 200 to 202 and 205 to 206	1, 4, 5, 8 and 10			
GRI Standards 2021 (GRI 11)	<b>11.10.3</b>	Benefits provided to full-time employees that are not provided to temporary or part-time employees	p. 191 and 210 to 211	1, 4, 5, 8 and 10			
GRI Standards 2021 (GRI 11)	<b>11.10.4</b> <b>11.11.3</b>	Parental leave	p. 211	1, 4, 5, 8, 10 and 16			Yes
GRI Standards 2021 (GRI 11)	<b>11.10.5</b>	Minimum notice periods regarding operational changes	p. 203	1, 4, 5, 8 and 10			



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 11)	<b>11.10.6</b> <b>11.11.4</b>	Average hours of training per year per employee	p. 212	1, 4, 5, 8, 10 and 16	6		Yes
GRI Standards 2021 (GRI 11)	<b>11.10.7</b>	Programs for upgrading employee skills and transition assistance program	p. 203 to 205; 213 to 216	1, 4, 5, 8 and 10			
GRI Standards 2021 (GRI 11)	<b>11.10.8</b>	New suppliers that were screened using social criteria	<b>Human Rights and Corporate Citizenship Supplement</b> p.57	1, 4, 5, 8 and 10	2		
GRI Standards 2021 (GRI 11)	<b>11.10.9</b>	Negative social impacts in the supply chain and actions taken	<b>Human Rights and Corporate Citizenship Supplement</b> p.57	1, 4, 5, 8 and 10		SOC-2 and 14	
GRI Standards 2021 (GRI 11)	<b>11.11.2</b>	Proportion of senior management hired from the local community	The information presented on page 205 is incomplete, as it was not possible to survey the nationality of the officers of all the subsidiaries during the time period available.	4, 5, 8, 10 and 16			Yes
GRI Standards 2021 (GRI 11)	<b>11.11.5</b>	Diversity of governance bodies and employees	p. 195 to 200	4, 5, 8, 10 and 16	6		Yes
GRI Standards 2021 (GRI 11)	<b>11.11.6</b>	Ratio of basic salary and remuneration	p. 197 to 198	4, 5, 8, 10 and 16	6		Yes



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 11)	<b>11.11.7</b>	Incidents of discrimination and corrective actions taken	<b>Human Rights and Corporate Citizenship Supplement</b> p.59 and 60	4, 5, 8, 10 and 16	6		Yes
GRI Standards 2021 (GRI 2)	<b>2-7</b>	Employees	p. 191 to 192	8		SOC-4 and 5	Yes
GRI Standards 2021 (GRI 2)	<b>2-8</b>	Workers who are not employees	p. 192	8			Yes
GRI Standards 2021 (GRI 2)	<b>2-20</b>	Process to determine remuneration	p. 207 to 209				Yes
GRI Standards 2021 (GRI 2)	<b>2-21</b>	Annual total compensation ratio	p. 209 to 210				Yes
GRI Standards 2021 (GRI 2)	<b>2-30</b>	Collective bargaining agreements	p.206 and <b>Human Rights and Corporate Citizenship Supplement</b> p.37	8	3		Yes
<b>SAFETY, HEALTH, AND WELL-BEING</b>							
GRI Standards 2021 (GRI 3)	<b>3-3</b>	Management of material topics – Safety, health, and well-being	p. 217 to 219; 223 to 224; 226	3 and 8		SHS-7	
GRI Standards 2021 (GRI 11)	<b>11.9.1</b>	Topic 11.9 Occupational health and safety	p. 217 to 219; 223 to 224; 226	3 and 8			



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPEECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 11)	<b>11.9.2</b>	Occupational health and safety management system	p. 219 and 223	3 and 8			
GRI Standards 2021 (GRI 11)	<b>11.9.3</b>	Hazard identification, risk assessment, and incident investigation	p. 219 and 226	3 and 8			
GRI Standards 2021 (GRI 11)	<b>11.9.4</b>	Occupational health services	p. 219 to 222 e <b>Human Rights and Corporate Citizenship Supplement</b> p. 28 to 35	3 and 8		SHS-1	
GRI Standards 2021 (GRI 11)	<b>11.9.5</b>	Worker participation, consultation, and communication on occupational health and safety	p. 222	3 and 8			
GRI Standards 2021 (GRI 11)	<b>11.9.6</b>	Worker training on occupational health and safety	p. 220; 223 to 226; 238 to 242	3 and 8		SHS-1	
GRI Standards 2021 (GRI 11)	<b>11.9.7</b>	Promotion of worker health	p. 220 to 221 and <b>Human Rights and Corporate Citizenship Supplement</b> p. 28 to 35	3 and 8		SHS-1 and 2	
GRI Standards 2021 (GRI 11)	<b>11.9.8</b>	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	p. 219 to 220, 223 to 224 and 226	3 and 8		SHS-4	



SOURCE	REFERENCE	DISCLOSURE	LOCATION, RESPONSE OR REASON OF OMISSION	SDG CORRELATION	UN GLOBAL COMPACT CORRELATION	IPIECA CORRELATION	ASSURANCE
GRI Standards 2021 (GRI 11)	<b>11.9.9</b>	Workers covered by an occupational health and safety management system	p. 219	3 and 8		SHS-2	
GRI Standards 2021 (GRI 11)	<b>11.9.10</b>	Work-related injuries	p. 219; 222 to 224; 226 to 228	3 and 8		SHS-3	
GRI Standards 2021 (GRI 11)	<b>11.9.11</b>	Work-related ill health	p. 223 to 224; 226 to 228	3 and 8		SHS-2	

## TOPICS OF THE APPLICABLE GRI SECTORAL STANDARD DEFINED AS NON-MATERIAL

### GRI 11: OIL AND GAS SECTOR 2021

Topic 11.12 Forced labor and modern slavery	The impacts related to the topic “forced labor and modern slavery” appeared only once in the evaluated internal documents and not once in the external ones. In internal interviews, the topic appeared spontaneously only once and was evaluated as having low significance. When the prompted method was used, only the stakeholder group “customers” evaluated the topic as having a significance of medium to high. All others were evaluated as having a significance between very low and low.
Topic 11.13 Freedom of association and collective bargaining.	Although impacts related to the topic “freedom of association and collective bargaining” appear in two evaluated documents, they were not mentioned spontaneously in the internal interviews, and when prompted, stakeholders evaluated them as non-existent, with low or very low significance. Only “internal public” evaluated these impacts as having a significance between low and medium.
Topic 11.16 Land and resources rights	Although impacts related to the topic “Land and resources rights” are in the internal and external documents evaluated, they were only mentioned spontaneously in a single internal interview. In the prompted method, such impacts were indicated as non-existent, with low or very low significance by stakeholders. Only “internal public” evaluated this with a significance between low and medium.
Topic 11.19 Anti-competitive behavior	The impacts related to the topic “anti-competitive behavior” appeared in only two documents, in no spontaneous internal interview, and when prompted, were evaluated as having significance level between very low and medium. Only the stakeholder group “clients” evaluated it as having a significance level between medium and high.
Topic 11.22 Public policy	The impacts regarding the topic “public policy” had two spontaneous mentions in the internal interviews, and only one of the cases was evaluated as having a high level of significance. When prompted, stakeholders evaluated it with a significance between medium and low, with the exception of the stakeholder group “public authorities”, who evaluated it as average, and the stakeholder group “investors”, who evaluated it as very low.



# SASB content index

Code	Topic	Metric	Pages
EM-EP-000.A EM-RM-000.A EM-RM-000.B EM-MD-000.A	Activity Metrics	Production of: oil, natural gas, synthetic oil, and synthetic gas; refining throughput of crude oil and other feedstocks; refining operating capacity; total metric ton-kilometers of: natural gas, crude oil, and refined petroleum products transported, by mode of transport	p.9
EM-EP-110a.1 EM-RM-110a.1 EM-MD-110a.1	Greenhouse Gas Emissions	Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations	p.104
EM-EP-110a.2	Greenhouse Gas Emissions	Amount of gross global Scope 1 emissions from: flared hydrocarbons, other combustion, process emissions, other vented emissions, and fugitive emissions	p.112
EM-EP-110a.3 EM-RM-110a.2 EM-MD-110a.2	Greenhouse Gas Emissions	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	p. 98 a 102
EM-EP-120a.1 EM-RM-120a.1 EM-MD-120a.1	Air Quality	Air emissions of the following pollutants: NO <sub>x</sub> (excluding N <sub>2</sub> O), SO <sub>x</sub> , volatile organic compounds (VOCs), and particulate matter (PM10)	p.110 a 112
EM-EP-140a.1 EM-RM-140a.1	Water Management	Total fresh water withdrawn, (2) total fresh water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	p.150 a 154
EM-EP-140a.2 EM-RM-140a.2	Water Management	Volume of produced water and flowback generated; percentage discharged, injected, recycled; hydrocarbon content in discharged water; Number of incidents of non-compliance associated with water quality permits, standards, and regulations	p.161
EM-RM-150a.1	Hazardous Materials Management	Amount of hazardous waste generated, percentage recycled	p.169
EM-EP-160a.1 EM-MD-160a.1	Ecological Impacts	Description of environmental management policies and practices for active sites	p. 132 a 148
EM-EP-160a.2	Ecological Impacts	Number and aggregate volume of hydrocarbon spills, volume in Arctic, volume impacting shorelines with ESI rankings 8-1 O, and volume recovered	p.123



Code	Topic	Metric	Pages
EM-MD-160a.3	Ecological Impacts	Terrestrial acreage disturbed, percentage of impacted area restored	p.133 e 143
EM-MD-160a.4	Ecological Impacts	Number and aggregate volume of hydrocarbon spills, volume in Arctic, volume in Unusually Sensitive Areas (USAs), and volume recovered	p.122 a 123
EM-EP-210 a.2	Security, human rights & rights of indigenous peoples	Percentage of proved and probable reserves in or near areas of conflict	<b>Human Rights and Corporate Citizenship Supplement</b> p. 49
EM-EP-210 a.3	Community relations	Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict	<b>Human Rights and Corporate Citizenship Supplement</b> p. 39 a 56
EM-EP-210 b.1	Community Relations	Discussion of process to manage risks and opportunities associated with community rights and interests	<b>Human Rights and Corporate Citizenship Supplement</b> p. 40 a 45
EM-EP-320a.1 EM-RM-320a.1	Workforce health & safety	Total recordable incident rate (TRIR), fatality rate, near miss frequency rate (NMFR), and average hours of health, safety, and emergency response training for full-time employees, contract employees, and short-service employees	p.225 a 227
EM-EP-320a.2 EM-RM-320a.2	Workforce health & safety	Discussion of management systems used to integrate a culture of safety throughout the exploration and production lifecycle	p. 223 a 225
EM-EP-420a.3	Reserves valuation & capital expenditures	Amount invested in renewable energy, revenue generated by renewable energy sales	p.117
EM-EP-420a.4	Reserves valuation & capital expenditures	Discussion of how price and demand for hydrocarbons and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets	p.98 a 101
EM-EP-510a.2	Business ethics & transparency	Description of the management system for prevention of corruption and bribery throughout the value chain	p. 74 a 81
EM-EP-530a.1 EM-RM-530a.1	Management of the legal & regulatory environment	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	p. 26



Code	Topic	Metric	Pages
EM-EP-540a.1 EM-RM-540a.1	Critical incident risk management	Process Safety Event (PSE) rates for Loss of Primary Containment (LOPC) of greater consequence (Tier 1) and lesser consequence (Tier 2)	p. 127 a 128
EM-EP-540a.2	Critical incident risk management	Description of management systems used to identify and mitigate catastrophic and tail-end risk	p. 128 a 131
EM-MD-540a.4	Operational safety, emergency preparedness & response	Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout the value chain and throughout project lifecycles	p.128 a 131



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