

# 2023 TCFD REPORT

(TECHNICAL REPORT N° GCFI-1146-2023)

Report of the Task Force on Climate-Related Financial Disclosures (TCFD) of PETROPERÚ S.A.  
December 2023



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## 1. Introduction

The TCFD stands for Task Force on Climate-Related Financial Disclosures, which is an international group created in 2015 by the Financial Stability Board (FSB), which was created by the G20 forum in 2009. The TCFD is currently led by Michael Bloomberg and proposes a voluntary disclosure framework that collaborates with companies in communicating climate-related information that could influence the decisions of investors, investment funds, banks, regulators, and others, while at the same time informing stakeholders about the financial exposure to climate-related risks to which companies have to face.

In 2022 PETROPERÚ S.A., based on the pre-existing elements of sustainability management in the Company since the 1990s, that is, structural, procedural, functional and technical elements of environmental and community relations (social), started the path towards updating its sustainability management with the evaluation of the new criteria and standards called ESG (Environmental, Social and Governance), referring to environmental, social and governance issues that, in particular, financial stakeholders now demand to be updated and strengthened in relation to the pre-existing ones in the companies. Related to the above, it is important to point out that environmental and social management has been developed in PETROPERÚ S.A. since the 1990's, with a special focus on environmental and social issues with the creation of the Environmental Protection Unit, the elaboration of the first Environmental Policy, the Policy on Community Affairs, as well as the Environmental Management System, in addition to the first management systems elaborated under the framework of the International Organization for Standardization (ISO); and that economic management is a main part of the Company as well as Governance management, which, the latter, has been more developed in recent years in response to global dynamics. Thus, already in 2007, the first Sustainability Management Unit was created in PETROPERÚ S.A., as well as the former Sustainable Development Department Management, now Sustainable Development Corporate Management.

In this line, we are currently members of the Association of Oil, Gas and Renewable Energy Companies of Latin America and the Caribbean (ARPEL), which in turn joined the United Nations Global Compact in 2006 and since then promotes the adoption of the Global Compact Principles by member companies.

Likewise, since 2012 our Sustainability Reports are prepared and verified under the Global Reporting Initiative (GRI) standard, in response to the demands and trends of the global market; since 2013 we measure and report our Greenhouse Gas Emissions under the ISO 14064 standard; and since 2015 we have had and perfected Social Management tools under international standards such as the Equator Principles, IFC Performance Standards, the Global Compact, the Guiding Principles for Sustainable Development and the UN Sustainable Development Goals.

In fiscal year 2022, PETROPERÚ S.A. prepares for the first time the Task Force on Climate-Related Financial Disclosures (TCFD) Report, which considers the diagnosis, analysis and identification of climate-related risks in our operations, following the path and good example of other international peers in the Oil & Gas industry that has decided their strategic transformation towards Energy companies, committed to a fair and responsible Energy Transition.

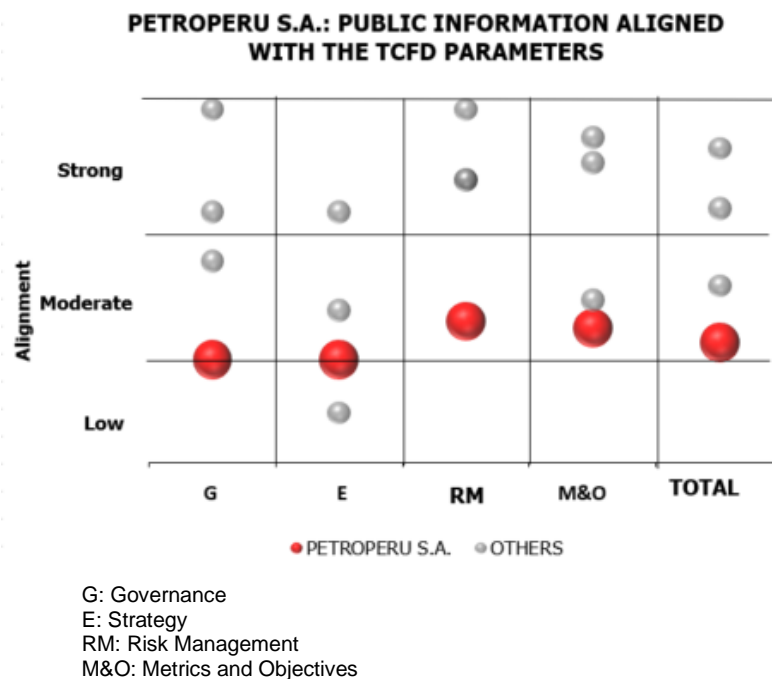
Thus, being aware of the need to provide information to our stakeholders, we present the first report identifying the risks of Climate Change and its possible effects on our economic and financial results, whose source of information is Sustainable1, a team that is part of S&P Global, leader in references, analysis and transparent data for the capital and commodities markets worldwide, as well as ratings, risk assessment related to the fight against Climate Change, among others.

## 2. Preliminary diagnosis

As part of S&P Global's climate risk diagnosis, assessment and analysis, an initial assessment of public disclosure was made in relation to the TCFD pillars: Governance, Strategy, Risk Management and Metrics and Targets (Figure 1). In addition, a comparison was made with companies in the region with notable experience in the presentation of TCFD reports.

Thus, PETROPERÚ S.A. obtained a moderate level of disclosure and transparency in the TCFD metrics. It should be noted that the requirement was quite high given that the comparable companies have extensive experience in the adoption of the ESG approach and in the presentation of TCFD reports. The results show us that we have a way to improve in the TCFD standards, which is why this report has materialized, which will be complemented with the strategy service and sustainability plan with ESG criteria that is being developed, with a view to the short, medium and long term.

Figure 1



In relation to Governance, S&P Global's *Sustainable1* team identified that PETROPERÚ S.A. did not publish information on the Board's oversight of climate-related risks and opportunities, including how and when the Board is informed of climate-related issues.

In relation to Strategy, PETROPERÚ S.A. has not disclosed any material risks related to Climate Change, nor has the potential resilience or impacts of climate-related risks been quantified.

In relation to Risk Management, PETROPERÚ S.A. has a robust process in place to identify climate-related risks, but disclosure on its management and process of climate-related risks is still pending.

Finally, under Metrics and Targets, PETROPERÚ S.A. does not publish specific metrics related to sustainability performance and targets. These include Greenhouse Gas targets, as well as metrics associated with the identification and management of climate-related risks and opportunities.

From this, *Sustainable1* team conducted the identification of climate-related risks, estimating the impact of transition risks and physical risks. On the transition risk



side, *Sustainable1* estimated the political and legal risk related to carbon pricing, as well as market risks. For the physical risk, they considered the climatological risks that would have the greatest

impact at the corporate level, such as extreme temperatures and river and rain flooding, information that can be seen in the strategy and risk management pillars.

### 3. The Pillars of the TCFD

This section develops the four pillars of the TCFD standard: Governance, Strategy, Risk Management, and Metrics and Targets, indicating progress in each case. It should be noted that the Governance and Metrics and Objectives Pillars were not considered by S&P Global *Sustainable1* because in both cases, these contain items that are not yet fully adapted to the methodology applied by that institution; however, PETROPERÚ S.A. has performed this analysis consistent with the recommendations of the international group TCFD for the disclosure of financial information related to Climate Change.

#### 3.1. Governance

The Sustainable Development Corporate Management of PETROPERÚ S.A. is the corporate support area in charge of defining the integrated strategy of social and environmental management at corporate level, in accordance with its Policies, promoting and monitoring the attention to the criteria of relevance, sustainability, trust, transparency and shared value, in order to help our operations to develop their activities with a minimum risk of interruption due to social impacts.

It is also responsible for developing and disseminating procedures, indicators and reports for monitoring in terms of prevention and control of the pollution, eco-efficiency, energy management, life cycle analysis of processes and products with an approach of circular economy, ecological footprint, biodiversity management and ecosystem services, environmental auditing, combating climate change, environmental and climate risk assessment, sustainable finance, environmental remediation, among others, within the framework of the GRI standard and now under the Environmental, Social and Governance (ESG) standards.

It is important to point out that by means of Board Agreement N° 122-2023-PP of 26 September 2023, the Board of Directors of PETROPERÚ S.A. approved the New Basic Organizational Structure of PETROPERÚ S.A., in which a new area is created within the Sustainable Development Management, called Sustainability and Energy Transition Project Department, which will have among its main functions to continue with the adoption and application of ESG criteria, as well as the management of sustainability projects related to Climate Change, exploration of new low carbon

intensity businesses within the framework of the Company's Energy Transition, etc., cross-cutting issues to our operations.

For the elaboration of the TCFD report and the determination of the risks in which our activities and economic results would be committed, PETROPERÚ S.A. had a group of international expert consultants in ESG matters and the recommendations of the TCFD, this consulting team is called Sustainable1, which is part of S&P Global.

For the development of the diagnosis, analysis and identification of the risks associated with climate in our operations, the CFO and his team as well as the Corporate Sustainable Development Manager and his team have conducted workshops on the risks of Climate Change in the framework of ESG, with the other Corporate Managers directly involved with climate-sensitive activities, such as suppliers and customers, as well as the Accounting and Finance Units in charge of the historical inventory of fixed assets of PETROPERÚ S.A.

In addition, open workshops have been held, inviting representatives of each Corporate Areas, as well as the Senior Management headed by the CEO, Corporate Sustainable Development Manager, CFO, Corporate Supply Chain Manager,



Corporate Commercial Manager, Corporate Gas Manager, Corporate Operations Manager, Corporate Exploration, Production and Pipeline Manager, Corporate Planning Manager, Corporate Risk and Process Manager, in

order to identify and raise awareness of the transition risks and physical risks and opportunities of climate change.

This report informed to the Board of Directors in order to ensure that it is in line with the strategy, vision, mission and culture of PETROPERÚ S.A.



### 3.2. Strategy

Based on the results of the climate risk assessment, PETROPERÚ S.A. recognizes the impact that Climate Change could have on its operations and economic-financial results, and therefore proposes to manage those risks and opportunities.

The following is an assessment of the climate-related risks that could affect PETROPERÚ S.A.'s operations in the short, medium and long term, as well as the strategies that will be adopted to manage each identified risk.

Table 1  
Identified Risks and Opportunities

Risk	Risk category	Risk description	Scale of risk	Responses
Transition	Exposure to political risk	<p>"It considers exposure to carbon price risk, i.e., the risk of policy measures to encourage the transition to a low-carbon emissions economy in direct operations or upstream supply chain (e.g., through carbon taxes).</p> <p>The occurrence of increasing taxes on fuel or greenhouse gas (GHG) emissions may leave PETROPERÚ S.A. with higher costs, which they may choose to absorb or invest in reducing their emissions."</p>	<p>In the medium term: In the year 2030, considering a scenario of low and high carbon prices, the estimated effect of an increase in operating expenses is between 0.4% and 1.4%, respectively.</p> <p>In the long term: In the year 2050, considering a scenario of low and high carbon prices, the estimated effect of an increase in operating expenses is between 1.1% and 3.6%, respectively.</p>	<p>Prepare an adequate corporate support structure for sustainability and energy transition.</p> <p>Explore alternatives and innovations in GHG emissions management, including, for example, methane emissions control.</p> <p>Energy efficiency, combustion and efficiency and electrification, among others.</p> <p>Analyze low-carbon emissions business plots.</p> <p>Evaluation of carbon capture, storage and use (CCUS) technologies.</p>
	Exposure to market risk	<p>"Climate-related market risk considers changes in the mix of sources of income and outflows, resulting in a decrease or increase, respectively.</p> <p>Although the ways in which markets could be affected by climate change are varied and complex, one of the main ways is through changes in supply and demand for certain commodities, products and services as climate-related risks and opportunities are increasingly taken into account.</p> <p>The market risk assessment allows PETROPERÚ S.A. to identify the parts of the value chain that are subject to carbon pricing risks in a 2°C scenario, and to help identify ways to reduce exposure to these risks over time by influencing its suppliers and encouraging its customers to reduce their own GHG emissions."</p>	<p>"In the medium and long term: By 2030 and 2050, respectively, taking into account the global GHG footprint risk, the profit margin situation of the Oil&amp;Gas sector and the geographic exposure to carbon pricing risk for suppliers of raw materials (crude oil) and crude oil derivatives, we would face a high risk of cost increases.</p> <p>Likewise, in the case of customers, in the medium and long term: By 2030 and 2050, respectively, taking into account the global risk based on the GHG footprint, the profit margin situation of the industrial and travel services sector, mainly, as well as the geographic exposure to carbon pricing risk, we would face a moderate risk of cost shifting."</p>	<p>High risk</p> <p>Moderate risk</p> <p>Prepare an adequate corporate support structure for sustainability and energy transition.</p> <p>Conduct industrial affiliations.</p> <p>Establish ESG-related communications plan and incentivize customers and suppliers for proper management of GHG emissions.</p> <p>Improve the energy transition plan including ESG approach and KPIs.</p> <p>Adjust to changing market conditions and energy transition goals transition objectives.</p>

Table 1 (continued)  
Identified Risks and Opportunities

Risk	Risk category	Risk description	Scale of risk	Responses
Physical	Extreme temperatures	The increase in temperature causes an increase in energy and water consumption, which in turn generates higher costs.	<p>Higher refrigeration, ventilation and air conditioning costs.</p> <p>Loss of employee productivity.</p> <p>Maintenance costs.</p> <p>By 2030, the risks of extreme temperatures in the strong and low mitigation scenarios present a low relative risk of 0.6% and 0.7%, respectively.</p>	<p>Low risk</p> <p>Prepare an adequate corporate support structure for sustainability and energy transition.</p> <p>Explore alternatives and innovations in GHG emissions management, including, for example, methane emissions control.</p> <p>Improve the energy transition plan including ESG approach and KPIs.</p> <p>Explore water reuse mechanisms.</p> <p>Evaluation of carbon capture, storage and use (CCUS) technologies.</p>
	Pluvial flooding	Climate change will cause extreme temperatures, which in turn will lead to heavy rains, causing rivers to overflow and flooding, due to the alteration of the natural flow of water.	<p>Delays or interruptions of activities due to damage to facilities and equipment.</p> <p>Cleanup and repair costs.</p>	
	River flooding		<p>By 2030, the risks of fluvial and pluvial flooding in the strong and low mitigation scenarios present a joint relative risk of 0.7% and 0.8%, respectively.</p>	

Note: Political risk exposure considers GHG emissions from the three refineries: Conchán, Selva and the old Talara refinery.

The scale of the transition risks considers the average EBITDA exposure of the supplier and customer sector, as well as the expenses and income that PETROPERÚ represents for the sector under evaluation.

The physical risk scale considers the danger and vulnerability of the assets of PETROPERÚ S.A. The risk exposure classification thresholds defined by S&P are: High > 15%, 15% > Moderate > 10%, Low < 10%.

Similarly, we are currently in the process of finalizing the Sustainability Strategy with ESG criteria, the roadmap for its implementation, as well as KPIS and GHG emission reduction targets for its application in the short, medium and long term.

### 3.3. Risk Management

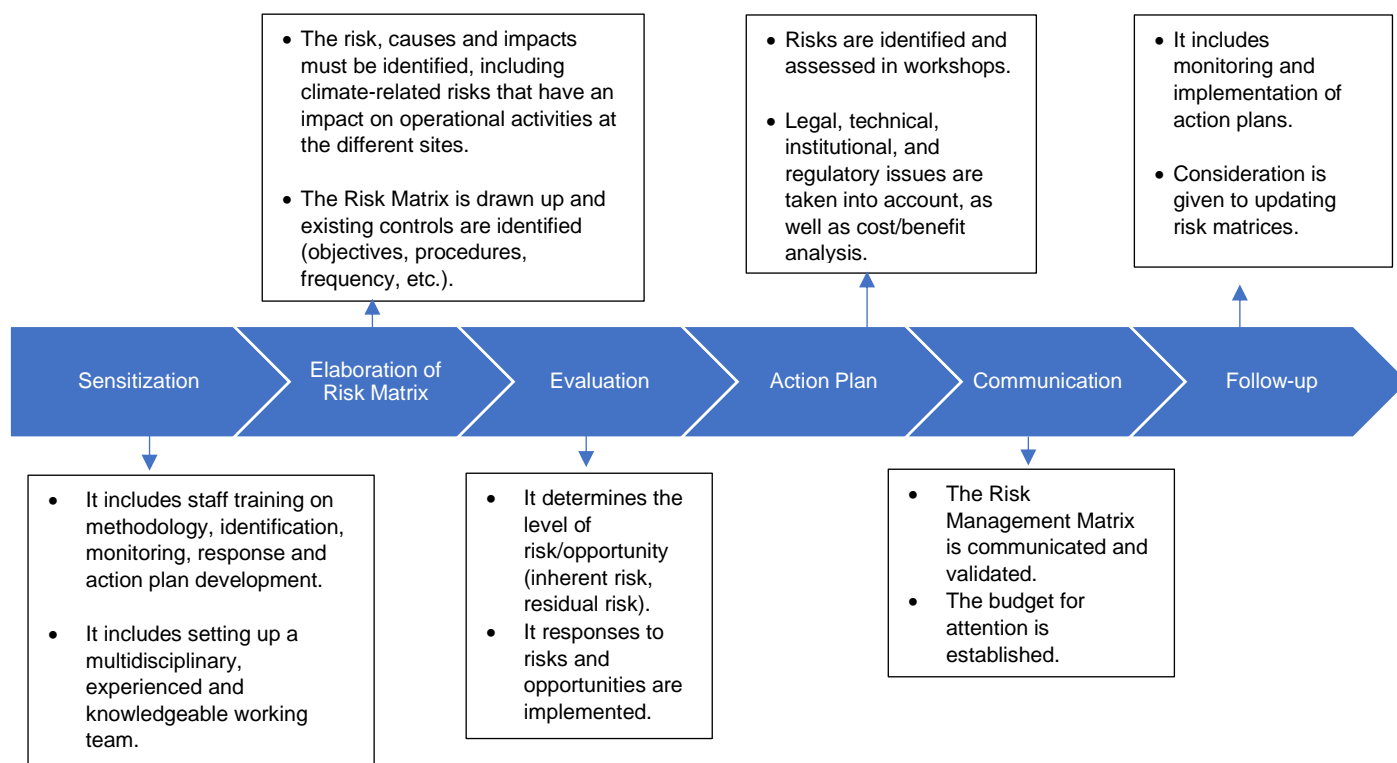
PETROPERÚ S.A. carries out an exhaustive risk management process to determine, identify, evaluate, respond and monitor the risks to which the Company is exposed in relation to the achievement of its organizational objectives (strategic objectives, process objectives, mainly), which contribute to give greater value to the business and long-term sustainability, in line with the risk appetite of PETROPERÚ S.A., for which it has developed a corporate risks management methodology, which were updated in the year 2021.

Among the risks identified are mainly those related to the operational affectation of the Company, the causes of which are generally typified as unfavourable weather conditions, such as: strong winds, abnormal waves, sea currents, heavy rains, among others.

The risk management process at corporate level is shown below:

Figure 2

#### PETROPERÚ S.A.: RISK MANAGEMENT PROCESS



### 3.3.1 Climate risks management

Based on the climate-related risks identified by *Sustainable1* from S&P Global in relation to policy measures to promote the energy transition to a low-carbon economy, market risk exposure to suppliers and customers, as well as physical risk exposure from increased and severe climate risks, we began the process of integrating climate risks into all of our decision-making processes.

It is important to highlight that, at the process level, we have included the risks that may arise due to weather conditions that may affect the operations of our refineries.

In this regard, we will review risk management at the corporate level, in order to specifically introduce adequate climate risk management.

### 3.3.2 Climate risks assessment

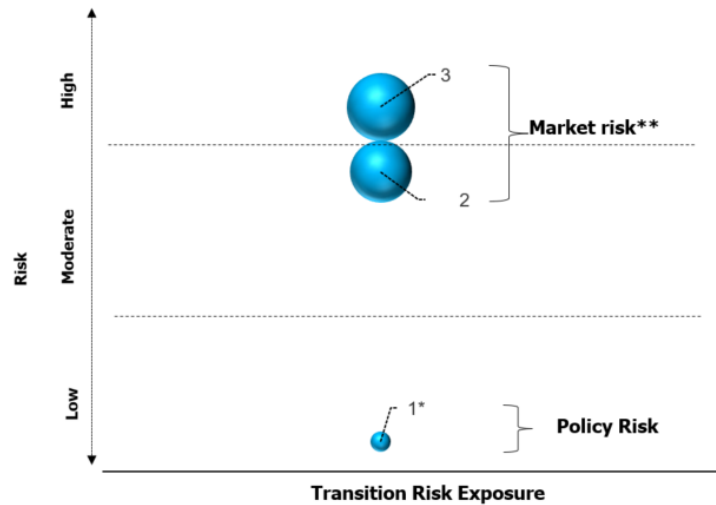
*Sustainable1*'s assessment includes the identification of transition risks (political risks related to carbon pricing and market risks) under the 2°C scenario, as well as physical risks under the 2100 scenarios of high and low GHG mitigation, which consider a global average temperature increase of 2.1-3.5°C and 3.3-5.7°C, respectively.

Thus, the political risk foresees a carbon price risk that could generate costs, which in turn could have negative effects on the Company's margins. In this sense, *Sustainable1* has assessed the risk considering a premium associated to the carbon price, considering the sector and geography in which PETROPERÚ S.A. is located, thus reflecting the additional risk that would be paid per ton of emission due to the eventual increase in carbon price regulations in the future. *Sustainable1* concludes that the political risk is low, taking into account PETROPERÚ S.A.'s current GHG emissions.

On the market risk side, *Sustainable1* considers sectoral exposure and country-level emissions profiles, which allows estimating carbon price risk exposure for suppliers and customers. In this sense, there is a high probability of cost increase along the supply chain in which PETROPERÚ S.A. operates. *Sustainable1*'s conclusion is that our activities present a high risk of raw material cost increase and a moderate risk of cost pass-through to customers by 2030.

Figure 3

**PETROPERÚ S.A.: TRANSITION RISK  
EXPOSURE TO 2030**



(\*) It includes GHG emissions from the three refineries: Conchán, Selva and Talara.

(\*\*) The scale considers the average EBITDA risk of the upstream and downstream sector (supplier and client), as well as the expense and income it represents for PETROPERÚ S.A.

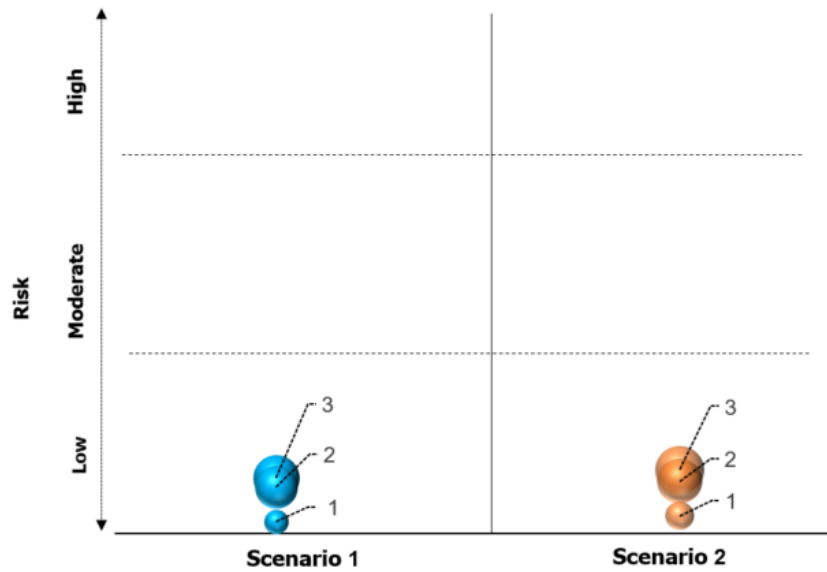
Note: It considers the scenario of high carbon prices in application of policies that are considered sufficient to reduce greenhouse gas (GHG) emissions in line with the objective of limiting climate change to 2° C in the year 2100.

1. Carbon pricing risk.
2. Risk of carbon tax cost shifting (Downstream).
3. Risk of raw material cost increase (Upstream).

On the other hand, *Sustainable1* considers that the three main physical risks for PETROPERÚ S.A. in the year 2030 are extreme temperatures, pluvial floods, and fluvial floods, although all of them have a risk considered low. For the analysis of the physical risk, the following factors are considered: personnel costs, refrigeration costs, cleaning and repair costs, interruption of activities, productivity losses, among others.

Figure 4

**PETROPERU S.A.: PHYSICAL RISKS BY CLASSIFICATION AND SCENARIOS TO 2030**



Note: The physical risks scale considers the danger and vulnerability of PETROPERÚ S.A.'s assets. The risk exposure classification thresholds defined by S&P are: High >15%, 15% > Moderate > 10%, Low < 10%.

**Scenario 1** considers strong mitigation in which total greenhouse gas emissions are stabilized at current levels until 2050. This scenario is expected to result in a global average temperature increase of 2.1-3.5°C in the year 2100. **Scenario 2** considers low mitigation in which total greenhouse gas emissions triple by 2075 and the global average temperature increases by 3.3-5.7°C by 2100.

1. Fluvial flooding.
2. Flooding due to rainfall.
3. Extreme temperatures.

### 3.4. Metrics and objectives

We are committed to contributing to the development and progress of the country, guaranteeing the supply of quality fuels, introducing improvements to reduce and control our own emissions. In this regard, we present below our corporate progress in emissions management, energy management and water management:

#### 3.4.1 Emissions management (carbon and others)

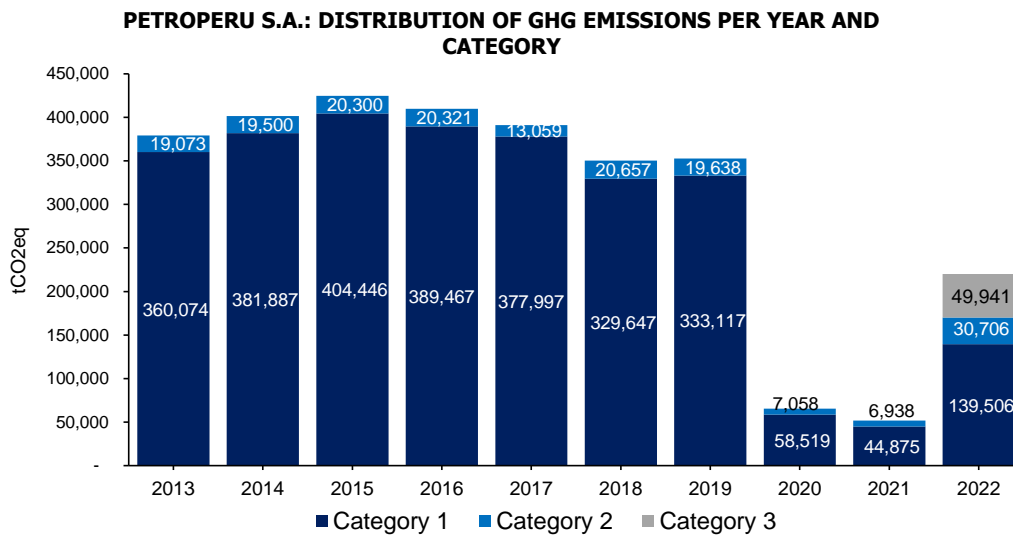
We are making the necessary efforts to control our own operational carbon footprint by performing activities such as maintaining our vehicles and monitoring air quality. At the technological level, we are integrating more modern emission systems and process plants to produce cleaner fuels. At the user level, we promote air care through daily actions, and, at the commercial level, we encourage the use of low-sulfur fuels and other related emissions.

We also make use of the methodology established in 2021 by the Intergovernmental Panel of Experts on Climate Change (IPCC) to carry out our emissions inventory. This governing body allows us to convert emissions of different gases into a standard unit: tCO<sub>2</sub>eq.

In 2022, under a unique methodology verified by an independent third party, we conducted our GHG emissions inventory under the ISO 14064 standard. In this report, we present the emissions of carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O) and methane (CH<sub>4</sub>) gases, so that in the year 2022 we generate 170,210.66.49 tCO<sub>2</sub>eq, in category 1 and 2, and an estimated 49,941.13 for category 3 (Transport of Inputs).

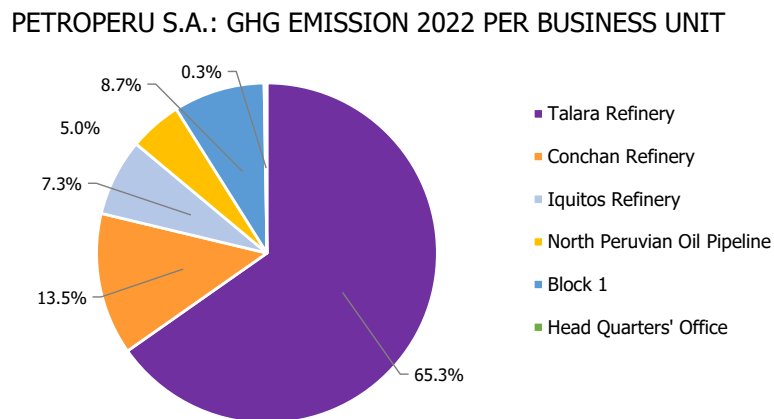
As shown in the graph below, GHG emissions in 2022 increased with respect to 2020 and 2021 mainly due to the gradual start-up of the New Talara Refinery (April 12, 2022).

Figure 5



Regarding GHG emissions by unit, the Talara refinery accounts for more than 65% of total emissions, followed by Conchán refinery with 14% and Iquitos refinery with 7%, as shown below:

Figure 6



### 3.4.2 Energy management

Our Energy Savings Committee is responsible for developing energy management and action plans to improve our operating units and contribute to energy savings. This committee has identified the following improvement opportunities:

- Use of renewable energies, mainly solar energy.
- Installation of electricity meters at each electrical substation in our operations.
- Cleaning of missing furnace tubes and heat exchangers.



We evaluated our energy performance using a calculation methodology based on the IPCC guidelines for 2006 National Greenhouse Gas Inventories.

To determine direct energy consumptions, energy consumption values were collected for each combustion mobile or stationary source, as well as the amount and type of fuel consumed in each case. These values were converted into energy units, according to the respective lower calorific capacity value.

In the case of indirect energy consumption, information was gathered from the activity parameters that the electricity service provider delivers to our operating units.

During 2022, we consumed 2,938,846.51 gigajoules (GJ) and having an increase of 360%, compared to 2021, due to the gradual start-up of operations of the Talara Refinery. It is worth noting that 81% of this consumption was from our own generation, while 19% came from other companies.

Our main source of energy corresponds to natural gas, which represents 71.8 % of our company's total energy consumption.

### 3.4.3 Water management

We recognize the importance of properly managing water resources, especially its adequate and rational use, as well as the controlled extraction of water from surface and subway sources for the company's operating processes.

In this sense, the water resource represents a basic element for the adequate development of our processes and activities, especially those processes that require cooling, steam production and washing of impurities.

We manage water resources responsibly and rationally as part of our operational controls to reduce the generation of effluents in our operations.

We also adopted measures to use water resources sustainably, of which we highlight the following: at the technological level, we modernized our equipment; at the operational level, we implemented wastewater treatment and reuse plants; at the user level, we promote responsible consumption of water resources; at the commercial level, we carry out maintenance at the desalination plant.

The non-industrial services or management control areas of each company office account for the consumption of their water resources; for this measurement, they use meters or the receipts provided by the supplier companies.

As of 2022, a total of 1,585,184.5 m<sup>3</sup> has been extracted, where our Talara Refinery consumes 74% of the total water, which comes from surface sources (ocean), being this characteristic remarkable, because in this way, Talara Refinery does not increase pressure on the scarce sources of fresh water, using sea water, thus contributing to increase the availability of fresh water for the population.

#### 4. Future actions

We are currently in the process of finalizing the Sustainability Strategy and Plan with ESG criteria, a roadmap for its implementation, as well as KPIS for its application in the short, medium and long term, which are being prepared by the international consulting firm S&P Global.



Such work will allow us to improve resilience to address the issue of energy transition and environmental challenges, having milestones and metrics that allow us to observe progress for stakeholders in the framework of the Company's decision in the sense of strategically transforming from being just an Oil & Gas Company to being an Energy Company.

Likewise, the most important requirements for an adequate implementation of the strategies are:

- Continue with the recognition, approval, and coordination of Sustainability issues with ESG Criteria from the top management, which corresponds to the Board of Directors and CEO, emphasizing the transversal impact of the strategy in all areas of the Company, activities towards which we are emphasizing. Likewise, a review of risk management will be carried out at the corporate level, to specifically introduce adequate climate risk management.
- Strengthen the communication strategy with investors, in which we would adopt protocols of transparency and full disclosure, as well as external verification of the information disclosed, in order to increase our levels of trust and credibility.
- Strengthen the Sustainable Development Management in order to articulate, implement and monitor the strategies proposed, which implies providing the necessary resources and budget allocations for the deployment of the activities involved in the Sustainability Plan with ESG criteria.