

PACTA METHODOLOGY APPLICATION FOR THE ANALYSIS OF 2°C SCENARIOS

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EXECUTIVE SUMMARY

PACTA (Paris Agreement Capital Transition Assessment) is a methodology which allows to assess the corporate portfolios alignment or compliance with the different Paris Agreement climatic scenarios. PACTA provides a guide about the actions that must be undertaken by more polluting industries to transit to a low-carbon economy, considering the exposure of financial institutions to these industries.

The scenarios used by PACTA provide important information about the potential climate change mitigation pathways, needed to limit global temperature rise. Consider assumptions that include the advancement of technologies, the policy making, falling demand for fossil fuels, reliance on renewable energy, the reduction of greenhouse gas emissions (GEI) to net zero emissions, in other aspects, social, economic and environmental.

PACTA is based in the measurement of three metrics that show the evolution in different scenarios: 1) Technology/fuel mix, which is focused on technology changes; 2) Production volume trajectory which measures production trends and 3) Emission intensity which compares the current and projected issuance intensity of a portfolio. Thus, PACTA methodology was applied to Banorte's activities portfolio related with the exploration and production of oil and gas, energy, cement, and steel manufacturing, as well as aviation.

The results of the implementation of the PACTA methodology confirm that the transition to a low-carbon economy to mitigate the effects of climate change and limit the raise in global temperature in compliance with the Paris agreement, directly affects all industrial industries, as well as the financial institutions that finance them.

The analysis of the different metrics shows that Banorte's portfolio would line up with the Sustainable Development Scenarios and Stated Policies, only if the assumptions that drive the different scenarios are considered. According to the metrics measurement of technology/fuel mix and the production volume trajectory for the fossil fuels, energy and gas industries, the portfolio presents opportunities to meet the parameters indicated by PACTA.

In the case of Net Zero scenarios, seeking to achieve net zero emissions by 2050, it becomes even more complicated that Banorte's portfolio aligns across all industries and metrics; the technologies, production volumes and current emissions of oil, gas, energy, cement, steel and aviation industries are still distant from the ambitious goals of the Net Zero given the current macroeconomic situation in Mexico.

PACTA methodology allowed to confirm that urgent actions are required to reduce polluting emissions and achieve the objectives of the Paris agreement. The lines of action are clear. For customers, gradually reduce the use and exploitation of fossil fuels, while taking advantage of the opportunities of renewable and clean energy. For financial institutions, define strategies focused on decarbonization of financing and investment portfolios, build risk appetite, finance climate industries, create policy and engage with clients.

1. INTRODUCTION

At GFNorte we are firmly committed with the global fight against the climate change. We recognize it is about one of the biggest threats the world faces, and the financial industry has a crucial role in catalyzing actions that allow moving towards a resilient and low-carbon economy.

Since 10 years ago, we have joined important initiatives, national and international, regulatory and voluntary, that seeking to mobilize private initiative, emissions reduction, the use of energy from renewable sources, identifying of risks and opportunities, the definition of objectives and disclosure of climate-related information.

We have a comprehensive climate strategy that incorporates governance principles, risks management, metrics and goals, interest groups and transparency, with short, medium and long term goals, online with the *Carbon Disclosure Project* (CDP), the *Science Base Targets* (SBT), the *Taskforce on Climate-Related Financial Disclosures* (TCFD), the *Net Zero Banking Alliance* (NZBA), the *Principles for Responsible Banking* (PRB), the *Equator Principles* (EP), the *Principles for Responsible Investment* (PRI) and the *Taskforce on Nature-Related Financial Disclosures* (TNFD).

Interested in strengthening our skills regarding the modeling of climate scenarios, in 2020 we join the efforts of the Sustainability Committee of the Asociación de Bancos de México (ABM) that together with *2° Investing Initiative* (2DII), summoned the country's banks to carry out the application of the PACTA methodology in corporate loan portfolios.

PACTA, developed by 2DII, is an open-source code and free of intellectual property rights that, at the beginning it evaluated the exposure of corporate stock and bond portfolios to transitional technologies in industries such as energy, fossil fuels, transport, cement, steel and aviation, as well as the exposure of these industries with the 2°C scenarios.

In 2019, 2DII launched a research program to expand the model to the corporate loan portfolio of banks, making 17 banks in Europe, the USA and South America commit to apply the methodology as part of a pilot project. Subsequently, 2DII continued calling more banks in emerging markets coming to Mexico.

1.1. Objective

The purpose of this document is to communicate the experience of implementing PACTA methodology in Banorte's portfolio that includes the industries with the highest intensity of carbon dioxide emissions (CO₂), granting a perspective of its alignment to the different climate scenarios of the Paris Agreement, as well as providing an approximation to the steps that financial institutions must take to actively contribute to the best emission reduction practices.

1.2. Scope

The economic activities with the highest intensity of emissions considered within the scope of this study were:

- a) Oil and gas exploration and production
- b) Energy
- c) Cement, Steel and Car manufacturing
- d) Aviation

2. PACTA METHODOLOGY

The *Paris Agreement Capital Transition Assessment* (PACTA), is a methodology and free tool that measures the portfolios alignment with various climate scenarios consistent with the Paris Agreement. PACTA was developed by 2° Investing Initiative (2DII) with a variety of partners, including the Principles for Responsible Investment, the University of Zurich and the Frankfurt School of Finance.

PACTA allows the application and analysis of different climate scenarios in corporate loans, compares what needs to be done in relevant climate industries to minimize increases in global temperature, considering the exposure of financial institutions to these industries. PACTA uses a dynamic and prospective approach, based on the 5-year production plans of the companies analyzed.

One feature of PACTA is that it is based on an evaluation of physical assets (such as steel or energy plants) linked to financial assets (such as loans, bonds, and stocks) and the concordance of these assets with climate scenarios.

The methodology measures the alignment by industry or technology since compliance with the objectives of the Paris Agreement varies according to the industry. There are industries which need to move faster than others, some like power generation, need to be reformed and others need to be phased out, for example fossil fuels.

The climate-relevant industries covered by PACTA to date, are the energy, cement mining, oil and gas industries, car manufacturing, cement, steel and aviation. Overall, these industries represent around the 75% of global GEI emissions.

2.1. Scenarios

Climate scenarios do not predict the future, one of its main objectives is to give important information about the potential decarbonization pathways that have the potential to achieve the level of climate change mitigation needed to limit global temperature increase. PACTA is based on the scenarios described below. Table 1 details the characteristics of each scenario.

- **More than two degrees scenario (B2DS for its acronym in English).**

Aims to limit with a 50% probability the increase in global temperature to 1.75°C above pre-industrial levels. It does not depend on the advancement of unforeseen technologies, all technologies included are already commercially available or will be within the scenario time frame. The energy industry emissions reach the zero emissions around 2060, achieved through a heavy reliance on bioenergy with carbon capture and storage.

- **Stated policies scenario (SPS for its acronym in English).**

Aims to evaluate how the world will be in the future according to the policies that have been announced recently. The demand of energy raises 1% annual up to 2040. More than half of this growth in demand is covered by photovoltaic solar energy. Oil demand stagnates in 2030.

- **Sustainable Development scenario (SDS for its acronym in English).**

This scenario aims to meet the sustainable development goals. This requires fast and generalized changes in all parts of the energy system. It is aligned with all the objectives established in the Paris Agreement, as well as, with the objectives related to the universal access to energy and a cleaner air. Due to its characteristics, this scenario is generally taken as reference.

- **IEA Net Zero 2050 scenario (IEA-NZ).**

This scenario expands the SDS for reaching the net zero emissions objective. The scenario responds to the growing number of countries and companies that have committed to reach net zero emissions combined with the objective to limit the increase of global temperature to 1.5 °C by the end of the century (with a 50% of probability). In particular, it explores the actions needed in the period up to 2030 to be on track to achieve net zero emissions for 2050, including the need to end the exploitation of new fossil fuels from 2021.

- **ISF Net Zero 2050 scenario (ISF-NZ).**

This scenario pretends to accomplish CO₂ net zero emissions for 2050 based on a carbon budget to maintain temperature rise below 1.5°C with a 66% of probability. The decarbonization of financial industries to achieve the Paris Agreement objective is achievable considering current technologies. It is economically viable and profitable in the medium and long term. This scenario serves as a contrast to the IEA.

Table 1. Comparison of the main modelling parameters and assumptions underpinning three main scenarios

The main parameters and assumptions		IEA-WEO-2020 SDS scenario	IEA-NZ-2021	ISF-NZ-2020
Overall scenario targets	Average global temperature target in 20100	1.8°C	1.5°C	1.5°C
	Probability of limiting warming goal by 20100	66%	50%	66%
	Global CO ₂ emissions	27 Gt CO ₂ in 2030 <i>Net Zero</i> in 2070	21 Gt CO ₂ in 2030 <i>Net Zero</i> in 2050	12.2 Gt CO ₂ in 2030 <i>Net Zero</i> in 2050
	Cumulative global CO ₂ budget for whole time frame (2020-2050)	790 Gt CO ₂ .	460 Gt CO ₂ .	450 Gt CO ₂ .
Coverage	PACTA sectors for which alignment can be measured	Fossil fuel, power	Fossil fuel, power, automotive (LDV)	Fossil fuel, power, cement, steel and aviation
	Geographical resolution	Regionalized pathway for power only. Global for Fossil fuel.	Global pathway	Global, EU and North América; regionalized pathway for power only.
	Time horizon and intervals	10 years intervals through to 2070.	10 years intervals through to 2050.	5 years intervals through to 2050.
	Main identified sources of model uncertainty	COVID uncertainties, behavioral changes, CCUS for fossil fuels.	Behavioral change, bioenergy, CCUS for fossil fuels	Behavioral change, large-scale deployment of renewables
	Main assumptions on technology maturity	60-65% of required CO ₂ reductions are from technologies currently commercially deployed	50-60% of required CO ₂ reductions are from technologies currently at demonstration or prototype stage	Only considers theoretical technologies that have demonstrated proof of concept.
Socio-economic assumptions	Global population	9.2 billion (2040)	8.5 billion (2030). 9.6 billion (2050).	7.7 billion (2030). 9.7 billion (2050).
	Economic growth (2020 baseline)	±3% per year (up to 2050)	+45% GDP (2020-2030). +100% GDP (2020-2050).	+100% GDP (2020-2050).
	Incorporates SARS-Cov2 pandemic recovery assumptions?	Yes, integrated into economic growth and sectoral recovery assumptions.	Yes, integrated into economic growth and sectoral recovery assumptions.	2 base years included (one without COVID effect, and one with estimation of COVID effect)- not included in the projection.
Assumption s of the energy model	Primary energy demand reduction	17% less in 2030 compared to 2019.	7% les in 2050, compared to 2020.	8% less in 2050, compared to 2020.
	Fossil fuel use and exploitation	Fossil fuel share in the primary energy mix falls around 70% by 2030.	No new development or exploitation from 2020 onwards	Emissions from fossil fuel must decline by more than half by 2030
	The role of renewable energy	Renewable energy generation share increases from 30% in 2019 to 40% in 2030	Renewable energy generation is 60% of electricity supply by 2030	Renewable energy generation share increases from 30% in 2019 to 40% in 2025
	The role of nuclear energy	36% growth in nuclear capacity by 2040	76% growth in nuclear capacity by 2040	No new nuclear power stations

2.2. Metrics

The metrics used by PACTA will allowed to determine if Banorte's portfolio is aligned with the different climate scenarios, described below.

2.2.1 Technology/fuel mix.

The climate transition requires of a shift from high-carbon technologies to low-carbon technologies one. Therefore, it is important to evaluate the use of these technologies within an industry and how they change over time.

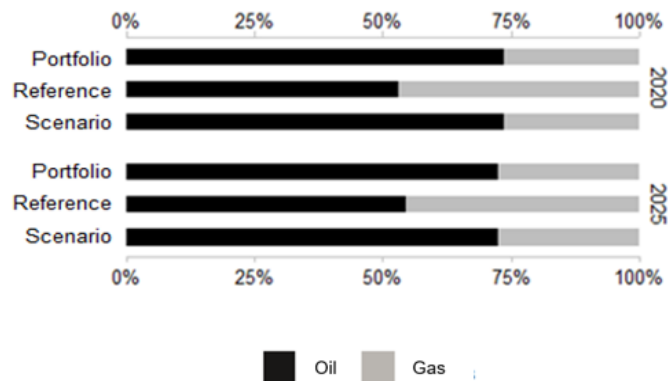
The technology/fuel mix metric shows for a specific industry, the mix of technology/fuel of a portfolio or client and how this mix should evolve to consider it to be aligned with the different climate change scenarios. That is, the metric measures the exposure of a financial institution to the economical activities which are affected by the transition to a low-carbon economy.

Technology/fuel mix metric is focused on the technology changes in the energy, fossil fuels and car industries. Changes in the processes used to generate the final products or changes in the final product nature. It is highlighted that metric uses as a main variable the changes that exist in the industry in terms of linked technologies to the use of renewable technologies.

The graphical representation of this metric shows two groups of bars that illustrate the bank's portfolio situation, according to the reference companies and the different scenarios in two-time horizons (2020 and 2025). Then, the description.

- **Portfolio:** Bank's portfolio participation in different technologies of the industry in order to reduce CO₂ emissions reduction.
- **Reference:** Reference portfolio considered by PACTA to evaluate the behavioral of the industry in a global level. Said portfolio corresponds to the *Asset Resolution* database, allied company of 2°II in PACTA's implementation; it considers 3,593 companies in the world which work in the Oil and Gas industry.
- **Scenario:** Series of parameters and assumptions described according to the global objectives achievement on climate change.

Graphic 1. Technology/Fuel mix metric



2.2.2 Volume production trajectory

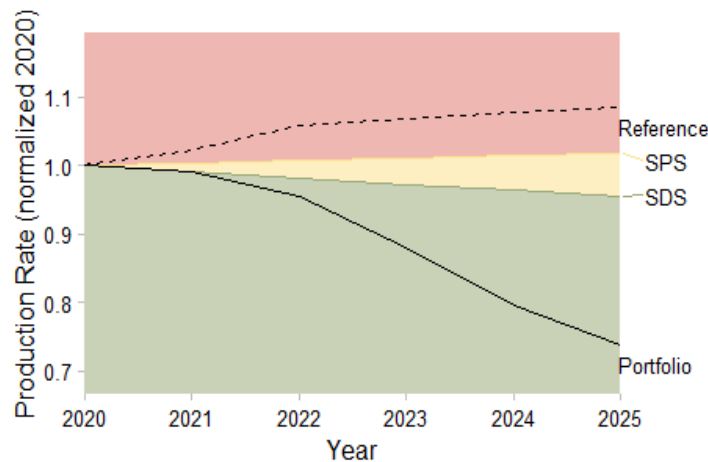
To align with the Paris Agreement objectives, it is required to evaluate the production trends that the different industries follow. This is very important for having parameters that allow us to identify the technologies which need to evolve with time to become clean technologies.

The Volume production trajectory metric measures the volume production alignment by technology/fuel of a portfolio or client, with the prescribed trends in the climate scenarios. It evaluates the portfolio's future production trends, that is, it indicates whether the exchange rate in the production amount is enough to accomplish the reference objective. This metric is used by the fossil fuels, energy and car industries.

The graphic representation of this metric shows the volume production trend between 2020 and 2025 for each industry technologies in question. For each asset class and technology, the results are displayed relative to the total change in the portfolio's production in a 5-year period. The mergers, acquisitions and increases in capital expenditures can lead to changes in these trends over time.

It is important to consider that the assessment of the different clients a production volume was considered according to the information given by *Asset Resolution*, however, the production volumes depend on factors such as public policies, international standard alignment, offer and demand of the market, price variations, access to new technologies, among other relevant factors that can modify the portfolio's behavioral trajectory and with it, compliance with the climate scenarios proposed by PACTA.

Graphic 2. Production volume trajectory metric



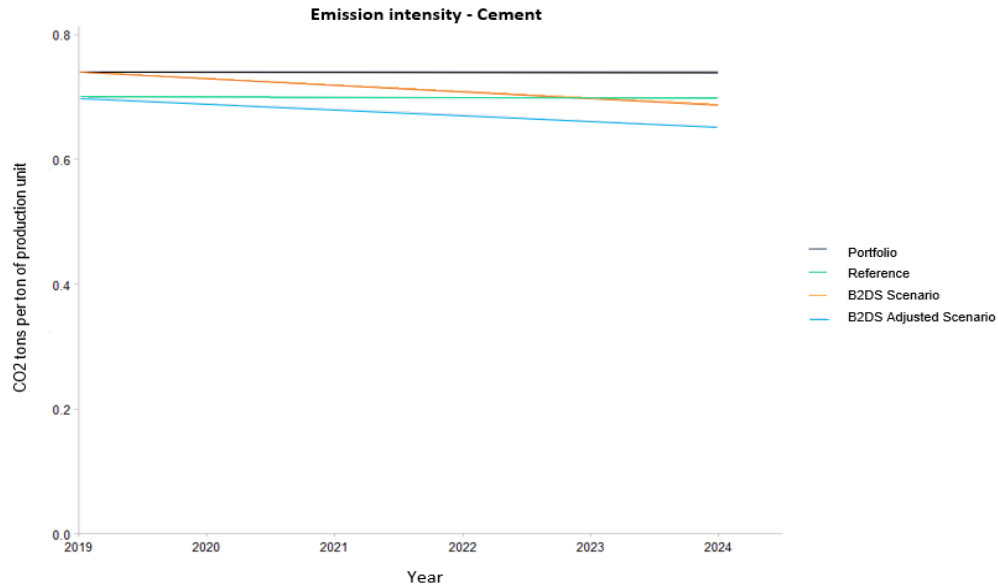
—	Production volume trajectory attributed to the portfolio of the financial institution for the next 5 years, based on assumptions where the volume of production decreases with the objective of achieving decarbonization and aligning with PACTA parameters.
- - - - -	Reference production volume trajectory or global benchmark.
SDS	Sustainable Development Scenario
SPS	Stated Policies Scenario
■	This area shows that the Institution's considered portfolio is in compliance with SDS or SPS, this under the parameter of a decrease in production levels.
■	This zone shows compliance with the parameters of the SDS and SPS scenario, it is the level where the benchmark and the portfolio should be kept
■	This area shows that the clients or companies evaluated are not aligned to the climate scenarios of the desired area for SDS or SPS, this is where the reference or global benchmark is located.






2.2.3. Emission intensity

This metric compares, for each industry, the current and projected issuance intensity of a portfolio against the evaluated emission intensity in the climate scenarios. It allows observing the issuance trend of the portfolio under review.

The metric is applied to the industries which do not have a decarbonization well-defined technology route. In PACTA this metric is calculated for the steel and cement sectors.

Graphic 3. Emission intensity –B2DS Scenario- Cement



	Reference emission intensity trajectory or global benchmark.
	Reference
	B2DS scenario
	B2DS adjusted scenario
	The results that are above the B2DS and B2DS Adjusted Scenario lines, allow us to conclude that it is a portfolio or group of companies that do not meet the parameters of the scenario, due to their high level of emissions and the lack of initiatives to its decarbonization.

3. SELECTED BANORTE PORTFOLIO

The portfolio considered in this exercise was made up of 25 clients, from the steel, aviation, cement, energy, oil and gas sectors.

Table 4. Steel, Aviation, Cement, Power, Oil and Gas sectors

Sector	Balance	% Balance	Amount	% Amount
Steel	\$ 3,408	8%	\$ 13,185	36%
Aviation	\$ 15	0%	\$ 15	0%
Cement	\$ 4,555	10%	\$ 5,296	15%
Power	\$ 18,337	42%	\$ 10,835	30%
Oil and gas	\$ 17,671	40%	\$ 7,039	19%
	\$ 43,986	100%	\$ 36,370	100%

4. ANALYSIS RESULTS

The exercise was directed towards the calculation on the three metrics recommended by PACTA, applied in the following sectors:

- *Technology/fuel mix* for fossil fuels and energy industry
- *Production volume trajectory* for the oil and gas industry
- *Emission intensity* for the cement, steel and aviation industries

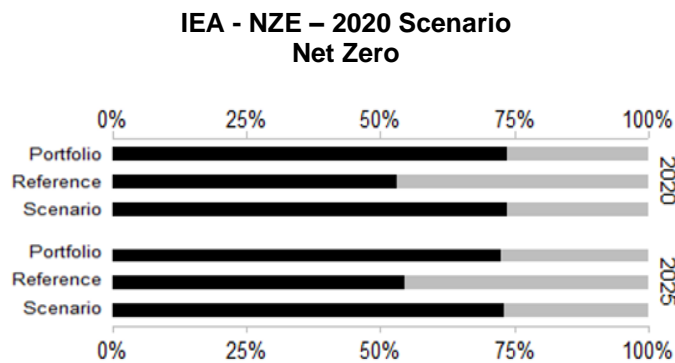
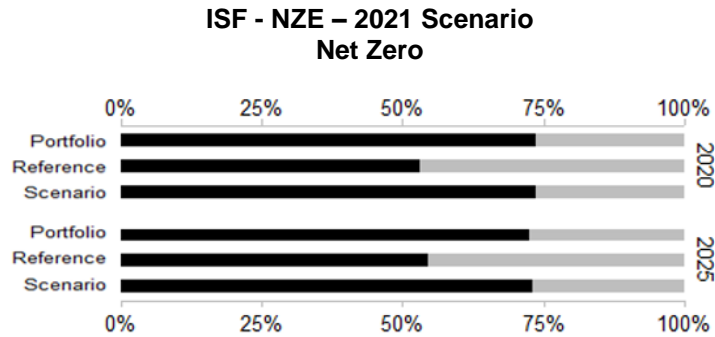
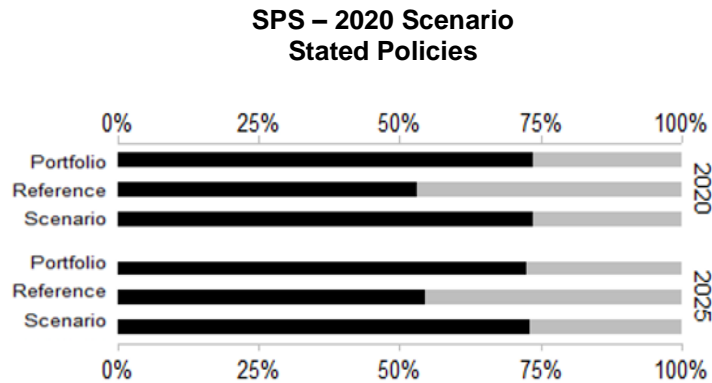
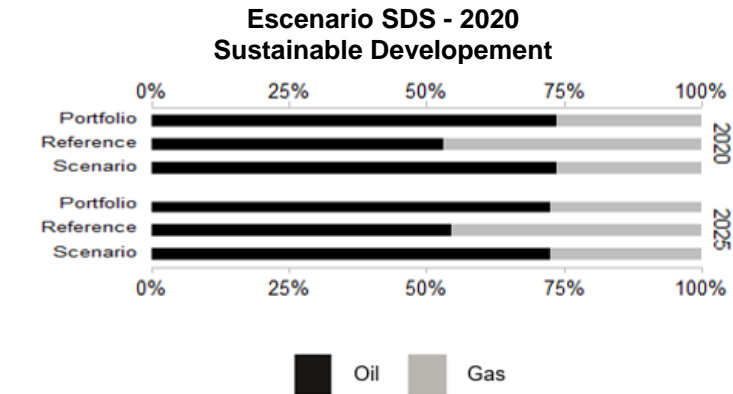
The *technology/fuel mix* and *production volume trajectory* metrics were applied to the SDS, SPS, IEA NZ and ISF NZ scenarios. The *emission intensity* metric was measured in the B2DS and ISF scenarios.

4.1 Technology/fuel mix - Fossil fuels

The graphics below show the measurement results of the *technology/fuel mix* for the selected portfolio in fossil fuels industry and according to the sustainable development scenarios (SDS), stated policies (SPS) and Net Zero (NZ). In all scenarios, Banorte's portfolio exhibits a similar behavioral. In 2020 and 2025 the portfolio shows approximately 73% exposure to oil technologies and 27% to gas technology. In comparison the industry reference shows a 53% exposure and 47% to oil and gas technologies, respectively. See graphic 4.

Considering that the selected sample for the analysis is made up of six clients with full balance of \$17.6 billion pesos and that only one client concentrates the 79% of it (\$13.8 billion pesos), the results are obvious. This client has not yet incorporated low emissions or renewable technologies within its processes, whereby, the metric reflects higher exposure to oil in each scenario and further alignment in the SDS and SPS case. However, the *technology/fuel mix* metric allows to observe that the transition towards a low-carbon technology required to mitigate the climate change effects and limit the global temperature rising, directly affects oil and gas industry, both globally and at Banorte, which shows greater exposure to emission-intensive technologies than the benchmark average.

Graphic 4 Technology/Fuel mix scenarios for fossil fuel sector portfolio sample



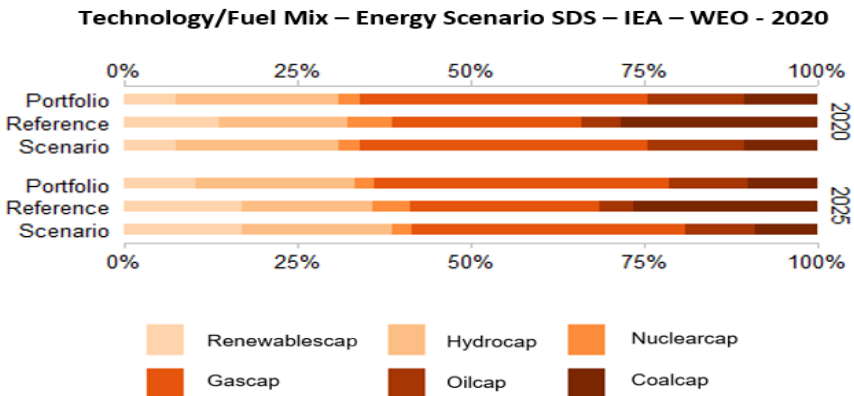
Therefore, in order to align with the different climate scenarios, contributing to the achievement of the objectives of the Paris Agreement and meet the expectations of its stakeholders, Banorte's portfolio requires to evolve fast towards low-emission technologies which allow to decrease its exposure to oil, adapt to the climate policies, sustainable development and, gradually, reach net zero emissions by 2050.

It is important to mention that the global trend indicates that the technology changes within oil and gas industry are generated in the long term, so the results may have a bias in the information. It is necessary to perform different measurements for adjusting the corresponding parameters for each scenario and with it, improving the obtained results.

4.2. Technology/fuel mix - Energy

The graphics below show the measurement results of the *technology/fuel mix* for the selected portfolio in the energy industry. The sample used represents an amount of \$18.3 billion pesos, where the most relevant client represents \$16.2 billion pesos, that is, 88% of the analyzed clients.

Graphic 5. Technology/Fuel mix scenarios for the Energy industry portfolio sample

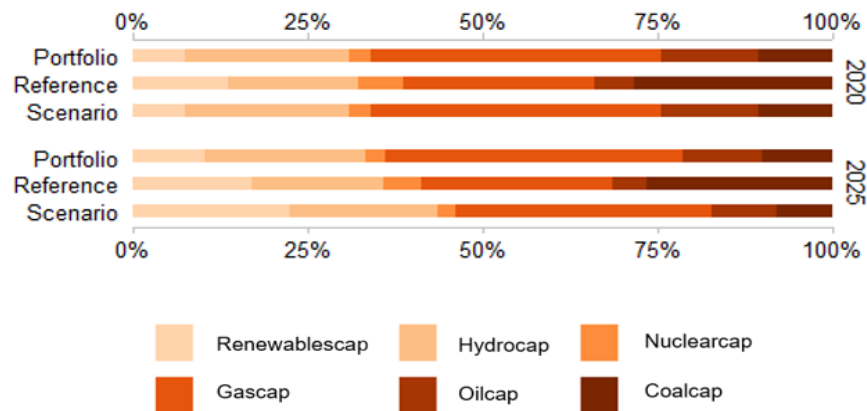


In the SDS scenario, about sustainable development, it is possible to observe that for 2020, Banorte's portfolio is aligned with the scenario, showing the combination of different types of technologies for the energy industry, with a trend of greater use of hydrocarbons and gas.

In 2025, the portfolio is misaligned with the scenario and the reference, which present a light evolution in renewable. It will be necessary to make higher institutional efforts in the oil, gas and renewable industries to achieve the sustainable development objectives.

When analyzing the reference or worldwide benchmark it is interesting identify relevant differences in the technologies combination for coal, oil, gas and nuclear energy. The reference registers the highest use of coal and renewable, as well as oil decline.

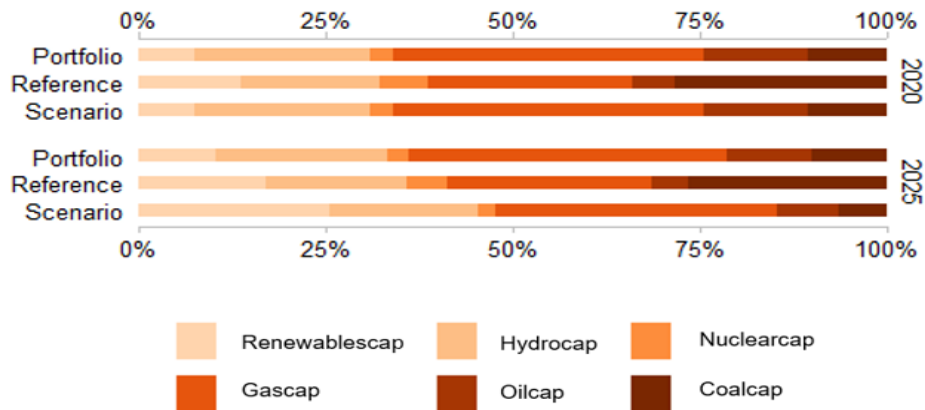
Technology/Fuel Mix – Energy Scenario ISF – 2020



In the ISF scenario it is possible to appreciate that, in 2020, the portfolio's behavioral and the scenario are similar to the one described in the SDS scenario, showing a higher exposure to the use of technologies for the hydrocarbons and gas industries.

In 2025 relevant variations are observed. At first, the scenario presents an evolution to a higher use of renewable and a marked decrease in the use of coal and oil. The reference tends to increase the use of renewable and the use of coal, meanwhile the portfolio promotes the least use of oil and gas and higher use of renewable and gas.

Technology/Fuel Mix – Energy Scenario NZE - 2021



Under the NZE scenario we watch an aligned behavioral between the portfolio and the scenario in 2020 with a higher use of technologies in gas, hydrocarbon and oil and gas mix industries. In 2025 a misaligned portfolio is observed with the reference and the scenario. Although the trends show a higher progress in the renewable industry, the portfolio should intensify actions to achieve net zero emissions in 2050, intervening in the coal, oil, gas and hydrocarbon industries.

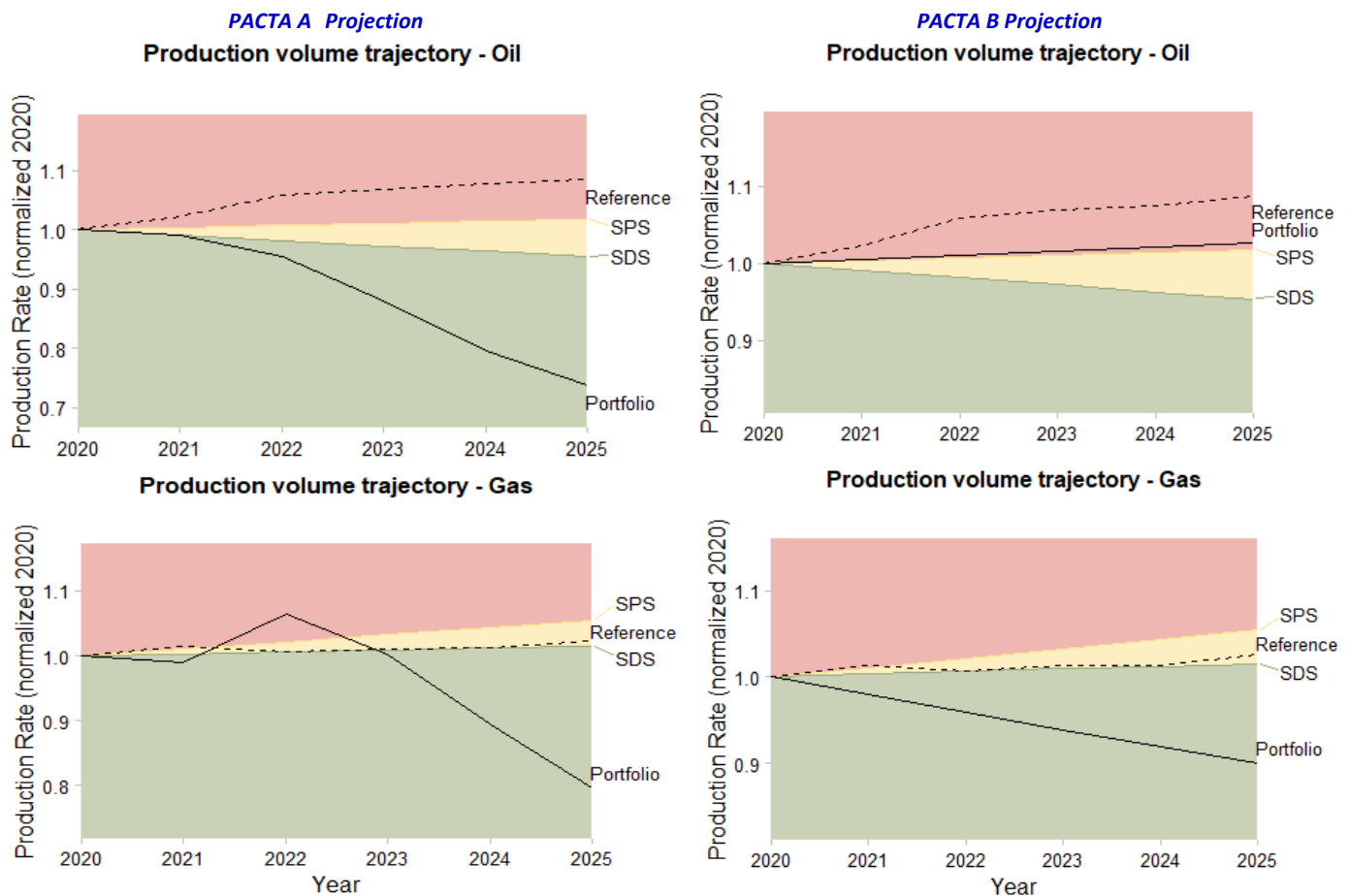
4.3. Production volume trajectory

The graphics below show the measurement results of the *Production volume trajectory* metric for the selected portfolio in the fossil fuels industry, according to the stated policies and sustainable development scenarios in two screenings, A and B.

- i. PACTA A screening: The base assumption is the reduction of the level of production in line with PACTA.
- ii. PACTA B screening: The base assumption takes as reference historical information and future production strategy of the leading company in the oil and gas industry in the country.

The purpose of developing B screening in the exercise, obeys to the necessity of having a close approximation to the present behavioral of Banorte's portfolio, considering the national context in terms of fossil fuels. With this, it will be possible to have data that better support the decision to maintain or increase the production levels.

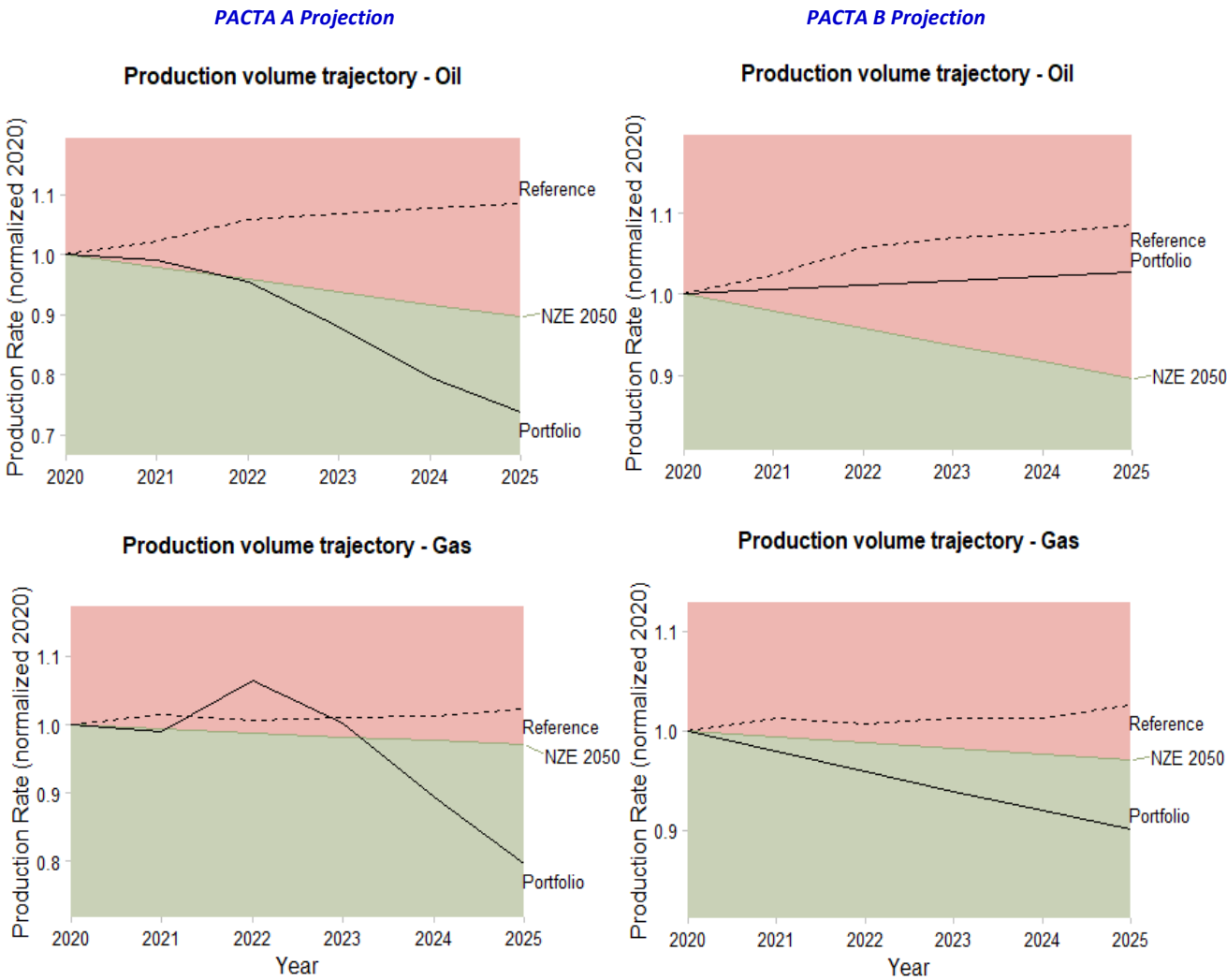
Graphic 6. Production volume trajectory for Oil and Gas sector portfolio sample – SPS – SDS Scenario



In type A screenings, for oil and gas industry, it is possible to observe that whether Banorte's portfolio starts a low-carbon production that favors the use of renewable energies, it could be located in the alignment zone (green zone), complying with the established parameters in the SDS and SPS scenarios recommended by PACTA in a time horizon to 2025.

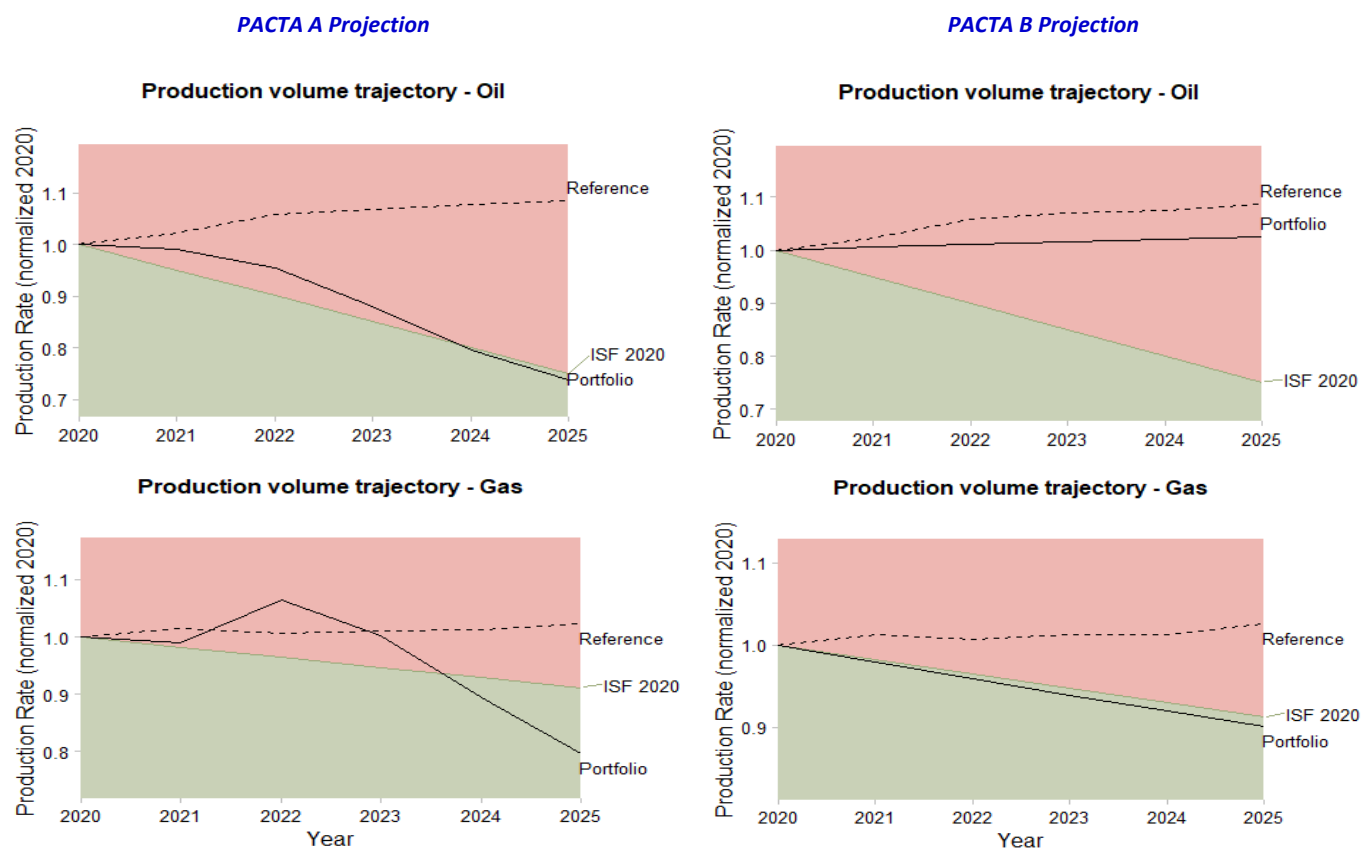
In type B screenings, for oil industry highlights that Banorte’s portfolio would be disaligned with the mentioned scenarios. Considering the 2020-2021 production levels of the most representative client of Banorte’s portfolio used for this exercise, as well as historical production data from the leader in oil and gas production in Mexico, it is observed that the portfolio would not be in possibility to accomplish with the SDS and SPS scenarios. Although the reference also leaves the alignment zone, once again, the need to undertake urgent action on the oil industry is detected, from the production companies to the financial institutions that grant them resources. The production trajectory graphic for gas shows a downward trend towards 2025 that shows an alignment with the recommended scenarios. In the case of Mexico, it is necessary to consider dependency on fuel imports.

Graphic 7. Production volume trajectory for Oil and Gas sector portfolio sample – NZE 2050 Scenario



The projections developed for the NZE 2050 scenario show the alignment of the oil and gas production volume trajectories in the Banorte portfolio. As mentioned above, meeting net-zero emissions assumptions requires immediate reduction or withdrawal of fossil fuel exploitation and boosting the generation and use of renewable energy.

Graphic 8. Production volume trajectory for Oil and Gas portfolio sample – ISF 2020 Scenario



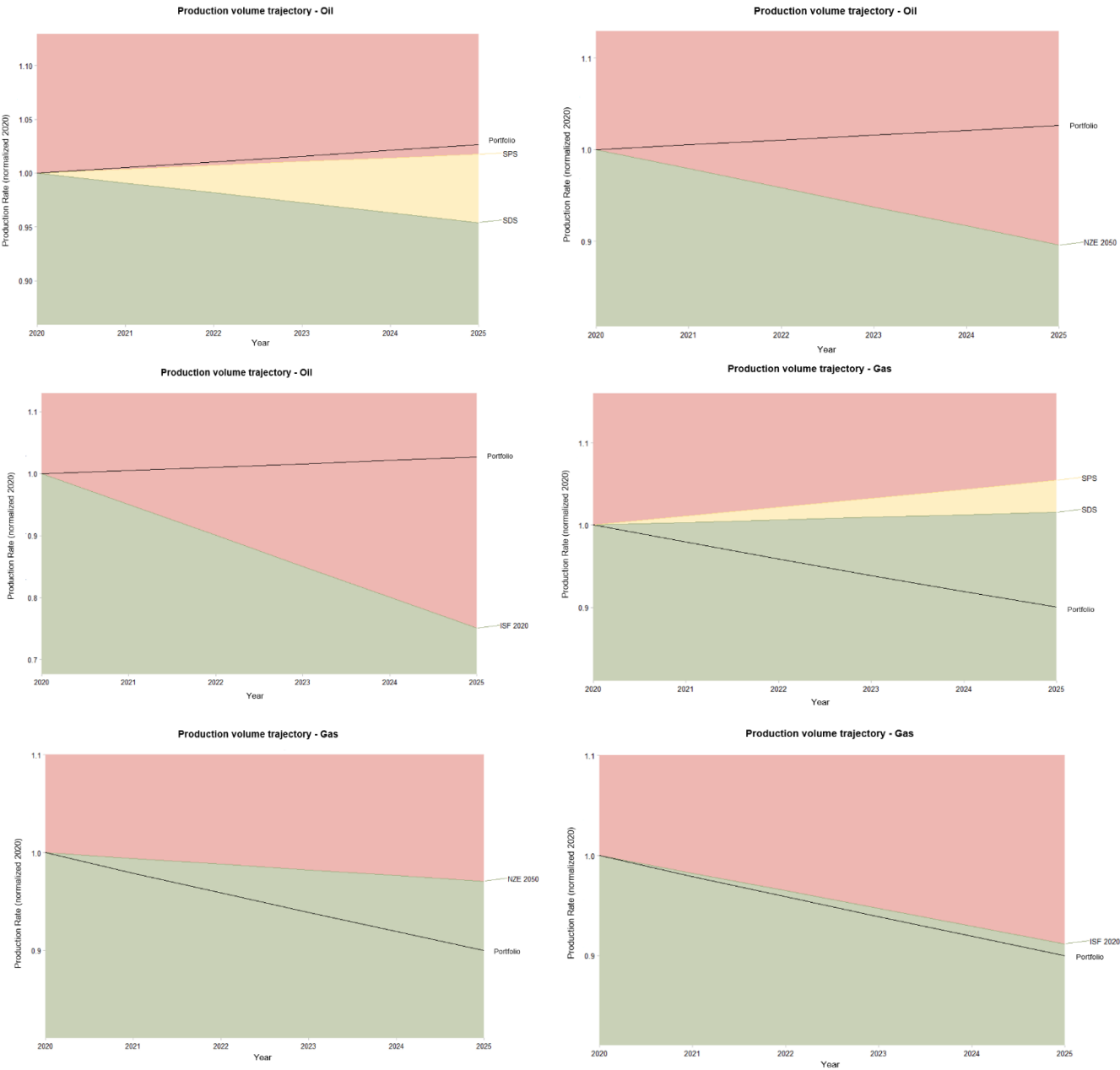
In type A screenings, for both the oil and gas industry, the production volume trajectories are shown in the alignment zone, which indicates that Banorte's portfolio started its decarbonization and renewable adoption for achieving net zero emissions in 2050.

In type B screenings, in the case of production volume trajectories for oil, it is observed that the portfolio is desaligned. In the case of gas production, the trend is located at the limit of compliance or alignment with the ISF scenario.

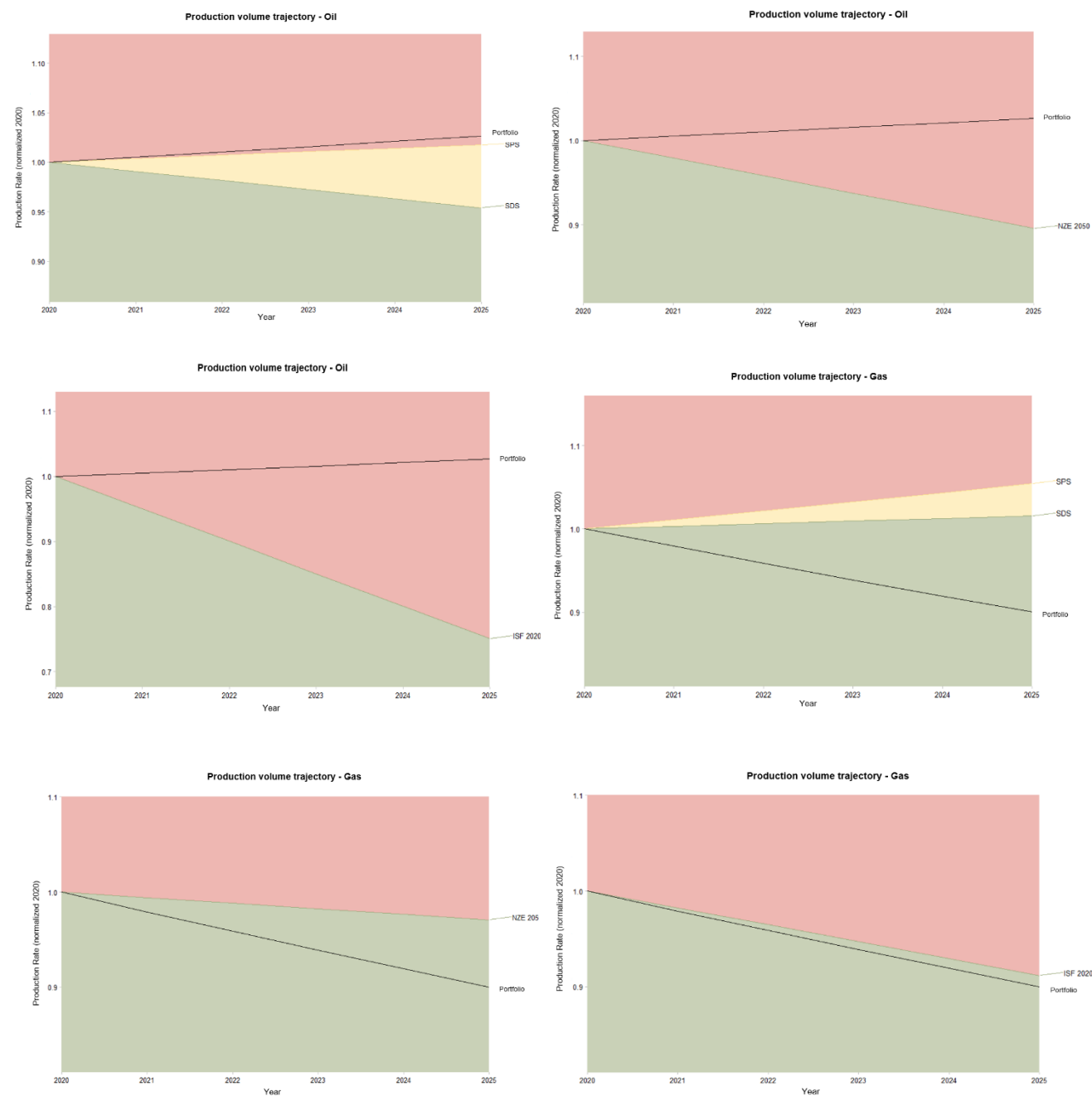
With the purpose to analyze the individual alignment of the clients who make up the oil and gas industry sample, Banorte's Loan Review area applied the PACTA methodology to each selected client for this exercise. The results are presented below.

Graphic 9. Loan Review projection - Per Client

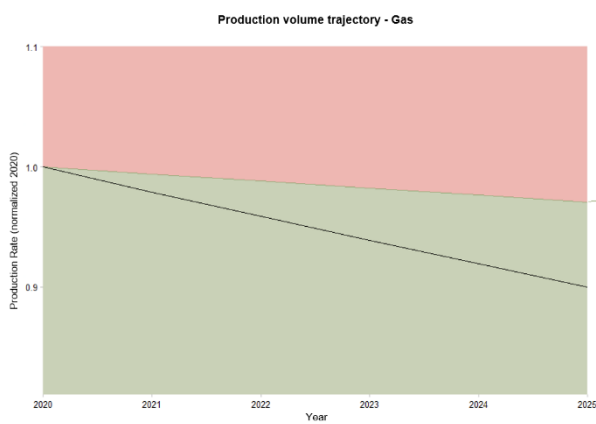
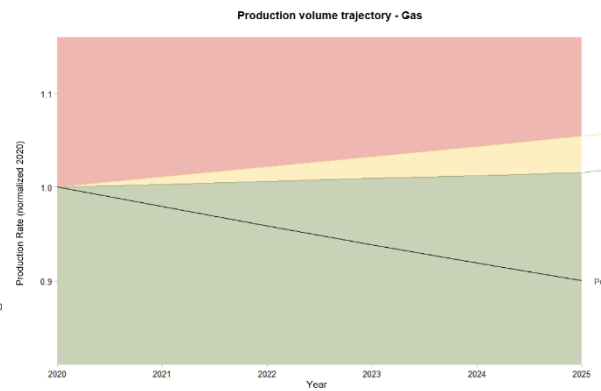
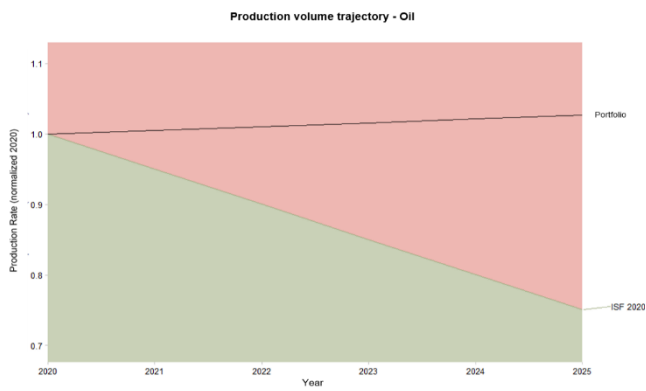
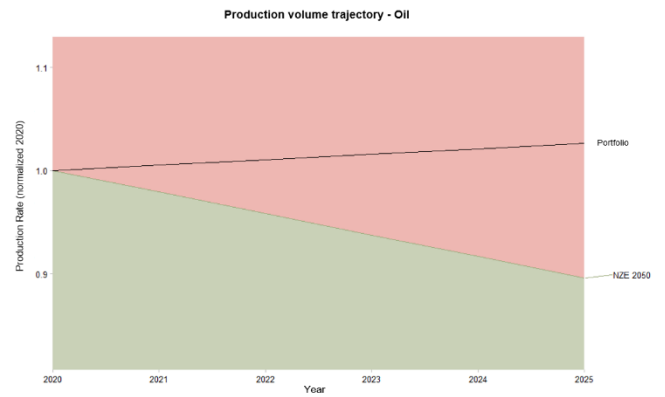
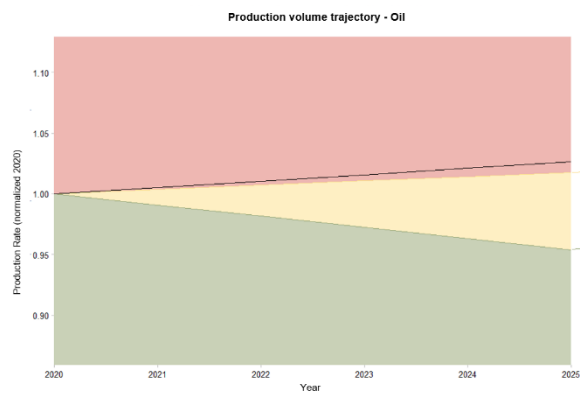
Client A



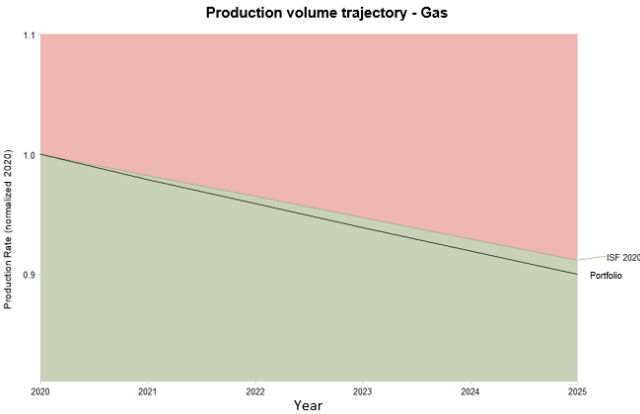
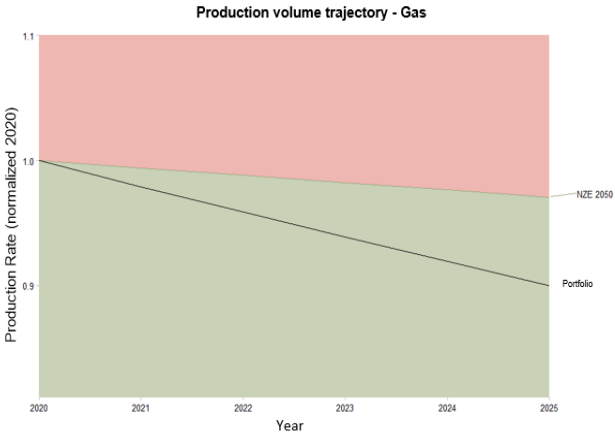
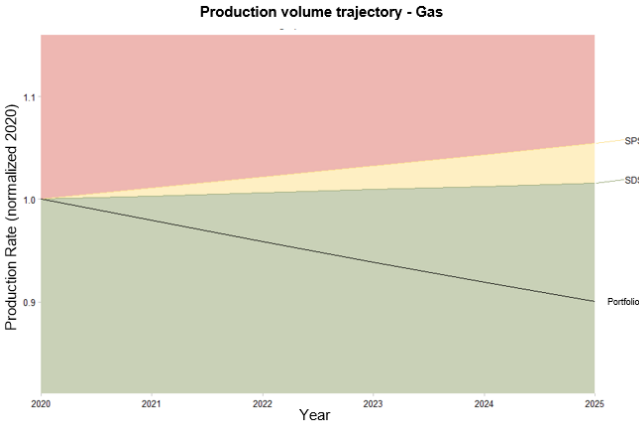
Client B



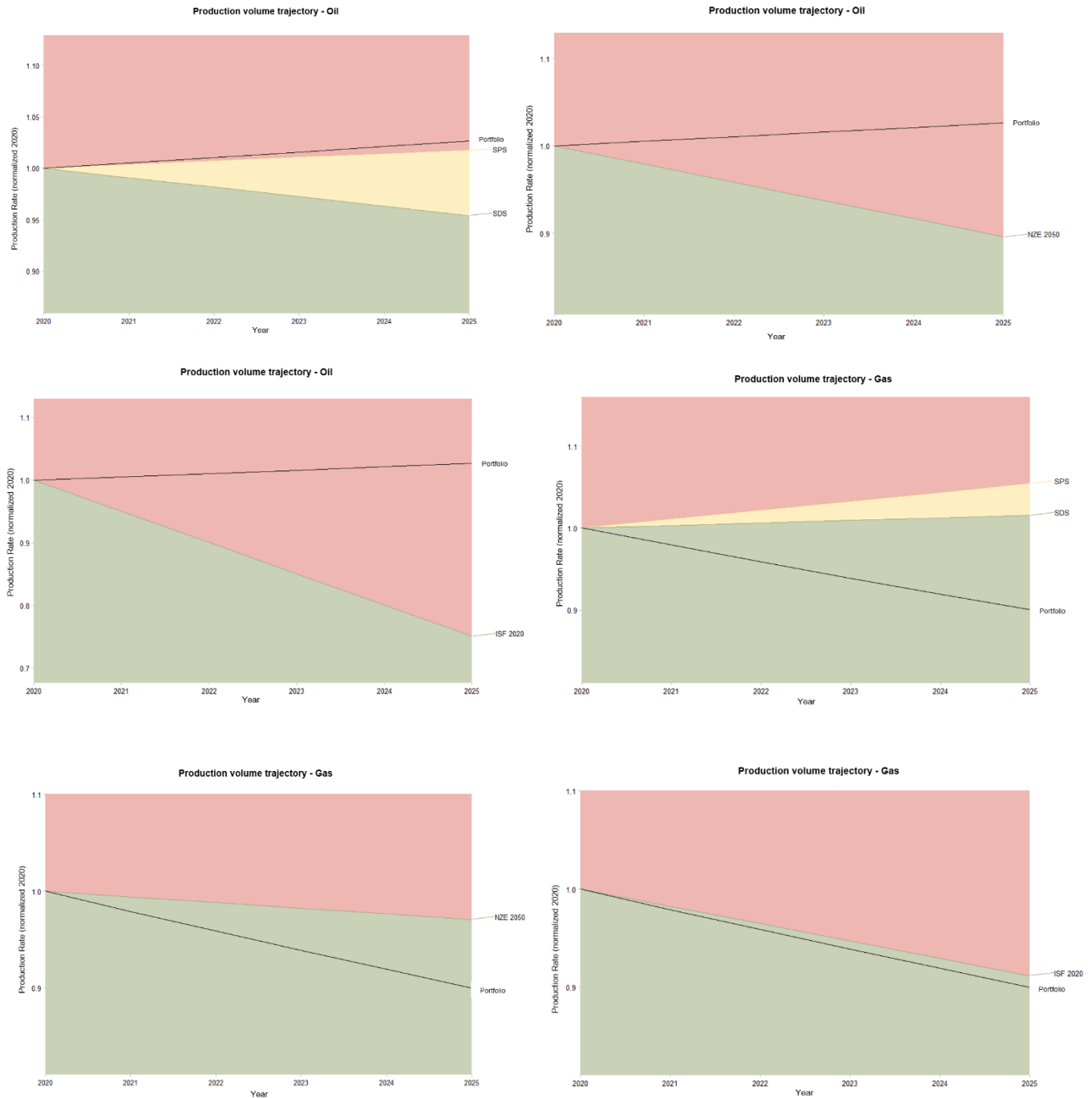
Client C



Client D



Client E



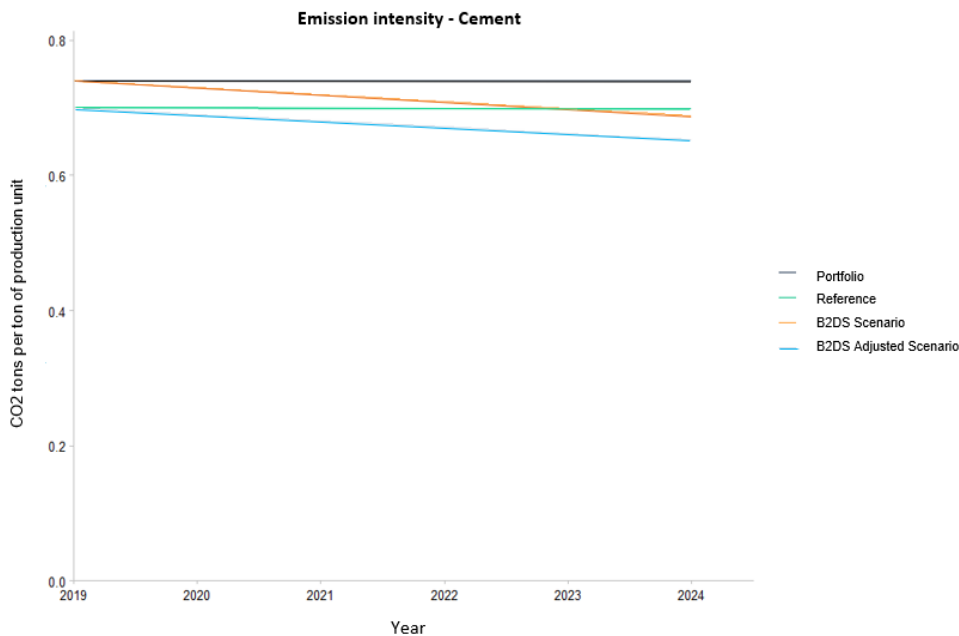
In general, the trajectories of production volume of the six clients present the same behavioral. For the oil industry, the plots show misalignment of the clients with the recommended scenarios, especially with those who look for the net zero emissions to 2050. For the gas industry, the gas production volume trends are in compliance with the scenarios; this is normal because gas is included in the transition variables of the different screenings.

Client D’s obtained results correspond only to the gas industry. In the different climate scenarios (SDS, SPS, NZE, ISF) the company complies with what is established for each of them. It is important to mention that the preponderant activities that Client D develops are platforms rent, maintenance services, among others.

4.4 Emission Intensity

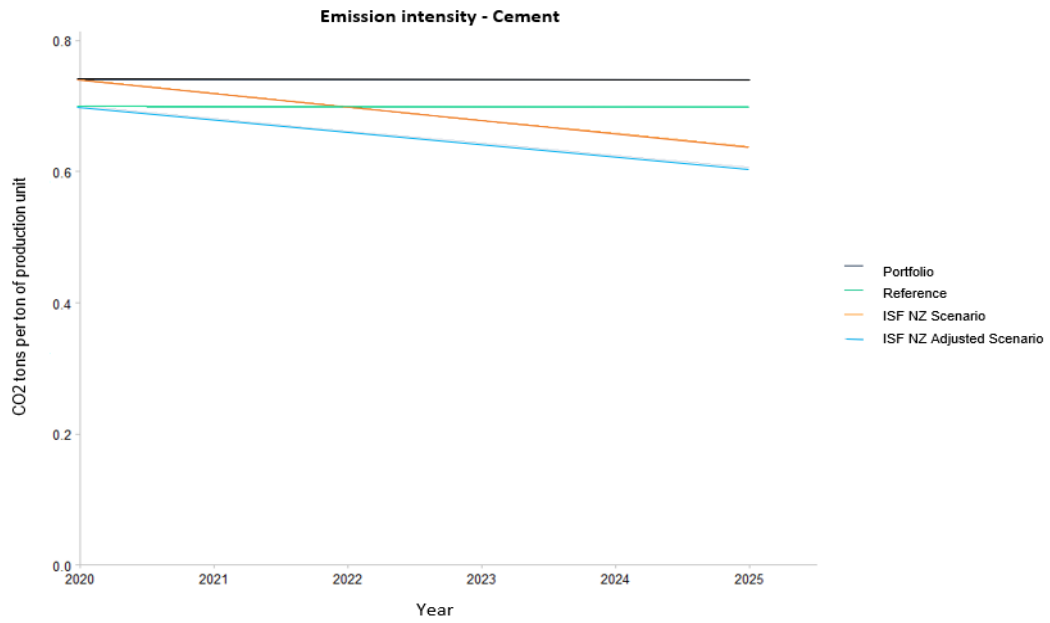
The following graphs show the measurement results of *Emission intensity* metric for the selected portfolio in the cement, steel and aviation industries according to the B2Ds and ISF scenarios. The sample used represents an amount of \$7.9 billion pesos. Next, the representation of the various scenarios and activities is described.

Graphic 10. Emission intensity – B2DS Scenario- Cement



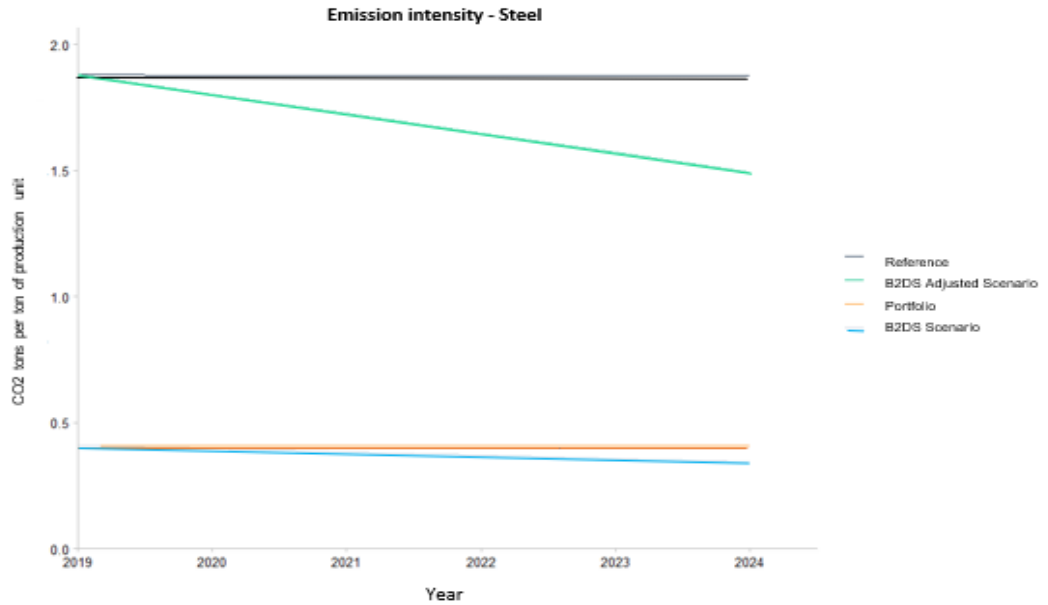
The B2DS scenario has the objective to limit the global temperature rising, however, the emission intensity metric analysis shows that the projected emissions for Banorte’s portfolio corresponding to the cement industry exceed the levels allowed, therefore, there is no alignment with the scenario.

Graphic 11. Emission intensity - ISF NZ Scenario- Cement



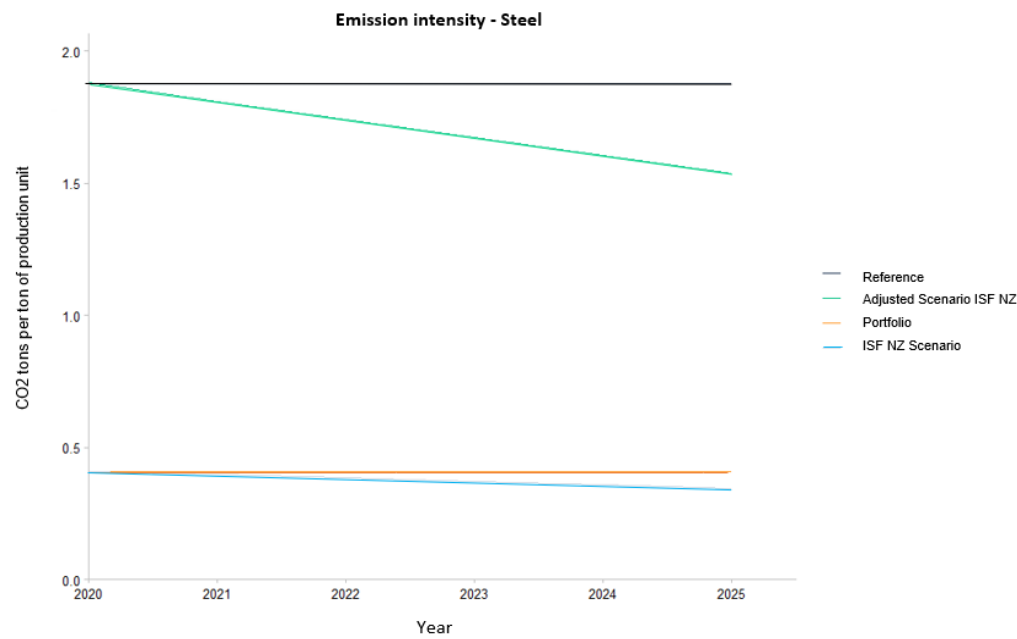
The ISF scenario intends to achieve CO₂ net zero emissions by 2050, when it comes to the cement industry and the proven generation capacity to generate high levels of emissions, it is possible to see in Banorte's portfolio graph that it is not aligned, it is even possible to observe a slightly higher trend each year.

Graphic 12. Emission intensity – B2DS Scenario- Steel



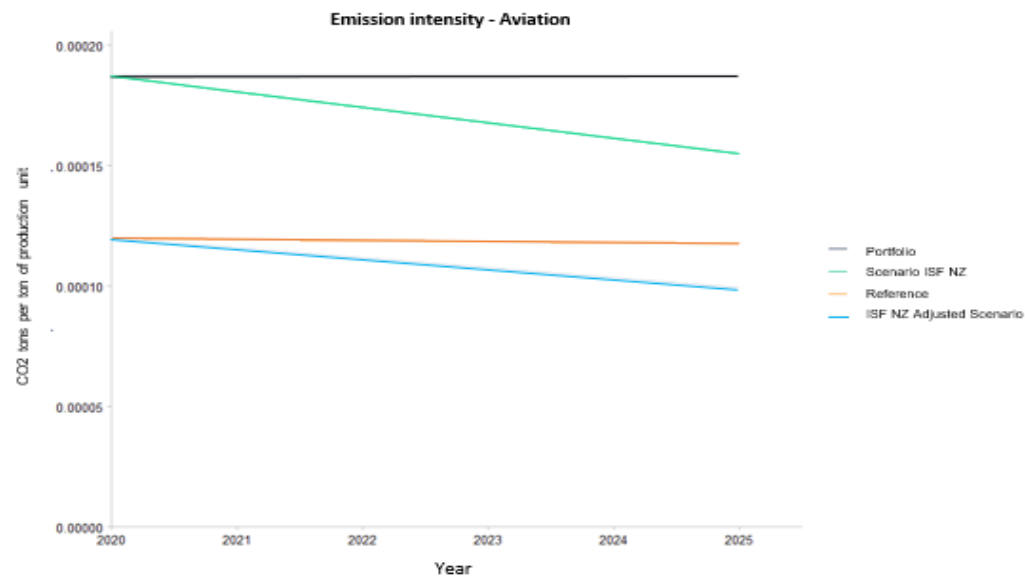
The B2DS scenario aims to achieve zero emissions around 2060. When analyzing the steel manufacturing industry it is possible to observe that the emissions intensity trend is slightly located above the indicated parameters. A relevant aspect is that in the adjusted B2DS scenario, the portfolio would be aligned because it is possible that the industry satisfies all the existent climate policies.

Graphic 13. Emission intensity - ISF NZ Scenario- Steel



The ISF scenario for steel has a similar behavioral as the B2DS scenario, in which Banorte’s portfolio is only aligned with the adjusted scenario.

Graphic 14. Emission intensity - ISF NZ Scenario- Aviation



At the time of doing this exercise, Banorte did not have clients from the aviation industry with current balance, however, the scenario was modeled for the portfolio of companies that have been accredited. Because the aviation industry is also characterized as a high emitter, and the lack of technology, the sample scenario shows that Banorte's portfolio surpasses the emissions intensity indicated by the scenario.

5. CONCLUSIONS

The results of PACTA methodology implementation confirm that the transition towards a low-carbon economy to mitigate the climate change effects and limit the global temperature rising in compliance with Paris Agreement, directly affects all the industries, as well as the financial institutions that finance them.

The analysis of the different metrics shows that Banorte's portfolio could align with the Sustainable Development and Stated Policies scenarios, considering the measurement of the *technology/fuel mix* and *production volume trajectory* metrics for the fossil fuels, power and oil and gas industries. This means that the portfolio has the potential to migrate to low-carbon technologies towards 2025.

In the case of Net Zero scenarios, that seek to achieve net zero emissions by 2050, it is difficult for Banorte's portfolio to align with all the industries and metrics; current technologies, production volumes and emissions of the oil, gas, energy, cement, steel and aviation industries are still distant from the ambitious Net Zero goals. Except for the gas sector, which seems to adapt to the assumptions of all scenarios due to its less polluting nature.

For the *emission intensity* metric, the behavioral screening of the related activities with the cement, steel and aviation industries showed that the generated emissions quantity surpasses the established limits in the scenarios, thus, the portfolio is not aligned. See table 5.

Table 5. Summary of results of the application of the PACTA methodology in the Banorte portfolio

Scenario	Technology/fuel mix		Production volume trajectory				Emission intensity		
	Fossil fuels	Power	Oil		Gas		Cement	Steel	Aviation
			A	B	A	B			
B2D2	NA	NA	NA	NA	NA	NA			
SDS									
SPS		NA							
IEA NZ									
ISF									

SDS: Sustainable development SPS: Stated policies IEA NZ: Net Zero ISF NZ: Net Zero

A: Projection A B: Projection B

NA: Not applicable



Aligned portfolio



Misaligned portfolio

It is important to mention although the results obtained are limited to the scope of the study and in some cases, they present flattering conclusions for some industries (oil and gas, for example), this first exercise clearly shows that, to comply with the energy model defined by climate scenarios, both companies and financial institutions urgently need to act on the parameters recommended by the scenarios.

The truth is that the global objectives in climate terms are not being fulfilled; there are countries like Mexico, where the current economic and political context is uncertain to favor the decarbonization, thus, physical and transition risks increase for the industry in general. Hence the undertaking of actions is the fastest possible.

The lines of action are clear. For clients, gradually decrease the use and exploitation of fossil fuels, while taking advantage of renewable and clean energies. For the financial institutions, defining climate strategies focused on decarbonization objectives of financing and investment portfolios, in climate financing, policies creation and engagement with customers.

At Banorte, the experience with PACTA allows to confirm actions to be gradually strengthened as part of the climate strategy. Some of them are:

- Increase sustainable financing to build low-carbon portfolio.
- Extend the issuance of green, social and sustainable bonds.
- Develop a risk appetite for sensitive (polluting) sectors and improve decision-making to drive portfolio alignment with the guidelines established by PACTA.
- Accompany clients in their decarbonization process.

These practices reaffirm the institution's commitment to sustainable development and climate change, demonstrating that it is possible to be competitive, while generating positive impacts and contributions for clients, society and the environment.

APPENDIX

Table 2. Oil and gas sector

#	Client	Sector	Balance	% Balance
1	A	Oil and gas	13,897	78.64%
2	B	Oil and gas	2,418	13.68%
3	C	Oil and gas	414	2.34%
4	D	Oil and gas	398	2.25%
5	E	Oil and gas	351	1.99%
6	F	Oil and gas	193	1.09%
Total			17,671	100.00%

The balances of the clients considered are taken until Dec 2020 because the Asset Resolution information provider uses this date for the implementation of the rest of the variables.

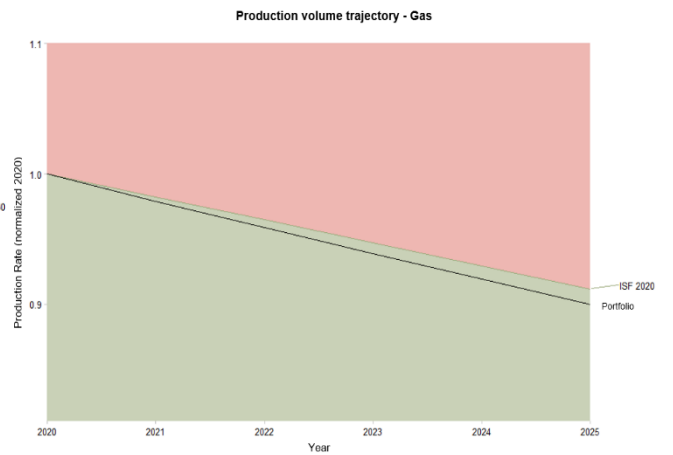
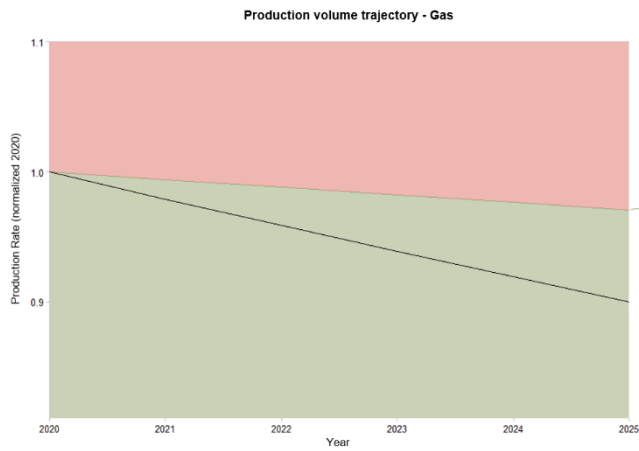
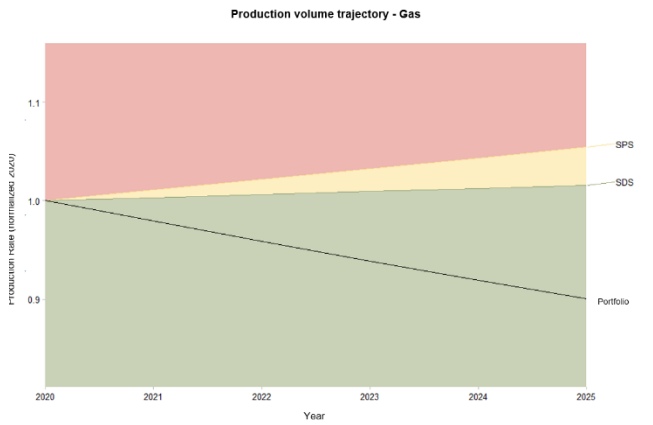
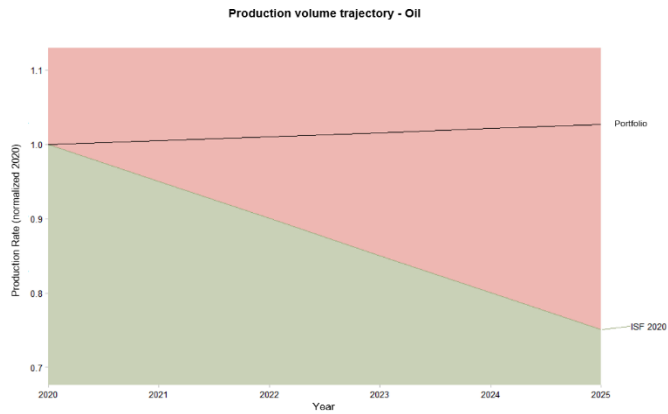
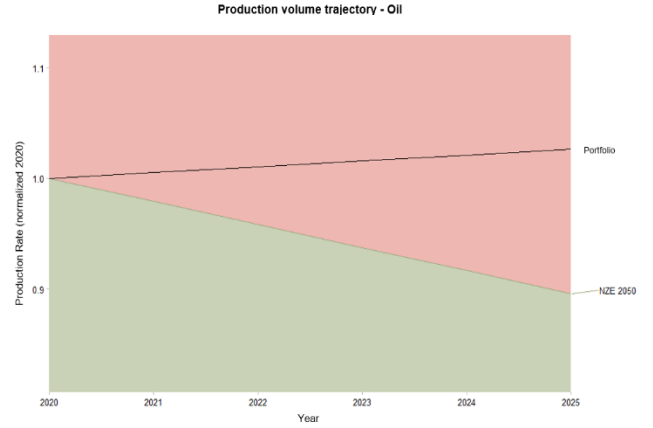
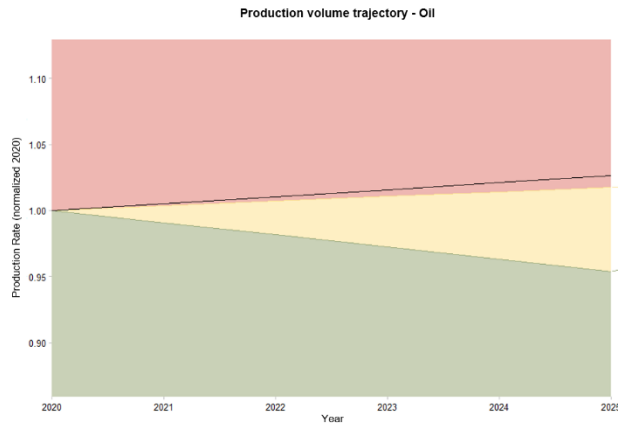
Table 3. Power sector

#	Client	Sector	Balance	% Balance
1	A	Power	16,187	88.28%
2	B	Power	661	3.61%
3	C	Power	502	2.74%
4	D	Power	421	2.30%
5	E	Power	414	2.26%
6	F	Power	121	0.66%
7	G	Power	20	0.11%
8	H	Power	6	0.03%
9	I	Power	3	0.02%
10	J	Power	1	0.01%
11	K	Power	0	0.00%
Total			18,337	100.00%

Table 4. Portfolio considered in the implementation exercise of PACTA in Banorte

#	Client	Sector	Balance	% Balance
1	A	Power	16,187	36.47%
2	B	Oil and gas	13,897	31.31%
3	C	Cement	3,628	8.18%
4	D	Steel	2,988	6.73%
5	E	Oil and gas	2,418	5.45%
6	F	Cement	927	2.09%
7	G	Steel	799	1.80%
8	H	Power	661	1.49%
9	I	Power	502	1.13%
10	J	Power	421	0.95%
11	K	Power	414	0.93%
12	L	Oil and gas	414	0.93%
13	M	Oil and gas	398	0.90%
14	N	Oil and gas	351	0.79%
15	Ñ	Oil and gas	193	0.43%
16	O	Power	121	0.27%
17	P	Power	20	0.04%
18	Q	Steel	17	0.04%
19	R	Aviation	15	0.03%
20	S	Power	6	0.01%
21	T	Power	3	0.01%
22	U	Power	1	0.00%
23	V	Aviation	0	0.00%
24	W	Steel	0	0.00%
25	X	Power	0	0.00%
Total			44,382	100.00%

Graphic 12. Oil and Gas Reference Client



ACRONYMS

2DII	2° Investing Initiative
B2DS	The Beyond 2° Scenario
CDP	Carbon Disclosure Project
CO₂	Carbon dioxide
EP	Equator Principles
GFNorte	Grupo Financiero Banorte
IEA-NZ	IEA Net Zero 2050 Scenario
ISF-NZ	ISF Net Zero 2050 Scenario
NZBA	Net Zero Banking Alliance
PACTA	Paris Agreement Capital Transition Assessment
PRI	Principles for Responsible Investment
PBR	Principles for Responsible Banking
SBTi	Science Base Targets
SDS	Sustainable Development Scenario
SPS	Stated Policies Scenario
TCFD	Taskforce on Climate-Related Financial Disclosures
TNFD	Task Force on Nature-Related Financial Disclosures

GLOSSARY

Concept	Definition
Paris Agreement	The Paris Agreement sets out a global framework to avoid dangerous climate change by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C. It also aims to strengthen countries' ability to deal with the impacts of climate change and support them in their efforts.
Adaptation	Adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential harms or to benefit from opportunities associated with climate change.
Bioenergy with Carbon Capture and Storage (BECCS)	Bioenergy with carbon capture and storage (BECCS) is the process of extracting bioenergy from biomass and capturing and storing the carbon, thereby removing it from the atmosphere. The carbon in the biomass comes from the greenhouse gas carbon dioxide (CO ₂) which is extracted from the atmosphere by the biomass when it grows.
Climate Change	The United Nations Framework Convention on Climate Change (UNFCCC), defines climate change as "climate change attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that adds to the natural variability of the climate observed over comparable time periods". The UNFCCC thus differentiates between climate change attributable to human activities that alter atmospheric composition and climate variability attributable to natural causes.
Sustainable portfolio	Financing for the development of activities or projects that generate positive impacts on the environment and society, in accordance with Banorte's Sustainable Taxonomy
Fossil fuels	General term to designate buried geological deposits of combustible organic materials that were formed by the decomposition of plants and animals that were later converted into crude oil, coal, natural gas or heavy oils when subjected to the heat and pressure of the atmosphere. Earth's crust for hundreds of millions of years
Scope 1 GHG emissions	Direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles).
Scope 2 GHG emissions	Indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling. Although scope 2 emissions physically occur at the facility where they are generated, they are accounted for in an organization's GHG inventory because they are a result of the organization's energy use
Scope GHG emissions	Other indirect emissions not controllable by the company; purchased products and services, business travel, employee commuting, waste disposal, use of sold products, transportation and distribution (upstream and downstream), investments, leased assets, and franchises. For financial institutions, scope 3 emissions corresponding to investments turn out to be the most relevant.

Greenhouse Gases (GHG)	Gases that contribute to global warming by absorbing infrared radiation, for example carbon dioxide (CO ₂).
Mitigation	Mitigation refers to efforts to reduce or prevent greenhouse gas emissions. It can include the use of new technologies and renewable energies, the increase in energy efficiency of old equipment or the change in management practices or consumer behavior.
Sustainable Development Goals	<p>The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.</p> <p>The 17 SDGs are integrated—they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability.</p>
Relevant climate sectors	According to PACTA, the relevant climate industries represent economic activities with a high intensity of emissions of carbon dioxide and other greenhouse gases.
Sensible sectors	Sectors of economic activity that have the potential to cause significant adverse environmental and social impacts (population displacement, loss of species, damage to cultural heritage, violation of human rights, among others) in areas whose natural, cultural, social and economic components, they have high value and vulnerability (mangroves, reefs, indigenous regions. Some sensitive industries are mining, oil and gas, energy, tourism, among others.

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