2022 CLIMATE REPORT

Strategy, risks & opportunities, net zero commitments

BNP PARIBAS

The bank for a changing world

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CEO FOREWORD

For many years, BNP Paribas has been convinced of the severity of climate change and the urgency of fighting it. Recent events and publications further emphasise this importance and emergency. In 2022, the world experienced once again dramatic weather events such as floods, large wildfires and extreme droughts. The latest Intergovernmental Panel on Climate Change (IPCC) synthesis report, published in March 2023, highlights the magnitude of climate crisis, the insufficiency of current global efforts, and the pressing need of always taking more ambitious action.

As the largest European bank, we believe in our responsibility to redirect financing towards low-carbon projects, with the aim of contributing to a net zero economy by 2050. For over a decade, we have been deploying very significant resources and efforts for the energy transition. In 2022 and early 2023, we entered a new phase of rapid acceleration:

- In 2022, BNP Paribas had clearly pivoted towards financing low-carbon energy. At the end of 2022, almost 55% of our energy production financing was dedicated to financing low-carbon energy.
- Regarding the alignment of our credit portfolios with global carbon neutrality by 2050, we publish in the present report our progress in the first three sectors (oil and gas, power, automotive) for which we disclosed targets last year, and we announce targets for three new sectors (steel, aluminium, cement).
- As we are committed to monitor the companies in which we invest, we took strong positions as shareholders to accelerate their transition and align their climate targets with a net zero economy in 2050.
- Early 2023, we confirmed that our exit path from oil is underway. We ceased financing oil exploration and production projects in 2016 and are committed not to provide any dedicated financing to development projects for new oil or gas fields.
- We published the first annual results of the CSR KPIs of our strategic plan for 2022-2025. One of them is the amount of support for the transition of our corporate clients to a low-carbon economy. With an amount of EUR 44 billion by end 2022, we are progressing with confidence towards our 2025 target of EUR 200 billion.
- We updated our charter on responsible representation to clearly refuse to be a member of organisations or lobbies that are not aligned with the 2015 Paris climate agreement.
- On top of continuously training all our client facing teams so that energy transition becomes one of the key topics of any client relationship, we created the Sustainability Academy to offer all our employees training, inforamtion and ressources to learn and act in favor of the ecological transition.

These progresses and commitments, alongside many others, are detailed in the current climate report, merging information that were included last year in our "Task Force on Climate-related Financial Disclosures" (TCFD) report[1] and in our "Climate analytics and alignment" report[2]. Most of the financial data used here was published in our 2022 URD [3].

Jean-Laurent Bonnafé

[1] BNP Paribas 2021 TCFD report
[2] BNP Paribas Climate analytics and alignment report, May 2022
[3] https://invest.bnpparibas/en/document/universal-registration-document-2022

I

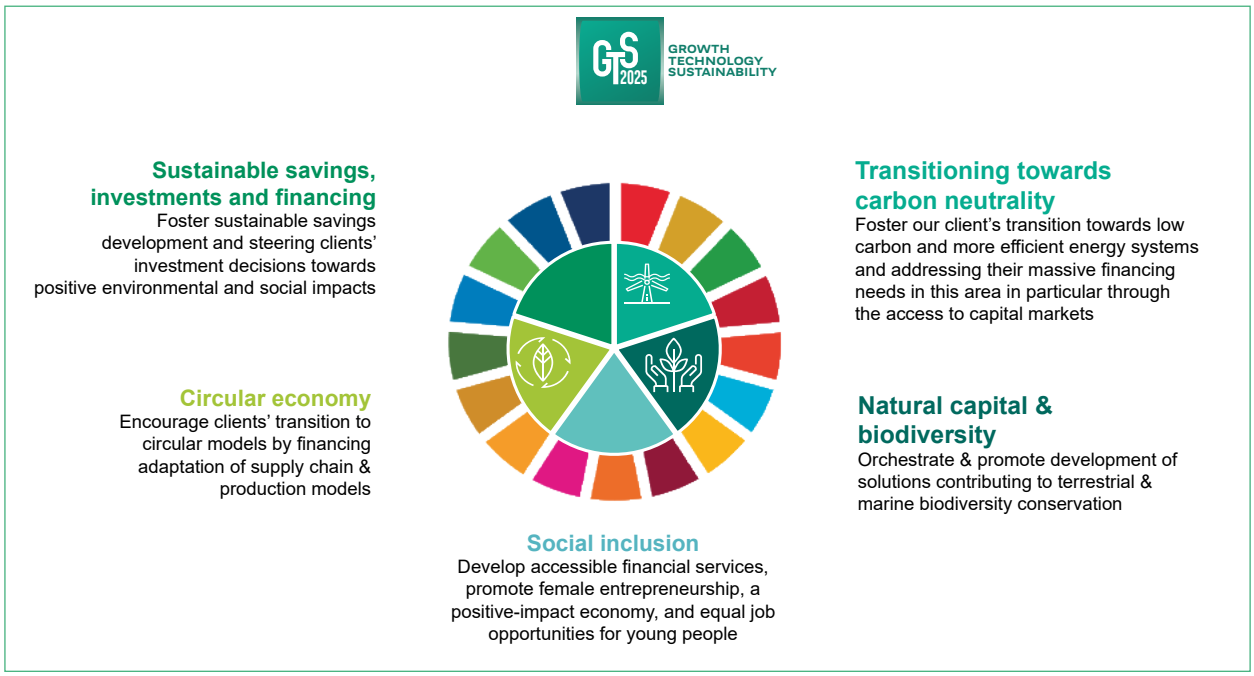
STRATEGY:
A RESILIENT BUSINESS MODEL TO FACE CLIMATE CHANGE

1 BNP PARIBAS EMBEDS CLIMATE AND TRANSITION TOWARDS CARBON NEUTRALITY AT THE CORE OF ITS STRATEGY

1.1 A 2025 strategic plan to accelerate sustainability transition

In 2021, BNP Paribas published its company purpose[3] "We are at the service of our clients and the world we live in." Thus, the Group continues engaging with its clients to create a sustainable low carbon future. To this end, BNP Paribas mobilises resources in favour of projects that will have a positive impact, and innovates to be a leader in sustainable finance.

In line with its company purpose, BNP Paribas' 2025 strategic plan, named "Growth, Technology, Sustainability" (GTS), places sustainability, including climate-related issues, at the heart of its strategy. Within the Sustainability pillar of the plan, the Bank has defined five priority themes that align with its clients' objectives and the United Nations Sustainable Development Goals (UN SDG). If climate is obviously central in the priority theme "Transitioning towards carbon neutral", it is also deeply connected to the other, such as "Circular economy" (e.g. via the reduction of resource consumption and the decrease in associated energy) or Sustainable savings, investments and financing" (e.g. via green bonds issuance, reducing the carbon footprint of the investment portfolio, etc.).



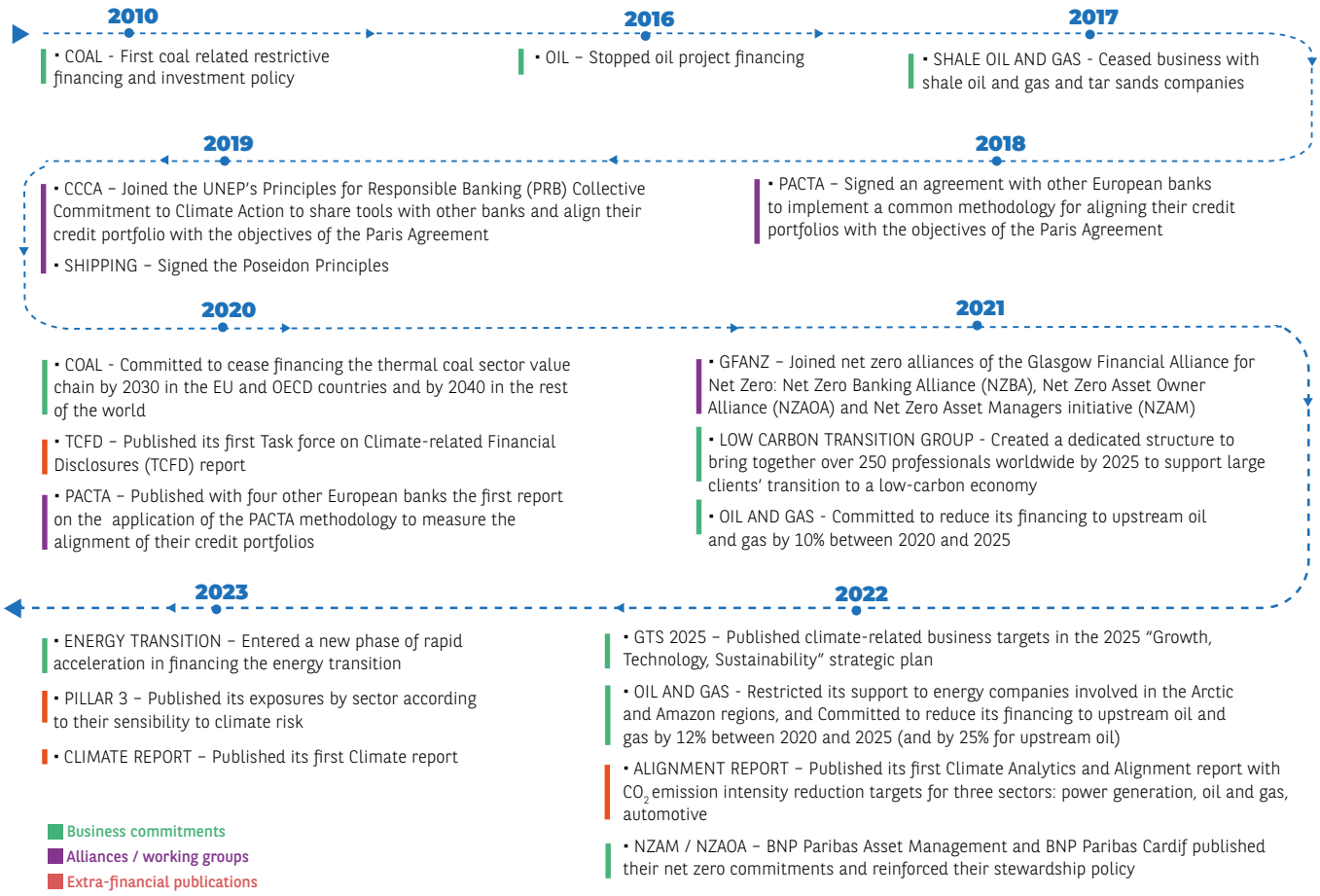
The Group has defined three strategic areas to accelerate the implementation of its commitments in CSR and sustainable finance:

1. Aligning its portfolios with its carbon neutrality commitment *(see Part IV. Metrics, targets and alignment progress);*
2. Engaging with clients to support them in the transition towards a sustainable economy *(see Part II. Section 3. BNP Paribas supports the low-carbon transition of all its clients);*
3. Strenghtening steering tools, processes and set-ups *(see Part II. Section 2. BNP Paribas strengthens steering tools, processes and set-ups to address climate change).*

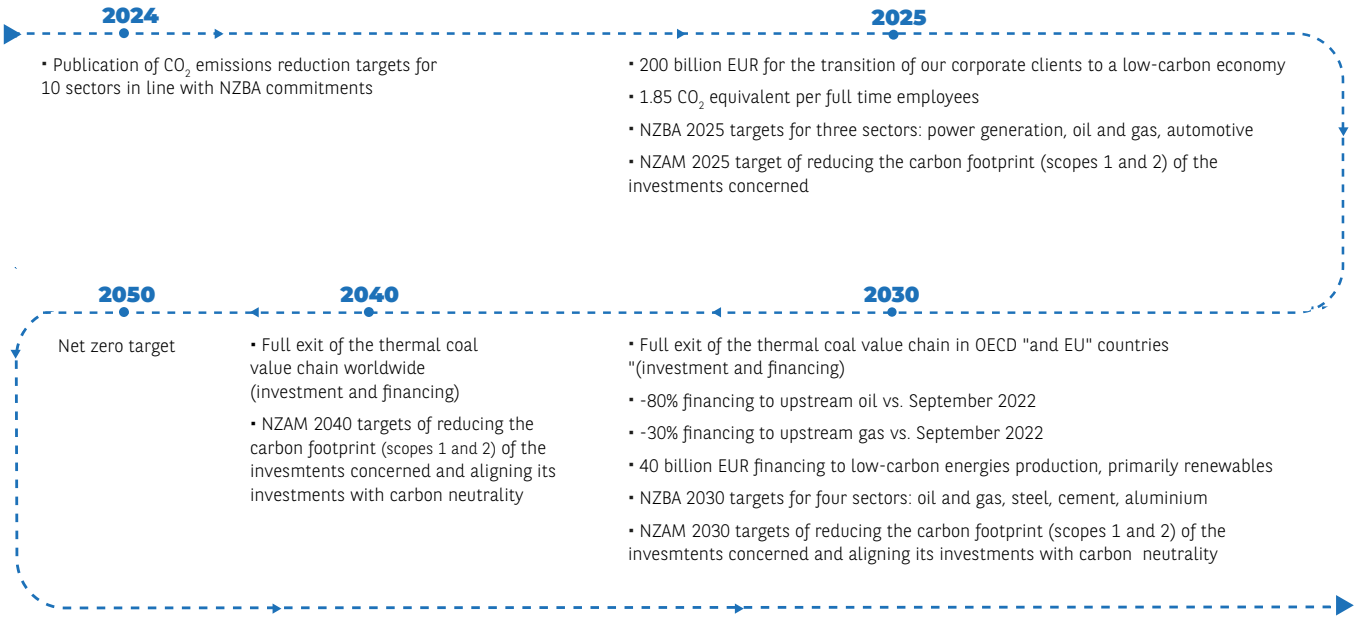
[3] https://group.bnpparibas/en/group/about-us/company-purpose

1.2 BNP Paribas takes strong commitments to combat climate change: timelines of its climate action

TIMELINE 1 | A long-standing commitment: landmark decisions and actions since 2010



TIMELINE 2 | Accelerating the pathway to net zero



FOCUS | Joining forces in alliances

Since the Paris Climate Agreement in December 2015, which aims at keeping the global temperature rise well below 2°C above pre-industrial levels and at pursuing efforts to limit the temperature increase further to 1.5°C, BNP Paribas has committed to gradually aligning its credit and investment portfolio with these objectives.

BNP Paribas is convinced that achieving these objectives requires the mobilisation of the entire financial system. The Group has therefore joined several initiatives such as United Nations Environment Programme (UNEP)'s Collective Commitment to Climate Action (CCCA) in 2019 and the Financial Services Task Force (FSTF) of the Sustainable Market Initiative (SMI) in 2021.

In September 2020, BNP Paribas and four other European banks published a report on the application of the PACTA (Paris Agreement Capital Transition Assessment) methodology to measure the alignment of their credit portfolios.

In 2021, this ambition was reinforced by the Group's decision to join the net zero alliances (NZBA, NZAOA, NZAM) of the Glasgow Financial Alliance for Net Zero (GFANZ) launched by the UNEP Finance Initiative.

1.3 BNP Paribas commits to monitor its financing and investment activities for a net zero economy by 2050

SECTOR FINANCING AND INVESTMENT POLICIES

Since 2010, as part of the implementation of its strategy to combat climate change, BNP Paribas has developed ESG financing and investment sector policies covering eight sectors, including the energy sectors with the largest impact on climate change. These restrictive policies lay down strict ESG criteria, including some related to climate;

Regarding the energy sectors, following the announcement in 2020 of a strategy for a full exit from the thermal coal value chain by 2030 in the European Union and OECD countries, and by 2040 in the rest of the world, BNP Paribas conducted a comprehensive analysis of its customer portfolio in the electricity generation sector. At the end of 2022, the Bank stopped its business relation with 90 companies in the energy production sector that continue to plan new coal-fired capacity and/or do not have a thermal coal exit strategy in line with BNP Paribas' objectives.

In addition, in 2017, BNP Paribas stopped supporting companies whose primary business is exploration, production and export of gas/oil from shale, oil from tar sands or gas/oil production in the Arctic. In 2022, BNP Paribas also tightened its financing restrictions in particularly sensitive ecosystems such as the Arctic and the Amazon.

In 2023, the Group accelerated again its exit from fossil fuels: BNP Paribas is committed not to provide any financial product or service dedicated to development projects for new oil or gas fields.

ACTIVITY MONITORING AND EXCLUSION LIST

To identify the companies with the highest environmental risks in addition to sector financing and investment policies, BNP Paribas manages an activity monitoring and exclusion list. The clients under monitoring are subject to close supervision to ensure that they are transitioning their activities toward lower emitting business practices. The Group prohibits any new business relationship with companies under exclusion. In 2022, 1,369 companies were under exclusion and 121 under monitoring.

VIGILANCE PLAN

Since the adoption of the French Duty of Care Law in 2017, BNP Paribas is implementing a vigilance plan to identify and prevent the risks of serious violations to human rights and fundamental freedoms, harm to human health and safety, and harm to the environment. It applies to all employees, activities, subsidiaries controlled by the Group, including suppliers and subcontractors, and is published in the Bank's Universal Registration Document each year.

In BNP Paribas vigilance plan[4], climate change and energy transition stood out in the materiality matrix that classifies around a hundred extra-financial topics according to their relevance for the Group's internal and external stakeholders. The Bank's vigilance approach includes the risk of harm to the environment, considering climate physical and transition risks, GHG emissions (CO_2, methane, and others).

[4] *BNP Paribas Universal Registration Document and Annual Financial report 2022, page 692*

FOCUS | Accelerating in the financing of the energy transition

BNP Paribas is even **more pro-actively and drastically redirecting financing**, that was historically granted to fossil energies, **towards low-carbon energies**. At the end of September 2022, BNP Paribas' financing for low-carbon energies production amounted to 28.2 billion EUR, already nearly 20% higher than that for fossil energies production (23.7 billion EUR). BNP Paribas has set a target of 40 billion EUR of financing for the low-carbon, mainly renewable, energy production by 2030. It will account for 4/5th of the Group's financing for energy production.

The Bank has already implemented or initiated an exit trajectory for each of the fossil energies:

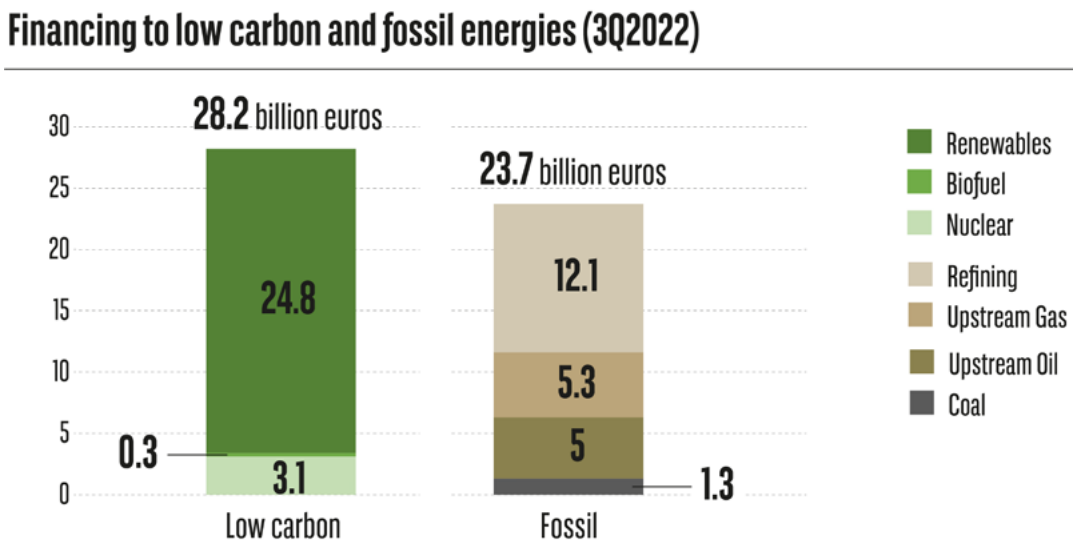
- An already very advanced exit from thermal coal, definitive by 2030 in the European Union and the OECD and by 2040 in the rest of the world.
- A fully completed exit from non-conventional hydrocarbon specialists.

In addition, BNP Paribas will no longer provide any financing dedicated to the development of new oil and gas fields regardless of the financing methods.

In the oil sector, BNP Paribas will reduce its financing of oil exploration and production by 80% by 2030, compared to end of September 2022, as follows:

- No longer providing any financing dedicated to the development of new oil fields.
- Phasing out financing to non-diversified oil exploration and production players (independent oil companies) which is intended to support oil production.
- Reducing the share of the general corporate-purpose facilities which is allocated to oil exploration and production.

As regards gas exploration and production, BNP Paribas will cease all financing dedicated to the development of new fields. As announced on January 24th, 2023, BNP Paribas is committed to reducing financing for gas exploration and production by more than 30% by 2030 (vs. September 30th, 2022 baseline).



1.4 BNP Paribas reduces its own operational emissions

BNP Paribas' strategy to reduce the environmental impacts of its operations (i.e. its direct emissions - scope 1), its indirect emissions related to energy purchases (scope 2) and its indirect emissions related to business travel (scope 3.6) consists in both reducing the energy consumption of its operations and increasing its share of low-carbon electricity. In addition, since 2017, the Group annually offsets the residual greenhouse gas emissions released the preceding year *(see related targets and metrics in Part IV. Section 1 Net zero alignment update and new sectors).*

[5] *In the whole report, the use of the word financing should be understood as credit exposure.*

2 BNP PARIBAS IDENTIFIES THE MAIN CLIMATE-RELATED RISKS AND OPPORTUNITIES

2.1 Climate change and its consequences are identified as risk drivers for BNP Paribas

Climate change and its consequences are identified as risk drivers for BNP Paribas, and recognised as such in its Universal Registration Document (URD). In particular, the chapter meeting legal and regulatory requirements relating to risks of the BNP Paribas Group (Chapter 5 - Pillar 3)[5] states that:

"Environmental risks and, more particularly, those associated with climate change are likely to translate into financial risks for the Group. The BNP Paribas Group is exposed to risks related to climate change, either directly through its own operations or of its assets or indirectly through its financing and investment activities. The main typical risk factors related to climate change are as follows.

PHYSICAL RISKS

resulting from the direct impact of climate change on people and assets due to extreme weather events or long-term shifts in climate patterns such as rising sea levels or rising temperatures.

TRANSITION RISKS

resulting from a change in the behaviour of economic and financial agents in response to the implementation of energy policies, change in regulation, technological innovations or changes in consumer preferences.

Furthermore, consequences in terms of liability may arise from these two risk factors. They correspond to potential disputes, claims for compensation, legal proceedings brought against a company, a State or a financial institution that could be held liable by any stakeholder or citizen who has suffered from climate change. In line with international work and in particular that of the Network of Supervisors and Central Banks for Greening the Financial System (NGFS), BNP Paribas considers the risks associated with the emergence of legal proceedings related to climate change for companies and investors, including liability risks, as a subset of physical and transition risks.

More specifically, **the consequences of climate change on the Bank's activity are considered in the risk identification framework** as risk drivers and integrated in the Group's risk management scheme. The potential impact of these risk drivers are monitored by BNP Paribas in the conduct of its own business and that of its counterparties, and in its proprietary and third-party investments.

[6] BNP Paribas Universal Registration Document and Annual Financial report 2022, Chapter 5 "Risks and Capital Adequacy – Pillar 3", page 303

⤡ Examples of potential impacts of transition risks

TYPE OF RISK	DESCRIPTION	BUSINESS AFFECTED	TIME HORIZON TO MATERIALIZE (ST, MT, LT)
Business and Strategic Risk	Decreasing revenues and loss of market share	All activities	MT
	"Stranded assets"*	All activities	ST/MT
Legal and Regulatory Risk	Judicial proceeds, for instance linked to infringement of Duty of Care obligations	Financing activities	ST
Credit, Counterparty and Settlement Risk	Clients' default	Financing activities	MT
	Fall in value and inability to rent certain properties	Residential Real Estate	ST/MT
	Shift in consumer preferences	All activities	ST/MT
Reputational Risk	External perception of BNP Paribas as insufficiently "green", generating negative externalities	All activities	ST
	In asset management activities, suspected greenwashing for unduly labelling sustainable funds	Asset Management	ST
Liquidity Risk	Behavioural changes	All activities	ST/MT
	Regulatory changes	All activities	ST/MT
Market Risk	Impact of carbon prices and/or a carbon tax, repricing of carbon-intensive assets	Market activities	ST/MT
	Decrease in the value of funds	Asset Management	MT
Operational Risk	Rise in carbon prices (tax or quotas)	Internal	MT
	Call for additional investments	Internal	MT

* "Stranded assets" are assets that have suffered from unanticipated or premature write-downs, devaluations or conversion to liabilities

⤡ Examples of potential impacts of physical risks*

TYPE OF RISK	DESCRIPTION	BUSINESS AFFECTED	TIME HORIZON TO MATERIALIZE (ST, MT, LT)
Business and Strategic Risk	Lower revenues because of value chain impacts and business disruption Stranded assets and fall in value Under-performance of fund	All activities	MT/LT
Credit, Counterparty and Settlement Risk	Credit losses Increased demand for liquidity Increased capital and insurance costs to cover damages	Financing activities	MT/LT
Market Risk	Sharp fall in prices or revaluation of financial assets and commodities	Market activities & Asset Management	MT/LT
Operational Risk	Supply chain disruption Partial or total destruction of a critical buildings (including data centers) Decrease in worker productivity	Internal	MT/LT

*The physical risks can be acute risks (event-driven such as water floods, wildfires, cyclones, etc.) or chronic risks (longer-term shifts such as the increase in temperature, the shifts in rainfalls, the rise of sea level, etc.).

Legend: Short term (ST), i.e. within two years; medium term (MT), i.e. between three and five years; or long term (LT), i.e. after five years.

2.2 The energy transition also represents opportunities for BNP Paribas

As indicated by the International Energy Agency (IEA) in its "World Energy Outlook 2022[7]", getting on track for the NZE (Net Zero Emissions) scenario by 2050 will require to triple the investments on clean energy and infrastructure by 2030. It estimates at **4 trillion USD annulally the investments required in low-carbon energy until 2030 to enable alternatives to fossil fuels for companies and individuals.** It also states that whereas energy investment accounted for just over 2% of global GDP annually between 2017 and 2021, it needs to rise to nearly 4% by 2030. Among the key milestones on the pathway to net zero emissions by 2050, the IEA NZE scenario shows nearly 90% of electricity should be produced from renewables in 2050, while nearly 50% of electricity is from low-emission sources in 2021. In addition, Electric Vehicles should represent 60% of vehicles sold globally by 2030 across all modes to align with a trajectory that would reach net zero CO_2 emissions by 2050[8].

Addressing these challenges and implementing these changes require massive investments by corporates, institutions, and the public sector. The in-depth transformation of business models, in terms of technology, human resources, infrastructure and organization, represents many business opportunities for BNP Paribas. **The transition is a historic opportunity for growth, job creation, innovation, and a sizeable market for entrepreneurs and innovators that provide solutions to scale.** By enabling all its clients to transition to a low-carbon economy, BNP Paribas believes that it will help create positive environmental impact worldwide and contribute to a sustainable economy with long-term and durable performance.

⬎ Examples of potential climate-related opportunities for BNP Paribas

MAIN BUSINESS LINE AFFECTED	OPPORTUNITY	TIME HORIZON TO MATERIALIZE (ST, MT, LT)
Corporate and Institutional Banking (CIB)	Financing the energy transition and low-carbon energy production	ST
	Supporting corporate clients in their low-carbon transition through the Low Carbon Transition Group	ST/MT
	Expanding the range and volume of sustainable financing solutions factoring climate-related criteria (green bonds and loans, Sustainability-Linked Bonds and -Loans...)	ST
Commercial, Personal Banking & Service	Expanding the offers to support the energy renovation of individual homes (green mortgage loans, special consumer loans...) and SME properties	ST/MT
	Developing affordable sustainable mobility offers for individuals, SMEs and midcaps	MT/LT
	Supporting SMEs and midcaps clients in their low-carbon transition through the Low Carbon Transition for Midcaps & SMEs initiative	ST/MT
	Developing more energy efficient and less GHG-emitting leasing products	ST/MT
Investment and Protection Services (IPS)	Engaging with companies to encourage their energy transition	ST/MT
	Expanding the range and volume of sustainable investments' solutions	ST/MT
	Developing low-carbon products (positive energy buildings, climate and green indices, green investments via retail funds, etc.)	ST/MT
Operational Scope	Reducing own operational emissions through the decrease of energy consumption in BNP Paribas' buildings, the optimization of professional travels and the increase of low-carbon electricity use	ST

Legend: Short term (ST), i.e. within two years; medium term (MT), i.e. between three and five years; or long term (LT), i.e. after five years.

[7] International Energy Agency report "World Energy Outlook 2022"
[8] International Energy Agency report "Global EV Outlook 2022"

3 BNP PARIBAS' STRATEGY IS RESILIENT TO VARIOUS CLIMATE SCENARIOS

As presented in the previous section, BNP Paribas identifies and analyses the different climate-related risks, and the climate-related opportunities that may impact its strategy and business.

Various climate scenarios, published by recognised international bodies (e.g. IEA, NGFS), are used to investigate their consequences for the Group. In particular, the Group assesses the compatibility of its risks' exposure with a carbon neutral trajectory, and the extent to which the Bank can contribute to financing the low-carbon transition while keeping a very strong resilience. Several climate scenarios were also used for the European Central Bank (ECB)'s 2022 climate stress test. These risk and opportunity analyses provide key elements for the strategy of the Group.

To mitigate these risks and to seize these opportunities, BNP Paribas embeds climate change and transition to global carbon neutrality at the core of its strategy *(see Part I. Section 1. BNP Paribas embeds climate and transition towards carbon neutrality at the core of its strategy)*, reinforces climate governance at the highest level of the company *(see Part II. Section 1. BNP Paribas reinforces climate governance at the highest level of the company)*, and strengthens steering tools, processes and set-ups to address climate change, across all business and functions of the company *(see Part II. Section 2. BNP Paribas strengthens steering tools, processes and set-ups to address climate change)*. This involves expanding teams dedicated to the support of clients in their transition (Low Carbon Transition Group), training all employees on these topics, strengthening the Group's capabilities to assess and manage environmental risks and incorporating them in its decision-making processes (Risk ID, ESG Assessment, etc. see *Part III. Section 2. How climate risks are identified, measured and monitored)*.

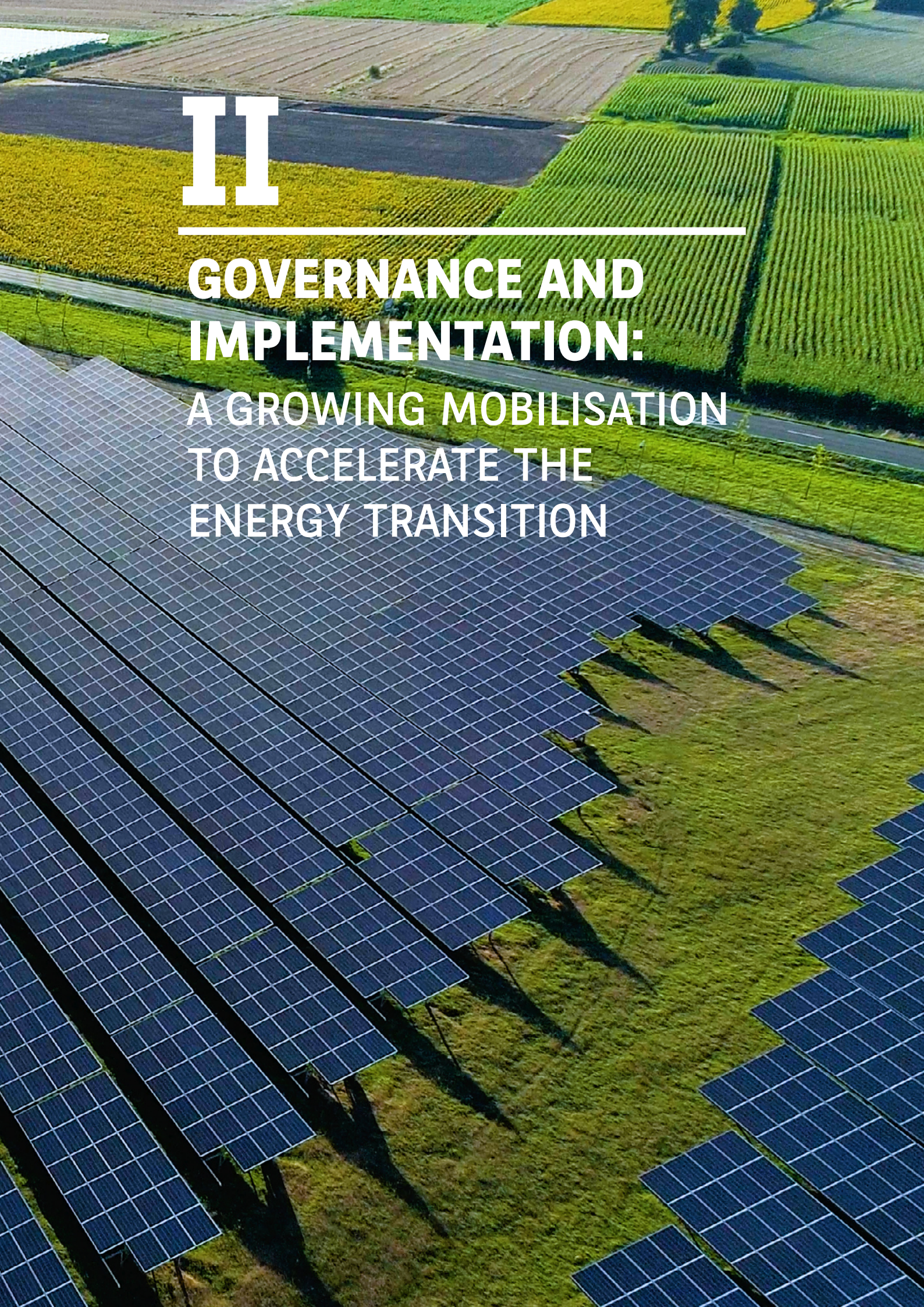
These analyses and strong transformation contribute to the Group's resilience to environmental and climate, which is made possible by two key elements:

- Climate risks may vary depending on business lines, geographical areas, and economic sectors. BNP Paribas' diversified and integrated business model, the diversity of the Group's business lines, sectors and geographies in which it operates are therefore key assets to mitigate risks of all kinds, especially climate risks.
- Sustainability is at the core of the 2025 GTS strategic plan and is reinforced by the commitment of BNP Paribas to align its activities with a carbon neutrality trajectory by 2050. This Group level commitment supports the reduction of BNP Paribas' exposure to economic players responsible for generating the highest GHG emissions, and thus of its exposure to transition risks.

BNP Paribas' strong commitments on climate can have different impacts on its business relationships with some of its clients, and on associated business opportunities *(see Part II. Section 3. BNP Paribas supports the low-carbon transition of all its clients)*:

- In some cases, it can lead to exit from specific activities: a thermal coal exit is underway for both investment and financing activities. It will be completed in 2030 in UE and OECD countries. And a progressive exit from upstream oil players is also planned.
- In most cases, BNP Paribas accompanies its clients in their energy transition, helping them finance the necessary changes in their business models and activities.
- Lastly, the energy transition provides new financing opportunities (renewable energies, low-carbon hydrogen, energy renovation, electric mobility, etc.).

All in all, climate-related opportunities are expected to be significantly more important than decrease in business due to climate mitigation. It is reflected in the Group's KPI on the support for the transition of its corporate clients to a low-carbon economy, for which BNP Paribas set a target of EUR 200 billion by 2025.



II

GOVERNANCE AND IMPLEMENTATION:

A GROWING MOBILISATION TO ACCELERATE THE ENERGY TRANSITION

1 BNP PARIBAS REINFORCES CLIMATE GOVERNANCE AT THE HIGHEST LEVEL OF THE COMPANY

1.1 The Board of Directors oversees the management of climate-related issues

In 2022, environmental topics, including climate issues, were specifically addressed 16 times at Board Committee meetings. The Board of Directors approves the Group's CSR strategy. It validates the climate-related metrics, policies and undertakings presented in the Universal Registration Document (URD) and approves the variable compensation granted to corporate officers, partially based on the Group's CSR performance (including climate-related).

↘ Two specialized committees within the Board of Directors

"Corporate Governance, Ethics, Nominations and CSR Committee" (CGEN)

It oversees issues relating to social and environmental responsibility. It ensures that the Group contributes to sustainable and responsible economic development, including climate action.

"Internal Control, Risk Management and Compliance Committee" (CCIRC)

It advises the Board of Directors on the suitability of BNP Paribas' overall strategy and tolerance for risks, including climate-related risks, both current and future. It also performs assessment over the achievement of the Group's risk policy, in coordination with the RISK Function and in accordance with regulatory requirements.

1.2 Management proposes and implements the Group's climate strategy

For climate-related risks and opportunities, the Chief Executive Officer and the Chief Operating Officers submit a strategy proposal to the Board of Directors. Jean-Laurent Bonnafé, Chief Executive Officer, is responsible for the climate strategy, managed by the Head of Company Engagement The latter, also a member of the Executive Committee, supervises the CSR Department which, alongside the operational entities, is responsible for operational implementation of the Group's climate strategy.

FOCUS |Share of compensation linked to CSR performance

In the framework of its 2025 GTS plan, BNP Paribas has set a CSR policy management dashboard with 10 specific KPIs[9] *(see its two climate-related KPIs in Part IV. Targets, metrics and alignment progress).* The CSR dashboard is monitored on an annual basis by the Group's Executive Committee. The achievement of these KPIs is used to calculate the three-year retention plan (attributed to more than 8,400 key Group employees in 2022) as well as the variable compensation of the Group's corporate officers. This annual variable compensation granted to corporate officers includes a portion of 15% related to the Group's CSR performance.

[9] *See BNP Paribas 2022 Universal Registration Document, p. 626 for all 10 KPIs, objectives and definitions*

2 BNP PARIBAS STRENGTHENS STEERING TOOLS, PROCESSES, AND SET-UPS TO ADDRESS CLIMATE CHANGE

2.1 Further accelerating the transformation of the whole Group

In addition to the appropriate governance described here above, the effective implementation of BNP Paribas agenda to tackle climate change requires a transformation at all levels of the company. The Group deploys very significant resources and efforts into further accelerating its transformation and developing the right tools, processes and set-ups to support material transition of all its clients. Since 2010, BNP Paribas has gradually deepened and broadened the integration of its climate agenda and commitments in all expertise of the Bank, from Functions (Finance, Risk, IT, Human Resources, Legal, Publics Affairs, etc.) to business lines. In particular, the ESG Assessment *(Part III. Section 3.Focus on key risks)* is an in-house dedicated tool that allows the Bank to reinforce the strategic dialogue with clients on ESG matters, including climate issues.

Since 2021, high level Sustainable Finance committees have been working on strengthening the integration of CSR and climate issues into the Group's strategy and within each of its entities. Among them, the Sustainable Finance Strategic Committee chaired by BNP Paribas' CEO, takes decisions on the Group's net zero commitments. It also analyses the impacts and implementation of new regulations related to sustainable finance and the expectations of the ECB (European Central Bank) regarding climate and environmental risks.

FOCUS | ESG data as a key lever

A comprehensive combination of ESG data, sophisticated analytics, and advanced technology is key to tackle the climate challenge. BNP Paribas is thus committed to developing the right tools to measure its impact on climate and support material transition of its clients. One of the main challenges for BNP Paribas remains the external data quality of the environmental climate-related information.

2.2 Upskilling all employees on climate knowledge and structuring a network of referent experts

For several years, BNP Paribashas been proactive in providing training on climate-related issues, to all its employees and tailored to different audiences.

In 2022, the Group continued rolling out the ***Climate Fresk*** (or Climate Collage) a three-hour workshop to understand the essentials of climate issues and take action. In total, 4,200 employees, including 400 members of Management Committees have already attended this workshop, offered in over 15 countries.

In addition, in 2022 BNP Paribas launched its ***Sustainability Academy,*** an evolving platform to train its almost 190,000 employees on the issues of the ecological transition and bolster their skill sets in this field.

Furthermore, communities of environmental and climate expertise have been created within the Group to accelerate and streamline the integration of climate in all the Bank's activities:

- The **Low Carbon Transition Group (LCTG)** created in 2021 to support the low-carbon transition of institutional and corporate clients *(see Part II. Section 3. BNP Paribas supports the low-carbon transition of all its clients)*.
- The **Network of Experts in Sustainability Transitions (NEST)** created in 2021 to extend the knowledge of sustainable finance including climate topics through a network of 500 expert employees.
- The **ESG Risks and Opportunities expert centre** within Group CSR to develop sector financing and investment policies and support business lines.
- The **Climate Analytics and Alignment (C2A) team** to develop and implement sector alignment methodologies in coordination with business teams *(see Part IV. Section 3. NZBA commitments update)*.

3 BNP PARIBAS SUPPORTS THE LOW-CARBON TRANSITION OF ALL ITS CLIENTS

To accompany its clients in their transition towards global carbon neutrality, BNP Paribas leverages energy sobriety, energy efficiency, low-carbon energies (primarily renewable) and sequestration of residual emissions. To offer products and services on each of these levers, the Bank mobilises all its expertise and the strength of its diversified and integrated model – three operational divisions (Commercial, Personal Banking & Services, Investment & Protection Services, Corporate & Institutional Banking) including specialized businesses – to offer products and services to its clients on each on these levers of action.

FOCUS | The Low Carbon Transition Group

In 2021, BNP Paribas created the Low Carbon Transition Group (LCTG), **a dedicated network of 160 professionals in sustainable finance to support its large corporate and institutional clients around the world in accelerating their transition to a sustainable and low-carbon economy.** With the aim of bringing together **250 professionals by 2025**, it builds on the Bank's leadership in capital markets and sustainable finance.

The LCTG advises clients on their transition (evolution of business model, alignment of capital structure) and provides them both with banking and extra banking expertise across the Group, including clean energy, mobility, and built environment solutions.

In 2023, BNP Paribas is launching a Low Carbon Transition initiative for Midcaps & SMEs to accelerate the support to SMEs and Midcaps clients in their low-carbon and sustainability transition through dedicated tools, advisory and financing.

FOCUS | BNP Paribas' position on voluntary carbon credits

As published in a public position in March 2023[10], BNP Paribas is convinced that voluntary carbon credits **can contribute to bring more economic viability to carbon projects** that otherwise would be difficult to finance; and that **the trade of voluntary carbon credits can also contribute to a shift of financial and technical resources from developed countries to developing countries.**

In this context, the solid and rigorous development of voluntary carbon credits has a role to play in the global transition to carbon neutrality, with a specific attention to several sensitive aspects: emission reduction actions should always be a priority over using of carbon credits; the GHG emission reductions linked to these voluntary carbon credits should be effective and permanent; the projects generating carbon credits should also have positive impacts on biodiversity and local populations (or at least no negative impacts).

[10] https://cdn-group.bnpparibas.com/uploads/file/bnpparibas_csr_voluntary_carbon_credits_position.pdf

2022 CLIMATE-RELATED BUSINESS CASES

FINANCING LOW-CARBON ENERGIES

The **Dogger Bank wind farm in the UK** (three phases of 1.2 GW), the largest worldwide offshore wind farm project, which is part of the UK's strategy to become carbon neutral by 2050 and will provide enough clean energy to power six million UK homes, where BNP Paribas was financial advisor.

The **959 million USD infrastructure financing for the Edwards Sanborn solar-plus storage facility in California,** North America's largest solar-plus-storage project with storage (410 MW of nameplate solar PV and 1,786 MWh of stored energy, where BNP Paribas was a major stakeholder.

The **IPO of Lhyfe, a leading european green hydrogen producer,** where BNP Paribas Portzamparc acted as joint global coordinator and bookrunner. the proceeds from the 110 million EUR IPO and pre-IPO funding will be used to accelerate the development of its green hydrogen production sites across europe and to strengthen its business development.

The **new windfarm of Elicio for a capacity of 4.7 MW in the Belgian municipality of Balen (Antwerp province),** with a 14 years 5.7 million EUR amortizing investment credit out of a total project cost of 8.1 million EUR, where BNP Paribas Fortis was financer. The new wind farm will add capacity to the current 275 MW onshore and 266 MW offshore wind energy in operation.

The **first tokenized renewable energy project bond with EDF Renewables** where BNP Paribas structured, tokenised[10] and distributed a bond, aimed at refinancing a solar energy project. Solar-based electricity production is the leading energy transition segment, with several trillions of financing needs in the near future. Almost half of these financing needs will come from smaller projects, which are currently being underserved.

Tokenisation provides greater transparency and verifiability of data across the whole value chain, especially verifiability of investors' ESG impact. Thus, it can facilitate the development of smaller renewable energy projects by offering dynamic bundling opportunities to investors.

FOSTERING ENERGY EFFICIENCY

The **"Decarb Fast Track" programme** in partnership with the French start-up Metron, a clean-tech expert in energy efficiency and performance, in which the Bank invested in 2018. This European programme **offers to 100 industrial companies a subsidized access to the Metron innovative energy management and consumption optimization toolbox**. Based on artificial intelligence, the solution enables industrial facilities to measure, compare and optimize their energy consumption.

The **625 million USD 10-year inaugural green bond for Lenovo to support the PC manufacturer's climate ambitions in APAC,** where BNP Paribas acted as joint global coordinator and sole green structuring advisor on Lenovo's Green Finance Framework. Proceeds from the green bond will finance eligible projects across five green categories, including energy efficiency, renewable energy, green buildings, circular economy adapted products, production and processes, and clean transportation.

BNP Paribas Polska created the Agronomist.pl platform to help agrifood companies make the transition to digitisation and the environmental protection of their ecosystem. **The platform was extended in 2022 and makes it possible to measure, through various tools such as AgroEmission, the potential for carbon sequestration in soils, greenhouse gas emissions (CO_2 and N_2O) and the crop water footprint.**

BNP Paribas Real Estate headquarters reconstruction in France, called Métal 57, was an opportunity to test and apply the principles of low carbon and energy performances (40% of the building energy needs are covered by geothermic energy, mobility, biodiversity, and intensification of uses).

[10]Tokenisation is the issuance of securities as native digital assets, which means that they can be recorded, moved and stored on the blockchain in a transparent way. This technology broadens market opportunities for smaller assets, improves data transparency as well as possibly bringing liquidity thanks to its digital format.

The **first wood-frame building in Paris La Défense, called Inspire**, launched by BNP Paribas Real Estate. This 22,000 m² building, which will be delivered in 2024, is targeting the highest levels of environmental labels and certifications, i.e. HQE, BREEAM, BBC Effinergie, etc.

BNP Paribas Fortis is the first large Belgian bank to apply the European Union's Energy Efficient Mortgage (EEM) label. The Bank offers preferential credit terms to individual customers who opt for environmentally and socially sustainable real estate projects.

The loan for clients willing to improve the energy performance of their housing at a preferential rate launched by BGL BNP Paribas in Luxembourg. This offer is based on a partnership with a certified energy advisor in Luxembourg and includes an energy diagnosis, the preparation and sending of the aid recovery file and site monitoring.

The "Abito" offer by BNL BNP Paribas in Italy, an offer that regroups all the aspects needed by individual clients: buying, renovating, and improving home energy efficiency, thanks to synergies within the Bank and a local partner.

DEVELOPING LOW-CARBON MOBILITY

The **inaugural 2.25 billion USD dual-tranche green bond for American automaker General Motors** where BNP Paribas acted as co-sustainability agent and active bookrunner. The green bond aims at financing General Motors' investments to increase its production capacity of electrified vehicles to 2 million units per year by 2025.

The **partnership of BNP Paribas Arval with Ridecell,** a global provider of mobility and fleet automation solutions, to enrich its "Arval Car Sharing" solution and thus **contributes to reducing CO_2 emissions by improving the usage rate of vehicles and encouraging the adoption of electrified cars.** Arval also offers e-bike leasing for companies' employees, enabling them to avoid commuting by car on short distances.

The **partnership of BNP Paribas Leasing Solutions with TSG,** a European leader in technical services for responsible mobility solutions, **to facilitate the wider adoption of electrified vehicles in corporate fleets.**

The **fair transition offer launched by BNP Paribas Personal Finance in France to help households access a cleaner, new or used car authorized in France's Low Emissions Zones.** This is a 10-year option rental with a call option for approximately 150 EUR per month. The residual value is low - the equivalent of a monthly payment - which allows these households, if they wish, to become owners of the vehicle at the end of the contract. This offer targets a loan amount of 120 million EUR.

FOCUS | BNP Paribas is engaging with companies and investing to support the energy transition

At the end of 2022, BNP Paribas Asset Management managed more than €13 billion in Paris-aligned/climate-aligned, low-carbon, fossil-fuel-free benchmark funds. For example, the BNP Paribas Climate Impact fund invests mainly in shares issued by innovative small and mid-cap companies in all countries and linked to environmental markets or the sectors of alternative energies, energy saving, water treatment and sanitation, pollution control, waste management or recycling. We can also mention the BNP Paribas Global Climate Solutions fund, which invests in shares issued by companies that engage in climate support on global markets. These companies provide, solutions for aquatic, terrestrial and urban ecosystems, as well as for renewable energy production, energy efficiency, energy infrastructure and transport. BNP Paribas Real Estate Investment Management (REIM) launched at the end of 2020 the European Impact Property Fund (EIPF). It is the first European institutional real estate fund that aims to meet the environmental objectives set out by the Paris Agreement at COP 21, by having a positive and measurable impact on the climate.

In 2022, BNP Paribas Asset Management and BNP Paribas Cardif each published their own Net Zero Roadmap[11] which consists of a long-term plan to achieve net zero portfolio emissions by 2050 or sooner. As part of its Net Zero Roadmap, BNP Paribas Asset Management will reduce the carbon footprint of its investment portfolios for in-scope holdings from a 31 December 2019 baseline (91.72 tCO_2/million EUR invested) by 30% in 2025 and 50% in 2030. It will also align its corporate investments (equity and fixed income) with carbon neutrality. It will target 60% investments in companies that are aligned, or in the process of being aligned, by 2030 and 100% by 2040. This will enable BNP Paribas Asset Management to achieve 100% net zero alignment of its corporate portfolio by 2050. As part of its Net Zero Roadmap, BNP Paribas Cardif will reduce the carbon footprint of its equity and corporate bond portfolios held directly from a 31 December 2020 baseline (64 tCO_2/million EUR invested), by at least 23% by 2024 and by at least 50% in 2030. In addition, BNP Paribas Cardif will allocate at least 800 million euros per year to investments with an environmental theme.

That strategy is supported by a proactive approach towards issuers. Indeed, BNP Paribas Asset Management and BNP Paribas Cardif engage on ESG and climate issues with the companies in which they invest. In 2022, BNP Paribas Asset Management strengthened its voting guidelines on ESG, paying particular attention to climate and biodiversity. Thus, it does not support the major resolutions of large companies in the most greenhouse gas emitting sectors that have not set a carbon neutral target by 2050. In 2022, BNP Paribas Asset Management supported 90% of shareholder climate-related proposals and submitted four resolutions on climate lobbying. Of the resolutions for which BNP Paribas Asset Management voted against, most (1,274) were for reasons related to climate and biodiversity. Regarding BNP Paribas Cardif voting activities, out of the 2,976 resolutions recorded, 439 votes by BNP Paribas Cardif were not aligned with the management expectations. Of the 439 votes, 10% concerned the environment and social issues.

In addition, BNP Paribas Asset Management and BNP Paribas Cardif use individual and collaborative engagement (through working groups or coalitions whose members act jointly with companies). For instance, as members of the Climate Action 100 + Initiative, they regularly engage with companies that emit the most greenhouse gases worldwide to improve their governance and strategy on climate change.

FOCUS | BNP Paribas invests to support innovation for the ecological transition"

The development of innovative technologies is a prerequisite for enabling the energy and ecological transition. **In 2022, BNP Paribas and the Solar Impulse Foundation completed the first closing for 100 million EUR of the *BNP Paribas Solar Impulse Venture fund.***

[11] https://docfinder.bnpparibas-am.com/api/files/F5EE3377-26CE-4DFD-B770-DBD29323D78B

III

RISK MANAGEMENT

1 DETAILED EXPOSURES PER SECTOR

Despite the recent developments of standardised methodologies for the quantitative analysis of ESG factors and their impact on traditional financial risks, the information presented in this report must be interpreted with caution, accounting for its current limitations. The tables and graphs presented in this section can only be assessed on the date of publication of this document and must be interpreted while considering the uncertainties related to the methodologies, projections and data used.

1.1 BNP Paribas reported its exposures towards sectors that highly contribute to climate change[1]

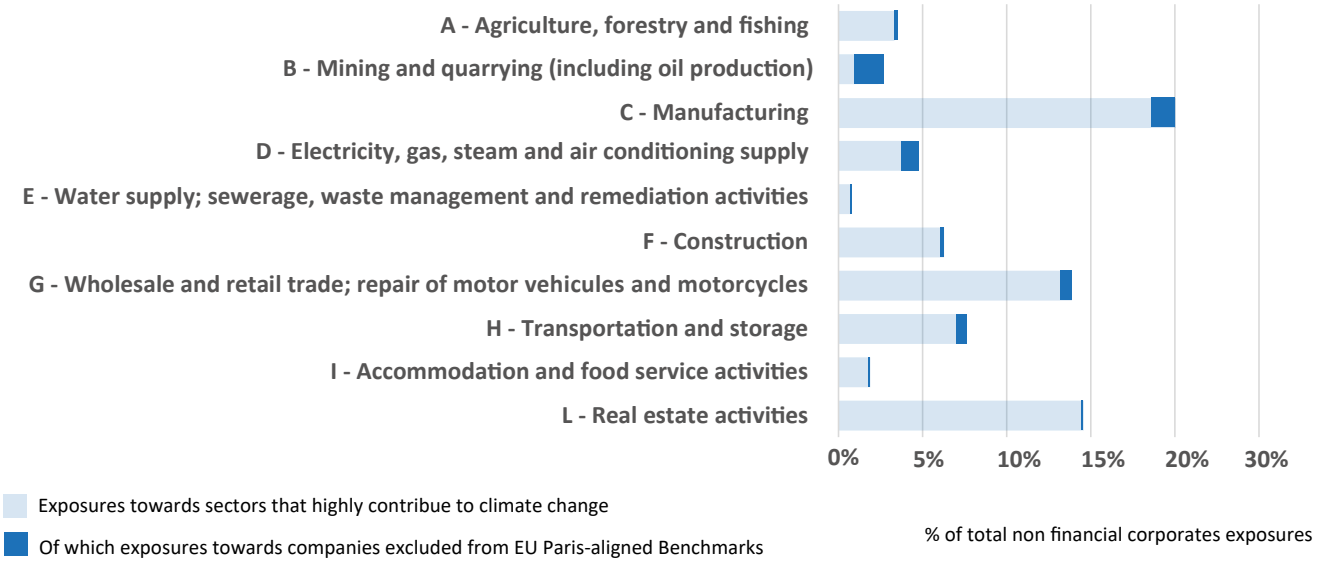
The Group's total exposure to non-financial corporates stands at 459 billion EUR as of 31 December 2022 including loans and advances, debt securities and equity instruments not held for trading. **The graph below shows mapping of exposures by sector with the detail of exposures considered to significantly contribute to climate change and may not, under any circumstances, be interpreted as an exposure to transition risk as such.**

The exposure towards companies excluded from Paris-aligned benchmarks[2] stands at 24 billion EUR and is composed of exposure towards companies active in fossil fuel[3].

These companies have been identified thanks to a double screening based on:

1. The identification of counterparts belonging to oil, gas and coal sectors as identified in the Group's internal activity referential or according to the NACE code declared by the counterpart.
2. The identification of counterparts deriving their revenue from fossil fuel value chain as per defined in the Climate Benchmark Standard Regulation[4] obtained from an external data provider.

Exposures towards sectors that highly contribute to climate change at end-December 2022

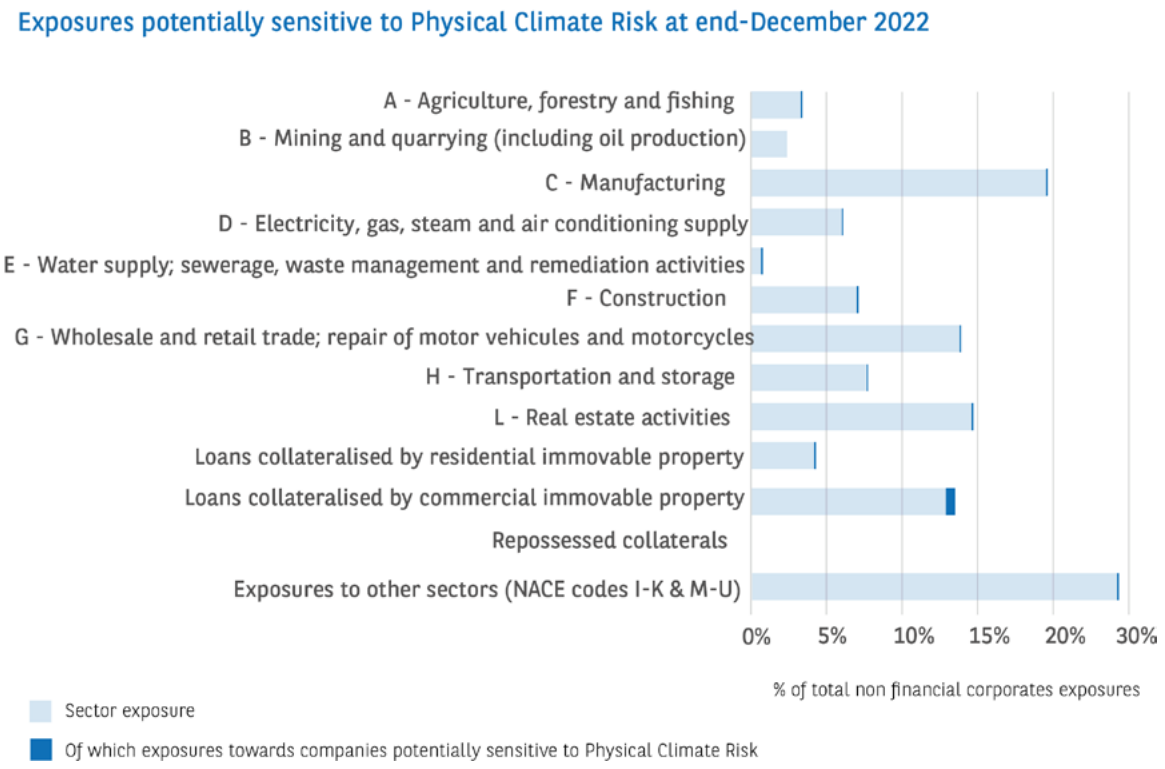


Disclaimer: In accordance with Commission Delegated Regulation (EU) 2020/1818 supplementing Regulation (EU) 2016/1011 as regards minimum standards for EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks – regulation on climate benchmarks: the sector listed in Annex I, sections A to H and section L, of Regulation (EC) No. 1893/2006.

[1] The Pillar III ESG can be read in the 2022 URD, chapter 5.11. The information exposed in this part of the report is detailed in it.
[2] In accordance with Article 12 (1) (d) to (g) and Article 12 (2) of Regulation (EU) 2020/1818. Assets granted to companies that would be excluded from a Paris Aligned Benchmark (PAB). These are companies active in fossil fuel as deriving a certain share of their revenues from the whole value chain of the fossil fuels (exploration, extraction, energy production, but also processing, storage, distribution, transportation, trade...). The share is of 1% for coal, 10% for oil and 50% for gas.
[3] The EUR 24 billion are different from the EUR 20.8 billion shown in the graph page 10 because the definition of BNP Paribas' financing in the template required by the European Banking Authority (EBA) is different from the Group's internal sector definition. The EBA's definition is based on a transition risk approach that is much wider. As a result, the EUR 24 billion integrates the whole value chain's dependency from the fossil fuel sector, from upstream production to transportation or trading.

1.2 BNP Paribas reported its potentially sensitive exposures to physical climate risks

Given the current lack of maturity of the models, the data gaps and the guidelines uncertainty for the EBA Pillar 3 Exercise, the Bank has chosen to use the results from the physical risk scenarios of the European Central Bank Climate 2022 stress test for this exercise. The results of the flood, heat wave and drought scenarios of the ECB's 2022 climate stress test have been adjusted to reflect the materiality of chronic physical risk factors over the estimated duration of credit portfolios, by only retaining exposures to non-financial companies to match with the model expected by the European Banking Authority (EBA). These figures are not comparable with publications from other banks that have taken other disclosure options and are published for information only. Those figures are a first attempt to flag exposures potentially sensitive to physical risk events and should not be understood as direct or integrated risks[4]. For further information about the recent and on-going development to further assess physical climate risks please refer to section 3.2.4.



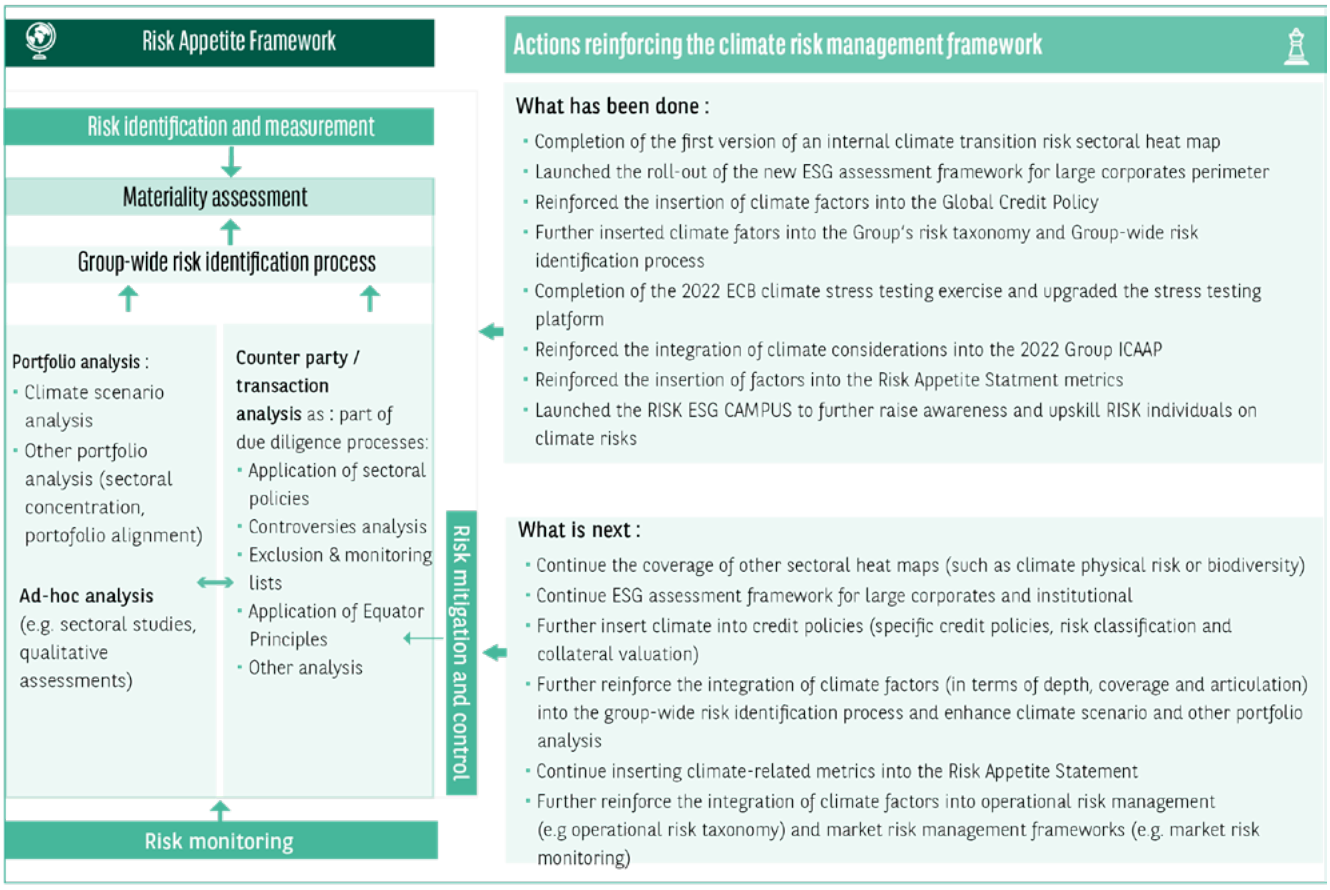
[4] *More detail is published in the chapter 5.11 of the 2022 URD.*

2 HOW CLIMATE RISKS ARE IDENTIFIED, MEASURED, AND MONITORED

2.1 Insertion of climate risk management in the risk framework of the Group

The Group does not consider climate-related risks as standalone risks *per se* but as risk drivers that may potentially impact the traditional risk categories such as credit, operational or market risks. Accordingly, as a risk factor, climate considerations must be inserted in the existing setup for the management of traditional risks, including related processes, organisation, and governance systems. **Since 2010, BNP Paribas has gradually deepened and broadened the insertion of climate risk drivers into its risk management framework.** With the objective to further reinforce this insertion and in line with the Group's strategy, **a holistic governance on sustainable finance was implemented in 2021** *(see Part II.1.1 The Board of Directors oversees the management of climate-related issues).*

Synthetic view of the ESG risk management framework of BNP Paribas



- **Risk appetite framework:** Climate factors are incorporated into the Risk Appetite Framework. The Group Risk Appetite Statement (RAS) is defined consistently with the strategy of BNP Paribas. It includes risk principles dedicated to ESG risks drivers (elements which favour or trigger a specific risk event). Climate-related elements are included in these ESG-risk drivers. These risk principles, coupled with dedicated metrics, define the risk tolerance of the Group on these dimensions. For example, the Group RAS integrates a metric on the share of coal in the Group's secondary energy mix (electricity production mix financed by the Group), with a limit set thereof. In addition, complementary indicators, resulting from the net zero targets setting regarding the Oil and Gas, the Power and the Automotive sectors are part of the RAS for monitoring purposes (*Part IV. Section 3. NZBA alignment update).*

- **Risk identification and measurement:** Climate factors have been integrated into the risk taxonomy of the Group, as well as into the risk identification process (Risk ID) which feeds the Internal Capital Adequacy Assessment Process (ICAAP) at Group level. This process enables the Bank to assess, in a forward-looking way, how climate risk drivers could give rise to elementary scenarios, corresponding to the materialisation of virtually any kind of risk types, whether they are financial or non-financial.

- **Risk mitigation and control:** For sectors particularly exposed to ESG issues, including climate-related ones, the Group has issued financing and investment policies, classified as sector policies, enabling to control the risk exposure towards these sectors of activities due to ESG factors. Exclusion & monitoring lists have been issued to restrict the activity or increase the level of scrutiny placed towards specific sectors or activities *(see Part 1. Section 1.3. BNP Paribas commits to monitor its financing and investment activities for a net zero economy by 2050).* Climate-related criteria, including the application of the above requirements, are incorporated as relevant in the customer and supplier due diligences, new/modified activities and exceptional transactions processes.

- **Risk monitoring:** The tools described above are also part of the risk monitoring framework, as they enable to re-assess on a regular basis the Group's exposure towards climate factors and act upon them.

2.2 Identifying the climate-related risk events

- THE FUNDAMENTALS OF RISK ID: **BNP Paribas' risk identification process (Risk ID) is a forward-looking, annual & continuous comprehensive approach to identify and assess the risks the Group is or might be exposed to.**

  It leads to producing and maintaining BNP Paribas' Risk Inventory, i.e., a set of 'severe but plausible' elementary scenarios ('risk events') corresponding to the way the risk types the Group is exposed to could materialise.

  All risk events are structured according to the same triplet-based approach.

↘ The three key components of any risk event

2 RISK DRIVERS IDENTIFICATION

Causes or factors favouring, triggering or aggravating the risk event, identified based on BNP Paribas' reference risk driver taxonomy

1 RISK EVENT DESCRIPTION

Severe but plausible scenario corresponding to the materialization of one of the risk types of BNP Paribas' reference risk type taxonomy

3 RISK EVENT MATERIALITY ASSESSMENT

Materiality of the risk event assessed using a everity / frequency pattern (several severity scales are available)

1 **Any risk event** *(i.e. elementary scenario, for example: a riverine flood in Europe which increases the cost of risk as its damages lead to higher insurance prices causing a valuation shock for real estate properties in high flooded areas) must be* **described and assigned to one of the risk types** *of BNP Paribas' risk type taxonomy.*

2 *The* **risk driver(s) that favour, trigger and / or aggravate the risk event must be identified** *(for the flood example here: acute physical Impact of climate change), on the basis of BNP Paribas' risk driver taxonomy.*

3 *The* ***materiality of the risk event must be assessed*** *using the* **materiality assessment pattern** *that relies, mainly, on the usual bi-dimensional severity assessment / frequency assessment framework. The* **materiality of the risk drivers** *underlying the risk event is* **inferred from the materiality of the risk event.**

▪ HOW ARE CLIMATE CHANGE RELATED DIMENSIONS INCLUDED IN BNP PARIBAS' RISK IDENTIFICATION PROCESS?

In coherence with the European Banking Authority's (EBA) and the European Central Bank's (ECB) positions[5], BNP Paribas' Risk ID process covers climate change-related risk dimensions through a set of risk drivers and not via stand-alone risk types, on the grounds that climate risk drivers can favour, trigger or aggravate the materialisation of, virtually, any risk type.

Consequently, out of the 108 risk drivers in BNP Paribas' risk drivers taxonomy used for Risk ID purpose, 13 risk drivers are associated to ESG concerns among which 7 are totally or partially climate change-related (see the table here under).

↘ Climate change-related risk drivers, extracted from the BNP Paribas risk driver taxonomy

LEVEL 1 TYPE OF RISK DRIVER	LEVEL 2 TYPE OF RISK DRIVER	LEVEL 3 TYPE OF RISK DRIVER	RELATION TO CLIMATE CHANGE
Environmental, Social and Governance drivers	**Physical risk drivers related to climate change**	Acute physical impact of climate change	Yes
		Chronic physical impact of climate change	Yes
	Transition risk drivers related to climate change	Transition to a low-carbon economy to mitigate climate change - policy changes	Yes
		Transition to a low-carbon economy to mitigate climate change - technological changes	Yes
		Transition to a low-carbon economy to mitigate climate change - behavioural changes	Yes
	Governance risk drivers	Governance risk drivers linked to inadequate management of E & S risks	Partially
	ESG related liability consequences	Consequences of ESG liability	Partially

[5] EBA "Report on Management & Supervision of ESG Risks for Credit Institutions & Investment Firms" [EBA/REP/2021/18] and ECB "Guide on climate-related and environmental risks" [Nov. 2020]

▪ THE QUESTION OF THE TRANSMISSION CHANNELS:

The connections between climate risk drivers and the materialisation of financial or non-financial risk types into severe but plausible risk events correspond to the transmission channels.

Understanding and standardizing those transmission channels is thus a key step to enhance the identification process linked to climate risk drivers.

In BNP Paribas' Risk ID process, the transmission channels are explicitly or implicitly embedded in the risk event's scenario. The figure below presents the climate-related transmission channels that have been extracted from the climate-related risk events of BNP Paribas 2022 Risk ID Inventory.

⇘ Climate-related transmission channels extracted from the BNP Paribas 2022 Risk Inventory

CLIMATE-RELATED RISK DRIVERS

Climate change-related **physical** risk drivers

- Acute
- Chronic

Transition to low carbon Economy risk drivers

- Policy changes
- Technological changes
- Behavioural / consumer preferences changes

Cimate-related **governance** risk driver

Climate-related **liability** risk driver

TRANSMISSION CHANNELS (illustrations)

- Carbon price / tax
- New climate-related laws / regulations
- Stranded assets and workers
- Property damages
- Asset destruction
- Shifts in prices and asset values
- Increased volatility of asset prices
- Lower asset performance
- Operational disruption
- Supply chain disruption
- Lack of production input
- Lower production
- Productivity changes
- Lower profitability
- Losses of business opportunity
- Impact on wealth and / or solvency
- Technological change, developments or disruptions
- New capital expenditure
- Increased costs
- Dispute, claims, legal proceeds against the Group
- Dispute, claims, legal proceeds against clients
- Sanctions & fines
- Changes in individuals' habits and behaviour
- Clients' expectations
- Labour market & employees' expectations Mortality
- Political decisions
- Migration of populations
- Social unrest
- Energy Performance Certificates
- Reputational hit leading to business impacts
- Availability and affordability & pricing of insurance

SCENARIOS / RISK EVENTS (Materialization of traditional risk types)

Financial risks

- Business & strategic risk (sector exit etc.)
- Credit risk (default, collateral depreciation, country risk etc.)
- Market risk (repricing etc.)
- Liquidity risk (increased demand, risk of climate related outflows / default of inflows etc.)
- Insurance underwriting risk (claims increase etc.)

Non-financial risks

- Execution risk
- ICT (obsolescence, disruptions etc.)
- Damage to physical assets
- Third-party risk (failure, non-compliance etc.)
- Legal risk
- Health issue and human resources safety risks

▪ CLIMATE-RELATED INFORMATION EXTRACTED FROM BNP PARIBAS 2022 RISK INVENTORY:

Leveraging on the 2022 Risk Inventory, analyses have been performed to try to seize the possible impact of climate-related scenarios for the Group, which led to the following observations:

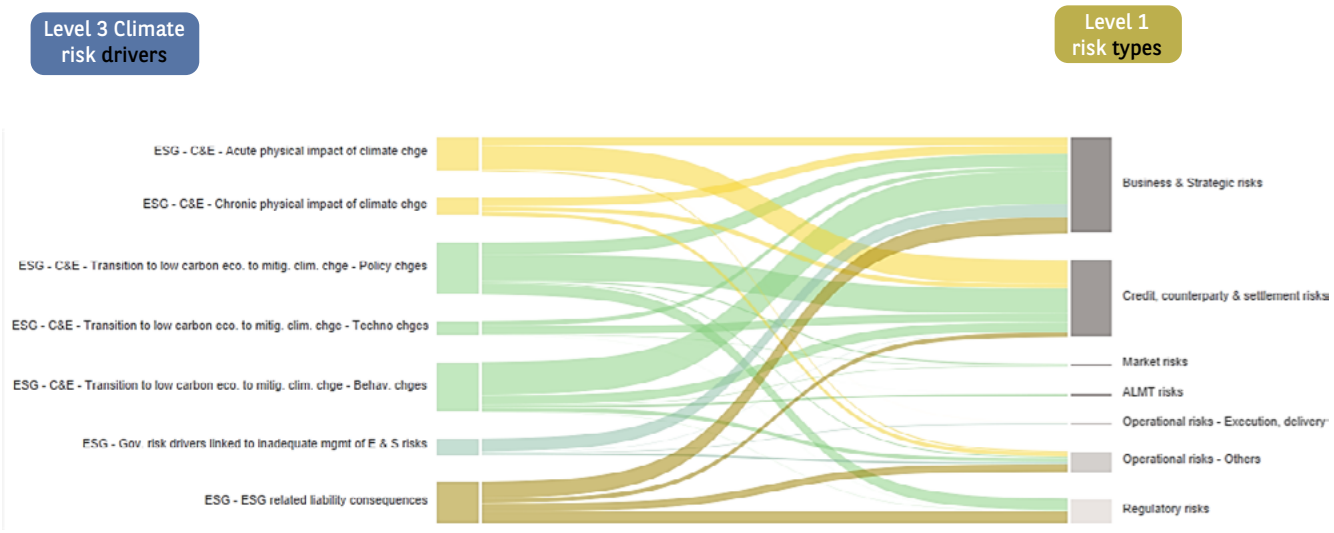
1. 11.3% of the total number of risk events in BNP Paribas Risk Inventory, are linked to, at least, one climate-related risk driver.
2. The climate-related risk drivers that underlie climate-related risk events have been assigned to 6.6% of the total materiality of the Group Risk Inventory.

In other terms, 6.6% of the risks BNP Paribas faces or could face are explained (favoured, triggered and / or aggravated) by climate risk drivers.

↘ 2022 materiality of climate risk drivers on risk types

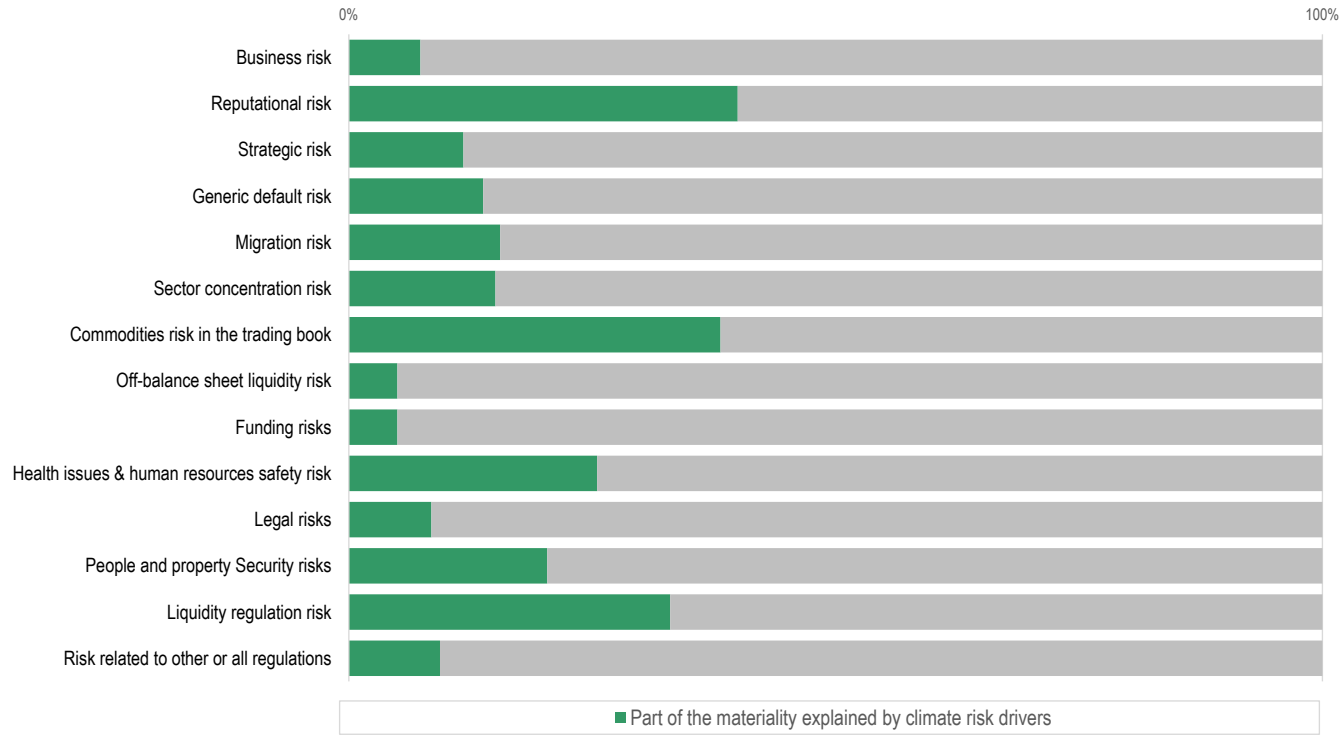
The Sankey diagram below illustrates the materiality relationship between the seven risk drivers totally or partially associated to climate change and the risk types.

Their materialisation is totally or partially explained by climate-change related risk drivers.



The thicker the link, the stronger the relation between risk driver and risk type (expressed in materiality).

And when deepening the analysis at a more granular level, it appears that, for some risk types, the fraction of their overall materiality explained by climate related risk drivers is significant:



2.3 Assessing potential impacts of climate risks through climate scenario analyses and stress testing

Over the past few years, BNP Paribas has built a robust platform for stress testing and financial simulations covering all risk types and business lines.

In particular, the Group has developed a sector-level analysis of forward-looking scenarios used since 2020 for the computation of provisions in the COVID-19 and Russia/Ukraine conflicts contexts, which is leveraged for climate risk scenario analysis. The Group has also developed capabilities to assess the potential impact of climate scenarios on the credit quality and associated internal rating of corporate clients at future dates and the geolocation of real estate to assess the impact of physical risk events (notably river flood).

Exercises based on scenarios have increased in number, diversity, and sophistication. In 2020-2021, BNP Paribas took part in the pilot programme conducted by the French Prudential Supervision and Resolution Authority (ACPR), which applied "shocks", taken from different Network for Greening the Financial System (NGFS) climate risks scenarios, to the risk parameters. The objective was to estimate the possible impact of the transition and physical risk on bank balance sheets and in terms of expected loss.

In early 2022, BNP Paribas participated in a European exercise supervised by the ECB. The Bank has also developed internal simulations both on transition and physical risks that contribute to its capital adequacy assessment. It is worth noting that some stress tests use the current exposures of the Bank without taking into account any future change or adaptation, while others allow the use of a dynamic balance sheet approach, reflecting both the public commitments taken by the institutions and the transition impacts on the banking books.

Climate scenario analysis is an integral part of the Bank's risk management and financial steering system, in which climate-related risks are fully integrated. As such, the Group's Internal Capital Adequacy Assessment Process (ICAAP) incorporates climate-related risks analysis.

The exercises carried out so far show relatively limited impacts at Group level for scenarios where the transition is successfully implemented, and the collective net zero objective is reached by 2050. Under these scenarios, physical risk impacts also have limited financial consequences for the Bank, even on a relatively long-term basis. They do, however, allow for the identification of exposures in some sectors and countries that would face higher risk under these scenarios.

The Group's corporate balance sheet has been tested against the Integrated Assessment Model (IAM) Regional Model of Investment and Development (REMIND) delayed transition risk scenario for which the Network for Greening the Financial System (NGFS) provided scenario-conditional pathways in 2022 in the context of Phase 3 delivery.

The projection of the Cost of Risk (CoR) until 2050 with a dynamic balance sheet approach is produced with the Bank's internal modelling framework including client level as well as sectoral level and using Energy Performance Certificates (EPC) for Corporates secured by real estate.

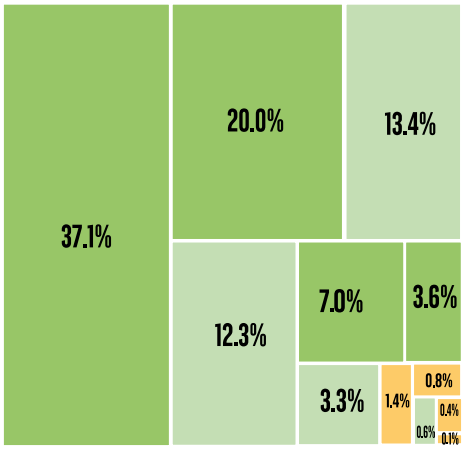
⬎ Dashboard | Relative impact of a 2040 delayed transition scenario vs. baseline per region and sector

The results of the stress test are illustrated in the dashboard below for corporates. Each geographical area has a weight equivalent to its share in the total exposure of the portfolio (excluding commercial real estate). The surface associated to each sector (or group of sectors), as defined in the Statistical Classification of Economic Activities in the European Community (NACE codes), is proportional to its weight in the total exposure to the corresponding geographical area.

The indicator used is the increase in the total Cost of Risk in percentage of the Exposure at Default (EAD) between a baseline scenario and a 2040 delayed transition scenario. The colour represents the size of the impact as follows:

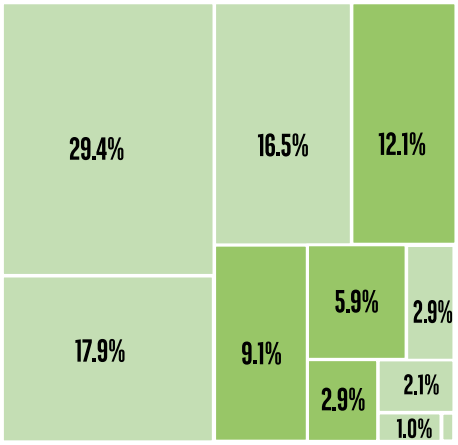
- Low impact (first quartile)
- Medium impact (second and third quartiles)
- Significant impact (fourth quartile)

FRANCE 23%



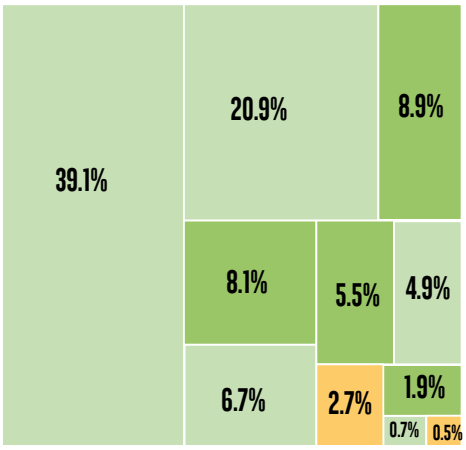
37.1%	Other
20.0%	Wholesale and Retail Trade
13.4%	Real Estate Activities
12.3%	Other Manufacture
7.0%	Construction
3.6%	Electricity and Gas Supply
3.3%	Transportation
1.4%	Mining and Quarrying (including oil production)
0.8%	Steel and Cement Production
0.6%	Agriculture
0.4%	Water and Waste Treatment
0.1%	Oil Refining

BELGIUM 10%



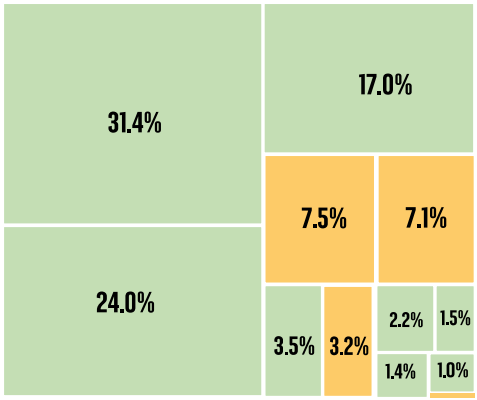
29.4%	Other
17.9%	Wholesale and Retail Trade
16.5%	Other Manufacture
12.1%	Construction
9.1%	Real Estate Activities
5.9%	Transportation
2.9%	Steel and Cement Production
2.9%	Electricity and Gas Supply
2.1%	Agriculture
1.0%	Water and Waste Treatment
0.2%	Mining and Quarrying (including oil production)
0.1%	Oil Refining

REST OF EUROPE 25%



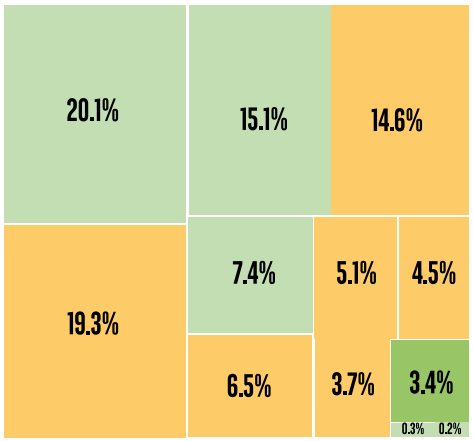
39.1%	Other
20.9%	Other Manufacture
8.9%	Electricity and Gas Supply
8.1%	Wholesale and Retail Trade
6.7%	Transportation
5.5%	Real Estate Activities
4.9%	Mining and Quarrying (including oil production)
2.7%	Steel and Cement Production
1.9%	Construction
0.7%	Water and Waste Treatment
0.5%	Oil Refining

ITALY 11%



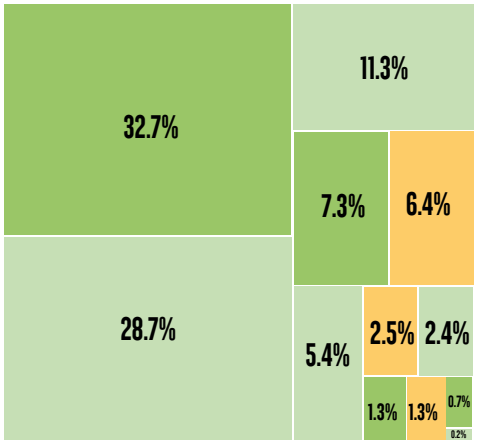
31.4%	Other Manufacture
24.0%	Other
17%	Wholesale and Retail Trade
7.5%	Electricity and Gas Supply
7.1%	Transportation
3.5%	Construction
3.2%	Steel and Cement Production
2.2%	Real Estate Activities
1.5%	Mining and Quarrying (including oil production)
1.4%	Water and Waste Treatment
1.0%	Agriculture
0.2%	Oil Refining

REST OF THE WORLD 14%



20.1%	Other
19.3%	Transportation
15.1%	Wholesale and Retail Trade
14.6%	Other Manufacture
6.5%	Electricity and Gas Supply
4.5%	Construction
3.7%	Steel and Cement Production
3.4%	Real Estate Activities
1.5%	Mining and Quarrying (including oil production)
1.4%	Water and Waste Treatment
1.0%	Agriculture
0.2%	Oil Refining

US 18%



32.7%	Other
28.7%	Other Manufacture
11.3%	Electricity and Gas Supply
7.3%	Wholesale and Retail Trade
6.4%	Mining and Quarrying (including oil production)
5.4%	Transportation
2.5%	Steel and Cement Production
2.4%	Construction
1.3%	Real Estate Activities
1.3%	Oil Refining
0.7%	Water and Waste Treatment
0.2%	Agriculture

The residential real estate portfolio has been tested against flood risks using internal capabilities to segment the map according to riverine flood risk and external estimations of asset shocks. From the Group's perspective, the exercise run for this ICAAP is complementary to the one run under the supervision of the ECB last year as Real estate price shocks provided by the ECB in 2022 relied on a worst-case scenario for each location using a 100-year return period based on the Nomenclature of Territorial Units for Statistics 3 (NUTS3) while in the Group's ICAAP, a range of realistic 1-in-1,000-year flood events was tested, including spatial correlation with a precise location level, under RCP 8.5 2100 conditions. Consequently, much more granular price shocks at the property-level are conveyed taking into account the fact that all properties are not hit at the same time during a realistic flood event.

▪ **LESSONS LEARNT:** Challenges are important for supervisors, banks and the academic world regarding the quality of new data and, the development of new modelling approaches. Important work on the definition of coherent and plausible climate stress test scenarios is necessary.

2.4 Developing new tools to further assess and monitor climate risks

- **BNP PARIBAS MONITORS CLIMATE-RELATED RISKS AT COUNTRY LEVEL:**

  Country risk is an essential component in the assessment of the creditworthiness of the Bank's counterparties involved in cross-border transactions, and **sovereign risks** are central to the analysis of the risks associated with the Bank's exposures to public and banking counterparties.

  Therefore, country and sovereign climate risks indicators are becoming central to the Bank's cross-border activities. The Bank has recently finalized its in-house, proprietary gauge, soon to be part of a wider ESG country risk assessment.

- **BNP PARIBAS HAS INTERNALISED CLIMATE MODELS FOR RIVERINE AND COASTAL FLOOD** *(physical risks)*:

  The **riverine flooding** and **coastal flooding** models use the flood data provided by the World Resources Institute (WRI). The models use the full flood depth exceedance probability distribution provided by WRI, as well as damage functions provided by the European Commission to estimate the potential damage caused by flood to an asset in a given year (expected annual damage). **The model can be applied to any coordinates to evaluate the level of flood risk for a given asset.**

  An example of the application to the Bank's residential real estate portfolio in France, where locations with an associated expected annual damage above 1% and 5%, under the RCP[6] 8.5 and RCP 4.5 in 2050 are shown in grey (1%) and green (5%) respectively, is shown hereafter.

  Similarly, BNP Paribas has internalised a chronic heat model using a reference temperature of 32°C as a Heat indicator which is then converted into a labour loss measure. This measure is considered as a first level proxy for heat risk being evident, noting that there is no sectoral or regional differentiation in the model currently.

Map 1 : Coastal flood risk on residential real estate in France under RCP 4.5 at time horizon 2050

Map 2 : Riverine flood risk on residential real estate in France under RCP 8.5 at time horizon 2050

[6] *RCP: Representative Concentration Pathway is a greenhouse gas concentration trajectory adopted by the IPCC. Four pathways are used for climate modeling and research (RCP 2.6, 4.5, 6.0 and 8.5 named after a possible range of radiative forcing values in the year 2100).*

3 FOCUS ON KEY RISKS

3.1 Credit Risk: ESG Assessment, clients' environment and climate performance review and challenge during the credit process

For all large corporate clients, BNP Paribas has developed the ESG Assessment. This tool enables a more harmonized, systematic, comprehensive, and formal review of climate topics through the credit chain: from origination to credit granting, monitoring and reporting.

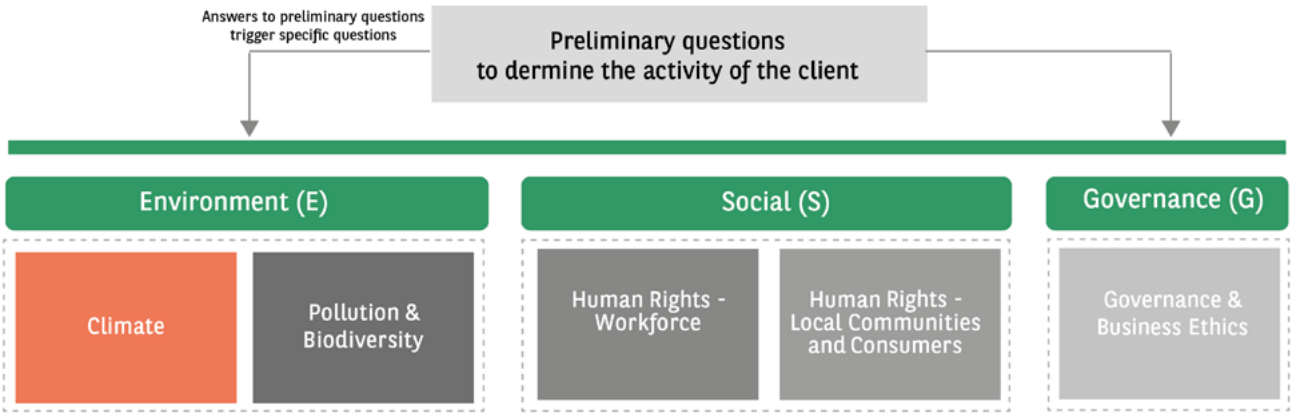
The ESG Assessment enables to:

- check client compliance with BNP Paribas sector policies, especially with climate-related criteria.
- assess how prepared the Bank's corporate clients are to manage all ESG challenges including climate-related ones.
- ensure that their strategies and commitments address key ESG risks specific to their sector and more specifically for climate their GHG emissions reduction plans and their net zero strategies.
- assess the maturity of their ESG strategy and their ability to monitor the key stakes of their industry, and to publish indicators.
- confirm if action plans have been implemented.
- analyse the materiality of the Bank's corporate clients ESG controversies and their potential impact on the client.

This specific analysis aims to identify companies for which weak ESG performance and risk management could generate credit, investment, or reputation risks, as well as negative environmental and social impacts. 19 sectoral questionnaires have been deployed in 2022, covering all industries. To date, over 1,500 analyses of very large and large corporate clients were carried out. The ESG analysis will gradually be extended to all corporate and financial institution clients, according to appropriate approaches. In a constantly evolving context, the ESG Assessment is being tested and will be adapted for continuous improvement, notably according to data availability.

In all the 19 sectoral questionnaires, BNP Paribas asks its clients if they disclose their CO^2 emissions and if they have net zero targets.

↘ The ESG Assessment tool covers five ESG dimensions including climate and environment



This analysis on five ESG dimensions provides a global overview of the ESG profile, which is completed by the controversies analysis for a full evaluation.

The qualitative conclusions of the ESG Assessment (including controversies analysis) are provided by the Relationship Manager and Group CSR as applicable and challenged by RISK as the control function, to allow a well-balanced evaluation of the performance and risk.

ESG Assessment helps decision-making through the usual credit processes, in strengthening and documenting due diligence and analysis on climate-related and environmental aspects at counterparty, transaction and collateral levels.

Credit risk is expected to be the risk that is the most impacted by ESG and climate risks and is also the most mature in term of methodologies. However, climate risks drivers are expected to impact all type of traditional risks and the Group is adapting its risk framework to incorporate those aspects.

3.2 Operational Risk

Regarding the operational risk, leveraging on climate scenarios, the exposure of BNP Paribas operations to the different types of physical risks is assessed throughout its various locations worldwide: this exercise supports the design of business continuity plans that are commensurate with the local vulnerabilities of the Group's premises. Thanks to these plans, which aim at mitigating these risks, BNP Paribas is in a favourable position to react quickly to climate and environmental events that could impact its activities.

On a broader scale, BNP Paribas has launched action plans to ensure the identification, the assessment and the reporting of operational risks potentially driven by climate and environmental risks.

3.3 Market Risk

Market risk is the risk that arises from movements in stock prices, interest rates, exchange rates, and commodity prices. Regarding market risk, BNP Paribas' key achievements include the participation in the ECB 2022 climate scenario exercise which included market risk shocks by sectors for equity and credit underlying, as well as the enhancement of the 2022 RISK ID process for the market activities to better reflect climate and environmental risk drivers.

The insertion of climate and environmental factors in the market risk framework is ongoing through several actions and in particular:

- Strengthening the approval framework for ESG transaction for Global Markets activities.
- Strengthening the operational process and governance for the application of the CSR exclusion list for equity and credit underlying (e.g. further automating the screening process of names excluded for CSR reason).
- Market risk preliminary dashboard with a focus on climate and environmental risks for trading books positions (equity and credit derivatives), for example through sectorial heat maps and transition ratings.

IV

METRICS, TARGETS & ALIGNMENT PROGRESS: MONITORING THE ACCELERATION TO NET ZERO BY 2050

1 NET ZERO ALIGNMENT UPDATE OF CREDIT PORTFOLIO

1.1 Introduction

In late 2015, the Group committed to gradually align its loan portfolio with the objectives of the Paris Agreement. In the following years, the Bank took a series of steps to decrease its support to the most environmentally damaging fossil fuels and to accelerate its financing of low-carbon technologies.

Upon joining the Net Zero Banking Alliance (NZBA) as a founding member in 2021, BNP Paribas endorsed the responsibility of setting intermediary targets to reach its net zero commitment. In May 2022, the Group published its Climate Analytics & Alignment report, outlining emissions-based reduction targets reduction targets for three key sectors (Power generation, Oil and Gas, Automotive) as part of BNP Paribas' 2025 strategic plan.

The Group continues to extend the range of portfolio alignment targets. In 2023, the Bank is setting portfolio alignment targets for three new sectors: Steel, Aluminium and Cement. The new targets are informed by the International Energy Agency's Net Zero Emissions (IEA NZE) by 2050 Scenario and are set for 2030, which is considered as the appropriate time horizon when taking into account the respective industries' decarbonisation inflexion points. A 2030 timeline for the new targets is also consistent with the approach of our banking peers and responds to stakeholders' requests looking to facilitate comparability across banks.

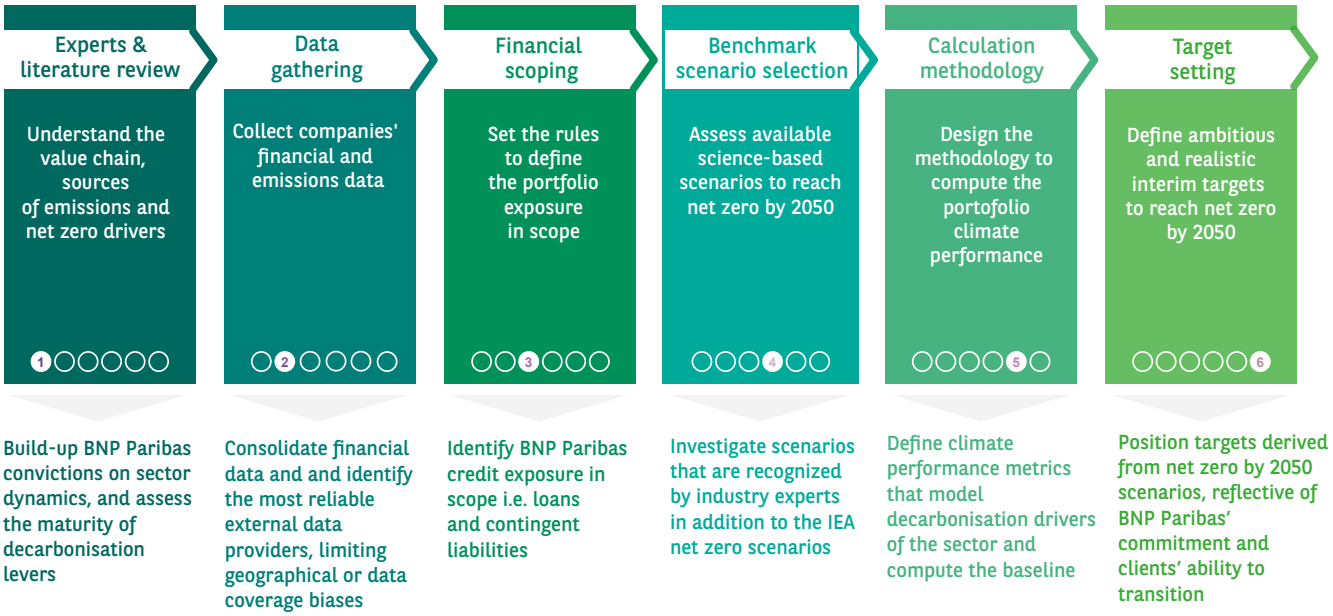
Methodological choices

BNP Paribas' review of highly emitting sectors focuses on its loan portfolio, comprised of loans and contingent facilities such as guarantees or letters of credit. The portfolio is measured in terms of credit exposure. With an objective to finance a carbon-neutral economy by 2050, the Bank sets for all sectors both realistic and ambitious intermediary targets based on emission intensity metrics, supplemented with operational metrics when relevant.

A methodology has been developed for each sector to assess BNP Paribas' loan portfolio's carbon emissions footprint. This work leverages both our in-house expertise as well as external market initiatives[1] to which the Bank actively contributes such as the working groups sponsored by the UNEP FI[2] or by the Center for Climate-Aligned Finance[3] of the Rocky Mountain Institute[4]. These methodological choices comply with the NZBA guidelines as provided by the UNEP FI, and our targets are benchmarked against the IEA NZE 2050 scenario.

[1] For Steel and Aluminium, computation methodologies take into account, where suitable, the guidelines and frameworks proposed by the working groups sponsored by the Center for Climate Aligned Finance - to which BNP Paribas actively contributes.
[2] https://www.unepfi.org/net zero-banking/
[3] https://climatealignment.org/
[4] https://rmi.org/

BNP Paribas methodological building blocks for Sector's initial assessment and target setting

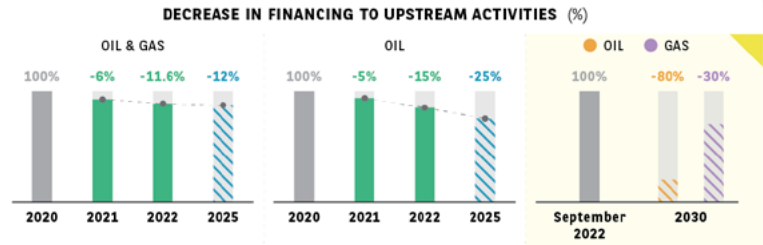


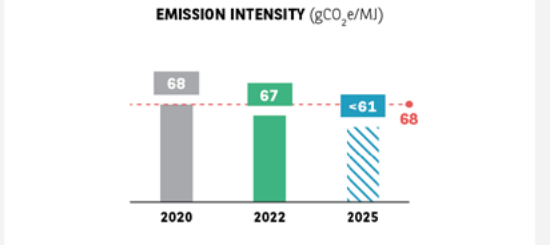
BNP Paribas strives to use the best available data and methodologies for each of the covered sectors. As data reliability, methodologies and standards continue to improve, BNP Paribas expects that regular reassessment will be needed to ensure our models and analysis reflect new developments, key trends and metrics. This might lead the Bank to adjust sector baselines and trajectories in future reports and in accordance with the best practices set by climate science.

Methodological evolutions will be monitored on a regular basis, as well as potential impact on trajectory intermediary points.

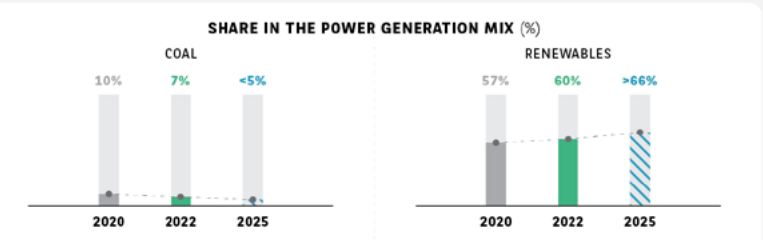
360° SECTOR OVERVIEW - CLIMATE ALIGNMENT DASHBOARD[5]

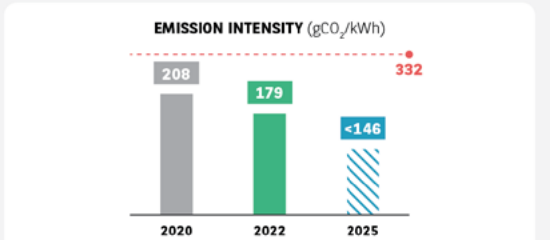
OIL & GAS



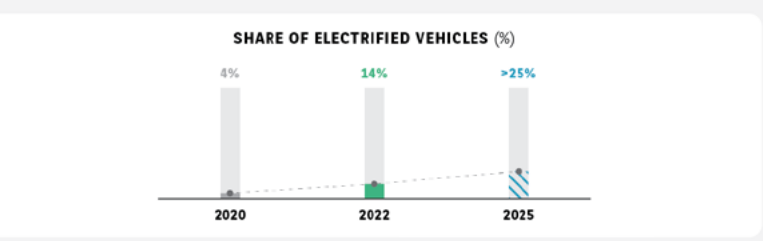


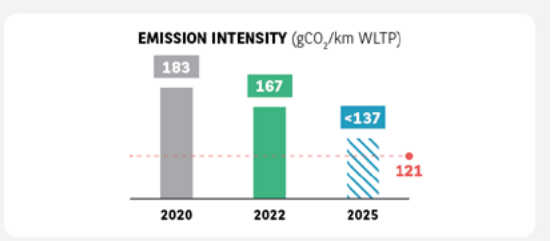
POWER GENERATION





AUTOMOTIVE





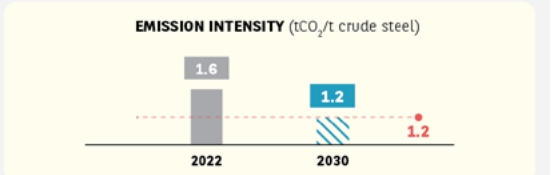
BNP PARIBAS' AMBITION AND PROGRESS TO DATE

BNP Paribas' targets have been informed by the Net Zero Emissions by 2050 scenario of the International Energy Agency (IEA NZE), reflecting the Group's ambition to align its portfolio with a 1.5°C temperature increase goal by 2050.

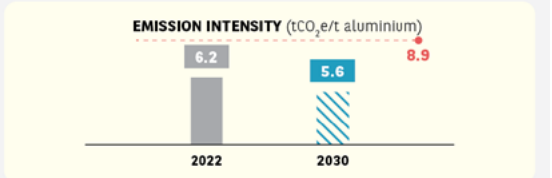
The targets for Oil and Gas, Power Generation, Steel and Aluminium meet or exceed the relevant IEA NZE benchmarks, while the Group's ambition for the Automotive and Cement sectors puts it in position to converge towards the IEA NZE trajectories in the medium term.

Based on its overall performance to date, the Group remains on track to meet its 2025 targets for Power Generation, Oil and Gas and Automotive.

STEEL



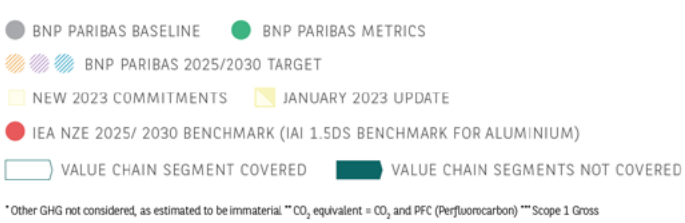
ALUMINIUM



COMMENT ON METRICS

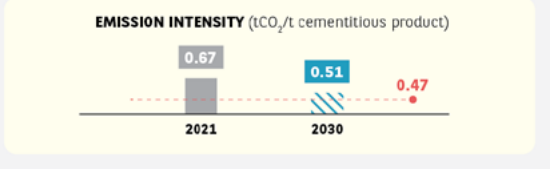
Two different sets of metrics have been chosen to monitor sectors' performance:

- **Emission intensity:** necessary to measure CO_2 equivalent relative emissions, and therefore to evaluate sector progress towards decarbonisation – applicable to all sectors.
- **Operational metrics:** specific to certain sectors, used to complement the emission intensity analysis by assessing the evolution of key operational aspects impacting the carbon footprint in the sector - applicable to Oil and Gas, Power and Automotive sectors.



*Other GHG not considered, as estimated to be immaterial. **CO_2 equivalent = CO_2 and PFC (Perfluorocarbon) ***Scope 1 Gross

CEMENT



[5] *IEA NZE Benchmark based on WEO 2021 considerations for Oil and Gas, Power and Automotive sectors; WEO 2022 for other sectors*

1.2 Alignment progress update on 2022 commitments

Oil and Gas

In 2022, the Oil and Gas sector has been strongly impacted by the unstable geopolitical situation due to the Russia-Ukraine conflict, resulting in energy supply tensions on a global scale, with strong repercussions in the European market and significant volatility in energy prices globally.

In Europe in particular, the shortage in natural gas supply and the resulting energy uncertainty has required the identification of alternative supplies such as LNG imports (with a related infrastructure build-up), to invest in new supply sources (essentially from Africa and Middle East) and has led to an acceleration in the renewable capacity deployment.

In this uncertain and volatile context, BNP Paribas has pursued with its stated objectives of reduction of its financing to Upstream Oil and Gas, while also accompanying clients engaged in the transition. We expect security of natural gas supplies to remain high on the European countries' agenda in years to come.

As of 31/12/2022, upstream Oil and Gas and refining represented c.1% of BNP Paribas' total financing.

▪ OPERATIONAL METRICS: UPSTREAM OIL AND GAS AND UPSTREAM OIL FINANCING

BNP Paribas first announced its ambition to reduce its upstream Oil and Gas financing in 2021 and subsequently strenghtened it in 2022. This commitment allows the Bank to actively monitor and steer the amount of credit made available to the Oil and Gas upstream segment of the industry. It is also a proxy for a carbon emissions reduction target.

As presented in the Section I.1.3, in January 2023 this ambition was further reinforced and **BNP Paribas is now committed to reduce its upstream oil financing to less than 1 billion euros by 2030, i.e. a 80% decrease compared to its exposure amount of 5 billion euros at the end of September 2022.**

BNP Paribas has also committed to streamline its upstream gas financing, giving priority to new-generation thermal power plants with low emission rates as well as to supply security infrastructure such as gas terminals, pipelines and gas transportation fleets. The upstream gas financing (5.3 billion euros at the end of September 2022) will be decreased by more than 30% by 2030.

At the same time, BNP Paribas remains firmly committed to deliver the 2025 targets which were set last year for the reduction of its upstream Oil and Gas financing (vs. a December 2020 baseline).

As of end 2022, BNP Paribas has already substantially succeeded in meeting its 2025 target on upstream Oil and Gas financing reduction by achieving a 12% reduction compared to the corresponding baseline at the end of 2020. In addition, the upstream oil financing has been reduced by 15% (vs 2020) and the Group is well on track to achieve its 2025 target of a 25% reduction.

▪ EMISSION INTENSITY METRIC:

The Oil and Gas portfolio weighted average emission intensity covers the full life cycle of emissions (Scope 1, 2 and 3) and is expressed in grams of CO_2 equivalent per mega joule (MJ) of energy generated.

In 2022, the Oil and Gas portfolio emission intensity has been reduced to 67 gCO_2e/MJ. BNP Paribas expects this reduction in intensity to accelerate as companies progress in the implementation of their emission reduction strategies. The Group's 2025 target of <61 gCO_2e/MJ remains unchanged.

Overview of Oil and Gas operational metrics and emission intensity metric

Operational Metrics			
Decrease in financing to Upstream	**2022** (vs Dec 31,2020)	**2025 Target** (vs Dec 31,2020)	**2030 Target** (vs Sep 30,2022)
Oil	-15%	-25%	-80%
Gas	-	-	-30%
Oil and Gas	-12%	-12%	-

Emission Intensity (gCO_2e/MJ)			
2020	**2022**	**2025 Target**	**% Reduction 2020–2025**
68	67	<61	>10%

Note: the Group's emission intensity is estimated using the following data sources:

- CO_2 and CH_4 emissions for Scopes 1 and 2 are taken in volumes ($ktCO_2e$ per annum) for each counterpart from Wood Mackenzie for upstream and for refining
- CO_2 emissions for Scope 3 are calculated based on volumes produced and/or refined by each company, using data sourced from Wood Mackenzie, to which IPCC 2006 Emission Factors for crude oil, natural gas and refining products (gasoline, diesel, kerosene etc.) are applied
- Production and processing volumes are sourced from Wood Mackenzie

Power Generation

In 2022, the Power Generation sector has also been strongly impacted by the geopolitical repercussions of the Russia-Ukraine conflict – resulting in energy supply disruptions at a global scale, especially in the European market. Emergency contingency plans involved the activation of coal as an alternative energy source to compensate gas shortages.
Despite this uncertain and volatile context, BNP Paribas maintained its financing role by supporting its clients throughout the energy crisis, while fostering investment towards new technologies and increased capacity in the renewable space leading to the decarbonisation of the industry.

As of 31/12/2022, power generation represented c.1.7% of BNP Paribas' total financing.

▪ OPERATIONAL METRICS: SHARE OF COAL AND SHARE OF RENEWABLES

Share of coal in the capacity mix of our financed Power Generation portfolio continued to decrease as a result of the enforcement of BNP Paribas' coal policy which commits to no longer finance companies that use coal to produce electricity in the EU and OECD countries by 2030 and in the rest of the world by 2040.
The share of renewables (including hydroelectric power) was marginally lower compared to 2021. In 2022, a higher share of the Bank's portfolio was allocated to renewable assets under construction which are not taken into account in the operational metric until the related projects are commissioned (as per PACTA methodology guidelines[6]). Overall, the share of low carbon energies (i.e. renewables and nuclear) remained stable vs. 2021 at 70%..

▪ EMISSION INTENSITY METRIC

Emission intensity slightly decreased compared to 2021. The increase of the Bank's exposure to low carbon clients was partially offset by the impact of an increase of the average IEA capacity factor for coal - reflecting a higher use of coal fire plants in the world.

Overview of Power Generation operational metrics and emission intensity metric

Operational Metrics				
Metric	**2020**	**2021**	**2022**	**2025 Target**
Share of coal (%)	10	8	7	<5
Share of renewables (%)	57	62	60	>66

Emission Intensity (gCO_2/kWh)				
2020	**2021**	**2022**	**2025 Target**	**% reduction 2020-2025**
208	182	179	<146	>30%

Note: the Group's emission intensity is estimated using the following data sources:

- Installed capacity per technology per counterpart (in MW) sourced from Asset Impact (formerly Asset Resolution). This data is used in the emissions intensity calculation as well as to estimate portfolio generation capacity mix.
- Capacity factors per technology & implied emission factors per technology sourced from the IEA "World Energy Outlook 2022". Capacity factors per technology measure how often an electric generator operates over a specific period, using a ratio (expressed as a percentage) of the actual output to the maximum possible output over that period.

[6] *PACTA for Banks Methodology*

Automotive

In 2022, the deterioration of the macro-economic context in the wake of the Russia-Ukraine conflict and the rising inflation have led to a softer demand for new cars vs 2021, while at the same time supply shortage issues have limited car manufacturers' production recovery. In this complex environment, the delivery of electrified cars has continued to grow strongly – despite the impact of higher electricity prices on the total cost of Electrified Vehicles' ownership.

BNP Paribas maintained its support to car manufacturers on both short term assignments (e.g. contingency plans required to mitigate global supply disruptions) as well as mid- and long-term strategies (e.g. review of logistics models in to be ready for this transition prior to 2035). **The Group's ambition is to keep working hand in hand with its clients to help them meeting most recently approved regulatory requirements** and therefore converging towards IEA NZE trajectory by 2030.

As of 31/12/2022, Light-Duty Vehicle (LDV) manufacturing activities represent c.0.6% of the Group's financing.

▪ OPERATIONAL METRICS: SHARE OF ELECTRIFIED[7] VEHICLES

The share of electrified vehicles in the powertrain technology mix of the BNP Paribas' financed automotive portfolio doubled in 2022 vs 2021 to 14%, reflecting the increase of electrified vehicle sales of the Bank's clients.

▪ EMISSION INTENSITY METRIC

Emission intensity decreased by 9 gCO_2/km WLTP[8] since 2021. This was driven by an improvement of client's performance and BNP Paribas exposure to best-in-class clients.

Overview of Automotive operational metrics and emission intensity metric

Operational Metrics				
Metric	**2020**	**2021**	**2022**	**2025 Target**
Share of electrified vehicles (%)	4	7	14	>25

Emission Intensity (gCO_2/km WLTP)				
2020	**2021**	**2022**	**2025 Target**	**% reduction 2020-2025**
183	176	167	<137	>25%

Note: the Group's emission intensity is estimated using the following data sources:

- Powertrain technology mix per counterpart (in % of vehicles produced) from IHS Markit. The produced fleet is segregated across five powertrain mixes: Internal Combustion Engine (ICE), Hybrid, Plug-in Hybrid (PHEV), Battery Electric Vehicles (BEV) and Fuel-Cell vehicles (FC).
- Emission factor per technology from Asset Impact, focusing on Scope 3 emissions of new vehicles sold (i.e., excluding current fleet in service) based on average standard CO_2 emissions per manufacturer and vehicle type per km driven based on WLTP norm.

[7] Electrified vehicles refers to a range of technologies that use electricity to propel a vehicle, for instance HEV (Hybrid Electric Vehicles), PHEV (Plug-in Hybrid Electric Vehicles), or BEV (Battery Electric Vehicles).
[8] The Worldwide harmonized Light vehicles Test Procedure (WLTP) is a global standard for determining the levels of pollutants, CO_2 emissions and fuel consumption for light duty vehicle.

1.3 2023 New portfolio alignment targets

Steel

KEY DECISIONS

BNP Paribas 2030 ambition for Steel

SCOPE	METRIC	SCENARIO	2022 BASELINE	2030 TARGET	DATA SOURCES
Scope 1 & 2 emissions	Emission intensity in t CO_2 / t crude steel	IEA NZE 2050 scenario	1.6 t CO_2 / t crude steel	1.2 t CO_2 / t crude steel (-25% vs 2022 baseline)	• IEA NZE scenario • CRU • Public client disclosures (commitments)

The alignment target for BNP Paribas' steel portfolio refers to a CO_2 emission intensity metric (expressed in t CO_2 / t Crude steel) covering Scope 1 and 2 emissions and is benchmarked against the IEA NZE 2050 scenario.

The parts of the value chain which are in scope span from raw material preparation to ironmaking and steelmaking, as well as auxiliary processes. As of 31/12/2022, the Bank's financing to these activities represented c. 0.3% of BNP Paribas' total financing.

BNP Paribas financed steel portfolio CO_2 emission intensity stood at 1.6 t CO_2 / t crude steel as of December 31, 2022. **By 2030, BNP Paribas target is to reach an emission intensity of 1.2 t CO_2 / t crude steel, representing a 25% reduction vs. a 2022 baseline.**

SECTOR DYNAMICS

Context of the global industry

Steel manufacturing is a highly carbon-emitting industry, producing around 7% of global energy system CO_2 emissions[9] In 2021, on average, each tonne of crude steel produced resulted in the emission of 1.91 tonnes of CO_2 into the atmosphere[10].

Global crude steel production was 1,952 Mt in 2021[11], with China accounting for about half of the total. According to the IEA NZE scenario, it is expected to reach 2,030 Mt by 2030 (alternative projections that follow the latest market trends show slightly lower output for the same year). While India and ASEAN countries are expected to be amongst the main contributors to the increase in crude steel production, output in China by 2030 is expected to decrease compared to 2021.

Primary production accounted for c. 80% of the total crude steel production in 2021. It was mostly carried out in integrated mills using the blast furnace - basic oxygen furnace (BF-BOF) route which is the most CO_2 intensive process (2.32 t CO_2 / t steel). The more recent DRI-EAF route nowadays relies mostly on natural gas for the reduction of iron ore, which makes it less CO_2 intensive in comparison (1.65 t CO_2 / t steel). In 2021, the primary production processes combined were responsible for 93%[10] of the total CO_2 emissions of the sector.

Secondary production is mostly carried out in Electric Arc Furnaces using recycled scrap. The scrap-EAF route has the lowest carbon intensity at an average of 0.67 t CO_2 / t steel In 2021, the secondary production represented ca. 20% of the total crude steel output but was responsible for only 7%[12] of the total CO_2 emissions of the sector.

[9] International Energy Agency, Iron and Steel Technology Roadmap, October 2020
[10] World Steel Association, Sustainability Indicators 2022 report
[11] IEA 2023; Iron and Steel Subsector, https://www.iea.org/reports/iron-and-steel, License: CC BY 4.0
[12] Computation based on International Energy Agency and World Steel Association data

Besides the feedstock in EAFs, scrap also constitutes a metallic input in the BOF process of integrated mills, and can contribute to their emission abatement efforts. In the NZE scenario, the scrap share input in all steelmaking processes combined increases from 31% in 2021 to reach 37% by 2030[13]. Nevertheless, scrap availability is not evenly distributed. Industrialized economies have high volumes of ferrous metals to recycle, while developing economies such as India and ASEAN countries have nowadays low levels of scrap available, which results in a higher dependency on primary production.

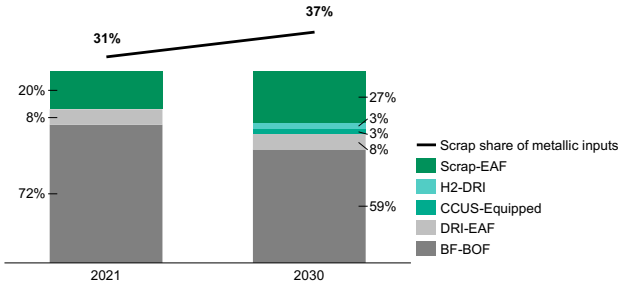
Decarbonisation enablers to be considered up to 2030 and onwards

Steel remains a crucial material for many sectors such as automotive, construction and energy. It is also a key infrastructure enabler for the energy transition, for example in off-shore wind facilities.

The decarbonisation levers available in the near term revolve around optimising the usage of input materials (e.g. scrap) and increasing the technology performance to reduce the energy intensity of the manufacturing process; these offer a relatively limited scope for improvement. Longer-term enablers with a higher potential for emission reduction include usage of low-carbon hydrogen and Carbon Capture and Use or Storage (CCUS).

Overall, decarbonisation pathways may vary from one region to another, depending on factors such as access to renewables and availability of scrap.

Production of crude steel by route in the Net Zero Scenarios[14] (IEA 2021-2030)



Key Net Zero enablers and high-level description

Electrification	CCUS (Carbon Capture, Utilization and Storage)	Low-carbon hydrogen
Replacement of blast furnaces with electric arc furnaces – promising, but requires massive investments and large volumes of low-price renewables as energy source	**Capture of residual emissions from emitting steel plants** - this technology is expected to play an important role	**Potential game-changer in the long term, as a replacement for metallurgical coal and natural gas**. Many major steel companies have already started developing DRI capacity in order to produce sponge iron with hydrogen – however, the reliable sourcing of massive volumes of low-carbon hydrogen necessary to operate these processes will be one of the main challenges of the sector

APPROACH

BNP Paribas' portfolio alignment assessment focuses on companies operating in steelmaking, both in primary and secondary production.

EMISSION SCOPE

Scope 1 and 2

Note: for non-vertically integrated steelmakers, emissions related to raw material preparation activities performed by third party providers (equivalent to scope 1 & 2 for integrated players) are also taken into account.

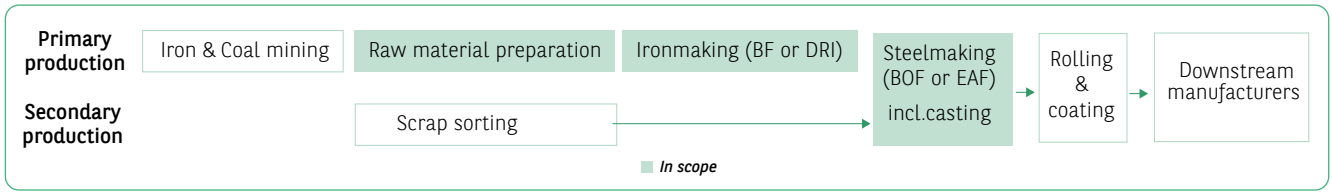
VALUE CHAIN

BNP Paribas' portfolio alignment measurement focuses on companies' operations that fall within the Fixed System Boundary of activities defined in the Sustainable Steel Principles' (SSP) and which represent the vast majority (c. 95%) of the CO_2 emissions of the industry.

Raw material preparation, ironmaking and steelmaking processes are key steps of the steelmaking value chain considered in our scope of analysis – other upstream (e.g. mining) or downstream (e.g. finishing) activities are considered out of scope:

[13] *International Energy Agency*
[14] *IEA, 2022, Steel*

Steel Sector Boundaries



METRICS

An intensity-based metric, capturing emission profile variations across BNP Paribas client portfolio is considered: t CO_2 / t crude steel. This consolidated metric takes into account the respective emission intensities of primary and secondary productions, as well as the share of scrap inputs.

DATA SOURCES

BNP Paribas has developed a blended approach leveraging emissions and production data from CRU, the Sustainable Steel Principles–recommended third-party data provider, adjusted to take into account clients' most recent publicly announced emission reduction commitments where available.

The Bank will pursue its efforts to securing the most reliable climate data and continuously improve its model accuracy – by leveraging trustable company information such as emissions data, transition plan initiatives and other relevant evidence.

BENCHMARK METHODOLOGY & TARGET SETTING

BNP Paribas has decided to use the IEA NZE 2050 scenario as a benchmark for the decarbonisation of its steel portfolio as follows:

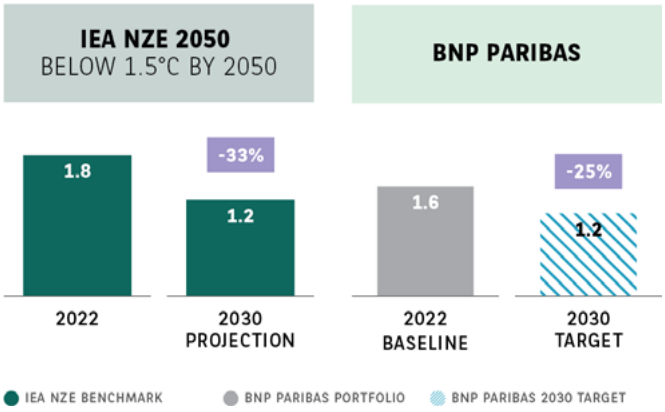
- Scope 1 calculations are based on the IEA NZE 2050 global steel decarbonisation scenario;
- Scope 2 is calculated based on the IEA NZE 2050 power generation decarbonisation scenario.

BNP Paribas' commitment for the steel sector

In 2022, BNP Paribas steel portfolio emission intensity was 1.6 t CO_2 / t Crude steel which is 12% below the comparable IEA NZE benchmark (1.8 t CO_2 / t crude steel). The portfolio benefits from favourable positioning in the EMEA region and presents slightly lower primary and secondary emission intensities as well as a slightly higher share of scrap input, than the comparable IEA indicators.

By 2030, BNP Paribas target is to align with IEA NZE 2050 scenario projections and therefore reach 1.2 t CO_2 / t crude steel emission intensity, representing a 25% reduction vs. the 2022 baseline.

BNP Paribas 2030 commitment on the Steel sector



ALUMINIUM

KEY DECISIONS

BNP Paribas 2030 ambition for Aluminium

SCOPE	METRIC	SCENARIO	2022 BASELINE	2030 TARGET	DATA SOURCES
Scope 1 & 2 emissions	Emission intensity in t CO_2e / t aluminium	IAI 1.5DS scenario	6.2 t CO_2e / t aluminium	5.6 t CO_2e / t aluminium (-10% vs 2022)	• IAI 1.5° Scenario[15] • IEA NZE scenario • CRU

The alignment target for BNP Paribas' Aluminium portfolio refers to a CO_2e emission intensity metric (expressed in t CO_2e / t aluminium) covering Scope 1 and 2 emissions and is benchmarked against the International Aluminum Institute (IAI) 2050 1.5DS scenario (which itself is based on the IEA NZE).

The activities retained include aluminium smelting (also referred to as electrolysis). As of 31/12/2022, these activities represent c. 0.04% of BNP Paribas total financingv.

The Bank's financed Aluminium portfolio CO_2e emission intensity stood at 6.2 t CO_2e / t aluminium as of December 31, 2022. **BNP Paribas target is to reach a emission intensity of 5.6 t CO_2e / t aluminium by 2030, i.e. a 10% reduction vs. a 2022 baseline.**

SECTOR DYNAMICS

Context of the global Aluminium industry

According to the IEA, in 2021 the Aluminium industry was directly responsible for 275 Mt of CO_2, c. 3% of the world's direct industrial CO_2 emissions (Scope 1). Including the indirect emissions from electricity consumption (Scope 2), the emissions of this industry amounted to 1.1 Gt of CO_2.

Primary aluminium production was 67 Mt in 2021, with China representing slightly less than 60% of the total. Primary production processes (alumina refining and aluminium smelting) account for c. 90% of the sector's CO_2 emissions despite primary aluminium representing c. two-thirds of the global supply. At 16.1 t CO_2 / t aluminium primary production is indeed more than 25 times more carbon intensive than secondary production (0.6 t CO_2 / t aluminium).

The IEA NZE 2050 scenario expects Aluminium production in 2030 to be 6% higher than in 2021. This trend is supported by the growth in global population and GDP, and the increased use of aluminium as a key material for transition technologies – due to favorable physical properties related to ductility, corrosion resistance, electrical conductivity and strength to weight ratio.

Regarding the sector emissions intensity (scope 1 & 2), the IEA NZE scenario expects a 3% decline per year by 2030. In the last years, aluminium production emission intensity has been only slightly decreasing and has not been on track with the IEA NZE's normative view.

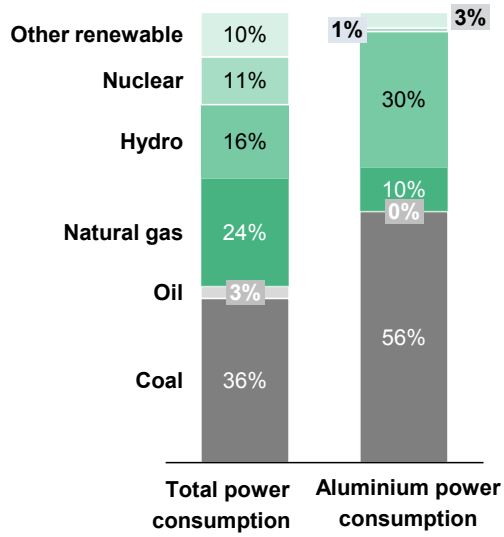
Decarbonisation enablers to be considered up to 2030 and onwards

Secondary production requires only 5% of the energy needed for primary production, therefore increasing the share of the former in the global mix is one of the key drivers for emission reduction. Yet, limited scrap availability caps the potential for such increase and in the IEA NZE scenario, the share of secondary production reaches only 40% of total production by 2030, compared to 34% in 2021.

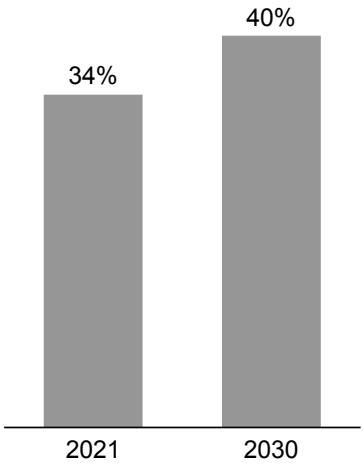
In primary production, the shift towards low-carbon electricity remains a key enabler in an industry where indirect emissions accounted for 70%[16] of total emissions in 2021. Longer term technological developments such as inert anodes (releasing oxygen instead of CO_2 during the electrolysis), CCUS and the use of low-carbon hydrogen to replace fossil fuels will be required to address the sector footprint.

[15] *IAI 1.5 Degrees Scenario (2018)*
[16] *IEA: Aluminium Analysis: https://www.iea.org/reports/aluminium*

Power consumption of Aluminium production vs global consumption per source of energy (IEA, 2020[17])



Share of recycled production in the Aluminium production (IEA, NZE 2050 Scenario[18])



APPROACH

BNP Paribas portfolio alignment measurement focuses on companies operating in the smelting segment of the Aluminium primary production value chain.

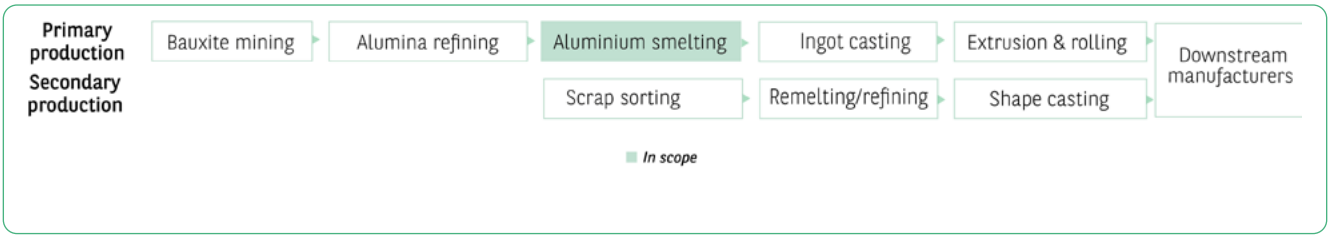
EMISSION SCOPE

Scope 1 and 2, encompassing both CO_2 and Perfluorocarbons emissions (PFCs)[19]

VALUE CHAIN

BNP Paribas has focused on Aluminium smelting which represents more than 75% of the life-cycle emissions within the sector. Other segments of the value chain in primary production (Bauxite mining and Alumina refining activities) as well as secondary production were not included at this stage due to data availability and data quality reasons.

↘ Aluminium Sector Boundaries



METRICS

An intensity-based metric, capturing emission profile variations across the BNP Paribas client portfolio is considered: t CO_2e / t aluminium.

DATA SOURCES

To calculate emission intensities of the companies in the aluminium portfolio, BNP Paribas relies on external data from CRU up to 2030.

As part of its efforts to continuously improve its model accuracy, BNP Paribas will be reviewing available climate data and leveraging the most reliable information on emissions, company transition plans and other relevant indicators.

[17] IEA, Composition of electricity used in aluminium production compared with total electricity consumption, 2010 and 2020
[18] IEA (2022), Aluminium
[19] PFCs can be produced in the smelting process of primary aluminium production, during events referred to as "anode effects", when insufficient amount of alumina is dissolved in the electrolyte bath - this results into the emission of gases such as tetrafluoromethane (CF_4) or hexafluoroethane (C_2F_6) with significant Global Warming Potential (GWP) accoding to IAI data relying on IPCC AR5 GWP values: 6,630 for CF_4 and 11,100 for C_2F_6. In 2021, PFC represented 6% of the CO_2e emissions released during electrolyisis

BENCHMARK METHODOLOGY & TARGET SETTING

BNP Paribas' Aluminium portfolio alignment is benchmarked against the IAI 1.5DS scenario, which is based on the IEA NZE 2050 scenario, combined with the IAI's material flow analysis and future demand scenarios.

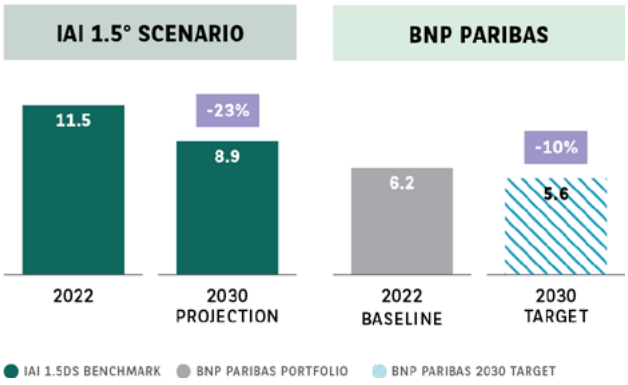
The IAI is providing the carbon budget of the Aluminium sector by process, notably the emissions related to the electrolysis, directly matching the value chain covered to measure BNP Paribas portfolio alignment.

BNP Paribas' commitment for the Aluminium sector

As of end 2022, BNP Paribas Aluminium portfolio stood at 6.2 t CO_2e / t aluminium and was well below the comparable IAI benchmark (11.5 t CO_2e / t aluminium), thanks to a favourable regional distribution with significant share of clients in Europe and Middle East. More specifically, the portfolio is highly exposed to clients with access to renewables (hydro) or gas, and with low share of coal, translating into a positive impact on its emission intensity profile.

Accompanying clients in further accelerating their decarbonisation pathways, notably by supporting them in the development of clean power usage and of decarbonisation levers not yet entirely mature (e.g. inert anodes, CCUS), continues to be at the center of the Bank's strategy.

BNP Paribas 2030 commitment on the Aluminium sector



Recognizing that its baseline has already achieved the IAI 2030 benchmark, BNP Paribas has established a target that exceeds the net zero ambition. **By 2030, BNP Paribas aims to reach an emission intensity of 5.6 t CO_2e / t aluminium, representing a 10% reduction vs. the 2022 baseline and being 37% below the IAI 2030 benchmark.**

CEMENT

KEY DECISIONS

BNP Paribas 2030 ambition for Cement

SCOPE	METRIC	SCENARIO	2021 BASELINE	2030 TARGET	DATA SOURCES
Scope 1 Gross & 2 emissions	Emission intensity in t CO_2 / t cementitious product	IEA NZE 2050 scenario	0.67 t CO_2 / t cementitious product	0.51 t CO_2 / t cementitious product (-24% vs 2021)	• IEA NZE scenario • Public client disclosures

The alignment target for BNP Paribas' Cement portfolio refers to a CO_2 emission intensity metric (expressed in t CO_2 / t cementitious products) covering Scope 1[20] and 2 emissions and is benchmarked against the IEA NZE 2050 scenario.

The activities retained include all end-to-end processes related to clinker & cement manufacturing. As of December 31, 2021, these activities represented c. 0.1% of BNP Paribas total financing.

The CO_2 emission intensity of the Bank's financed Cement portfolio stood at 0.67 t CO_2 / t cementitious products as of December 31, 2021. **By 2030, BNP Paribas target is to reach an emission intensity of 0.51 t CO_2 / t cementitious product, representing a 24% reduction vs. a 2021 baseline.**

[20] *Scope 1 emissions on a gross basis, i.e. including emissions released by the combustion of alternative fuels – excluding biomass*

Context of the global Cement industry

Cement represents a significant source of CO_2, being responsible for c. 7%[21] of the world's total CO_2 emissions.

Global production stood at c. 4,300 Mt of cement in 2021, with China accounting for about 55% of the total. Global demand is expected to continue to grow as emerging countries build their infrastructure. Nevertheless, the IEA NZE 2050 scenario assumes the cement production to stay relatively flat by 2030, mainly thanks to an optimized use of materials in construction together with the development of alternative building materials.

The emissions of the Cement sector are mostly generated from the chemical reactions involved in the processes of precalcination and clinkerisation (i.e. the conversion of limestone into calcium oxide at temperatures of up to 1,450°C; c. 60%[22] of total emissions) - and from the combustion of fossil fuels used to generate the process heat (c. 40%[23] of total production processes emissions).

Regarding sector emissions, between 2015 and 2021, the Cement CO_2 intensity increased c. +1.5% per year. The IEA NZE 2050 scenario directs a -3% decline per year in order to rejoin the trajectory by 2030.

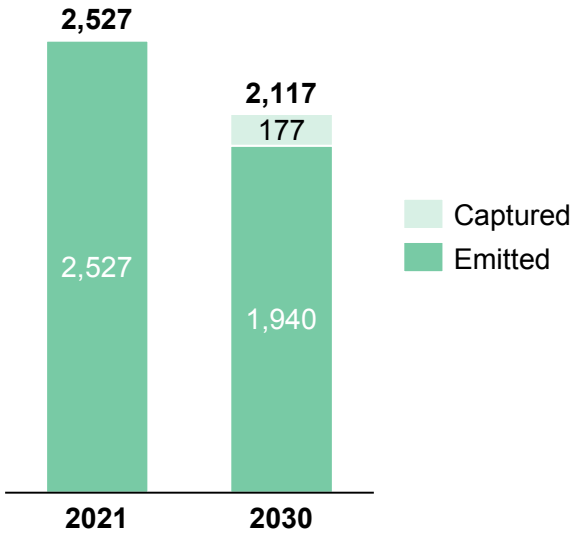
Decarbonisation enablers to be considered up to 2030 and onwards

Energy efficiency solutions (kiln upgrades, waste heat recovery) and the utilization of alternative fuels (bioenergy, renewable waste and non-renewable waste, including tyres, waste oil, plastics and municipal solid waste) for heat generation are among the main levers in the short to medium term. Some alternative fuels (non-renewable waste) can however have high CO_2 intensities and accordingly the NZE 2050 scenario puts the focus on increasing the share of bioenergy and renewable waste.

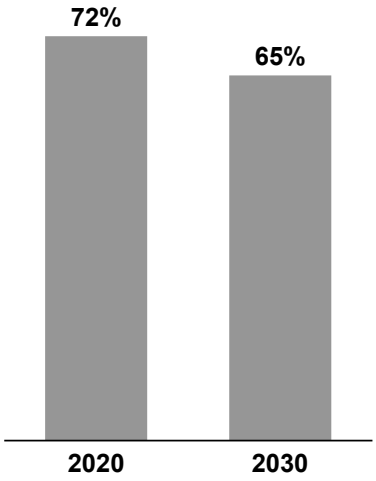
The optimization of the clinker-to-cement ratio represents a key lever as the quantity of clinker used is proportional to the emissions generated. Higher use of clinker substitutes (e.g. slag, fly ash) could be limited by technical requirements and end-usage specifications for certain types of concrete. In the NZE 2050 scenario, the IEA expects the clinker-to-cement ratio to drop from 72% to 65% in 2030.

Longer term solutions such as Carbon Capture Utilization and Storage (CCUS) entail several challenges: technological maturity, economic viability, significant funding requirements and a need of adequate ecosystems. There is still no consensus on the timeline for its deployment at scale: in the NZE 2050 scenario, the IEA expects CCUS to capture 8% of the cement emissions in 2030 but the industry assesses that this lever will only become significant beyond 2030[24].

CO_2 emissions from cement manufacturing[25] (IEA, NZE 2050 Scenario, in Mt CO_2)



Evolution of the clinker to cement ratio from 2020 to 2030 (IEA, NZE 2050 Scenario)[26]



[21] *IEA: Energy Technology Perspectives 2020 (windows.net)*
[22] *GCCA Sustainability Guidelines for the monitoring and reporting of CO_2 emissions from cement manufacturing*
[23] *GCCA: Getting to Net Zero (gccassociation.org)*
[24] *IEA: Cement – Analysis*
[25] *IEA, CCS deployment in the Net Zero Scenario, 2015-2030*
[26] *IEA (2022), Cement*

APPROACH

EMISSION SCOPE

Scope 1 and 2. Scope 1 includes emissions related to the combustion of alternative fuels (i.e. it is measured on a gross basis).

VALUE CHAIN

The portfolio alignment measurement focuses on companies operating in clinker & cement manufacturing end-to-end value chain (from quarrying of raw materials to storing)[20], covering substantially all emissions from these processes.

Cement Sector Boundaries

METRICS

An intensity-based metric, capturing emissions profile variations across BNP Paribas clients' portfolio is considered: t CO_2 / t cementitious product.

DATA SOURCES

To calculate emission intensities of companies in the Cement portfolio, BNP Paribas relies on clients' data and public commitments announced in annual reports. As a result, the baseline was set at December 31, 2021 due to data availability.

For future publications, BNP Paribas will continue working towards identifying and using reliable external data to improve its model accuracy and ensure a consistent treatment across companies and geographies.

BENCHMARK METHODOLOGY & TARGET SETTING

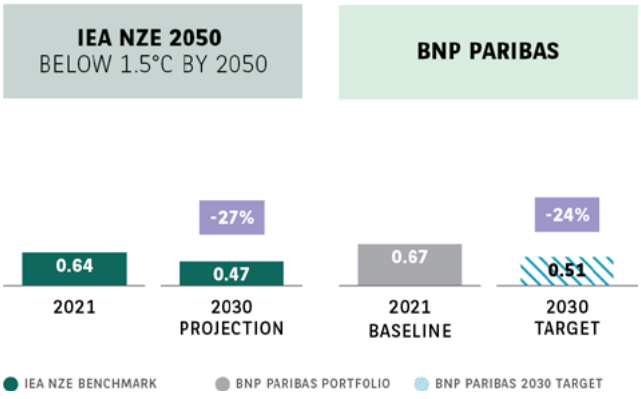
BNP Paribas has decided to use the IEA NZE 2050 as a benchmark for the decarbonisation of its cement portfolio. Scope 1 (gross basis) calculations are based on the NZE 2050 global cement decarbonisation scenario, complemented with IEA NZE 2050 global power generation decarbonisation scenario for the Scope 2 emissions.

BNP Paribas' commitment for the Cement sector

In 2021, the BNP Paribas Cement portfolio stood at 0.67 t CO_2 / t cementitious product, slightly above the IEA NZE scenario benchmark (0.64 t CO_2 / t cementitious product). The Bank's metric is based on a slightly broader value chain scope than the IEA technology roadmap modelling scope[21], leading to a slightly higher emission intensity. We intend to continue working towards eliminating comparability gaps with the IEA NZE benchmark.

After reviewing the range of available technological options for decarbonising clients' operations in the short term and acknowledging the fact that the industry commitments are not yet aligned with IEA's normative assumptions (e.g. on CCUS deployment), **BNP Paribas has set a target to reach an emission intensity of 0.51 t CO_2 / t cementitious product in 2030, representing a -24% reduction vs. the 2021 baseline.**

BNP Paribas 2030 commitment on the Cement sector



The target is slightly above the IEA NZE 2050 trajectory but the difference is nevertheless limited. The Group aims to keep supporting its clients in their transition pathways via the optimization of their clinker-to-cement ratio, energy efficienty and circular economy processes, and the development of CCUS technologies, today at a nascent stage. The Bank trusts an accelerated deployment of these drivers by 2030 could help converging gradually towards the NZE trajectory.

[20] *BNP Paribas relies on emissions disclosed by its clients, related to their cement manufacturing end-to-end operations.*
[21] *BNP Paribas' relies on clients data, which include limestone quarrying, while the IEA NZE roadmap modelling scope is excluding it.*

1.4 Aligning the credit portfolio with NZBA commitments

Aligning its portfolio with its net zero commitment is a key component of the overall strategy of the Bank, which it intends to deliver across several dimensions.

Pivoting the portfolio towards a low carbon future and accelerating on the path of reducing fossil fuel production, in line with the most ambitious pathways

Over the years, BNP Paribas has transformed the way it finances the energy sector, where its approach has been to support a transition that is both fast and grounded in the evolving realities of the world. The Bank has been continuously strengthening its sector policies, most recently with the update of its Oil and Gas policy, while encouraging and supporting its clients to switch to energies that are less damaging to the environment.

On the back of these efforts, BNP Paribas had already affected a major pivot towards financing low-carbon energy production, which represented 54% of its financing to energy production at the end of September 2022. The Group is committed to reach €40 billion in financing to the production of low-carbon, primarily renewable, energies by 2030. This amount will then represent nearly 80% of its exposure dedicated to energy production.

By directing capital towards a massive clean energy expansion in the coming years, the Bank will also indirectly help major industry sectors such as Aluminium and Steel that depend on electrification for their low carbon transition.

Fully mobilising the Group's integrated business model in support of clients as they deploy key decarbonisation technologies

As the Bank extends its alignment objectives to new sectors such as Steel, Aluminium and Cement, it intends to proactively support existing and new clients across the different steps of their low carbon journeys. In these hard-to-abate sectors, the transition will require both the massive deployment of readily available technologies as well as the emergence and rapid scaling-up of technologies that are still under development.

BNP Paribas is already deploying expertise and capital to help incubate some of the key transition technologies and catalysts for these new sectors such as CO_2 capture and low carbon hydrogen, which still require de-risking and support to reach commercial deployment phase.

On low carbon hydrogen specifically, helping finance several aspects of the value chain is important for scalability, and BNP Paribas' Low-Carbon Transition Group teams are active in this area. As an example, the Group is a Market Pathfinder Bank and Mandated Lead Arranger for a €3.5 billion financing of the first large-scale integrated hydrogen-based green steel facilities for H2 Green Steel in Northern Sweden.

Building its climate alignment expertise, tools, and systems

Recognising the need to strengthen its steering tools and capabilities, the Group created in 2022 the Climate Analytics and Alignment team ("C2A"). The team is entrusted with the responsibility to develop the methodologies and processes for the review of the carbon intensive sectors, to help formulate the Group's portfolio alignment ambition and to monitor the progress across the covered sectors.

The Group is also investing in developing the appropriate IT tools and capabilities to help automate, industrialise and secure the computation of its portfolio alignment metrics and trajectories, while enabling their smooth dissemination and integration in the relevant management information systems and processes.

Ultimately, the above steps will lead to the strengthening of the Bank's steering and monitoring capabilities, which will inform decision-making and reinforce its capacity to accompany clients while delivering on its net zero commitments.

Embedding our portfolio alignment ambition in our decision-making process

In the course of 2022, the C2A team started to support the Bank's front officers by providing ad hoc climate alignment analysis at client or transaction-specific level with impact simulations to inform the decision-making process. It is essential to ensure the origination efforts across the Group properly factor in its portfolio alignment targets.

For the clients that are part of the sectors covered by alignment objectives, such analysis can usefully complement the review performed as part of the regular ESG Assessment of corporates, notably by helping assess the maturity of the clients' decarbonisation plans and their progress vs the relevant benchmarks and trajectories.

The climate alignment metrics are also being progressively incorporated into the Risk Appetite Statement metrics and monitoring tools of the Bank. The progress vs the alignment targets is regularly monitored and reported to the governance bodies of the Group, including the Sustainable Finance Strategic Committee (SFSC).

2 OVERVIEW OF BNP PARIBAS MAIN CLIMATE-RELATED METRICS, TARGETS AND ALIGNMENT PROGRESS

METRICS	BASELINE	TARGETS
TRANSITIONNING IN THE ENERGY SECTOR FINANCING		
Financing to **low-carbon, primarily renewable, energy production**	**28.2 billion EUR at end-3Q2022, i.e. almost 55% of BNP Paribas' financing to energy production**	**40 billion EUR by 2030**
Financing to **upstream oil** (exploration and production)	5 billion EUR at end-September 2022	**Reducing by at least 80%, i.e. less than 1 billion EUR by 2030**
Financing to upstream gas (exploration and production)	5.3 billion EUR at end-September 2022	**Reducing by at least 30% by 2030**
Financing to **thermal coal**	1.3 billion EUR at end-September 2022	Completing the exit from the thermal coal value chain by 2030 in European Union and OECD countries, and by 2040 worldwide

METRICS	2022	TARGET
ENGAGING WITH CLIENTS TO SUPPORT THEM IN THEIR LOW-CARBON TRANSITION		
Amount of support to the transition of large corporate customers to low-carbon	**44 billion EUR at end-December 2022**	**200 billion EUR by 2025***

METRICS	BASELINE	2022	TARGET
REDUCING OWN OPERATIONAL EMISSIONS			
Greenhouse gas emissions tons of CO_2 equivalent per full time employees[1] (tCO_2e/FTE)	**3.21 tCO_2e/FTE** in 2012	**1.65 tCO_2e/FTE**[2]	**1.85 tCO_2e/FTE by 2025***

**These two targets are part of the 10 2025 targets of the CSR Dashboard.*
[1] Greenhouse gas emissions in tqCO_2e/FTE (kWh buildings and business travel): greenhouse gas emissions for scope 1 (direct emissions from the combustion of fossil fuels), scope 2 (indirect emissions from the purchase of energy) and, for a part of scope 3 (emissions related to employees' business travel), in proportion to the number of Group employees (FTE).
[2] The level of greenhouse gas emissions per employee in the Bank's operational scope is particularly low in 2022 in a context of a limited recovery in business travel by plane. However, in the context of the current energy crisis, this indicator could be impacted upwards by a higher-carbon energy mix in certain countries in which the Group operates.

- CREDIT PORTFOLIO (NZBA commitments)

Sectors published in 2022: Power Generation, Oil and Gas, Automotive

	Operational Metrics					Emission Intensity					
	Metric	2020 Baseline	2022	2025 Target	2030 Target	Metric	2020 Baseline	2022	2025 Target	IEA Net Zero 2025 Target	% Reduction 2020–2025
Oil and Gas	Upstream Oil Financing (%)	-	-15% (vs Dec 2020)	-25% (vs Dec 2020)	-80% (vs Sept 2022)	Emission Intensity (gCO_2e/MJ)	68	67	<61	68	>10%
	Upstream Gas Financing (%)	-	-	-	-30% (vs Sept 2022)						
	Upstream Oil and Gas Financing (%)	-	-12% (vs Dec 2020)	-12% (vs Dec 2020)	-						
Power Generation	Share of coal (%)	10	7	<5	-	Emission Intensity (gCO_2/kWh)	208	179	<146	332	>30%
	Share of renewable (%)	57	60	>66	-						
Automotive	Share of electrified vehicles (%)	4	14	>25	-	Emission Intensity (gCO_2/km WLTP)	183	167	<137	121	>25%

Sectors published in 2023: Steel, Aluminium, Cement

	Emission Intensity					
	Metric	2021 Baseline	2022 Baseline	2030 Target	IEA Net Zero 2030 Target	% Reduction Basline-2030
Steel	Emission intensity (tCO_2/t crude Steel)	-	1.6	1.2	1.2	25%
Aluminium	Emission intensity (tCO_2e /t aluminium)	-	6.2	5.6	8.9	10%
Cement	Emission intensity (tCO_2/t cementitious product)	0.67	-	0.51	0.47	24%

METRICS	BASELINE	TARGETS
INVESTMENT PORTFOLIOS (NZAM AND NZAOA COMMITMENTS)		
▪ BNP Paribas Asset Management, member of NZAM		
Carbon footprint (scopes 1 and 2) of its investments in scope	2019	**Reducing by 30% by 2025 and by 50% by 2030**
Alignment of its investments with net zero	-	**Reaching 60% by 2030 and 100% by 2040** of investment in companies that have already achieved carbon neutrality, are aligned or in the process of alignment
▪ BNP Paribas Cardif, member of NZAOA		
Carbon footprint (scopes 1 and 2) of equity and corporate bond portfolios held directly	2020	**Reducing by at least 23% by 2024**
Carbon intensity (scopes 1 and 2) of office buildings held directly	2020	**Reducing by at least 12% by 2030**

APPENDIX TCFD INDEX

	Recommended disclosures	BNP Paribas Climate Report references	Pages
I - GOVERNANCE	a) Describe the board's oversight of climate-related risks and opportunities.	**Part II – GOVERNANCE AND IMPLEMENTATION: A growing mobilization to accelerate the energy transition** **Section - 1.1** The Board of Directors oversees the management of climate-related issues This section illustrates the Board's processes and frequency to discuss and approve BNP Paribas' climate strategy. It provides insight on the Board's internal organization, compensation policy and relations with specialized committees to address climate-related risks and take advantage of related opportunities.	15
	b) Describe management's role in assessing and managing climate-related risks and opportunities.	**Part II – GOVERNANCE AND IMPLEMENTATION: A growing mobilization to fight climate change throughout the Group** **Section - 1.2** Management proposes and implements the Group's climate strategy This section explains how the management submits a climate strategy proposal to the Board, how the responsibility to implement this strategy is transmitted.	15
II - STRATEGY	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	**Part II – GOVERNANCE AND IMPLEMENTATION: A growing mobilization to accelerate the energy transition** **Section - 2.1** Climate change and its consequences are identified as risk drivers for BNP Paribas	10-11
		Section - 2.2 The energy transition also represents opportunities for BNP Paribas The tables, "Examples of potential impacts of transition risks" and "Examples of potential climate-related opportunities for BNP Paribas", classifying possible transition risks, physical risks and opportunities, provide depiction on the short-, medium- and long-term impact of these risks and opportunities regarding the Group's business.	12
	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	**Part I – STRATEGY: A resilient business model to face climate change** **Section - 1.1** A 2025 strategic plan to accelerate sustainability transition This section presents how climate-related risks and opportunities are taken into account into the Group's strategy, especially in its 2022-2025 strategic plan.	6
		Part I – STRATEGY: A resilient business model to face climate change **Section - 1.2** BNP Paribas takes strong commitments to combat climate change: timelines of its climate action	7-8
		Part I – STRATEGY: A resilient business model to face climate change **Section - 1.3** BNP Paribas commits to monitor its financing and investment activities in order to finance a net zero economy by 2050 These sections present the Group's main commitments and targets on climate (especially the long-term target of contributing to a net zero economy by 2050), which have significant impacts on the Group's businesses and financial planning.	8-9

		Part II – GOVERNANCE AND IMPLEMENTATION: A growing mobilization to accelerate the energy transition **Section - 3** BNP Paribas the low-carbon transition of all its clients This section presents the impacts of climate-related risks and opportunities on the Group's businesses (with examples of business cases on pages 18-20).	17-20
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	**Part I – STRATEGY: A resilient business model to face climate change** **Section – 3** BNP Paribas is resilient to various climate scenarios This section summarises our assessment on the resilience of the Group's strategy.	13
		Part II – GOVERNANCE AND IMPLEMENTATION: A growing mobilization to accelerate the energy transition **Section - 2.3** Assessing potential impacts of climate risks through climate scenario analyses and stress testing This section presents the multiple ways in which the Group uses different climate-related scenarios, including a 1.5°C scenario (a.o. IEA's NZE scenario), to assess the resilience of its strategy. Selected benchmark scenarios include those from IEA (NZE), NGFS and IPCC.	29-31

III – RISK MANAGEMENT	a) Describe the organization's processes for identifying and assessing climate-related risks.	**Part III – RISK MANAGEMENT** **Section - 2.2** Identifying the climate-related risk drivers All risks and transmission channels and their time horizons identified as part of the BNP Paribas inventory process are described. An assessment conducted by the Industry Research team to anticipate and mitigate risks is developed as well.	25-28
	b) Describe the organization's processes for managing climate-related risks.	**Part III – RISK MANAGEMENT** **Section 3 –** Focus on key risks This section presents key risks (credit risk, operational risk and market risk) and illustrates how they are managed.	33-34
	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	**Part III – RISK MANAGEMENT** **Section – 2.1** Insertion of climate risk management in the risk framework of the Group The climate-related risk management process is addressed through the Risk Appetite Framework, Risk identification and measurement, and Risk monitoring.	24-25

IV – METRICS AND TARGETS	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	**Part III – RISK MANAGEMENT** **Section – 1** Detailed exposures per sector	22-23
		Part III – RISK MANAGEMENT **Section – 2.2** Identifying the climate-related risk drivers	25-28
		Part III – RISK MANAGEMENT **Section – 2.3** Assessing potential impacts of climate risks through climate scenario analyses and stress testing These sections present metrics used by the Group to assess climate-related risks, in line the associated risk management processes	29-31
		Part IV - METRICS, TARGETS & ALIGNMENT PROGRESS: Monitoring the acceleration to net zero by 2050 **Section - 1.1** Introduction The credit portfolio's alignment methodology along with the sector-specific target setting approach are disclosed with metrics selected by BNP Paribas to assess risks and opportunities related to climate topics, in line with its strategy.	36-38
		Part IV - METRICS, TARGETS & ALIGNMENT PROGRESS: Monitoring the acceleration to net zero by 2050 **Section - 2** Overview of BNP Paribas main climate-related metrics, targets and alignment progress This section summaries the main metrics used by the Group to assess climate-related risks and opportunities.	51-53
	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	**Part I – STRATEGY: A resilient business model to face climate change** **Section – 1.4** BNP Paribas reduces its own operational emissions This section discloses the Group's operational GHG emissions, i.e. scope 1, scope 2, and scope 3.6 (business travels). The related risks are presented on both tables on page 11	9
		Part IV - METRICS, TARGETS & ALIGNMENT PROGRESS: Monitoring the acceleration to net zero by 2050 **Section – 1.2** Alignment progress update on 2022 commitments	39-41
		Part IV - METRICS, TARGETS & ALIGNMENT PROGRESS: Monitoring the acceleration to net zero by 2050 **Section – 1.3** 2023 new portfolio alignment targets These sections describe the climate impacts of BNP Paribas' loan portfolios for 6 sectors (i.e. finance emissions – scope 3.15) and the related risks.	42-49

	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	**Part IV - METRICS, TARGETS & ALIGNMENT PROGRESS: Monitoring the acceleration to net zero by 2050** **Section – 1.2** Alignment progress update on 2022 commitments	39-41
		Part IV - METRICS, TARGETS & ALIGNMENT PROGRESS: Monitoring the acceleration to net zero by 2050 **Section – 1.3** 2023 new portfolio alignment targets This section presents the main targets used by the Group to assess and manage climate-related risks and opportunities and the performance in 2022 against these targets. In particular, it displays the 2022 alignment progress updates in NZBA sectors in addition with new sectors, with a description of the benchmark methodology and target-setting approach.	42-49

Glossary

ACPR: Autorité de contrôle prudentiel et de résolution (French prudential supervisory and resolution authority)

ALMT: Asset and Liability Management Treasury

ASEAN: Association of Southeast Asian Nations

BEV: Battery Electric Vehicle

BF: Blast Furnace

BOF: Basic Oxygen Furnace

CF_4: Tetrafluoromethane

C2A: Climate Analytics and Alignment

C_2F_6: Hexafluoroethane

CCCA: Collective Commitment to Climate Action

CCIRC: Comité de Contrôle Interne, des Risques et de la Conformité (Internal Control, Risk and Compliance Committee)

CCUS: Carbon Capture, Utilisation and Storage

CEO: Chief Executive Officer

CGEN: Comité de gouvernance, d'éthique, des Nominations et de la RSE (Governance, Ethics, Nominations and CSR Committee)

CH_4: Methane

CIB: Corporate and Institutional Banking

CO_2: Carbon dioxide

CO_2e: Carbon dioxide equivalent is the number of metric tons of CO_2 emissions with the same global warming potential as one metric ton of another greenhouse gas

COP: Conference of Parties

CoR: Cost of Risk

CSR: Corporate Social Responsibility

DRI: Direct Reduction of Iron

EAD: Exposure At Default

EAF: Electric Arc Furnace

EBA: European Banking Authority

ECB: European Central Bank

EMEA: Europe, Middle East, Africa

EPC: Energy Performance Certificates

ESG: Environmental, Social and Governance

EU: European Union

EV: Electric Vehicle

FC: Fuel-Cell vehicle

FTE: Full-Time Equivalent

FSTF: Financial Services Task Force

g: Gram

GCCA: Global Cement and Concrete Association

gCO_2/km: Gram of carbon dioxide per kilometer

gCO_2/kWh: Gram of carbon dioxide per kilowatt-hour

gCO_2e/MJ: Gram of carbon dioxide equivalent per mega joule

GDP: Gross Domestic Product

GFANZ: Glasgow Financial Alliance for Net Zero

GHG: Greenhouse Gases

Gt: Gigatonne

GWAM: Gigawatt

GWP: Global Warming Potential

H_2: Hydrogen gas

HQE: Haute Qualité Environnementale (High Environmental Quality)

IAI: International Aluminium Institute

IAM: Integrated Assessment Model

ICAAP: Internal Capital Adequacy Assessment Process

ICE: Internal Combustion Engine

ICT: Information and Communication Technology

IEA: International Energy Agency

IMO: International Maritime Organization

IPCC: Intergovernmental Panel on Climate Change

IPO: Initial Public Offering

IPS: Investment & Protection Services

IT: Information Technology

km: Kilometer

KPI: Key Performance Indicator

kWh: Kilowatt-hour

KYC: Know Your Customer

LCTG: Low Carbon Transition Group

LDV: Light-Duty Vehicle

LEED: Leadership in Energy and Environmental Design

LNG: Liquefied Natural Gas

Midcap: Mid-capitalization companies

MJ: Megajoule

Mt: Megatonne

MW: Megawatt

MWh: Megawatt-hour

NACE : Nomenclature statistique des Activités Economiques (Classification of Economic Activities)

NEST: Network of Experts in Sustainability Transitions

NGFS: Network of supervisors and central banks for Greening the Financial System

NZAOA: Net Zero Asset Owner Alliance

NZAM: Net Zero Asset Manager initiative

NZBA: Net Zero Banking Alliance

NZE: Net Zero Emissions

NZE 2050: The IEA's Net Zero Emissions by 2050 Scenario

OECD: Organisation for Economic Cooperation and Development

PAB: Paris Aligned Benchmark

PACTA: Paris Agreement Capital Transition Assessment

PF: Personal Finance

PFC: Perfluorocarbons

PHEV: Plug-in Hybrid Electric Vehicle

PV: Photovoltaic

RAS: Risk Appetite Statement

RAF: Risk Appetite Framework

RCP: Representative Concentration Pathway

REIM: Real Estate Investment Management (BNP Paribas)

REMIND: Regional Model of Investment and Development

SSP: Sustainable Steel Principles

UN: United Nations

SDS: Sustainable Development Scenario

SLL: Sustainability-Linked Loan

SME: Small and Medium-Sized Enterprise

SMI: Sustainable Markets Initiative

t: tonne or metric ton

TCFD: Task force on Climate related Financial Disclosures

UNEP FI: United Nations Environment Programme Finance Initiative

URD: Universal Registration Document

WLTP: Worldwide harmonized Light Vehicle Test Procedure

WRI : World Resources Institute

Disclaimer

This report was prepared in May 2023.

The figures included in this report are mostly unaudited (CSR Dashboard KPIs data are audited).

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