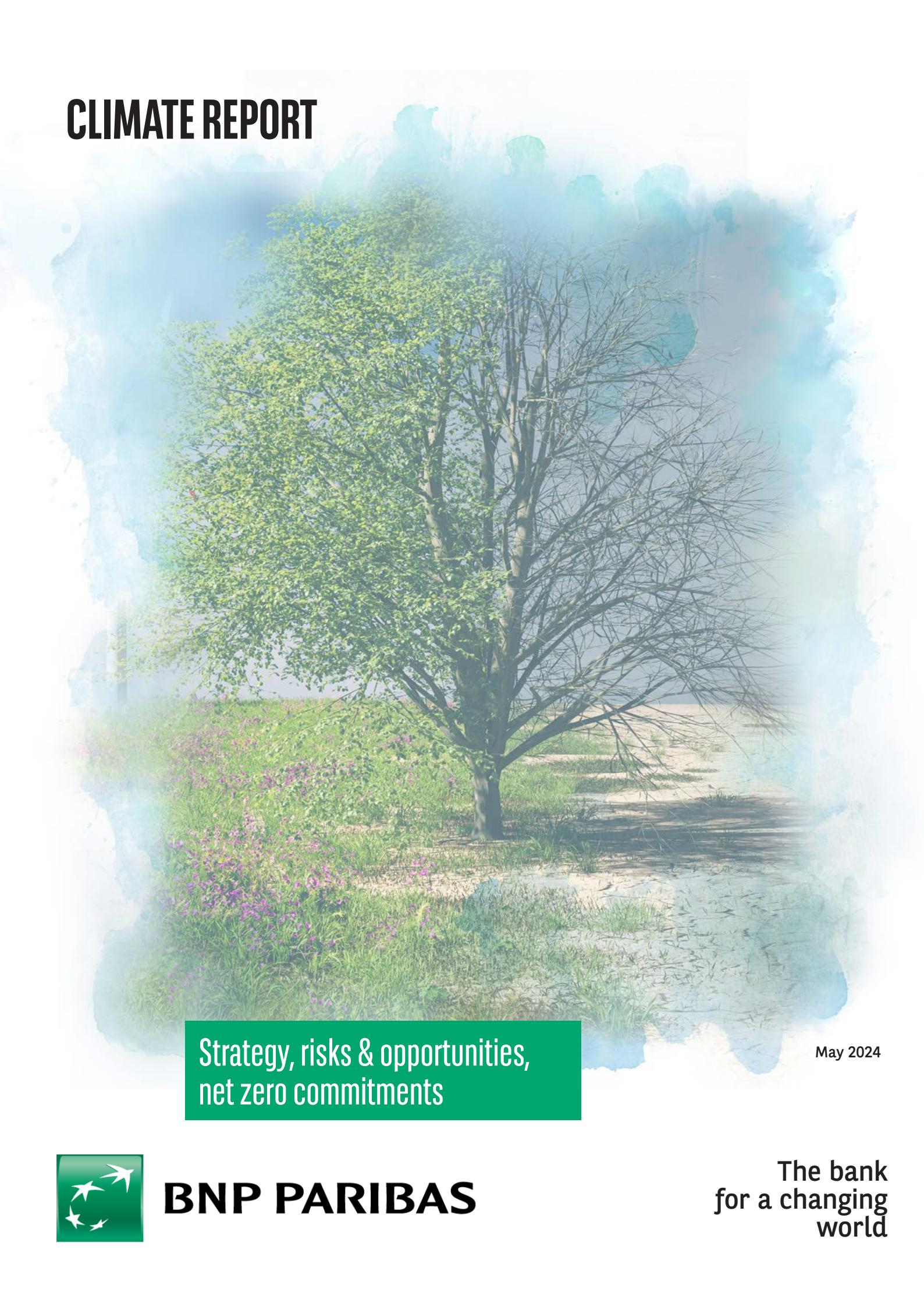


# CLIMATE REPORT



Strategy, risks & opportunities,  
net zero commitments

May 2024



**BNP PARIBAS**

The bank  
for a changing  
world

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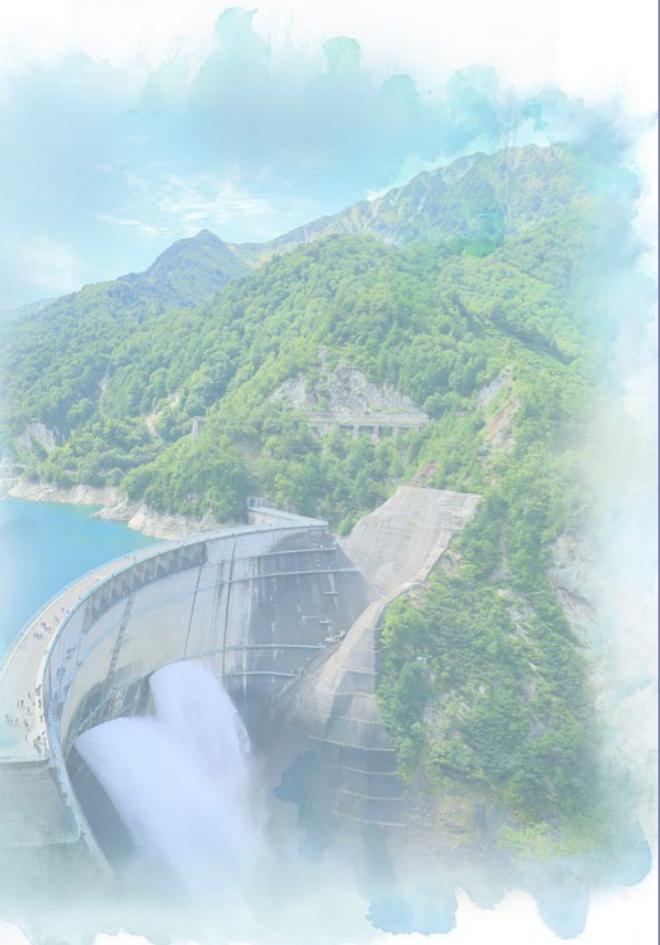
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# STRATEGY: A RESILIENT BUSINESS MODEL TO FACE CLIMATE CHANGE

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

### 1.1 On track for sustainability within the 2025 Strategic Plan

In 2021, BNP Paribas published its company purpose<sup>1</sup> "We are at the service of our clients and the world we live in". To this end, the Group engages continuously with its clients to create a sustainable low-carbon future, 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 the Group's strategy. Within the Sustainability pillar of the plan, the Bank has defined five priority themes that

align with its clients' objectives and with the United Nations' Sustainable Development Goals (UN SDG). While the climate is obviously central to the priority theme "Transitioning towards carbon neutrality", it is also deeply connected to the others, such as "Circular economy" (e.g. via the reduction of resource consumption and the decrease in associated energy) or "Natural capital & biodiversity" (e.g. via the fight against deforestation) or "Sustainable savings, investments and financing" (e.g. via green bonds issuance, reducing carbon footprint of 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 objective for carbon neutrality (see *Part IV. Metrics, targets and alignment progress*).
2. Engaging with clients to support them in the transition towards a sustainable low-carbon economy (see *Part II. Section 3. BNP Paribas supports the low-carbon transition of all its clients*).
3. Strengthening steering tools, processes and set-ups (see *Part II. Section 2. Tools, processes, and set-ups strengthened to address climate change*).

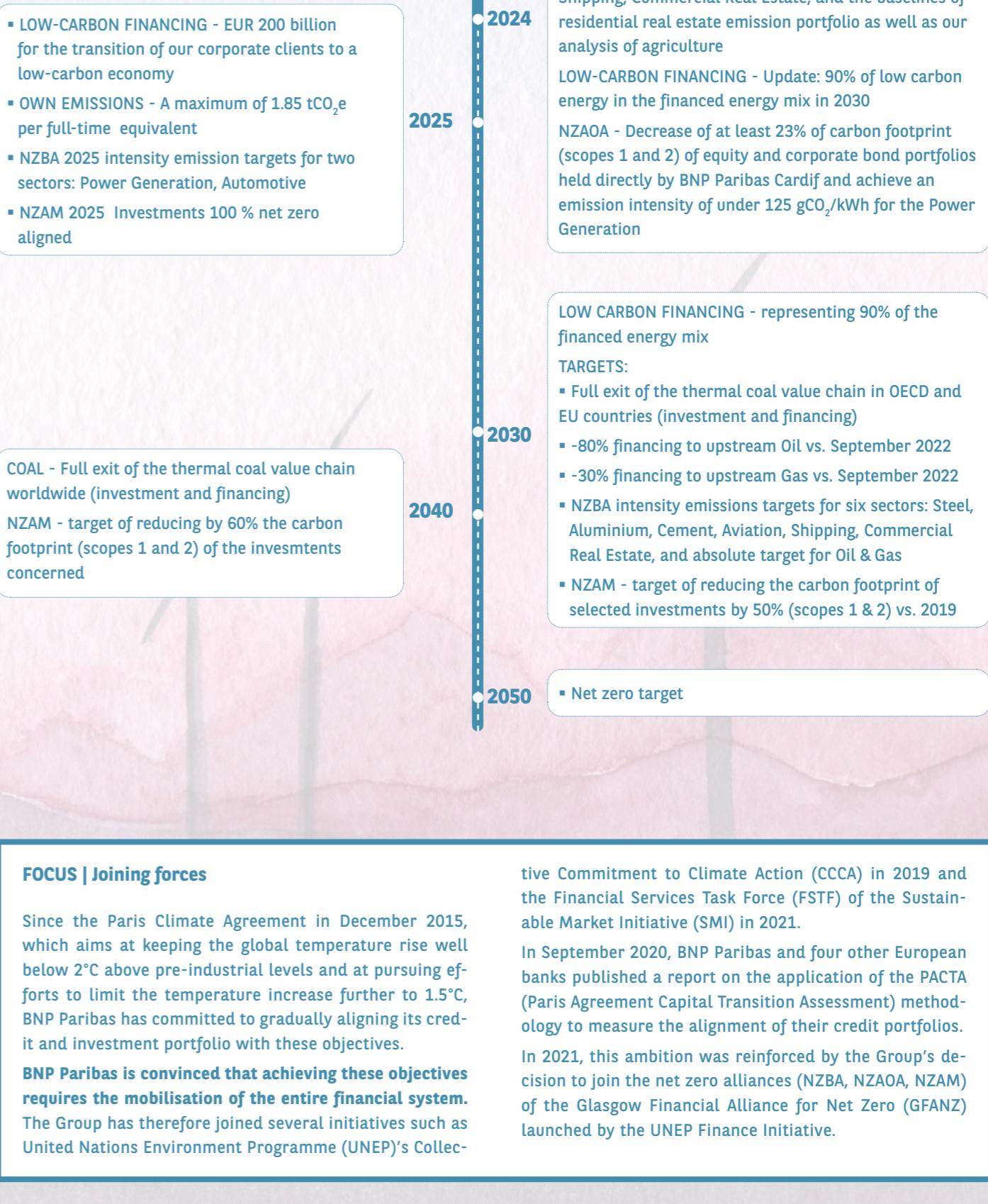
<sup>1</sup> <https://group.bnpparibas/en/group/about-us/company-purpose>

## 1.2 BNP Paribas' strong commitments to combat climate change

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



### TIMELINE 2 Accelerating the pathway to net zero: ambitious commitments to pave the way to global carbon neutrality by 2050



## 1.3 Committed to a net zero economy by 2050: BNP Paribas monitors its financing and investment activities

### 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<sup>2</sup>, including the energy sectors with the largest impact on climate change. These restrictive policies lay down strict ESG criteria, including some related to climate. The policies are regularly updated: for instance, in 2023, the Group excluded all financing for projects related to the extraction of the metallurgical coal.

Regarding the energy sector, 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 clients portfolio.

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 no longer grants financing for the development of new oil or gas projects, regardless of the financing terms (project financing, reserve-based lending, FPSO), nor to non-diversified players in oil exploration and production.**

### 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. At the end of 2023, the number of companies under monitoring was 286, while the number under exclusion reached 1,432.

### 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 Group's Universal Registration Document each year.

In BNP Paribas' vigilance plan<sup>2</sup>, 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 Group's vigilance approach includes the risk of harm to the environment, considering climate physical and transition risks, and GHG emissions (CO<sub>2</sub>, methane, and others).

### FOCUS | Accelerating in the financing of the energy transition

As of 30 September 2023, BNP Paribas' financing of low-carbon energies had reached EUR 32 billion, representing a total of 65% of the Group's financing to energy production. Within the financing for low-carbon energy, renewables accounted for EUR 28.8 billion, an increase of EUR 4 billion in one year due to an increase in financing of renewables across all client segments (utilities, non power companies, households). Exposure to nuclear and biofuels remained stable over the last year. By 2030, the Group now targets 90% of its energy financing towards low-carbon.

This low-carbon exposure covers drawn and committed undrawn amounts. It has been built as an addition of five exposures:

- **Exposure to renewable power generation from power generation actors:** this computation is based on the renewable share in the power generation capacity mix of each legal entity as provided by the data provider Asset Impact.
- **Exposure to nuclear power generation from power generation actors (utilities, renewable developers and operators):** this computation is based on the nuclear share in the power generation capacity mix of each legal entity as provided by the data provider Asset Impact.
- **Exposure to renewable power generation:** some transaction can come from non-power generation actors such as supermarkets, IT companies, etc. when such companies are developing a renewable project, the transaction is identified and included in the calculation.
- **Exposure to renewable power generation from households:** it is based on identified renewable transactions in the Bank's internal systems.
- **Exposure to biofuels:** it is based on biofuels' industry code in the Bank's internal systems.

As of now, the broader low-carbon ecosystem (renewable manufacturers, hydrogen, storage, etc.) is not taken into account.

Additionally BNP Paribas 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 2017, BNP Paribas stopped supporting companies whose primary business is exploration, production and export of gas or oil from shale oil and gas and from tar sands specialists. In 2022, BNP Paribas also tightened its financing restrictions in particularly sensitive ecosystems such as the Arctic and the Amazon<sup>4</sup>.

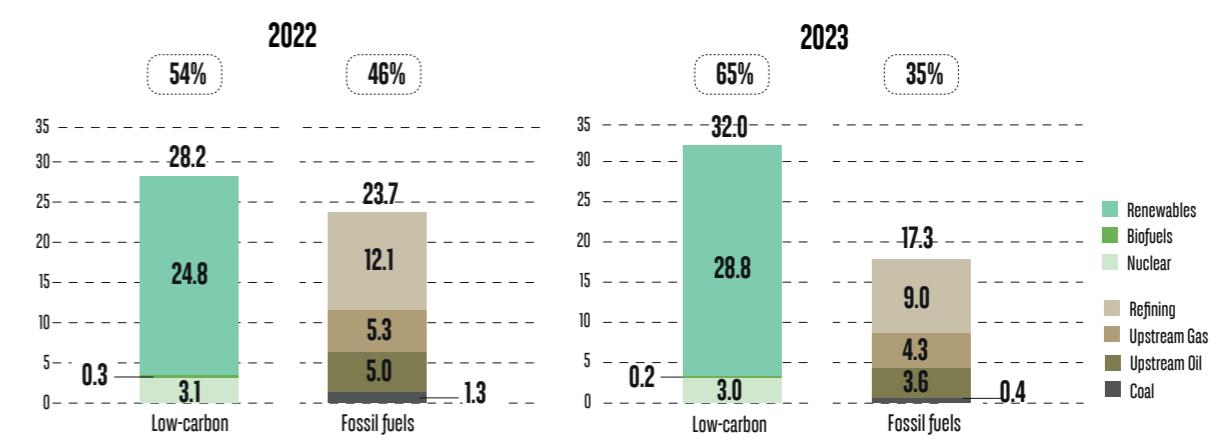
In the oil sector, BNP Paribas will reduce its financing of oil exploration and production by 80% by 2030, compared to end of September 2022, as follows:

- The end of financing purely dedicated to the development of new oil fields regardless of the financing methods (project financing, reserve-based lending, FPSO).
- The phasing out of financing for non-diversified oil upstream players (independent oil companies) and intended to support oil production (corporate financing or reserve-based lending).
- The reduction of general purpose lending allocated to oil upstream.

As regards gas exploration and production, BNP Paribas also excludes all financing dedicated to the development of new capacities. The amount of financing for gas exploration and production will be reduced by more than 30% by 2030 compared to the end of September 2022. The Group may contribute to the financing of new-generation thermal power plants with low emission rates as well as, if necessary, of the infrastructure needed for security of supply (gas terminals, gas transportation fleet, etc.), to take into account current geopolitical factors.

### Financing for low-carbon energy and fossil fuels

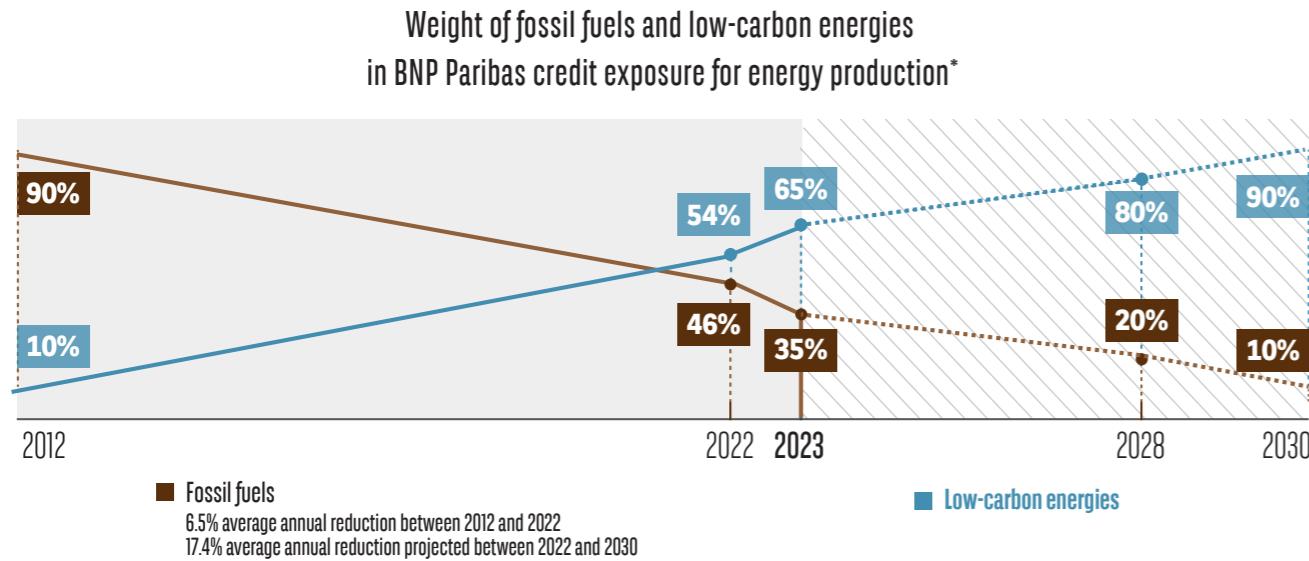
Credit facilities + contingent liabilities + securities on balance sheet, in billions of euros, at 30 September 2022 and 30 September 2023.



<sup>2</sup> <https://group.bnpparibas/en/our-commitments/transitions/financing-and-investment-policies>

<sup>3</sup> BNP Paribas Universal Registration Document and Annual Financial report 2023, page 704

<sup>4</sup> See our oil and gas policy: [https://group.bnpparibas/uploads/file/bnpparibas\\_csr\\_sector\\_policy\\_oil\\_gas.pdf](https://group.bnpparibas/uploads/file/bnpparibas_csr_sector_policy_oil_gas.pdf)



Furthermore, the consequences in terms of liability may arise from these two risk factors. They could result in potential disputes, claims for compensation, or 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 Group'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 is monitored by BNP Paribas as it conducts its own business and that of its counterparties, and in its proprietary and third-party investments.

## 1.4 BNP Paribas reduces its own operational emissions

Since 2012, BNP Paribas has implemented a 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, cat. 6) increasing the share of low-carbon electricity used. At end 2023, the carbon footprint per Full Time Equivalent was 1.56 tCO<sub>2</sub>e, being already lower

than the maximum target set for 2025. This figure also represents a reduction of 10% compared to 2022 and more than 38% compared to 2019, the pre-Covid-19 reference year. Additionally, since 2017, the Group annually purchases voluntary carbon credits for an amount equivalent to the residual greenhouse gas emissions emitted the previous year within its operating scope.



## 2 BNP PARIBAS IDENTIFIES PRIMARY CLIMATE-RELATED RISKS AND OPPORTUNITIES

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 5 meets legal and regulatory requirements related to risks of the BNP Paribas Group<sup>5</sup>.

Environmental risks and, more particularly, those associated with climate change are likely to translate into financial risks for the Group. It 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.

<sup>5</sup> Chapter 5 - Pillar 3 of the 2023 URD, page 526.

## ■ 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 proceedings, 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	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	MT
	Regulatory changes	All activities	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
	Rise in carbon prices (tax or quotas)	Internal	MT
Operational Risk	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	All activities	MT/LT
	Stranded assets and fall in value		
	Under-performance of fund		
Credit, Counterparty and Settlement Risk	Credit losses	Financing activities	MT/LT
	Increased demand for liquidity		
	Increased capital and insurance costs to cover damages		
Market Risk	Sharp fall in prices or revaluation of financial assets and commodities	Market activities & Asset Management	MT/LT
	Supply chain disruption		
	Partial or total destruction of critical buildings (including data centers)		
Operational Risk	Decrease in worker productivity	Internal	MT/LT

Legend: Short term (ST) is within two years, medium term (MT) is between three to five years, and long term (LT) is after five years.

## 2.2 The energy transition also represents opportunities for BNP Paribas

As indicated by the International Energy Agency (IEA) in the 2023 update of its Net Zero Roadmap<sup>6</sup>, getting on track for the NZE (Net Zero Emissions) scenario by 2050 will require a tripling of investments on clean energy and infrastructure by 2030. It estimates that annual investments in low-carbon energy needs to climb from USD 1.8 trillion in 2023 to around USD 4.5 trillion a year by the early 2030s to enable alternatives to fossil fuels for companies and individuals. Among the key milestones on the pathway to net zero emissions by 2050, the IEA NZE scenario shows that electricity produced from renewables should grow from 30% in 2022 to nearly 60% in 2030 and more than 75% in 2035. In addition, the IEA estimates that the electric vehicles sales recent growth put them on track to account for two-thirds of new car sales by 2030 – a critical milestone to reach net zero CO<sub>2</sub> emissions by 2050.

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, etc.)	ST
Commercial, Personal Banking & Services (CPBS)	Expanding the offers to support the energy renovation of individual homes (green mortgage loans, special consumer loans, etc.) and SME properties	ST/MT
	Developing affordable sustainable mobility offers for individuals, SMEs and midcaps	ST/MT
	Supporting SMEs and midcaps clients in their low-carbon transition through the Low-Carbon Transition for Midcaps & SMEs initiative	ST/MT
Investment and Protection Services (IPS)	Developing more energy efficient and less GHG-emitting leasing products	ST/MT
	Engaging with companies to encourage their energy transition	ST/MT
	Expanding the range and volume of sustainable investments' solutions	ST/MT
Operational Scope	Developing low-carbon products (positive energy buildings, climate and green indices, green investments via retail funds, etc.)	ST/MT
	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) is within two years, medium term (MT) is between three to five years, and long term (LT) is after five years.

<sup>6</sup> <https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-1.5c-goal-in-reach>

### 3 BNP PARIBAS' BUSINESS MODEL IS RESILIENT TO VARIOUS CLIMATE SCENARIOS

As presented in the previous section, BNP Paribas identifies and analyses the different climate-related risks and 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.

**These analyses in combination with its transformation contribute to the Group's resilience to the environment 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.



To mitigate these risks and to seize these opportunities, BNP Paribas embeds climate and transition towards carbon neutrality at the core of its strategy. This involves expanding teams dedicated to the support of clients in their transition (Low-Carbon Transition Group), training all employees on these topics through its Sustainability Academy, developing robust tools to be used during the decision-making process (Risk ID, ESG Assessment, etc. see *Part III. Section 2. How climate risks are identified, measured and monitored*).

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*):

- BNP Paribas supports its clients in their own energy transition, helping them finance the necessary changes in their business models and activities.
- The energy transition provides new financing opportunities (renewable energies, low-carbon hydrogen, energy renovation, electric mobility, etc.).

**Climate-related opportunities are expected to be significantly more important than the decrease in business resulting from climate mitigation.** This 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 HAS A STRONG CLIMATE GOVERNANCE

## 1.1 The Board of directors oversees the management of climate-related issues

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). The Board is regularly informed of the progress made in the implementation of the Group's CSR strategy. In 2023, it addressed ESG topics 29 times, including the financing of the energy transition and BNP Paribas' netzero trajectory, as well as the preliminary analyses of the corporate loan portfolio with regard to ESG risk factors.

### ■ Two specialized committees within the Board of directors



## 1.2 The 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 is responsible for operational implementation of the Group's climate strategy alongside the operational entities.

### 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<sup>7</sup>, two of which are climate-related (see Part IV. Section 2. Overview of BNP Paribas' main climate-related metrics, targets, and alignment progress). This CSR dashboard is monitored on an annual basis by the Group's Executive Committee. The achievement of these CSR objectives determines the payment of 20% of the amount of the loyalty plan awarded in 2023 to more than 8,200 key Group employees. The achievement of the CSR objectives is also included for one third in the calculation of 15% of the variable compensation awarded for 2023 to the Group's corporate officers.

# 2 TOOLS, PROCESSES, AND SET-UPS STRENGTHENED TO ADDRESS CLIMATE CHANGE

## 2.1 Further accelerating the transformation of the whole Group

In addition to the appropriate governance described in the previous section, 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 the low-carbon transition of all its clients. Since 2010, BNP Paribas has gradually deepened and broadened the integration of its climate agenda and commitments in the whole Group, 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 Group to reinforce the strategic dialogue with clients on ESG matters, including climate issues. More than 3,000 large and very large corporate clients were evaluated using this tool by the end of 2023, representing almost the entirety of the Group's clients in these segments. The tool has also been adapted to cover mid-size clients (with an annual turnover greater than EUR 50 million) and financial institutions throughout 2024.

Since 2021, high level 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 Paribas has been proactive in providing training on climate-related issues, to all its employees and tailored to different audiences.

In 2023, 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 at end-Q1 2024, more than 25,000 employees had already attended this workshop, offered in over 20 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 skillsets in this field. Over a bit more than a year, more than 100,000 individual employees took part in at least one training on sustainable finance (1.7 hour and 4.3 training modules on average by FTE at the end of 2023).

Furthermore, communities of environmental and climate expertise have been created within the Group to accelerate

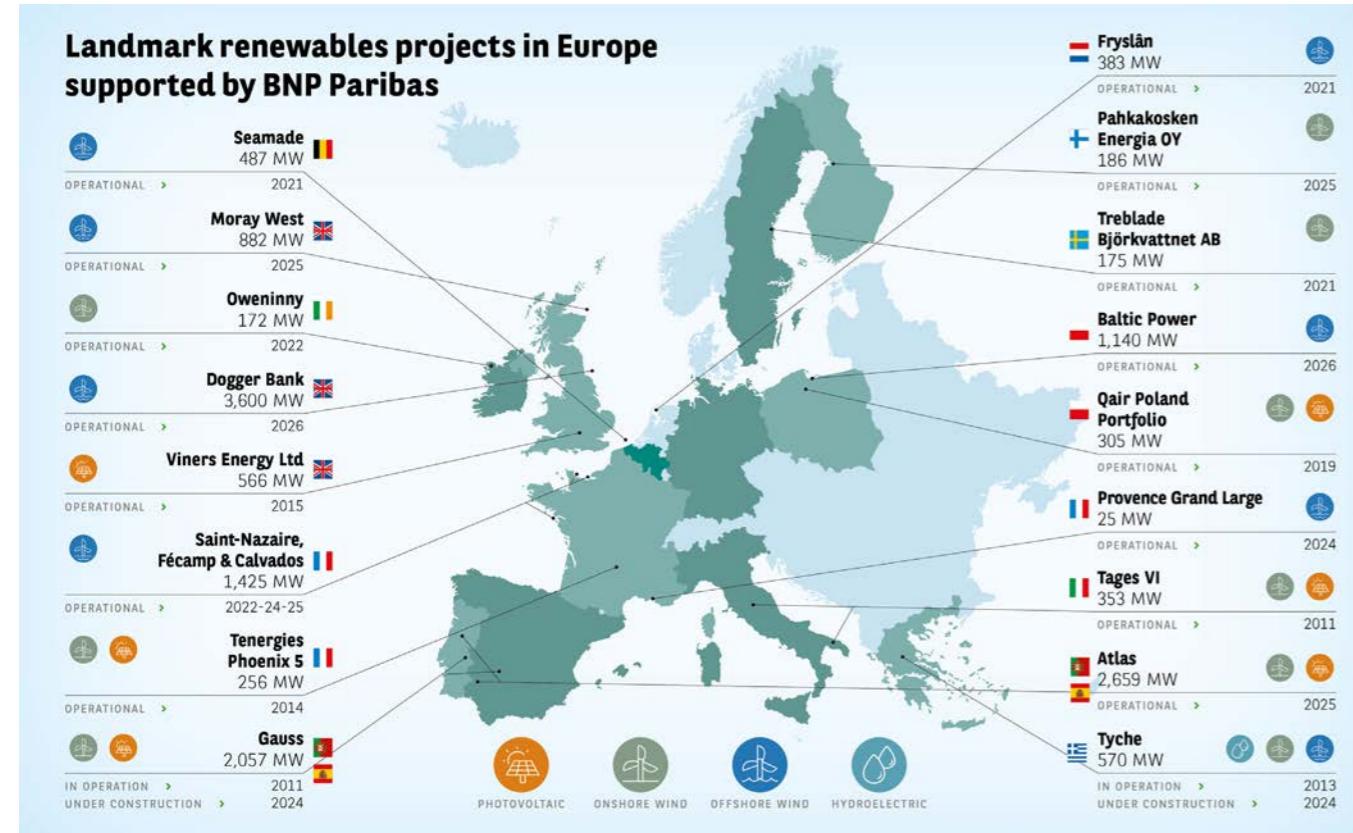
and streamline the integration of climate in all the Bank's activities:

- 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 more than 700 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 1: *Net zero alignment update of credit portfolio*).

<sup>7</sup> See BNP Paribas 2023 Universal Registration Document, p. 626 for all 10 KPIs, objectives and definitions.

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

To support 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 Group mobilises all its expertise and the strength of its diversified and integrated model, including three operational divisions (Corporate & Institutional Banking, Commercial, Personal Banking & Services, Investment & Protection Services) with specialized businesses.



#### FOCUS | The Low-Carbon Transition Group

In 2021, BNP Paribas created the Low-Carbon Transition Group, a strong platform made up of 200 bankers at end-2023 (with a target of 250 specialized bankers by end-2025) dedicated to supporting international clients, companies and institutional investors in accelerating their transition to a sustainable and low-carbon economy. A continuum of banking and non-banking solutions is therefore provided for the decarbonisation of the economy, and particularly the energy,

mobility and industry sectors. In addition to renewable energy and the battery sector, this platform is particularly attentive to future technology projects, specifically green hydrogen. In addition, the Low-Carbon Transition for SMEs & MidCaps initiative supports SMEs and mid-sized companies in the transition to net zero emissions in the Group's five main Domestic Markets (France, Belgium, Italy, Luxembourg and Poland) through dedicated tools, advisory and financing offers.

### SELECTED EXAMPLES OF 2023 CLIMATE-RELATED BUSINESS CASES

#### FINANCING LOW-CARBON ENERGIES

**ReNew Power**, a major Indian player in renewable electricity production, obtained a loan of USD 1 billion to finance a portfolio of wind and solar projects of 1.3 GW, backed up by batteries to provide an uninterrupted energy supply. It is the most significant financing for a round-the-clock renewable energy project in India. The energy produced will be sold to the Solar Energy Corporation of India (SECI). BNP Paribas played the role of lead arranger and hedge bank in this transaction. Hybrid projects of this nature, combining wind, solar and energy storage, make it possible to optimise land resources and grid infrastructure, while generating a reliable electricity supply day and night.

CPBF (Commercial & Personal Banking in France) co-led financing to Kallista, an independent renewable energy producer, in a corporate power purchase agreement securing power supply for green and renewable hydrogen. Under a long-term contract deal, Kallista Energy will sell wind-generated electricity to Lhyfe, one of the world's pioneers in the production of green and renewable hydrogen. For Lhyfe, this Corporate Power Purchasing Agreement secures the power supply needed for its future green hydrogen production sites, thus consolidating its sustained growth. Kallista will be able to repower a wind park through financing co-lead by BNP Paribas and SaarLB.

BNP Paribas was coordinating lead arranger and bookrunner for a USD 2.5 billion financing to **support renewable energy generation projects from AES Corporation**, an American company specialised in the energy sector. This credit facility will finance more than 3 GW of new clean energy construction (solar, wind and energy storage) in the United States over a 12-month period.

In Poland, BNP Paribas was a major player in the **Baltic Power project** led by Orlen and Northland Power. A loan of more than EUR 4.4 billion will enable the construction of the first offshore wind farm in Polish waters. It comprises 76 wind turbines that will provide renewable energy to more than 1.5 million households from 2026. This was the largest offshore wind project in Europe in 2023.

BNP Paribas supports the sustainable transition of the agriculture sector in many ways across Europe. For instance in Italy, **BNL has worked out a new credit policy aiming to facilitate the financing of the conversion of biogas to biomethane plants**. This initiative from BNL, that followed a decree from the Italian Ministry for the Ecological Transition issued in September 2022, should allow the acceleration of the conversion of some of the 2.000 operating biogas plants in Italy, in order to produce sustainable fuel for cars and trucks.



## DEVELOPING LOW-CARBON MOBILITY

BNP Paribas is helping accelerate the development of the battery sector in Europe, playing a key role in financing large projects.

- BNP Paribas acted as joint sustainability structuring coordinator during the **successful placement of the first EUR 1.25 billion green bond for Stellantis**, whose funds will be mainly dedicated to the design, development and manufacture of 100% electric vehicles and electric vehicles fuel cells.

- **AESC** (Automotive Energy Supply Corporation), the world's leading Japanese company in the design and production of batteries, **was financed for an amount of more than EUR 800 million for the planned construction of a gigafactory in France**. BNP Paribas acted as mandated lead arranger. During the first phase of this large-scale project, it is expected that 9 GWh of batteries will power 200,000 electric vehicles produced each year from 2025 by the manufacturer Renault.

- **Northvolt raised USD 5 billion for expansion of Europe's first circular gigafactory**. BNP Paribas acted as Exclusive Senior Debt Advisor and Tier 1 Senior Mandated Lead Arranger. This deal represents the largest non-recourse green financing for a battery cell gigafactory in Europe. The loan will facilitate the expansion of Northvolt Ett, Europe's first homegrown gigafactory, as well as the realisation of Northvolt's ambitious plans for battery recycling. The facility recovers battery-grade metals with a carbon footprint that is 70% lower than mined raw materials, thereby enabling a fully integrated, circular battery production setup that has not previously existed outside of Asia.

**Arval and BNP Paribas Leasing Solutions announced a new offering for both companies and individuals across Europe that tackles a key barrier to electric vehicle adoption:** convenient and affordable charging points at home and in the workplace. At Arval, the package includes leasing an electric vehicle for companies or individuals, and charging station installation, maintenance, and even removal and re-use or recycling if needed. For corporate clients, optional employee home charging reimbursement adds further value. Corporate fleet managers will be able to use "Leasing Solutions Charge & Lease" offer to roll-out and finance a charging infrastructure package for their companies with various power levels, electric infrastructure, civil works, signage, and installation support.

In France, to meet the expansion of bicycle use, BNP Paribas Personal Finance launched a new long-term rental offer for electric bicycles. The service is provided as a monthly subscription, with different cost levels depending on the bike, the options chosen and the length of the contract. Users can use a high-quality bike for a period of 24 or 36 months, which is covered by insurance (breakage, theft, etc.) and serviced annually by a professional. Corporate have access as well to Arval bike leasing offer for their employees, a long term rental solution of e-bikes, available in 14 countries, contributing to diversifying mobility means towards low-carbon practice both for commuting and professional journeys.

## FOSTERING ENERGY EFFICIENCY

**Heidelberg Materials launched inaugural EUR 750 million Sustainability-Linked Bond, for which BNP Paribas acted as joint bookrunner**. The 9-year SLB has a coupon rate linked to the achievement of two key performance indicators, namely to reduce specific net CO<sub>2</sub> emissions to 500 kg CO<sub>2</sub> per tonne of cementitious material by 2026, and to 400 kg CO<sub>2</sub> per tonne by 2030. At Group level, Heidelberg Materials aims to reach net zero carbon emissions by 2050 at the latest.

**BNP Paribas Fortis acted as co-sustainability coordinator when negotiating a sustainability-linked loan of EUR 400 million for Renewi, a waste recycling and recovery company**. The interest margin on the loan will depend on whether Renewi achieves the objectives it has set itself, namely, to recycle 75% of its waste by 2025 and to reduce its scopes 1 and 2 carbon emissions.

**CPBF (Commercial & Personal Banking in France) financed a foundry sand regeneration installation project for an amount of EUR 3.3 million**, an innovative project enabling La Fonte Ardennaise, a major player in the foundry industry worldwide, to recycle 90% of black moulding sand, and thus save natural resources, stop the landfill of sand waste and reduce CO<sub>2</sub> emissions by 20,000 tonnes per year.

## SUPPORTING ENERGY EFFICIENCY HOME ACQUISITIONS AND RENOVATIONS

The energy footprint of housing is a major issue in the ecological transition both for customers and the bank. **Across its European markets, BNP Paribas is accelerating and expanding the support brought to individual customers**. The Group offers dedicated financing and beyond banking solutions to help increase comfort, reduce energy spending while decarbonizing the residential real estate portfolio. The solutions launched by CPBF in France, BNP Paribas Fortis in Belgium and BNL in Italy are detailed in the residential real estate section of the report (See Section IV. Part 1. Net zero alignment update of credit portfolio).

**BNP Paribas Polska Bank signed an agreement for up to EUR 100 million to support energy efficiency projects in Poland with the European Investment Bank**. Moreover, the EIB has also signed with BNP Paribas Bank Polska a cooperation agreement under the European Local Energy Assistance Program, providing to housing associations with technical assistance and energy audits which are necessary in the phase of the preparation of the investment projects.

**BGL BNP Paribas customers, beside benefiting from preferential rates to buy a home with registered efficient Energy Performance Certificates (EPC) label (or equivalent)**, are also incentivised to carry out energy renovations when buying a property, and supported by renovation experts like Actif, providing advice on solutions to improve the energy quality and to optimize the energy performance certificates of their home.

## FOCUS | Investing in climate opportunities and supporting the energy transition

While the transition to a low-carbon economy creates risks, it also generates significant opportunities, which forward-looking investors may capture with the right investment tools.

### ▪ BNP Paribas Asset Management

BNP Paribas Asset Management has a long history of helping its clients investing in the energy transition, since its first climate focused strategy launched in 2002. It has since brought to market a range of climate-focus products. It ranks among the largest ESG passive managers in Europe which reflects its long history in this class, starting with the first low-carbon ETF in 2008. As of 31 December 2023, it manages EUR 15.6 billion in Paris-Aligned Benchmarks and Climate Transition Benchmarks passive strategies. In 2023, it created a new private assets business unit to bring together its range of activities in this area and launched the Climate Impact Infrastructure Debt fund. It allows clients to invest in renewable energy, clean mobility, and circular economy, including new sectors such as batteries, hydrogen, and carbon capture.

In addition, to meet the needs of investors who are increasing their allocations to sustainable private investment strategies, BNP Paribas Asset Management decided to broaden its private markets investment platform by acquiring leading Danish natural resources specialist International Woodland Company (IWC). This will allow clients to invest in sustainable forestry, agriculture, and natural ecosystems, as well as carbon credits and conservation projects.

Early in 2024, BNP Paribas Asset Management brought to market a new equity strategy: the Global Net Zero Transition strategy, where it applies the NZ:AAA framework with a just transition lens focusing on engagement in order to source companies within the MSCI ACWI (All Country World Index). The strategy includes a charity class fund, where it donates part of the management fee to the charity Electriciens sans frontières, that builds small scale renewable energy projects in communities predominantly located in the Global South. Its goal is to continue to increase its climate and environmentally theme investments solutions while embedding climate and net zero considerations across their range of investment strategies.

BNP Paribas Asset Management updated its Global Sustainability Strategy in 2023: it will continue to focus on Energy transition, healthy Ecosystems, and greater Equality in our societies – its 3Es. It published its own climate reporting for its 2023 activities detailing the asset manager's commitments and building on its Net Zero Roadmap<sup>8</sup>. BNP Paribas Asset Management aims at reducing the carbon footprint of its investment portfolios for in-scope holdings from a 31 December 2019 baseline (91.72 tCO<sub>2</sub>/million EUR invested) by 30% in 2025 and 50% in 2030. It also aims to align its corporate investments (equity and fixed income) with carbon neutrality. It targets 60% investments in companies that are achieving, aligned, or aligning to net zero<sup>9</sup> by 2030 and 100% by 2040. This will enable BNP Paribas Asset Management to achieve 100% net zero alignment of its in-scope assets under management by 2050.

### ▪ BNP Paribas Cardif

As part of its net zero commitments, BNP Paribas Cardif is reducing the carbon footprint of its investments. Its goal is to decrease the carbon footprint of its directly-held equities and corporate bonds by at least 23% between end-2020 and end-2024. It also aims at reducing the carbon intensity of directly owned office properties by at least 12% between 2020 and 2030 (-47% achieved between 2011 and 2020), and the emission intensity of electricity producers in which it invests to less than 125g CO<sub>2</sub>/kWh by the end of 2024.

In addition, BNP Paribas Cardif has committed to allocate at least EUR 800 million annually between now and 2025 to investments that contribute to the energy transition and initiatives with an environmental theme. This commitment encompasses investments in sectors that involve environmental protection, including the energy transition, energy efficiency, waste recycling and the preservation of biodiversity. In 2023, BNP Paribas Cardif allocated nearly EUR 1.1 billion in investments that contribute to the energy transition and positive impact on the environment, notably through financing via green bonds and investing in funds such as the Climate Impact Infrastructure Debt fund launched by BNP Paribas Asset Management in 2023.

Through its C. Entrepreneurs fund (along with Cathay Innovation), BNP Paribas Cardif invested in Beem Energy, a French startup promoting the adoption of solar self-consumption through simple solutions to better understand, control and save the energy. The company has the ambition to equip over 500,000 homes by 2030 and expand in Europe, particularly in Germany, Italy and the Netherlands.

### ▪ Initiatives and stewardship

BNP Paribas Asset Management has a proactive approach towards issuers and engage individually, as well as collaboratively with other institutional investors with aligned goals on climate topics. For example, it co-led engagement with 10 companies in Europe, the U.S. and Asia through the Climate Action 100+ Initiative in 2023. Both BNP Paribas Asset Management and BNP Paribas Cardif are members of this investor-led initiative that collectively works to ensure that the largest corporate GHG emitters take the necessary action on climate change.

In addition, BNP Paribas Asset Management worked with a group of institutional investors for nearly two years to launch Nature Action 100 (NA100). After being "soft launched" in Montreal at the end of 2022, in tandem with COP15 of the Convention on Biological Diversity, the initiative was officially launch in 2023.

BNP Paribas Asset Management opposes management resolutions on the approval of discharge of the board, board reelections or financial statements (depending on the market) at companies that do not properly report on their carbon footprint (scope 1, 2, and 3 when appropriate) or their climate lobbying activities, nor communicate or constructively engage about their climate strategy. In addition, it expects companies identified as the world's largest corporate GHG emitters to publicly announce their ambition to achieve net zero GHG emissions by 2050 or sooner. It results in a significant opposition vote at general meetings for climate-related considerations. In 2023, it opposed 1,080 resolutions at 200 companies based on the climate-related expectations. It also supports shareholder proposals when they align with its ESG expectations. In 2023, it supported 85% of shareholder resolutions related to climate change and it opposed 55% of say-on-climate proposals that were within its scope, reflecting proposals that did not meet its expectations.

In 2023, BNP Paribas Cardif voted in favour of two climate resolutions such as "say on climate". To choose how to express its votes, BNP Paribas Cardif considers GHG reduction objectives, the related action plans, and the established governance to deal with climate issues.

### ▪ BNP Paribas Real Estate

BNP Paribas Real Estate has taken 10 commitments<sup>10</sup> towards a low-carbon future, aiming to reduce the direct emissions related to its business and the indirect emissions related to the buildings it constructs, manages and

operates. Its commitments focus on reducing the emissions from its own operations but also those from products built, renovated and managed by its business lines, as well as maximizing the use and limiting the risk of building obsolescence, supporting and facilitating emission reductions with stakeholders, and storing and offsetting residual emissions. On a European scale, its Property Management activity has structured an offer to lead existing real estate towards net zero, with a range of solutions including energy and zero carbon trajectory, management of actions to achieve net zero, audit to develop renewable energies in self-consumption and the integration of soft mobility.

In 2023, BNP Paribas Real Estate signed a new partnership with Materrup that offers clean cement made from uncalcined clay, a highly abundant, local raw material derived from waste. This product allows to halve the carbon footprint of construction sites. It is working with Materrup on five pilot projects in Lyon and Bordeaux that represent 81,800 m<sup>2</sup> of floor space, or 700 dwellings.

BNP Paribas Real Estate also signed a partnership with iQspot, a player in energy efficiency that collects and analyses all of the buildings' energy consumption data, and allows 16% of energy savings without any renovation.

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. In late 2023, the fund has already acquired 10 assets through Europe and begun deploying ambitious investments plan for improving their climate performance.

### ▪ BNP Paribas Wealth Management

BNP Paribas Wealth Management is mobilized to offer climate-related investment solutions by selecting investment opportunities focused on climate, low-carbon, net zero, etc. and by incorporating clients' sustainability preferences in their investment advice activity and portfolio management service.

Since 2008, any client may also benefit from a free bespoke philanthropy advisory service. One out of four clients is requesting advice to preserve biodiversity, and focus on venture philanthropy for innovative green tech (decarbonation, green coal, carbon capture solutions, etc.).

<sup>8</sup> <https://docfinder.bnpparibas-am.com/api/files/E6A84FBC-4DF0-4506-92A7-721F19394C99>

<sup>9</sup> BNP Paribas Asset Management uses a proprietary framework to measure the alignment of its investments in corporates. This framework is largely inspired by the Paris Aligned Investment Initiative (PAII) Net Zero Investment Framework. This triple-A (NZ: AAA) framework is based on various sources: Transition Pathway Initiative (TPI), Science Based

Targets Initiative (SBTi), Climate Action 100+ and Carbon Disclosure Project (CDP). Further details on this framework are available in BNP Paribas Asset Management's net zero roadmap available here: <https://docfinder.bnpparibas-am.com/api/files/F5EE3377-26CE-4DFD-B770-DBD2932D78B>

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<sup>10</sup> <https://inspire.realestate.bnpparibas/en/commitments/climate-change/>

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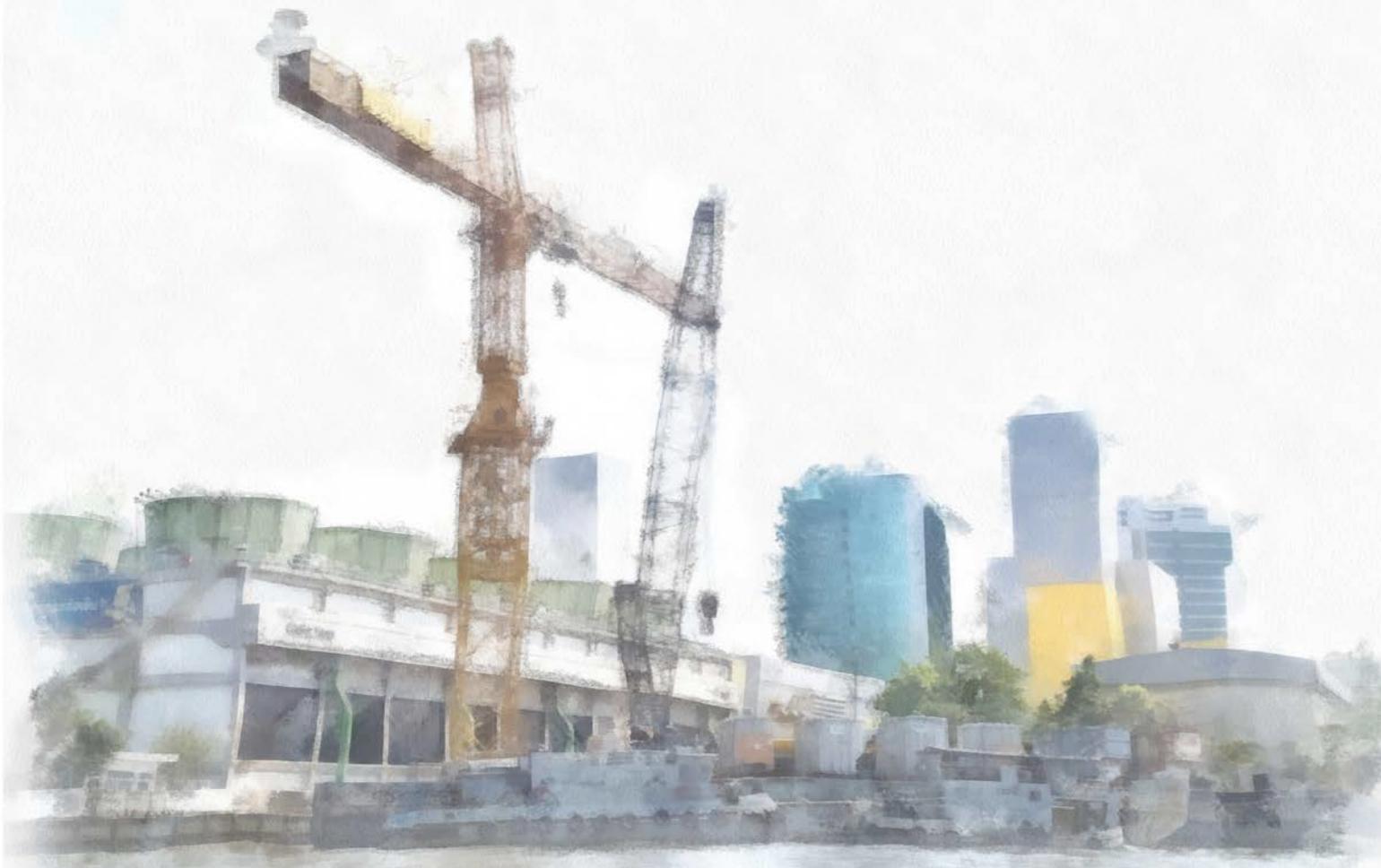
**FOCUS | BNP Paribas invests to support innovation for the ecological transition**

BNP Paribas has been supporting innovation in the areas of ecological transition by committing a total of EUR 250 million of equity since 2016 to support start-ups. At the end of 2023, through its Ecological Transition Capital investment line, BNP Paribas had already invested EUR 87.2 million in 12 innovative companies, including CarbonWorks in France (CO<sub>2</sub> capture and recovery using microalgae) and Protix in the Netherlands (insect factory for animal feed), and in eight funds, including Shift4Good, Clay Capital and Seaya Andromeda.

Within this same investment line, the SFDR Article 9 fund BNP Paribas Solar Impulse Venture, to which BNP Paribas committed EUR 75 million, completed a closing of EUR 131.2 million at the end of 2023. In 2023, this fund invested in Hello Watt, which helps individuals reduce their carbon footprint through the energy renovation of their homes.

The Group also supports start-ups by partnering with them on projects with high added value. TEB, a subsidiary of the Group in Türkiye, has joined forces with the German start-up Plan A to calculate CO<sub>2</sub> emissions for its clients in the Turkish textile and automotive sectors. In Poland, BNP Paribas Bank Polska invested in the start-up Envirly to offer their solution to the bank's MidCap customers in order to calculate their CO<sub>2</sub> emissions. Finally, BNP Paribas advised ChargePoly, a specialist in ultrafast charging solutions for electric vehicles, on its raising of EUR 15 million in equity.

In 2023, the Group continued to deploy its impact investments, via its own budget of EUR 200 million or its funds on behalf of third parties, by favouring direct equity investments in corporate clients with a strong social and/or environmental impact. 16 new investments (excluding reinvestments) were made for a total of EUR 56 million, including Ecov, a shared mobility operator in areas where public transport is limited or absent, to promote mobility that is accessible to as many people as possible while avoiding CO<sub>2</sub> emissions thanks to carpooling lines.

**III****RISK MANAGEMENT**

# 1 DETAILED EXPOSURES PER SECTOR

Despite steady progress made in developing methodologies for quantitative analysis of ESG risk factors and related impacts on traditional financial risks, there are still limitations, including on the underlying data, which require cautiousness in interpreting the information presented herein. Thus, tables and graphs presented in this section can only be assessed on the date of publication of this document and must be interpreted mindful of the uncertainties related to ESG methodologies, projections and data used.

## 1.1 BNP Paribas reported its exposures towards sectors that highly contribute to climate change<sup>11</sup>

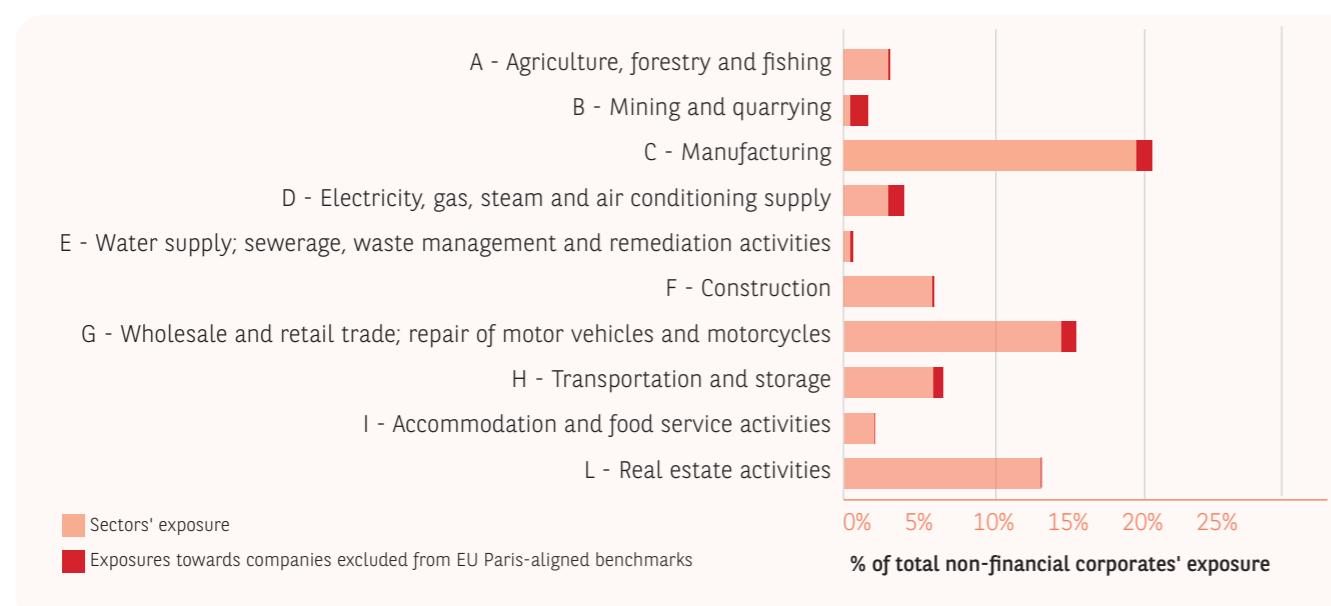
The Group's total exposure to non-financial corporates stands at EUR 454 billion as of 31 December 2023 including loans and advances, debt securities and equity instruments not held for trading. **The graph below shows breakdown of exposures by sector notably those considered to significantly contribute 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<sup>12</sup> stands at EUR 25 billion and is mainly composed of exposure towards companies active in fossil fuel<sup>13</sup>. These

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

- 1 The identification of counterparties 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 counterparty.
- 2 The identification of counterparties deriving their revenues from the fossil fuel value chain as defined in the Climate Benchmark Standard Regulation<sup>14</sup> obtained from an external data provider.

**Exposures towards sectors that highly contribute to climate change at end-December 2023**



<sup>11</sup> The information disclosed in this part of the report is detailed in the section of Pillar 3 related to ESG risk factors (see BNP Paribas' 2023 Universal Registration Document (URD), chapter 5.11).

<sup>12</sup> In accordance with Article 12 (1) (d) to (g) and Article 12 (2) of Regulation (EU) 2020/1818.

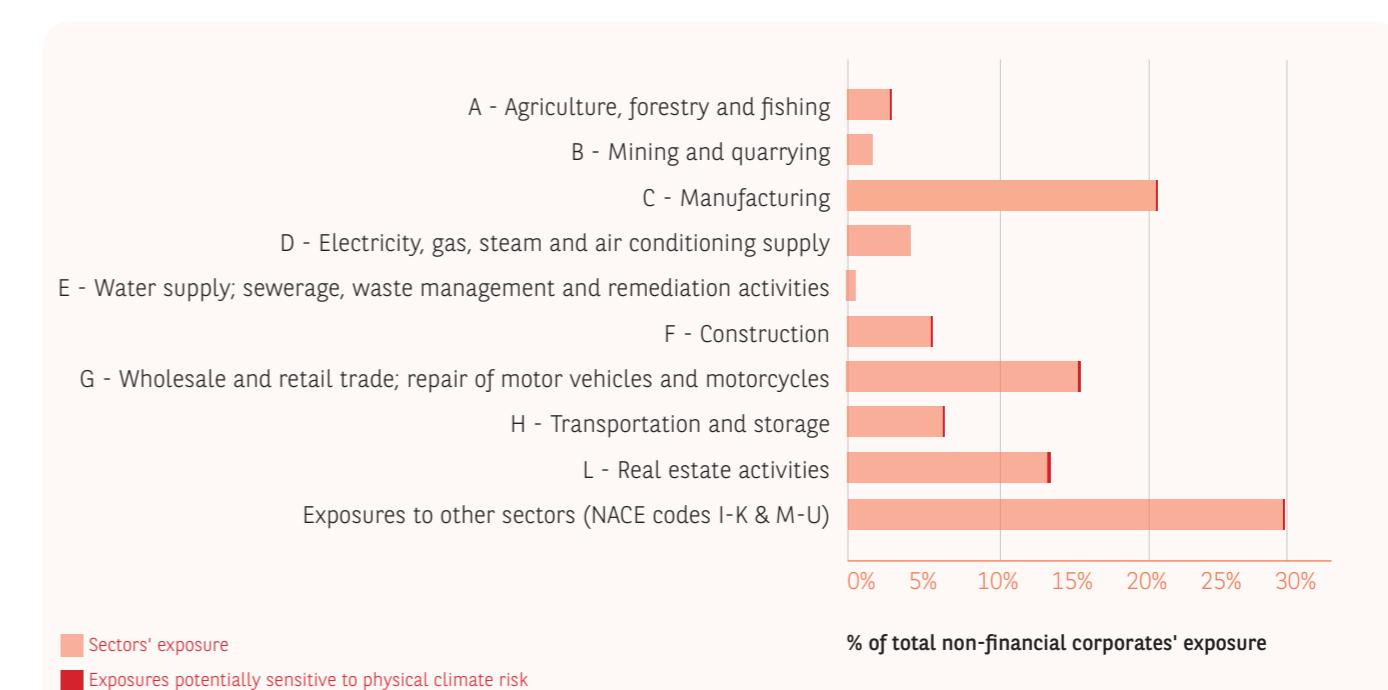
<sup>13</sup> As per the EBA's definition. This amount integrates the whole value chain's dependency from the fossil fuel sector, from upstream production to transportation or trading.

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

Given the current lack of stability of the models, the data gaps and the guidelines uncertainty, the Bank has chosen to apply the same methodology as the previous year in using the physical risk scenarios of the European Central Bank 2022 climate 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 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<sup>15</sup>. For further information about the recent and on-going development to assess physical climate risks please see Part III. Section 2. How climate risks are identified, measured and monitored.

**Exposures potentially sensitive to physical climate risk at end-December 2023**



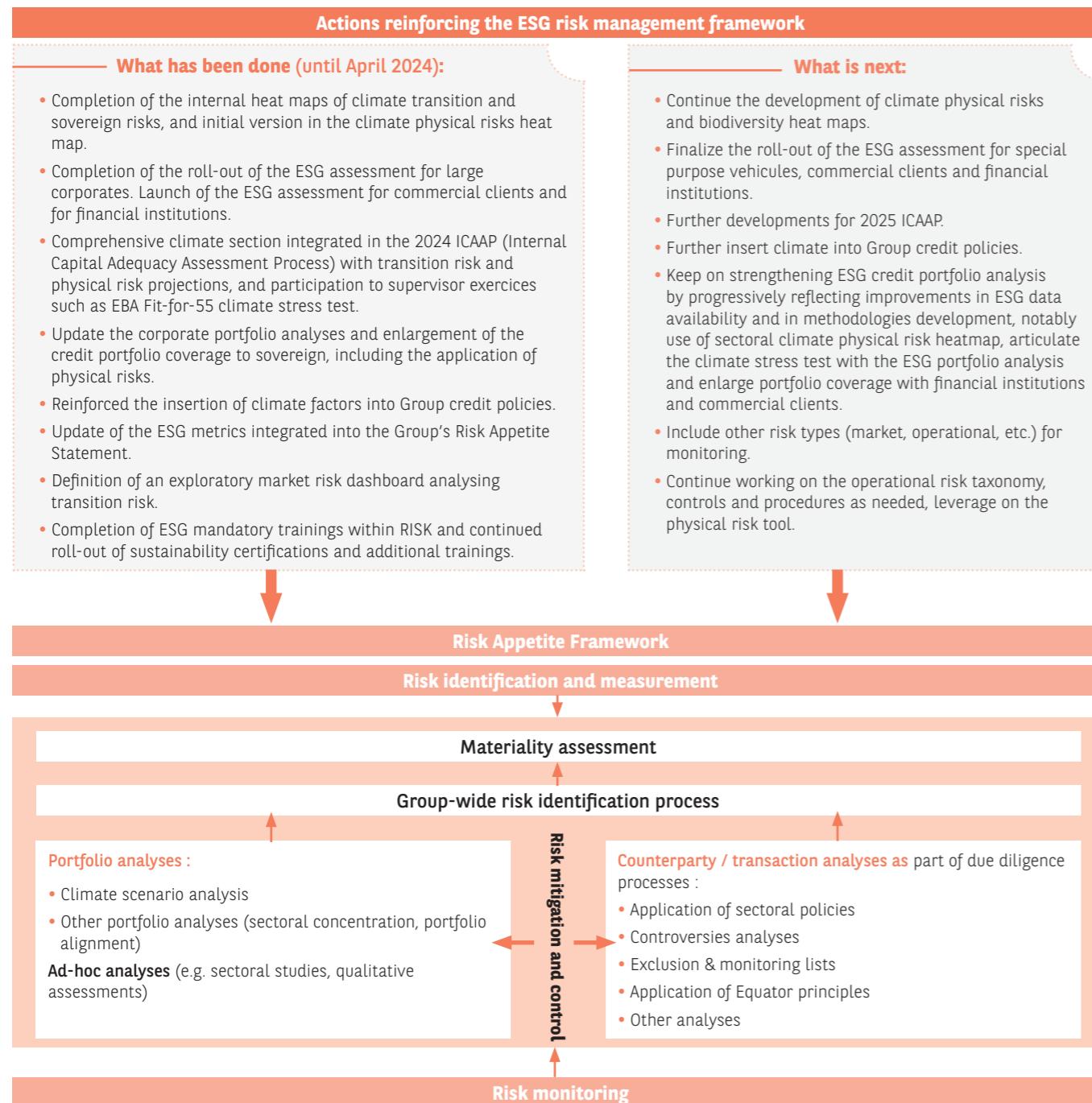
<sup>15</sup> More detail are published in the chapter 5.11 of the 2023 URD.

## 2 HOW CLIMATE RISKS ARE IDENTIFIED, MEASURED, AND MONITORED

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

In line with regulatory and supervisory expectations, **BNP Paribas considers climate-related risks as risk drivers that may potentially impact the traditional risk categories such as credit, market or operational risks.** They are not standalone risks *per se*.

Accordingly, climate considerations are incorporated, as risk factors, in the Group's existing risk management framework, processes, and governance systems (see *Part II. 1.1 The Board of Directors oversees the management of climate-related issues*).



BNP Paribas has gradually deepened and broadened the insertion of climate risk drivers into its risk management framework and related lifecycle.

#### Risk identification and assessment

Climate factors are integrated into the **risk taxonomies** 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. Complementing this process, the Group produces several **heat maps**, informing the materiality assessment. **Climate scenario analyses** are performed and integrated in the ICAAP. At counterparty and transaction level, ESG performance and associated risks are also analysed through the **ESG Assessment** which is fully integrated into the credit process.

#### Risk management: solutions & adaptation

To closely control the risk exposure towards sectors particularly exposed to ESG matters, the Group has issued financing and investment policies, classified as sector policies. Group credit related policies have also been reinforced considering ESG dimensions.

**Exclusion & monitoring** lists restrict the activity or increase the level of scrutiny placed towards specific sectors or activities (see *Part I. Section 1.3 Committed to a net zero economy by 2050: BNP Paribas monitors its financing and investment activities*).

Besides, climate-related criteria are incorporated as relevant in the due diligence performed on customers and suppliers, in covenants and procedures related to new/modified activities and exceptional transactions.

Portfolios are dynamically managed towards the alignment targets defined by the Group (see *Part IV. Section 1.2 Alignment progress update on the 2022 and 2023 commitments*).

#### Risk monitoring and reporting

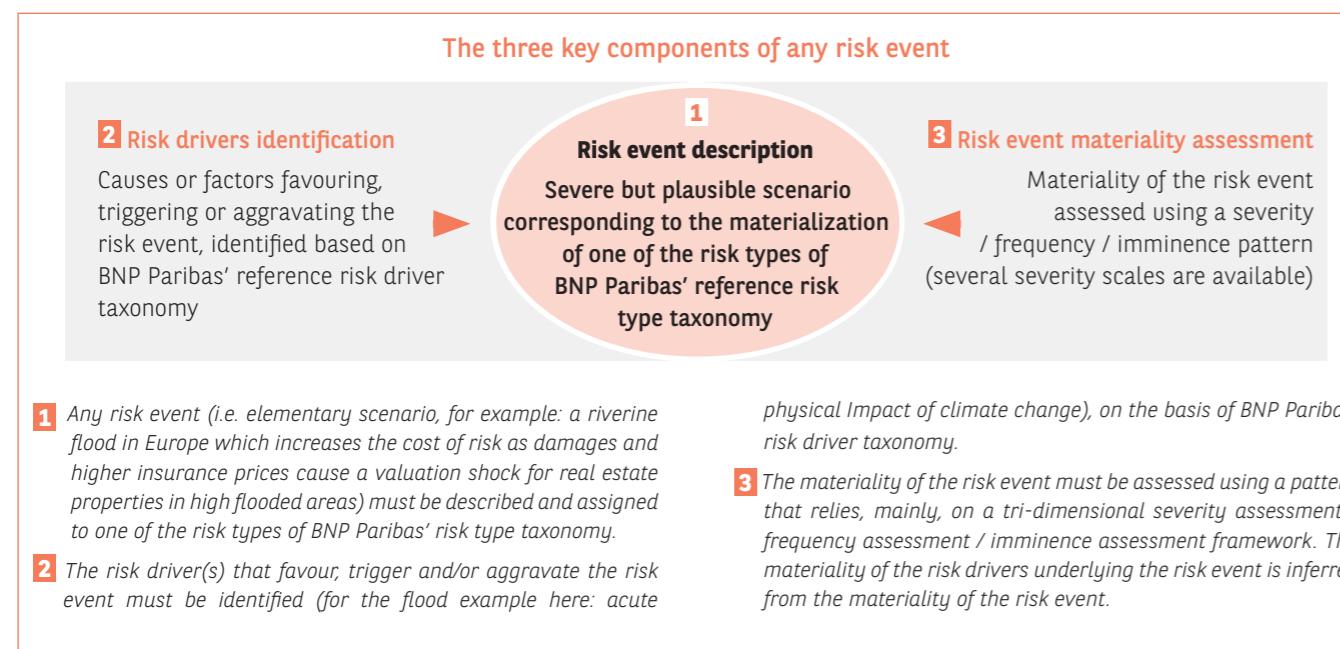
The above-mentioned approaches and tools developed for risk identification, measurement and control do also constitute tools for risk monitoring, as they enable portfolio analyses and provide for indicators and insights on the Group's exposure towards climate factors. Also, climate factors are incorporated into the Group's Risk Appetite Statement (RAS). The Group's RAS is defined consistently with the strategy of BNP Paribas and includes risk principles dedicated to ESG risks drivers (climate-related elements are included). These risk principles, coupled with dedicated metrics, define the risk tolerance of the Group on these dimensions. For example, the Group RAS integrates five metrics with limits to control the Group achievements with respect to its commitments on thermal Coal and Oil & Gas upstream financing for 2025 and 2030. In addition, complementary indicators, resulting from the Net-Zero targets setting regarding the Oil & Gas, Power Generation and Automotive sectors, and the Low-Carbon Financing are part of the Risk Appetite Statement for monitoring purposes (see *Part IV. Section 1. Net zero alignment update of credit portfolio*).

As part of sector/activity RAS review, the Risk and Development Policy Committee, gathering Business & RISK representatives, validates the strategic development plan and underlying risk profile of the sector/activity under review, including the ESG dimension.

## 2.2 Identifying the climate-related risk events

### THE FUNDAMENTALS OF RISK ID

BNP Paribas' risk identification process (Risk ID) is an all-risk forward-looking, annual & continuous comprehensive approach to identify and assess, in a harmonized manner, the risks that 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 materialize. All risk events are structured according to the same triplet-based approach.



### 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<sup>16</sup>, 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 favor, trigger

and/or aggravate the materialization of, virtually, any risk type. Consequently, out of the 115 risk drivers in BNP Paribas' risk driver taxonomy used for Risk ID purpose, 13 risk drivers are associated to ESG concerns, among which seven 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		Inadequate governance regarding management of environmental & social risks	Partial
ESG related liability consequences		ESG-related liability consequences	Partial

<sup>16</sup> EBA "Report on Management & Supervision of ESG Risks for Credit Institutions & Investment Firms" [EBAREP/2021/18] and ECB "Guide on climate-related and environmental risks" [Nov. 2020].

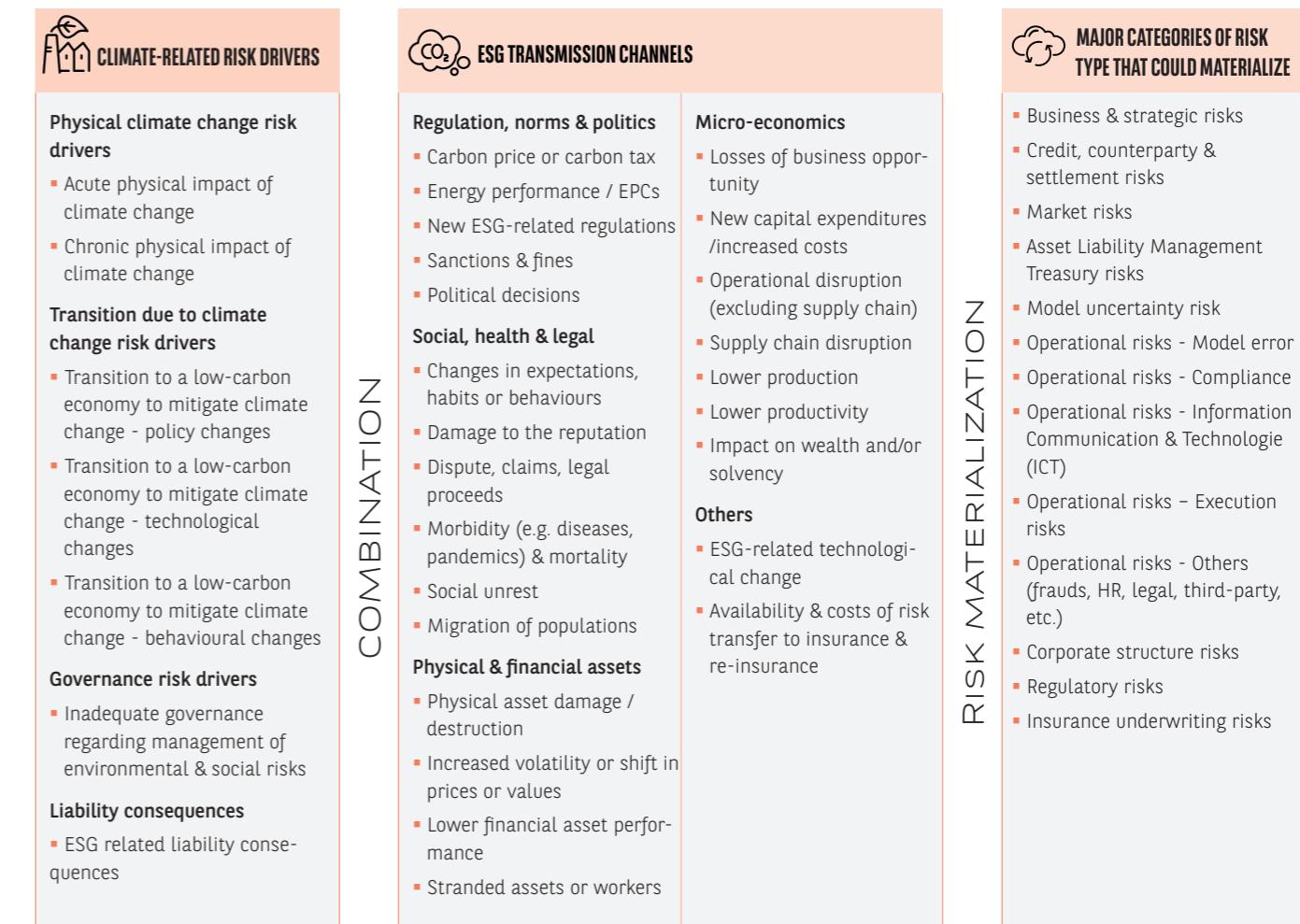
### The question of the transmission channels

The connections between climate risk drivers and the materialization 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. Consequently, in 2023, BNP Paribas has

created a first version of an ESG transmission channels taxonomy and integrated it into Risk ID process methodology and IT application.

The figure below presents the climate-related transmission channels that have been embedded in the identification of climate-related scenarios.

### Climate-related transmission channels BNP Paribas 2023 Risk ID methodology

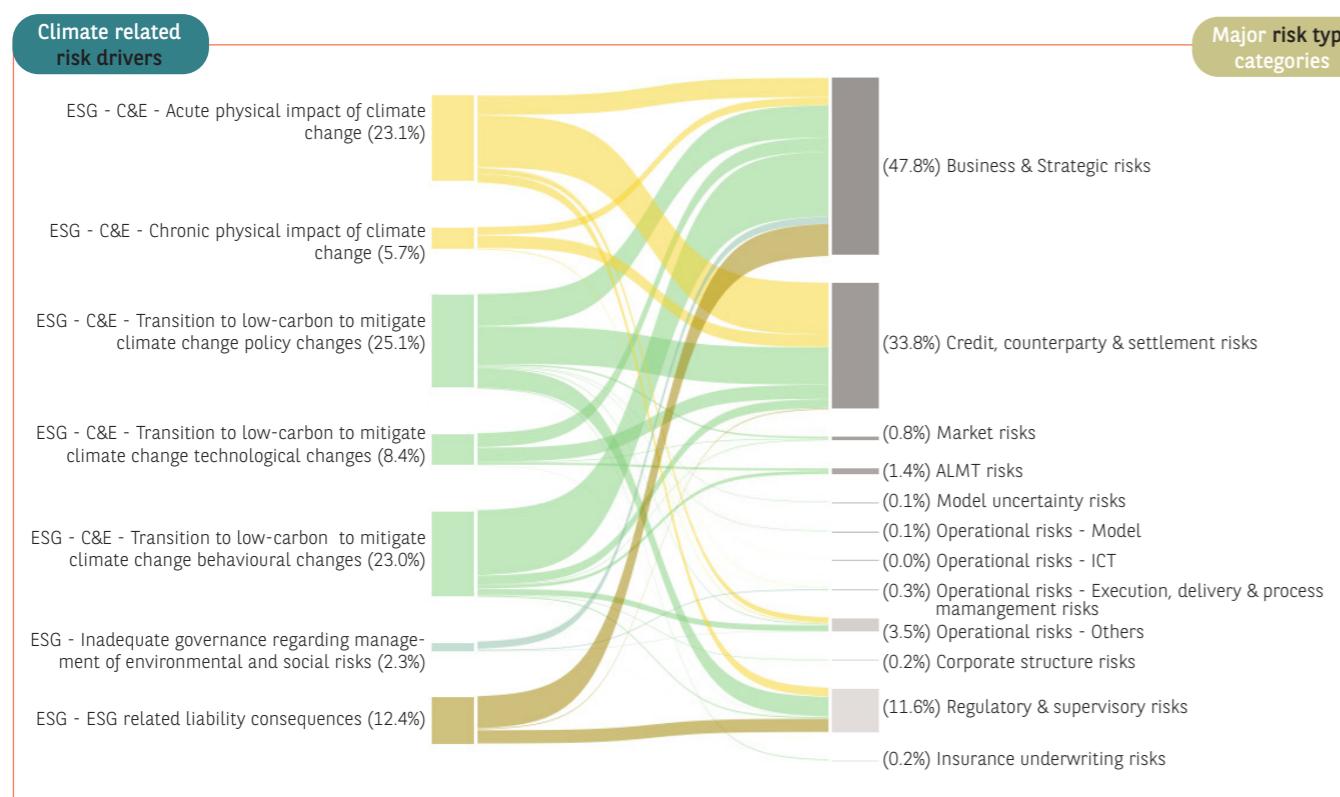


Concretely, whenever a climate-related risk driver is selected as underlying a risk event, the relevant ESG transmission channels that correspond to the way the driver concurs to the materialization of the risk event have to be identified.

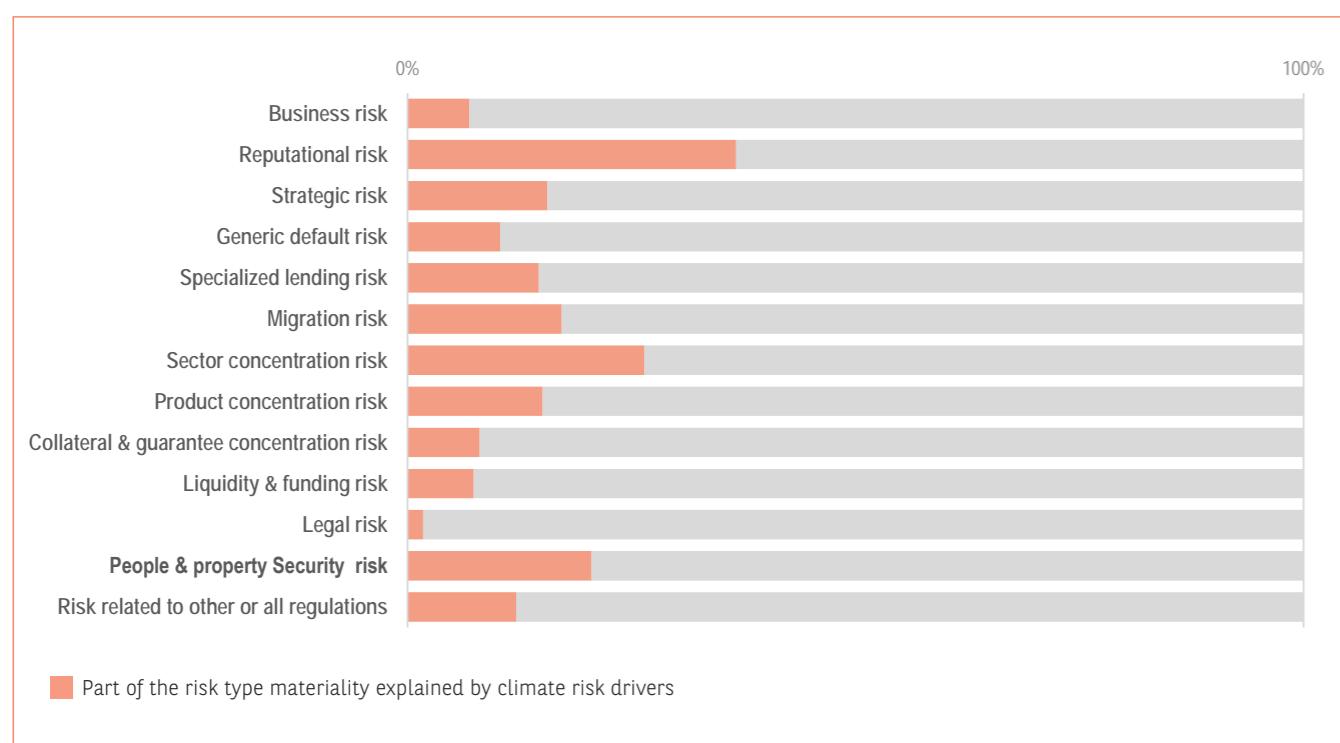
### Climate-related information extracted from BNP Paribas 2023 risk inventory

Leveraging on the 2023 Risk Inventory, analyses have been performed to assess the materiality of climate risk drivers on the different 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).

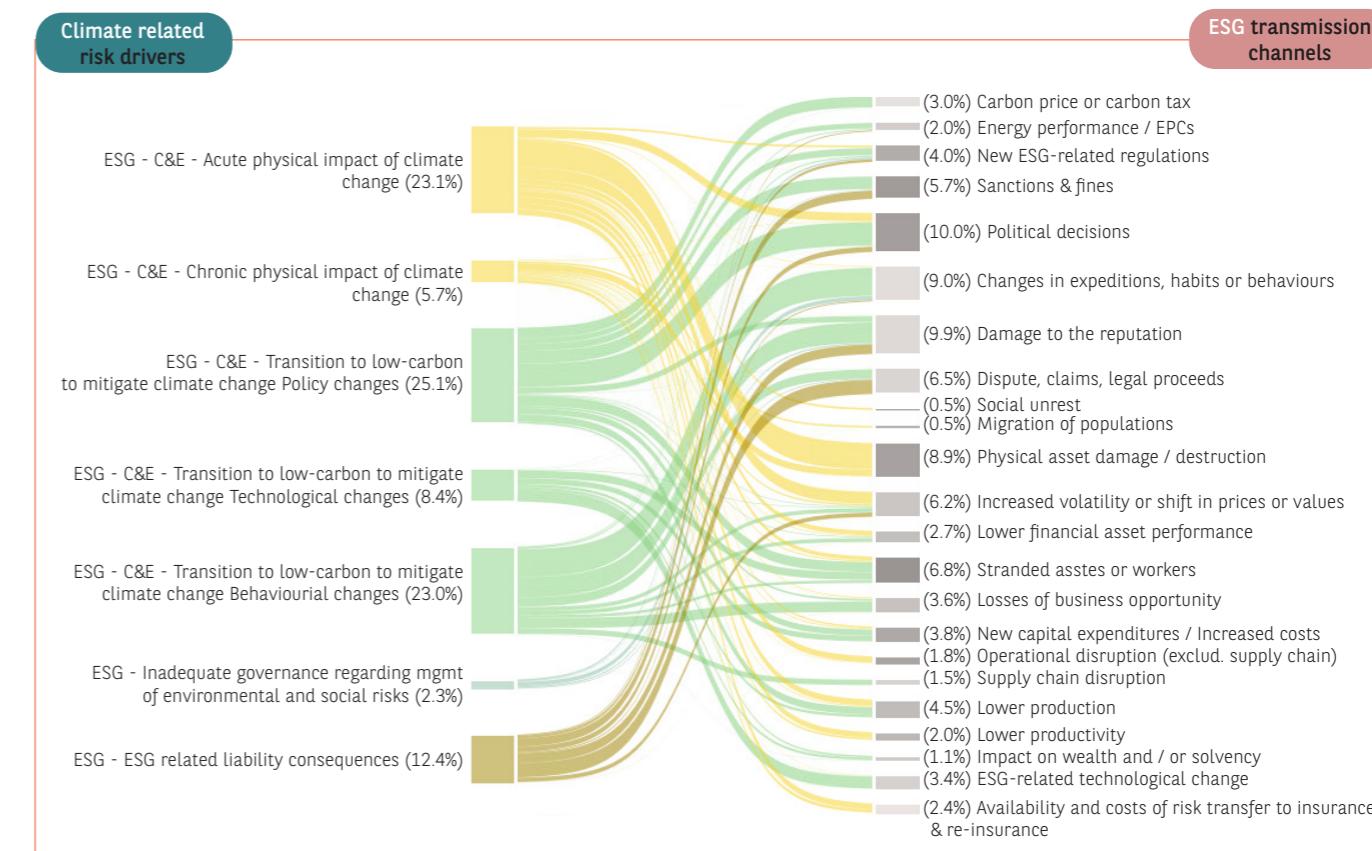


And when deepening the analysis at a more granular level, it appears that, for some risk types, the fraction of their overall materiality explained by climate-related risk drivers is significant:

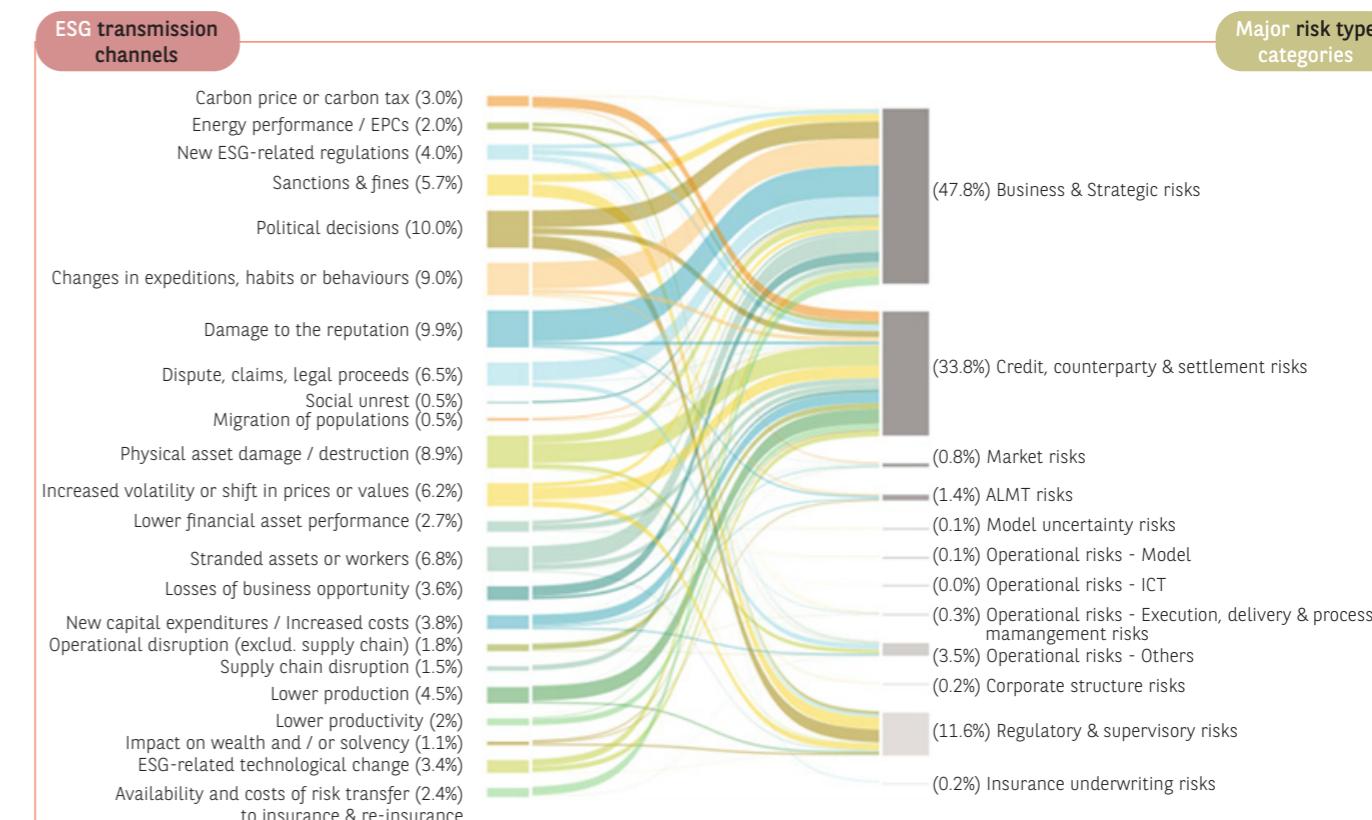


ESG transmission channels relate to the way climate-related risk drivers could ultimately result in direct or indirect impacts the Group.

Based on 2023 Risk Inventory, when isolating the risk events that are climate-related, it is possible to extract this infographics that presents the relationship (in terms of materiality), between climate-related risk drivers and the transmission channels that characterize the way these drivers could lead to negative consequences.



Last, the materiality relationship between ESG transmissions channels and the risk type categories of the most aggregated level of the Group risk type taxonomy, for the ensemble of climate-related risk events of 2023 Risk Inventory, is displayed in the following diagram.



## 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. The Group has also developed capabilities to assess the potential impact of climate scenarios on the credit quality of corporate clients and the geolocation of real estate to assess the impact of physical risk events (such as riverine flood). Exercises based on scenarios have increased in number, diversity, and sophistication.

In 2020-2021, BNP Paribas took part in the pilot program conducted by the French ACPR (Prudential Supervision and Resolution Authority), which applied "shocks", taken from different NGFS (Network for Greening the Financial System) climate risks scenarios, to the risk parameters. The objective was to estimate the possible impact of the transition and physical risks on bank balance sheets and in terms of expected loss. In early 2022, BNP Paribas participated in a European exercise supervised by the ECB.

In 2023, BNP Paribas contributed to the EBA Fit-for-55 Climate Stress Test by providing specific climate data on the clients. The Group 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 Group'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.

In 2023 BNP Paribas has tested its corporate portfolio against three transition scenarios: the Integrated Assessment Model (IAM), the Regional Model of Investment and Development (REMIND) below 2°C (Orderly scenario) and delayed transition (Disorderly scenario), and current policies scenarios for which the NGFS has provided scenario-conditional pathways of both macro-economic and climate variables in late 2022.

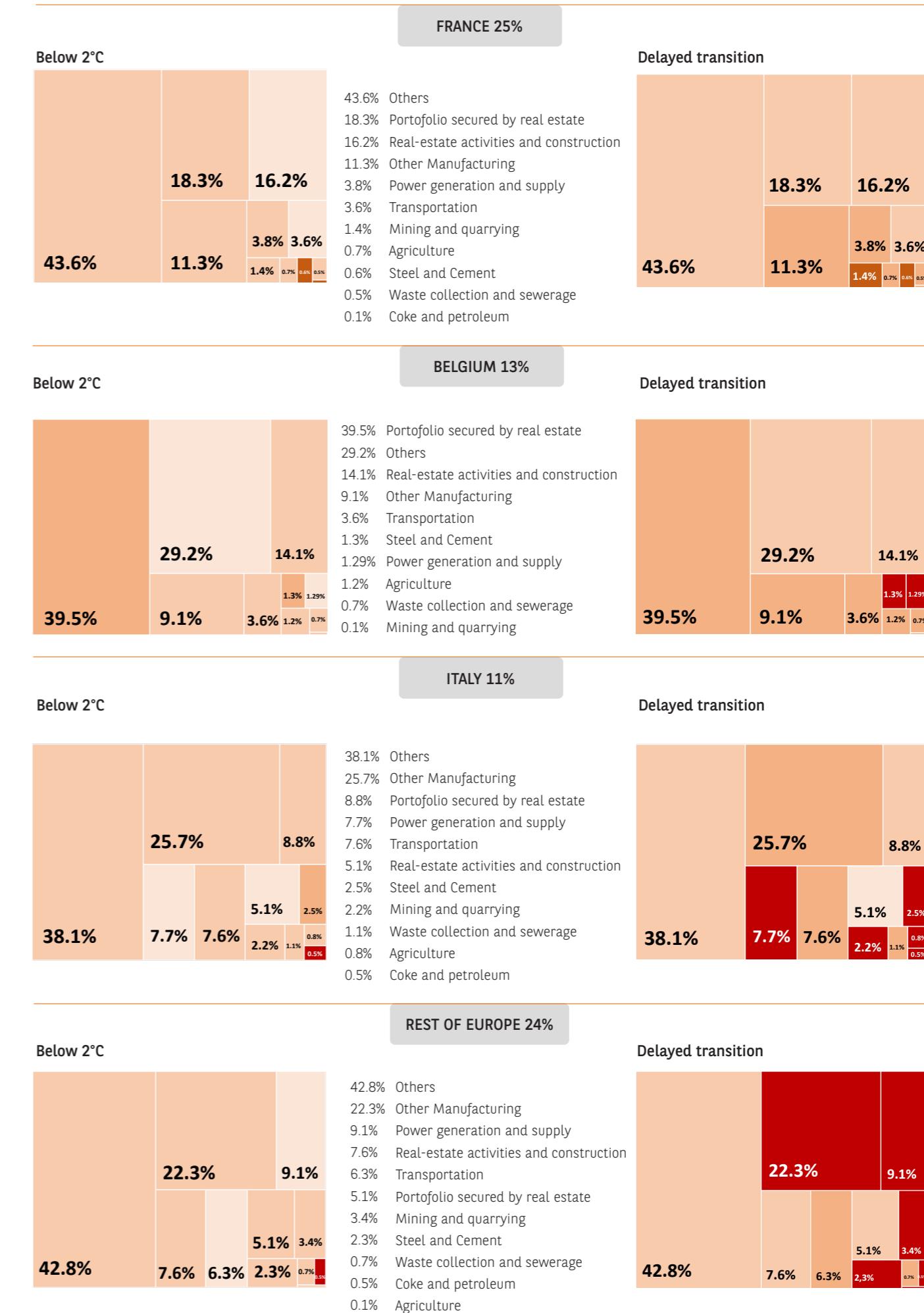
The projection of the Cost of Risk (CoR) until 2050 is performed with the Bank's internal modelling framework. First, the latter encompasses a dynamic balance sheet module that enables to reflect sectoral reallocation of the Bank's unsecured portfolio but also EPC mix change on the secured by real-estate portfolio. Moreover, the framework leverages on an in-house solution that generates credit rating change at client-level in order to account for credit worthiness evolution in adequacy with the scenario.

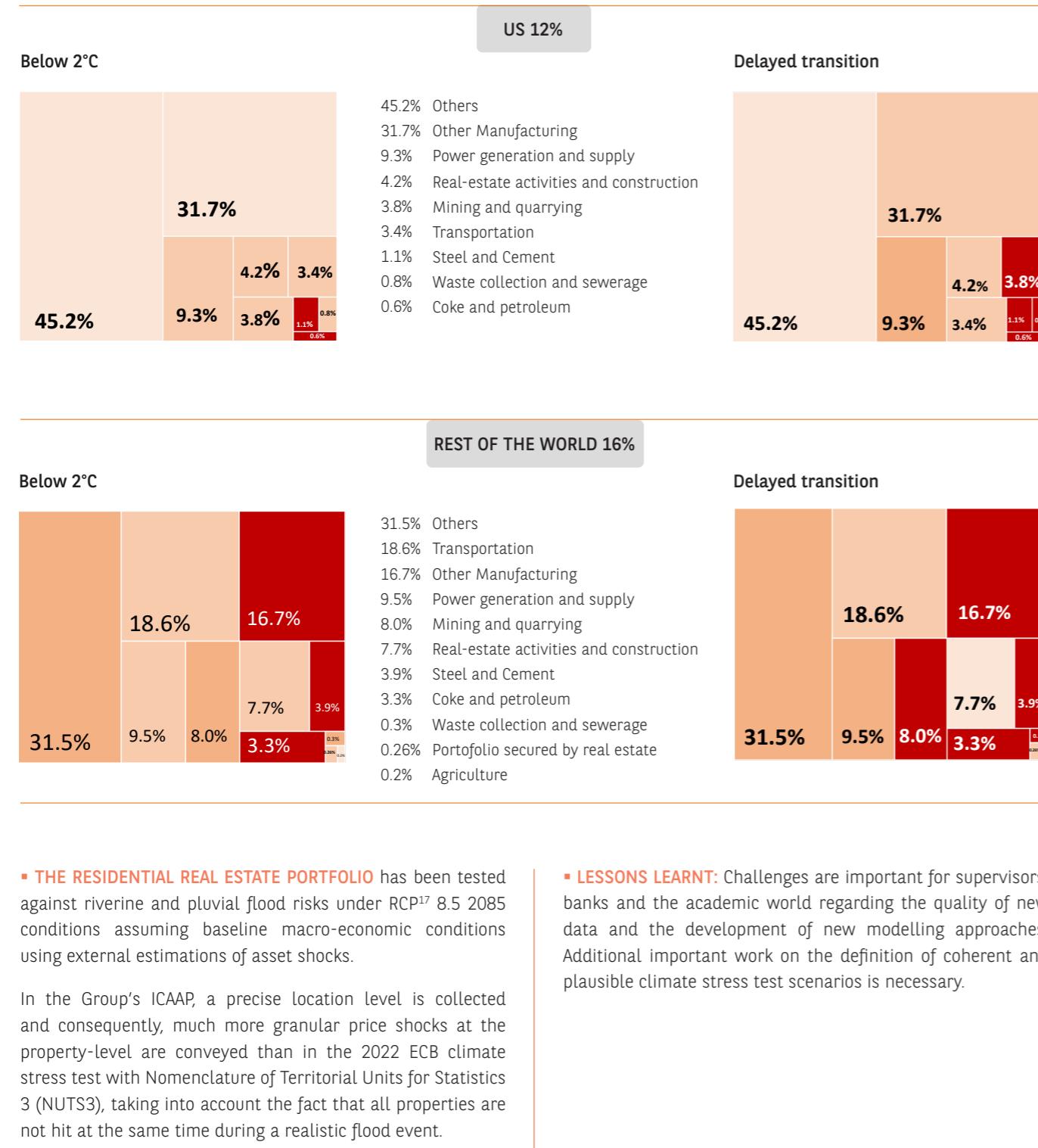
**DASHBOARD | Relative impacts of an orderly (below 2°C) and a disorderly (delayed transition) scenario vs. current policies scenario per region and sector**

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. 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 relative increase in the total Cost of Risk in percentage of the Exposure at Default (EaD) between the current policies scenario and the other scenarios at 2040 when the transition is in full swing. The colour represents the size of the impact as follows:

- |                 |                        |
|-----------------|------------------------|
| Low impact      | Slight moderate impact |
| Moderate impact | High impact            |





## 2.4 New tools to further assess and monitor climate risk

### ■ BNP Paribas monitors climate-related developments at country and sovereign levels

Country risk is an essential component in the assessment of the creditworthiness of the Group's counterparties involved in cross-border transactions, and sovereign risks are central to the analysis of the risks associated with the Bank's exposure 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 built its in-house, proprietary gauge of ESG and Climate & Environment (C&E) sovereign risk assessment, based on variables from recognised external sources, including the NGFS, and covering more than 180 countries.

As a ranking does not fully capture a sovereign's ESG profile, the transformation of data into metrics relies on the "distance to best performance" method, across a series of ESG dimensions. A "distance to frontier" score captures the gap between an economy's performance and a measure of best practices, either represented by those of the best performing countries or by an ideal target.

The E dimension results in a combination of nine metrics, related to acute and/or chronic climate physical risks and to climate transition risks: (1/2) the exposure to natural catastrophes and to water scarcity, (3/4) the under-water and above-ground biodiversity risks, (5) the greenhouse gases emitted by the economy, (6) the GDP's dependency to the fossil fuels production industries, and finally (7/8/9) the sensitivity of the economies to three climate risks scenarios designed by NGFS, i.e. the "Fragmented World" scenario, the "Delayed Transition" scenario, and the "Net Zero emissions" scenario. The S and G dimensions are built on more traditional country risk analysis factors: the human development, the income distribution, the respect of civil rights, the government effectiveness and respect of the rule of law, the gender equality, political stability, the fight against corruption, etc.

### ■ BNP Paribas is progressing towards a vision of the residual physical risk

Following the internalisation of various physical risk models over the past few years (including riverine and coastal floods as well as chronic heat), BNP Paribas has recently added drought and tropical cyclone to the range of hazards analysed internally. The Group has also identified strategic partners for enhancing the in-house capabilities, with a larger and/or richer (e.g. higher-resolution) set of hazards, for example pluvial (flash flood), hail and wildfire. Analysis is generally performed across a number of science-based scenarios, mostly CMIP<sup>18</sup> (e.g. SSP126, SSP245, SSP585). Time horizons range from 2030 to 2050 and, for some hazards, up to 2100.

Those physical risks models have been applied, in an exploratory way, to the Group's residential and commercial real estate portfolios, as well as on its main offices and data centres. Regarding the corporate portfolio, BNP Paribas has focused its efforts on some key sectors where the required asset-level data is readily available, allowing the development, calibration and application of more precise vulnerability functions. For example, in the case of the power sector, BNP Paribas' approaches distinguish between different types

of power generating assets and apply different damage and disruption models. Nevertheless, sourcing corporate asset data across all sectors (location, type of assets, size and strategic importance) has remained a key challenge to expand the analysis across the entire portfolio. In this context, it is also worth noting that BNP Paribas has engaged in dialogues with key clients to benchmark, test and refine the calculations, as well as reflect on adaptation measures.

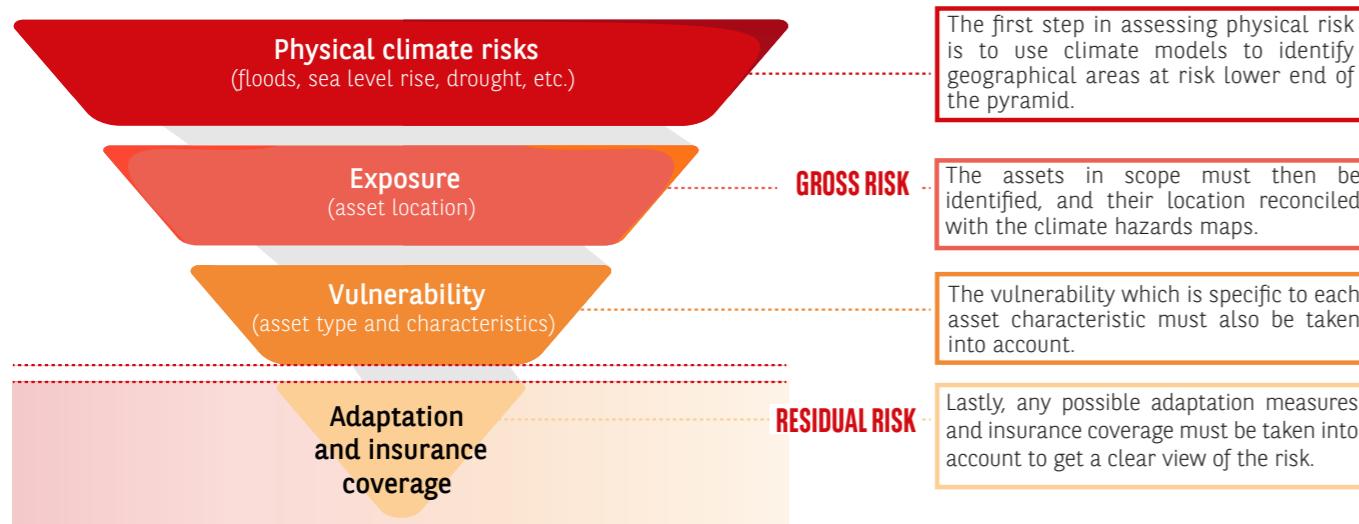
For the purpose of portfolio stress-testing (e.g. ICAAP), more sophisticated approaches have also been used, typically catastrophe models relying on large numbers of climate-conditioned events.

Recognising the fact that physical risks are primarily borne by the insurance and reinsurance industry (and in some instances public authorities), the next step is to achieve a residual risk view, by reflecting insurance coverage and/or public schemes and understanding the way the insurance protection gap will evolve under future climate scenarios.

Please see the illustration on the next page.

<sup>17</sup> 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).

<sup>18</sup> CMIP Phase 6 (CMIP6) - Coupled Model Intercomparison Project ([wcrp-cmip.org](http://wcrp-cmip.org)).



## 3 FOCUS ON KEY RISKS

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

For 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:

- Verify 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.

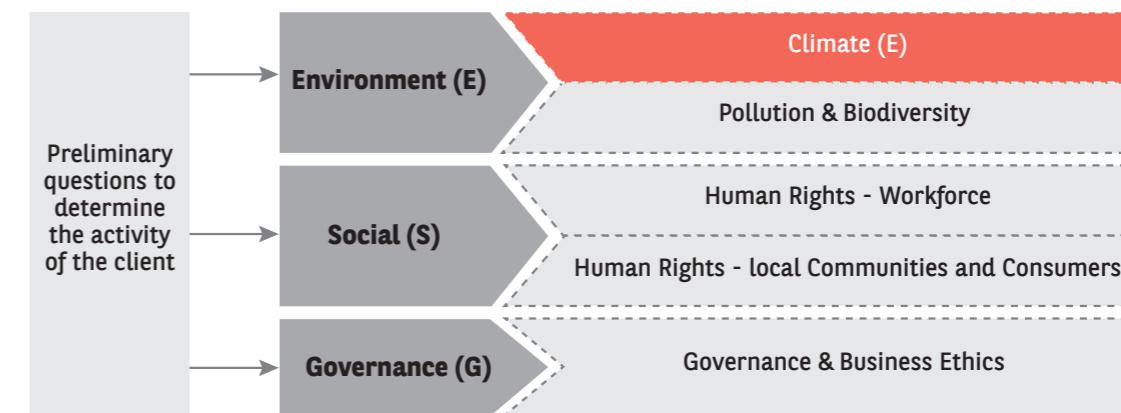
This specific analysis aims to identify companies for which weak ESG performance and risk management could generate credit, investment or reputation risks, as well as negative environmental and social impacts.

As of end of 2023, over 3,000 analyses of very large and large corporate clients were carried out, covering almost all clients of these scopes thanks to 19 sectoral questionnaires.

In 2023, the ESG assessment framework has been enhanced thanks to new questionnaires adapted to relevant medium-sized corporate customers (companies with sales of over EUR 50 million, selected on risk-based criteria) and financial institutions, with the aim to cover those clients by end of 2024.

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

Answers to preliminary questions trigger specific questions



This analysis on these five ESG dimensions provides a global overview of the ESG profile of the client, 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 if 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. The global framework surrounding the credit process has been enhanced, in particular through the update of the various credit policies, encompassing dedicated and adapted ESG sections (including climate) and leveraging on the ESG Assessment outcomes.

Credit risk is expected to be one of the most impacted risks by ESG and climate risk drivers and is also the most mature in terms of assessment methodologies.

However, the Group also adapts its risk framework to embed ESG and climate-risk drivers in other risk processes to capture potential impacts of these drivers, as the case may be.

### 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 favorable position to react quickly to climate and environmental events that could impact its activities.

On a broader scale, the integration of ESG-related topics in BNP Paribas operational risk framework continues to ensure the identification, assessment and 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 market variables, such as stock prices, interest rates, exchange rates, and commodity prices. Over the course of 2023, BNP Paribas has continued to strengthen its RISK ID process to ensure climate and environmental risk drivers are adequately considered in the context of its Global Market activities. The Bank has also continued to improve its market risk exploratory dashboard, which provides a consolidated view of transition

and physical risks, based on a blend of internal and external information (sectoral heatmaps, ratings, etc.). The dashboard is used to monitor trading portfolios and where applicable, to drill-down into specific issuers of concern. However, the dashboards indicate that the risks are not material on the portfolios in scope.

# IV

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

### 1

### NET ZERO ALIGNMENT UPDATE OF CREDIT PORTFOLIO

#### 1.1 Introduction

BNP Paribas decided to gradually align its loan portfolio with the objectives of the Paris Agreement. In 2021, the Group committed to setting intermediary alignment targets for the most carbon-intensive sectors. To date, it has published targets for six sectors - Oil and Gas, Power generation, Automotive, Steel, Aluminium and Cement.

In 2024, the Group is setting portfolio alignment targets for three additional sectors: Aviation, Shipping, and Commercial Real Estate, while also disclosing its approach to the Residential Real Estate and Agriculture sectors. The new alignment targets are informed by science-based and industry-endorsed scenarios, published by reputable organisations. All new

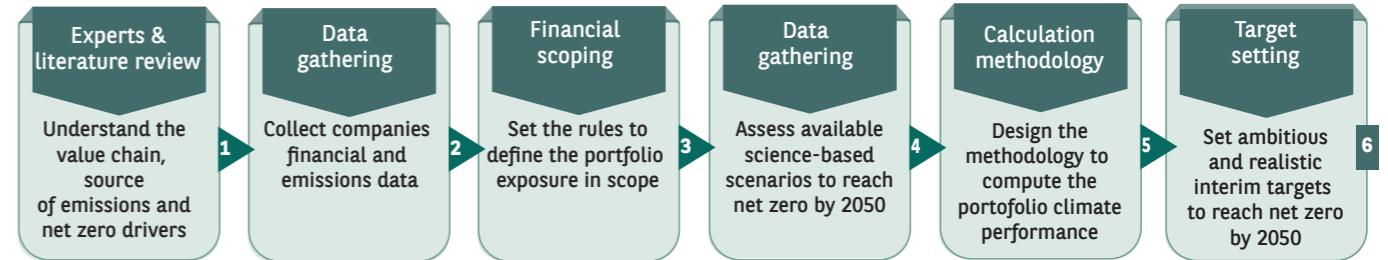
targets are set for 2030, which is considered as an appropriate time horizon taking into account the respective industries' decarbonisation pathways and underlying challenges. As the Group further accelerates its pivot away from financing fossil fuels and towards financing low-carbon energies, it is also adapting its Oil and Gas indicators with the objective to better measure and monitor the impact of its strategy in terms of absolute emissions. The Group is introducing a financed emissions indicator for its Oil and Gas portfolio, together with an associated 2030 reduction target that is replacing the earlier emission intensity indicator, which has become obsolete in the new context.

#### 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, and balance sheet securities. The portfolio is measured in terms of credit exposure, including drawn and committed undrawn amounts, except for the Oil & Gas financed emissions metric which is computed using outstanding (drawn) amounts. As part of its objective to finance a carbon-neutral economy by 2050, the Bank aims to set intermediary targets which are both realistic and ambitious. With the exception of the Oil & Gas sector, for which the indicators are based on credit exposure and on absolute emissions, the metrics for all sectors are based on physical emission intensities, supplemented with one operational KPI where relevant.

A methodology has been developed for each sector to assess BNP Paribas' loan portfolio carbon emissions baselines and trajectories. This work leverages both our in-house expertise and external market initiatives<sup>19</sup>, to which the Group actively contributes, such as the working groups sponsored by the UNEP FI<sup>20</sup> or by the Center for Climate-Aligned Finance of the Rocky Mountain Institute<sup>21</sup>. These methodological choices comply with the NZBA guidelines, and our targets are benchmarked against the Net Zero Emissions by 2050 Scenario of the IEA (IEA NZE 2050) or, in certain cases, against other science-based scenarios when they present distinct advantages in terms of granularity, scope or metrics.

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



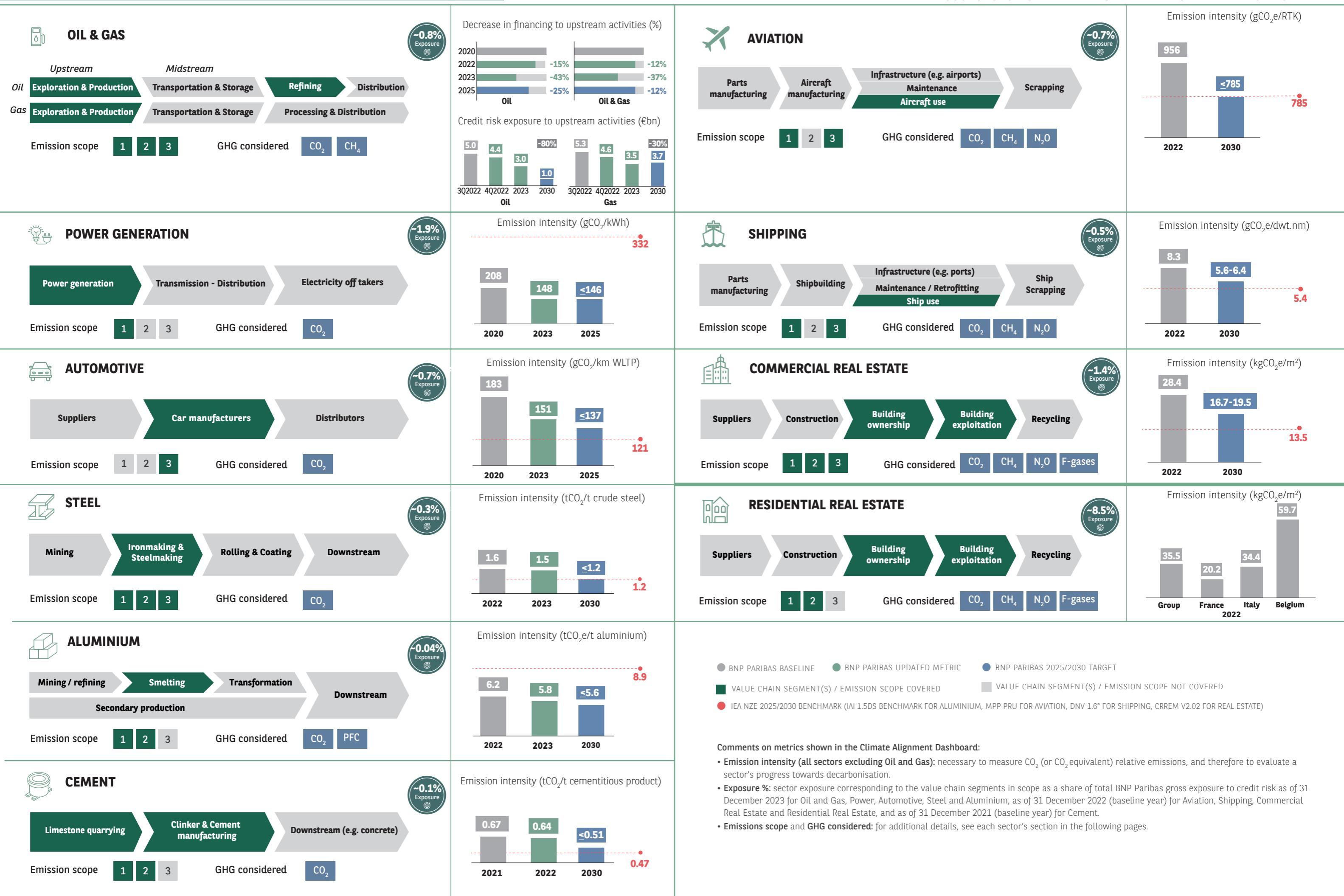
BNP Paribas strives to use the best available data and methodologies for each of the covered sectors. As data reliability, methodologies and standards continue to improve, BNP Paribas expects that regular reassessment will be needed to ensure that its models and analyses reflect new developments, key trends and metrics. This might lead the

Group to adjust sector baselines and trajectories in future reports in accordance with the best practices set by climate science. Methodological evolutions will be monitored on a regular basis, as well as potential impacts on trajectory intermediary points. See also our disclaimer, p. 70.

<sup>19</sup> Pegasus Guidelines for the Aviation Sector and Poseidon Principles working group for Shipping. For Steel and Aluminium, the working groups of the Center for Climate Aligned Finance.

<sup>20</sup> <https://www.unepfi.org/net20zero-banking/>

<sup>21</sup> <https://climatealignment.org/> and <https://rmi.org/>



## 1.2 Alignment progress update on the 2022 and 2023 commitments



Emission scope	GHG considered	Scenario	Data sources	Sector share of total emissions
1, 2 & 3	CO <sub>2</sub> , CH <sub>4</sub>	IEA NZE 2050	- IEA NZE scenario - Wood Mackenzie - 2006 IPCC Guidelines	c. 40% of global GHG emissions (of which c. 15% for scope 1 & 2) <sup>22</sup>
2023 Credit exposure		Sep 30, 2022 Baseline	2030 Target	Metric
c. 0.4% of BNP Paribas' total gross exposure to credit risk		Upstream Oil: 5.0 Upstream Gas: 5.3	≤ 1.0 (-80%) ≤ 3.7 (-30%)	Credit exposure to upstream Oil and Gas in EUR billion

### SECTOR DYNAMICS

Over the course of last year, the Oil and Gas sector has continued to be impacted by the unstable geopolitical situation, 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, the shortage in Russian natural gas supply in 2022 and the resulting energy uncertainty have required the identification of alternative supplies such as liquefied natural gas (LNG) imports (with related infrastructure build-up), essentially coming from the US and the Middle East. In that context, LNG became the base source of natural gas supply into Europe reaching 35% of the overall supply in 2022<sup>23</sup> and in 2023.

In 2023, BNP Paribas has further accelerated its objectives to reduce the financing to upstream Oil and Gas, while also pursuing its efforts to support its clients engaged in the transition. Together with the deployment of low carbon financing at scale, we expect the security of natural gas supplies to remain high on the European countries' agenda in years to come.

As of 31 December 2023, exposure to upstream Oil and Gas represented c. 0.4% and exposure to upstream Oil and Gas and refining represented c. 0.8% of BNP Paribas' total gross exposure to credit risk.

### OPERATIONAL METRICS: UPSTREAM OIL AND UPSTREAM GAS CREDIT EXPOSURE

BNP Paribas first introduced in 2021 and then reinforced in 2022 a set of 2025 objectives to reduce its credit exposure to the upstream Oil and Gas activities.

In January 2023, this ambition was substantially strengthened and extended to 2030: BNP Paribas has committed to reduce its upstream Oil financing to less than EUR 1 billion by 2030, i.e. an 80% decrease compared to its exposure amount of EUR 5 billion at the end of September 2022.

The Group has similarly committed to decrease its upstream Gas financing (EUR 5.3 billion at the end of September 2022) by more than 30% by 2030.

The Group also decided to no longer provide any financing dedicated to the development of new Oil and Gas fields, regardless of the financing method (project financing, reserve-based lending, FPSO)<sup>24</sup>, nor to non-diversified upstream Oil players.

As of end 2023, BNP Paribas had already exceeded its 2025 upstream Oil and Gas and upstream Oil financing reduction targets (respectively -12% and -25%) vs. December 2020, with actual reductions of -37% and -43%. It is also well on track with its 2030 objectives as can be seen in the table on the following page.

### FINANCED EMISSIONS METRIC

In order to better measure and monitor the impact of its pivot away from financing fossil fuels and towards financing low-carbon energies, the Group is introducing a financed emissions indicator for its Oil and Gas portfolio, together with an associated 2030 reduction target. The baseline is set at 30 September 2022, which is in line with the baseline for the Bank's 2030 upstream Oil and Gas exposure reduction targets.

The financed emissions indicator builds on the PCAF methodology and is specifically tailored to measure and monitor the impact of the Group's exposure reduction strategy in terms of absolute emissions. It covers scope 1 & 2 emissions for upstream and refining, together with scope 3 emissions for upstream (end-use combustion). The scope 1 & 2 emissions include methane emissions which need to decrease by 75% by 2030 compared to 2020 levels under the IEA NZE scenario.

Attribution factors are computed for upstream and refining entities using outstanding (drawn) amounts and balance sheet items (equity and debt). The attribution factor is subject to a certain degree of inherent volatility related to year-on-year fluctuations in company values or changing drawing patterns. In order to reduce potential distortion associated with company book fluctuations, the attribution factors are computed using 3-year averages for equity and debt.

The 2030 financed emissions target is set at 8.2 MtCO<sub>2</sub>e, representing a 70% reduction compared to a September 2022 baseline of 27.3 MtCO<sub>2</sub>e. The target is benchmarked against the IEA NZE scenario which involves a reduction in Oil and Gas emissions of 34% between 2022 and 2030. It also takes into account the Group's objectives in terms of reducing upstream exposure as well as its targets to reduce the weight of the fossil fuel financing in its energy production financing portfolio to 10% by 2030. As of end of 2023, the metric stood at 15.9 MtCO<sub>2</sub>e, representing a 42% reduction vs. the baseline.

While replacing the earlier emission intensity metric, which has become obsolete at portfolio level in the context of the strong acceleration of the Group's upstream exposure reduction targets, BNP Paribas intends to continue to use the operational emission intensities indicators for its internal assessment of individual Oil and Gas companies' performance.

The Group's financed emission indicator is subject to certain limitations usual for this kind of metrics (use of estimates, potential reporting date mismatches, etc.). It has been tailored to measure the impact of the Group's upstream exposure reduction strategy and as such may not be comparable with other similar metrics, including the financed emissions reported under Pillar 3 or other reporting requirements.

**The financed emissions indicator formula reads (simplified):**

$$\text{Financed emissions metric} = \sum \text{emissions}_c \times \frac{\text{Drawn amounts}}{(\text{Equity} + \text{Debt})_c}$$

c = company

**Note:** The Group's financed emissions metric is computed using the following data sources:

- CO<sub>2</sub> and CH<sub>4</sub> emissions for scopes 1 and 2 (MtCO<sub>2</sub>e per annum) are taken from Wood Mackenzie for each upstream or refining counterparty.

• CO<sub>2</sub> emissions for scope 3 are calculated based on O&G volumes extracted by each counterparty, using data sourced from Wood Mackenzie to which Emission factors computed using IPCC 2006 and IEA data are applied.

- Equity and Debt = company data consolidated by BNP Paribas, three-year averages.

### Overview of Oil and Gas operational metric

Metrics	Baseline	2023 Results	2025 Target
Upstream Oil Credit Exposure	Dec 31, 2020	-43%	-25%
Upstream Oil and Gas Credit Exposure	Dec 31, 2020	-37%	-12%
Metrics	Baseline	2023 Results	2030 Target
Upstream Oil Credit Exposure	Sep 30, 2022	-40% (EUR 3.0bn)	-80%
Upstream Gas Credit Exposure	Sep 30, 2022	-34% (EUR 3.5bn)	-30%

### Overview of Oil and Gas financed emissions metric

Metrics	Sep 30, 2022	2023 Result	2030 Target
Financed emissions (MtCO <sub>2</sub> e)	27.3 (baseline)	15.9 (-42%)	8.2 (-70%)

BNP Paribas' 2030 target is more ambitious than the IEA NZE scenario which involves a reduction in Oil and Gas emissions of 34% between 2022 and 2030.

### BNP Paribas partnership with Kayrros

In 2023, BNP Paribas formed a landmark research & development partnership with Kayrros - a global environmental intelligence firm. Kayrros uses artificial intelligence to process satellite images and track global methane emissions in near real time. BNP Paribas teams intend to build on these methane tracking technologies to work towards developing more accurate industry-level methane metrics using different modelling techniques, including geospatial data analytics. The Group will leverage Kayrros' expertise to deepen its understanding of the methane footprint and enhance its engagement with oil and gas companies. The project aims to supplement the existing corpus of knowledge on methane emissions quantification available to banks to measure their progress towards the methane abatement goals of IPCC (AR6).

<sup>22</sup> Source : IEA - <https://iea.blob.core.windows.net/assets/2f65984e-73ee-40ba-a4d5-bb2e2c94cecb/EmissionsfromOilandGasOperationinNetZeroTransitions.pdf>

<sup>23</sup> Source : WEO 2023 - <https://iea.blob.core.windows.net/assets/86ede39e-4436-42d7-ba2a-edf61467e070/WorldEnergyOutlook2023.pdf>

<sup>24</sup> Floating production storage and offloading.

## Power Generation

Emission scope	GHG considered	Scenario	Data sources	Sector share of total emissions
1	CO <sub>2</sub>	IEA NZE 2050	- IEA NZE scenario - Asset Impact - IEA WEO 2022	c. 32% of global GHG emissions
2023 Credit exposure	2020 Baseline	2025 Target	Metric	
c. 1.9% of BNP Paribas' total gross exposure to credit risk	208	146 (-30%)	gCO <sub>2</sub> /kWh	

### SECTOR DYNAMICS

In 2023, the global demand for electricity grew by 2.2%<sup>25</sup> caused by a strong growth in China which more than compensated the decrease in the USA and the EU. In the renewable field, capacity additions increased by almost 50% to nearly 510 gigawatts with a strong acceleration in China. Global CO<sub>2</sub> emissions from power generation increased by 1% in 2023, mainly due to a rebound in coal-fired power generation, especially in China and India, which counterbalanced a reduced hydropower output driven by droughts.

In 2023, BNP Paribas accelerated its financing role by supporting its clients in the renewable energy sector leading to the decarbonisation of the industry.

As of 31 December 2023, exposure to Power Generation represented c. 1.9 % of BNP Paribas' total gross exposure to credit risk.

### OPERATIONAL METRICS: SHARE OF COAL AND SHARE OF RENEWABLES

The share of coal in the capacity mix of our financed Power Generation portfolio continued to decrease from 7% in 2022 to 5% in 2023, as a direct consequence of the ongoing enforcement of BNP Paribas' coal policy, which entails 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<sup>26</sup> was up to 65% in 2023 compared to 60% in 2022. Overall, the share of low-carbon energies (i.e. renewables and nuclear) also increased from 69% in 2022 to 74% in 2023<sup>27</sup>.

In the World Energy Outlook report published by the IEA in 2023, the global coal and the renewable capacities represented 24% and 31% respectively in 2022.

### EMISSION INTENSITY METRIC

BNP Paribas' portfolio emission intensity significantly decreased in 2023 (148 gCO<sub>2</sub>/kWh) compared to 2022 (179 gCO<sub>2</sub>/kWh). This improvement is due to the decrease of coal and gas in the technology mix, the increase of the Bank's exposure to clients in the renewable energy field, and the updating of client's data.

#### Overview of Power Generation operational metrics and emission intensity metric

Metrics	2020	2021	2022	2023	2025 Target
Share of coal (%)	10	8	7	5	<5
Share of renewables (%)	57	62	60	65	≥66

Metrics	2020	2021	2022	2023	2025 Target
Emission intensity (gCO <sub>2</sub> /kWh)	208	182	179	148	≤146

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

- Installed capacity per technology per counterparty (in MW) sourced from Asset Impact. This data is used to estimate the portfolio generation capacity mix as well as to compute the portfolio emissions intensity.
- Latest updated capacity factors per technology & implied emission factors per technology sourced from the IEA World Energy Outlook 2023. 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.

## Automotive

Emission scope	GHG considered	Scenario	Data sources	Sector share of total emissions
3 (Tailpipe emissions)	CO <sub>2</sub>	IEA NZE 2050	- IEA NZE scenario - S&P Global - Asset Impact	c. 10% of global CO <sub>2</sub> emissions
2023 Credit exposure	2020 Baseline	2025 Target	Metric	
c. 0.7% of BNP Paribas' total gross exposure to credit risk	183	137 (-25%)	gCO <sub>2</sub> /km WLTP	

### SECTOR DYNAMICS

2023 saw a solid growth in production and sales of light-duty vehicles, driven by pent-up demand which followed supply shortages in the previous year. Much of the growth was carried by electrified car sales, which however noticeably slowed in the later part of the year. A certain retrenchment in electric vehicles subsidies in Europe, the global rise of interest rates, and remaining limitations in the 'ease of use' of battery electric vehicles all played their part.

As of 31 December 2023, the NZBA Automotive<sup>28</sup> exposure represented c. 0.7% of the Group's total gross exposure to credit risk.

### OPERATIONAL METRICS: SHARE OF ELECTRIFIED VEHICLES<sup>29</sup>

As a result of the above market developments, the share of electrified vehicles in the powertrain technology mix of the BNP Paribas' financed automotive manufacturing portfolio continued to increase, albeit at a slower pace, reaching 15% in 2023 compared to 14% in 2022.



### EMISSION INTENSITY METRIC

The portfolio's emission intensity decreased by 16 gCO<sub>2</sub>/km WLTP<sup>30</sup> to reach 151 gCO<sub>2</sub>/km in 2023. In addition to the increased share of electrified vehicles in our clients' production, it was driven by the continued efforts of the Group's automotive clients to reduce the emissions of their models with combustion engines.

#### Overview of Automotive operational metric and emission intensity metric

Metrics	2020	2021	2022	2023	2025 Target
Share of electrified vehicles (%)	4	7	14	15	≥25
Emission intensity (gCO <sub>2</sub> /km WLTP)	183	176	167	151	≤137

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

- Powertrain technology mix per counterparty (in % of vehicles produced) from S&P Global. 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 factors per technology from Asset Impact, focusing on tailpipe emissions of new vehicles sold (i.e. excluding current fleet in service) based on average standard CO<sub>2</sub> emissions across manufacturer and vehicle type per km driven based on the WLTP norm.

<sup>25</sup> IEA - Electricity 2024 – Analysis and forecast to 2026 and IEA Renewables 2023 – Analysis and forecasts to 2028

<sup>27</sup> See the detailed electricity mix by capacity in our 2023 URD p. 656.

<sup>28</sup> Renewable energy: wind and marine energy, photovoltaic solar energy, concentrated solar energy, hydroelectricity, geothermal energy, bioenergy (including biofuels except for first generation).

<sup>29</sup> In our methodology defined as light-duty vehicle manufacturing.  
<sup>30</sup> Electrified vehicles refers to a range of technologies that use electricity to propel a vehicle including BEV: Battery Electric Vehicle, PHEV: Plug-in Hybrid Electric Vehicle, FCV: Fuel Cell Vehicle.

<sup>30</sup> The Worldwide harmonized Light vehicles Test Procedure (WLTP) is a global standard for determining the levels of pollutants, CO<sub>2</sub> emissions and fuel consumption for light duty vehicles.

Steel	Emission scope	GHG considered	Scenario	Data sources	Sector share of total emissions	Aluminium	Emission scope	GHG considered	Scenario	Data sources	Sector share of total emissions
	1, 2 & 3 cat. 1	CO <sub>2</sub>	IEA NZE 2050	- IEA NZE scenario - Commodities Research Unit (CRU) - Public client disclosures	c. 7% of global CO <sub>2</sub> emissions		1 & 2	CO <sub>2</sub> PFC <sup>31</sup>	IAI 1.5 Degree scenario	- IEA 1.5 Degree scenario - Commodities Research Unit - IEA NZE scenario	3% of global CO <sub>2</sub> emissions
	2023 Credit exposure	2022 Baseline	2030 Target	Metric	0.04% of BNP Paribas' total gross exposure to credit risk		2023 Credit exposure	2022 Baseline	2030 Target	Metric	
	c. 0.3% of BNP Paribas' total gross exposure to credit risk	1.6	1.2 (-25%)	tCO <sub>2</sub> /t crude steel	6.2	5.6 (-10%)	tCO <sub>2</sub> e/t aluminium				

## ■ SECTOR DYNAMICS

In 2023, global crude steel production was almost the same as in 2022 reaching 1,891 million tonnes: China's production was flat due to a weaker demand from the construction sector while growth in India and Russia compensated capacity reduction in the EU.

As of 31 December 2023, the steel sector represented c. 0.3% of BNP Paribas' total gross exposure to credit risk.

## ■ EMISSION INTENSITY METRIC

BNP Paribas' portfolio emission intensity decreased in 2023 (1.5 tCO<sub>2</sub>/t of crude steel) compared to 2022 (1.6 tCO<sub>2</sub>/t of crude steel). This improvement is due to the decrease of the emission intensity of some clients, partly thanks to energy and material efficiency initiatives. BNP Paribas' steel portfolio remains below the worldwide average emission intensity of 1.8 tCO<sub>2</sub>/t crude steel and in line with the IEA 2030 target.

## Overview of steel emission intensity metric

Metric	2022	2023	2030 Target
Emission intensity (tCO <sub>2</sub> /t of crude steel)	1.6	1.5	≤1.2

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

- Emission intensity baseline calculated for each furnace based on specific boundaries (raw material preparation including performed by third party providers for non-fully integrated steelmakers, iron making and steel making) sourced from CRU.
- 2030 emission intensity: when available most recent publicly announced emission reduction commitments otherwise CRU estimates.

## ■ SECTOR DYNAMICS

In 2023, primary aluminium production increased by 2% at 70.6 million metric tonnes, mainly driven by an increase in China (strong growth in solar modules and electric vehicles) and in the Gulf Cooperation Council countries while Europe decreased its production notably due to weak demand and floating/unhedged power tariffs<sup>32</sup>.

As of 31 December 2023, the aluminium sector represented c. 0.04 % of BNP Paribas' total gross exposure to credit risk.

## ■ EMISSION INTENSITY METRIC

BNP Paribas' portfolio emission intensity decreased in 2023 (5.8 tCO<sub>2</sub>e/t of aluminium) compared to 2022 (6.2 tCO<sub>2</sub>e/t of aluminium). It is mainly due to clients' improvements. It remains well below the worldwide average (11.5 tCO<sub>2</sub>e/t of aluminium in 2022) as the Bank continues to focus its financing, on average, on clients operating with relatively low emission intensities.

## Overview of Aluminium emission intensity metric

Metric	2022	2023	2030 Target
Emission intensity (tCO <sub>2</sub> e/t of aluminium)	6.2	5.8	≤5.6

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

- Emission Intensity baseline calculated for each aluminium smelter sourced from CRU.
- 2030 emission intensity: when available most recent publicly announced emission reduction commitments otherwise CRU estimates.



<sup>31</sup> PFC: Perfluorocarbon.

<sup>32</sup> Source: International Aluminium Institute.



Emission scope	GHG considered	Scenario	Data sources	Sector share of total emissions
1 (Gross <sup>33</sup> ) & 2	CO <sub>2</sub>	IEA NZE 2050	- IEA NZE scenario - Clients' public disclosures	c. 7% of global CO <sub>2</sub> emissions
2022 Credit exposure	2021 Baseline	2030 Target	Metric	
c. 0.1% of BNP Paribas' total gross exposure credit risk	0.67	0.51 (-24%)	tCO <sub>2</sub> /t cementitious product	

## ■ SECTOR DYNAMICS

Global cement production declined significantly in 2022, down 5% and driven by China (-11%). China remains the leading cement producer, with 51% of global production, where India is increasing its share in global production<sup>34</sup>.

In 2022, major cement players have worked to reduce their carbon intensities by optimising the production parameters (clinker to cement ratio, energy efficiency, cement content). In the near future, these elements will remain the main driver of decarbonisation, together with the use of alternative products for cement. Carbon capture and storage solutions will be required to maintain the decarbonisation trend in the longer term. Some of our clients are now planning first introductions of these technologies by 2030.

As of 31 December 2022, the cement manufacturing activities represented c. 0.1% of BNP Paribas total gross exposure to credit risk.

## ■ EMISSION INTENSITY METRIC

Over 2022 the collective decarbonisation efforts of the sector have led to a reduction of the average emission intensity of



<sup>33</sup> Scope 1 emissions on a gross basis, i.e. including emissions released by the combustion of alternative fuels – excluding biomass.

<sup>34</sup> Source: IEA, Tracking Cement.

## 1.3 2024 new portfolio alignment approaches and targets



Emission scope	GHG considered	Scenario	Data sources	Sector share of total emissions
1 & 3, cat. 3 (airlines) or 3, cat. 13 (lessors) Well-to-Wake	CO <sub>2</sub> CH <sub>4</sub> N <sub>2</sub> O	MPP <sup>35</sup> Prudent scenario	- PACE <sup>36</sup> - MPP Prudent scenario - Public client disclosures	2 to 3% of global CO <sub>2</sub> emissions
2022 Credit exposure	2022 Baseline	2030 Target	Metric	
c. 0.7% of BNP Paribas' total gross exposure to credit risk	956	785 (-18%)	gCO <sub>2</sub> e/RTK (Revenue Tonne Kilometre)	

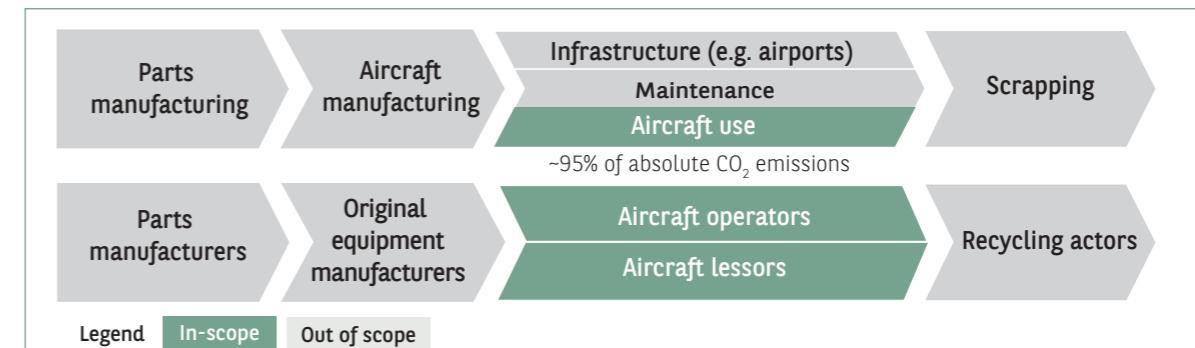
## ■ SECTOR CONTEXT

Aviation connects people, provides access to goods and services and enables trading across geographies. It is therefore fundamental to the world economy. In 2019, prior to the pandemic-induced volatility in air traffic, the air transport sector represented EUR 3.5 trillion (4.1% of the world's GDP). The Aviation decarbonisation path starts from a hard to abate framework: in 2019 pre-pandemic GHG emissions from the sector contributed to roughly 2 to 3% of global total emissions (1.2 GtCO<sub>2</sub>e).

The current projections of the International Air Transport Association (IATA) estimate that demand for air travel in 2050 could exceed 10 billion air passenger journeys - more than doubling 2019 levels - as the global economy continues to develop in the coming years and a larger share of emerging economies' population adopt a regular flying mode. As other

sectors decarbonise, Aviation's share in overall emissions is expected to be amplified in the future, driven by the continued growth of the sector. At this pace, air transport cumulative GHG emissions between 2022 and 2050 could sum up to 47 GtCO<sub>2</sub>e and exceed the 1.5°C carbon budget of the sector by a factor of more than two.

Numerous stakeholders in the aviation value chain have broadly committed to net zero by mid-century, with intermediate targets, but the path to reaching that goal remains complex. Given the capital-intensive nature of the sector and the lack of readiness of alternative lower emission technologies, achieving carbon neutral operations will require time and massive capital investments, initially supporting a wider uptake of Sustainable Aviation Fuels (SAF).



## ■ APPROACH

BNP Paribas' portfolio emissions intensity measurement leverages on the methodology outlined by the Pegasus Guidelines.

### Financial scope

Secured and unsecured exposure (drawn and committed undrawn amounts), encompassing commercial and export credit agency-insured lending. As of 31 December 2022, exposure to the Aviation sector represented c. 0.7% of BNP Paribas total gross exposure to credit risk.

### Emission scope

Scope 1 and scope 3 category 3 (fuel and energy-related activities which are not included in scope 1 or scope 2) for air-

lines and scope 3 category 13 (downstream leased assets) for lessors.

Emissions are measured on a well-to-wake basis, which includes the emissions released during combustion, as well as upstream fuel emissions (which are negative for Sustainable Aviation Fuels). All Kyoto Protocol GHGs (including CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O) are in scope.

### Value chain

BNP Paribas' portfolio emissions intensity measurement focuses on the operations of commercial aircraft, whether owned by airlines or lessors, and which represent c. 95% of the total CO<sub>2</sub> emissions along the value chain.

<sup>35</sup> Mission Possible Partnership.

<sup>36</sup> Platform for Analysing Carbon Emissions.

**Metrics**

Emission intensity defined in grams of CO<sub>2</sub>e per Revenue Tonne Kilometre (RTK), with RTK a unit of traffic measurement corresponding to one metric tonne of payload carried one kilometre. This metric is used in the Pegasus Guidelines and has several advantages: (i) RTKs encompass all types of payload i.e. passengers, belly freight and dedicated cargo traffic, (ii) it reflects airlines efforts to improve emissions intensity through load factor optimization, and (iii) it is consistent with SBTi's guidance for the aviation sector.

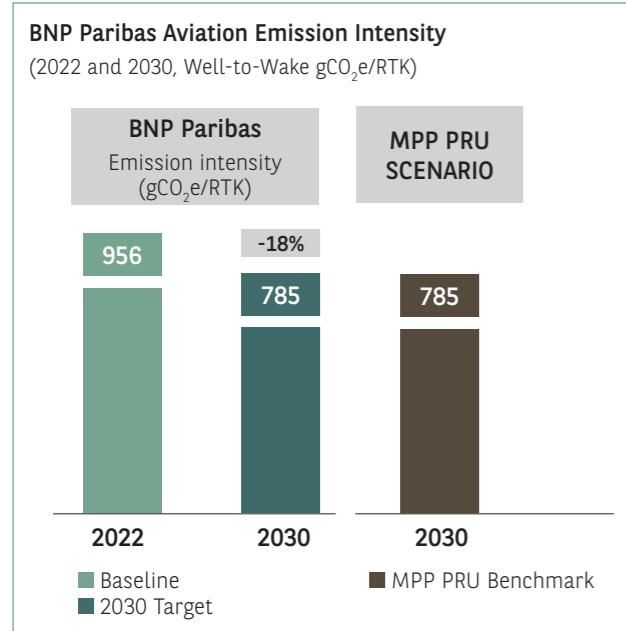
**Data sources**

BNP Paribas leverages on the data collected directly from clients and through PACE (Platform for Analysing Carbon Emissions), one of the Pegasus Guidelines qualified third-party data provider.

**BENCHMARK METHODOLOGY & TARGET SETTING**

BNP Paribas has elected to use the Prudent scenario of the Mission Possible Partnership (the "MPP PRU scenario") as a benchmark for the decarbonisation of its Aviation lending portfolio. The MPP PRU scenario (i) consists in a 1.5°C-aligned trajectory for Aviation, (ii) is based on robust and credible industry-backed assumptions in terms of traffic forecasts and gradual technological developments, (iii) differentiates passenger and dedicated cargo operations, and (iv) is the reference benchmark used in the Pegasus Guidelines.

We have also considered the IEA NZE scenario, which is however currently less adapted to the Aviation sector on some key parameters (traffic forecasts, scope, type of emissions covered, metrics, granularity).



At 2022-end, BNP Paribas Aviation portfolio compares favourably to the global industry average, at 956 gCO<sub>2</sub>e/RTK. This performance can mainly be attributed to the larger share of young aircraft in the Bank's global portfolio compared to the world average.

By 2030, BNP Paribas targets a reduction of 18% of its Aviation portfolio emission intensity vs. the 2022 baseline, representing 785 gCO<sub>2</sub>e/RTK, aligned with MPP PRU scenario projections.

This reduction target is highly dependent on a small number of enablers such as operational efficiency, which may be affected by individual operational strategies from airlines and other stakeholders (e.g. civil aviation authorities), as well as the scaling up and availability of SAFs. It does not consider any carbon offsetting measure and assumes that the share of cargo aircraft, which typically exhibit lower emission metric per transported weight than passenger aircraft, remains marginal in BNP Paribas' Aviation portfolio.

**DECARBONISATION ENABLERS**

Aviation's unique requirements, including passenger safety, weight and size constraints, long innovation cycle and the high cost and/or limited scale of key decarbonisation levers depict the challenges the sector faces towards more sustainable travelling and, ultimately, net zero flying by 2050.

The decarbonisation of aviation encompasses - beyond limiting air travel demand - operational efficiency, fleet renewal, SAFs and novel aspirational propulsions (hydrogen, battery-electric and hybrid aircraft). Near term solutions rely more on enhancing operational efficiency, renewal of fleet and gradual introduction of sustainable fuels, which are the three levers considered for setting the BNP Paribas aviation portfolio 2030 target. Longer term enablers (after mid-2030s) include wider SAFs offtake and the adoption of electric, hybrid and hydrogen-powered propulsions that at 2050 horizon will have the potential to serve regional, short-haul and perhaps some medium-haul markets. To achieve its 2030 target, BNP Paribas recognizes that these enablers are not fully in the hands of its clients. Several factors are also highly dependent on policy support and industry collaboration across the value chain - including for the future availability and price of SAF.

<b>Operational efficiency</b>	Better utilization of aircraft (higher load factor), air traffic management, flight and ground operations, incremental improvements on turbine and aerodynamics.
<b>Fleet renewal</b>	Larger share of new generation aircraft in operations.
<b>Sustainable Aviation Fuels (SAF)</b>	Sustainable Aviation Fuels (SAF) having lower lifecycle emissions than traditional jet-fuel. SAFs are drop-in fuels and can be used without changes to aircraft and airport infrastructure. But they require a massive ramp up of production and need significant quantities of sustainable feedstock (among others without competition with food or feed) and energy.
<b>Novel aspirational propulsions</b>	Introduction of novel propulsion technologies including hybrid, hydrogen and battery-electric aircraft.



Emission scope	GHG considered	Scenario	Data sources	Sector share of total emissions
1 & 3, cat. 3 Well-to-Wake	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	- IMO Revised Strategy - Det Norske Veritas	- DNV 1.5 Initiative scenarios - DNV/IMO - Asset Impact - Public client disclosures	2-3% of global CO <sub>2</sub> emissions
2022 Credit exposure	2022 Baseline	2030 Target	Metric	
0.5% of BNP Paribas' total gross exposure to credit risk	8.3	5.6 - 6.4 (-32% to -23%)	Annual Efficiency Ratio (AER) in gCO <sub>2</sub> e/dwt.nm	

**SECTOR CONTEXT**

Representing approximately 80% of global trade by volume, seaborne transport is therefore essential to the world economy, including in terms of energy and food security.

The shipping sector contributes to 2-3%<sup>37</sup> of global greenhouse gases emissions and is deemed a hard-to-abate sector. At the same time, it remains by far the most carbon-efficient mode of commercial transport today in terms of emissions per distance travelled.

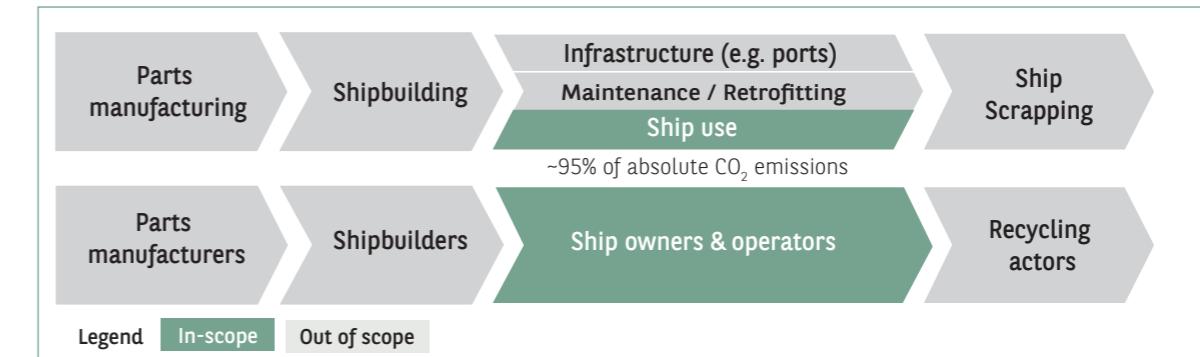
According to the IEA Stated Policies Scenario (IEA, 2023 WEO), without further actions, carbon emissions from the sector are expected to increase from 855 MtCO<sub>2</sub> to 1,098 MtCO<sub>2</sub> between 2022 and 2050, as seaborne trade volume grows by 2.9% per year on average over the same period. Regulations, policies, and industry initiatives remain key to achieve sufficient reductions in GHG emissions.

In July 2023, the International Maritime Organization (IMO) revised its GHG strategy and declared an ambition for

international shipping to reach net zero "by or around" 2050 (compared to its 2018 initial target of a 50% reduction in GHG emissions with respect to 2008 levels). Emissions are now considered on a full lifecycle (i.e. well-to-wake) basis.

European authorities have also stepped up their ambitions. From 2025 onwards, the FuelEU Maritime regulation will set requirements to reduce the average annual well-to-wake GHG emission intensity of onboard energy used by ships trading in the EU between 2025 and 2050.

Confronted with the need for a technological and operational shift, the sector already embarked on voluntary decarbonisation efforts by way of operational improvements, such as slow steaming, optimisation of weather/voyage routings, technical retrofits (installation of energy saving devices), efficiency gains and the development of nascent alternative propulsion technologies.

**APPROACH****Financial scope**

Secured and unsecured exposures (drawn and committed undrawn amounts), encompassing commercial and export credit agency-insured lending. As of 31 December 2022, exposure to the Shipping sector represented c. 0.5% of BNP Paribas total gross exposure to credit risk.

**Emission scope**

Scope 1 and scope 3 category 3 (fuel and energy-related activities which are not included in scope 1 or scope 2) of ship owners & operators.

Emissions are measured on a well-to-wake basis, which includes the emissions released during combustion on board of a vessel, mainly for propulsion purposes, as well as upstream fuel emissions. CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O are included.

**Value chain**

BNP Paribas' portfolio emission intensity measurement focuses on cargo vessels once built, delivered and in operations, which represent the vast majority of the GHG emissions along the value chain, BNP Paribas' approach excludes vessels under construction.

**Metrics**

BNP Paribas measures the Annual Efficiency Ratio (AER) of each of the vessels in-scope. The AER is the most widely used carbon intensity metric in the industry today, being mandated by the IMO for existing regulations (IMO DCS<sup>38</sup>, CII<sup>39</sup>) and therefore the standard applied by ship finance institutions. The AER is reported in grams of CO<sub>2</sub> equivalent per deadweight tonne times nautical miles (gCO<sub>2</sub>e/dwt.nm), reflecting the emissions generated in relation to the maximum cargo capacity of the ship and the distance sailed.

To obtain an aggregated metric at portfolio level, the emission intensities are weighted by the corresponding loan exposures.

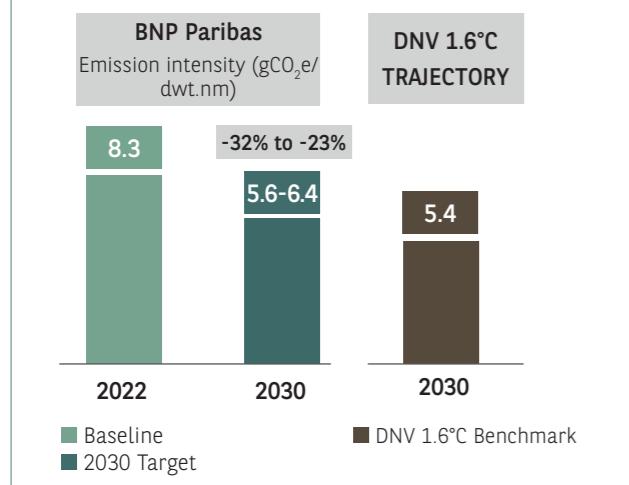
Passenger shipping has been excluded due to a different metric computation, the need of a specific emission intensity formula and a lack of comparability with cargo vessels.

**Data sources**

BNP Paribas leverages on emission intensities sourced from DNV Maritime Advisory / IMO Data Collection System for vessels falling within the Poseidon Principles' alignment calculation scope and from Asset Impact for counterparties within the remaining exposure.

**BENCHMARK METHODOLOGY & TARGET SETTING**

BNP Paribas has reviewed several decarbonisation pathways proposed for the global shipping industry from a variety of sources (IEA, IMO, SBTi, Bureau Veritas, DNV). Our target setting exercise was informed by these scenarios, however, our underlying assumptions and metrics computations are best compared to the DNV bottom-up approach which was designed at the request of a group of banks involved in Shipping, including BNP Paribas.

**BNP Paribas' 2030 commitment for the Shipping sector**

At end-2022, BNP Paribas Shipping portfolio emission intensity stood at 8.3 gCO<sub>2</sub>e/dwt.nm.

By 2030, BNP Paribas targets a reduction between -23% and -32% in emission intensity, representing an intensity ranging from 5.6 to 6.4 gCO<sub>2</sub>e/dwt.nm. The lower end of our 2030 emission intensity target range is close to the DNV 1.6°C trajectory.

**■ DECARBONISATION ENABLERS**

While the industry has already started to improve its energy efficiency with practical measures (e.g. engine improvement, weather routing, electric onshore powering at berth, etc.), the ability of the shipping sector to substantially reduce its GHG emissions remains contingent on the ramp-up in scalable volumes of low or zero emissions fuels and the uptake of new propulsion technologies able to run on such new fuels. Such developments related to alternative fuels are beyond the business model of shipping companies alone, as a result, the decarbonisation of the sector would require strong and sustained efforts from multiple stakeholders across the energy and maritime industries, as well as coordinated government and regulatory actions and incentives.

Among the key enablers of the sector's decarbonisation, alternative fuels stand out by offering significant reductions in well-to-wake GHG emissions, such as green/blue ammonia, methanol, LNG, biofuels and low-carbon hydrogen. However, to make them economically and practically viable, their production must be scaled up with their processing using renewable energy. The challenge is compounded by today's current outlook for multiple fuelling alternatives rather than one single clean fuel of choice. Additionally, ships capable of using these fuels need to be built as well as the supply infrastructure/bunkering logistics enabling to fuel them.

Despite their current high cost, alternative fuels could become competitive with the right level of investment and involvement of all stakeholders, supported by regulatory measures (pricing and/or tax mechanism) to disincentivize the use of conventional fossil fuels.

To achieve its 2030 target, BNP Paribas recognizes that these enablers are not fully in the hands of its clients. Several factors are also highly dependent on policy support and industry collaboration across the value chain – including for the ramp up of alternative fuels.

<b>Fleet renewal / upgrade</b>	Vessel retrofits and introduction of new-builds with the highest energy efficiency propulsion available.
<b>Speed reduction</b>	Benefits of slow steaming might be narrowed depending on the geopolitical context, logistics bottlenecks and/or market conditions on a given shipping segment.
<b>Alternative Fuels uptake</b>	Low- and zero-emissions alternative fuels require a significant increase of production to drive costs down.

<sup>38</sup> International Maritime Organization Data Collection System.

<sup>39</sup> Carbon Intensity Indicator.

## Commercial Real Estate

Emission scope	GHG Considered	Scenario	Data sources	Sector share of total emissions
1, 2, and when applicable part of 3, cat. 13 (downstream leased assets)	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, F-gases <sup>40</sup>	CRREM <sup>41</sup> Global Pathways V2.02	- EPCs collected from clients and public databases - Public client disclosures	c. 10% of global GHG emissions <sup>42</sup>
2022 Credit exposure	2022 Baseline	2030 Target	Metric	
c. 1.4% of BNP Paribas' total gross exposure to credit risk	28.4	16.7-19.5 (-41% to -31%)	kgCO <sub>2</sub> e/m <sup>2</sup>	

**■ SECTOR CONTEXT**

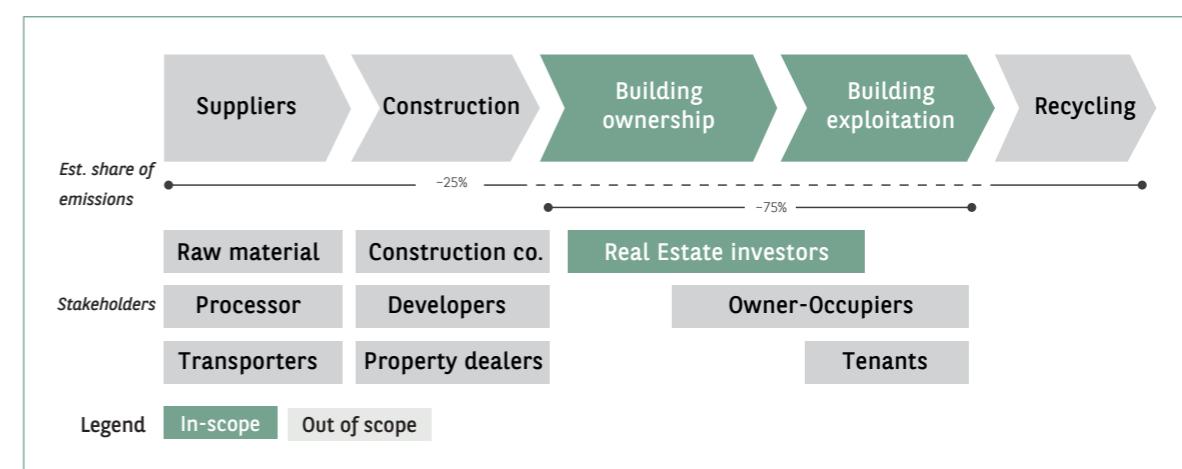
The Commercial Real Estate (CRE) sector comprises all real estate used for commercial purposes where the building is leased, used, or operated to generate an income. This includes predominantly non-residential properties (offices, warehouses etc.), which account for approximately 13% of global CO<sub>2</sub> emissions. One quarter of these emissions is associated with construction (embodied emissions, c. 3%) and the rest with the utilisation of the buildings (operational emissions, c. 10% of global GHG emissions).

Within the operational emissions, approximately 30% of operational emissions are direct emissions originated from the on-site generation of energy<sup>43</sup>. The other 70% come from indirect emissions, i.e. associated with electricity and heat generated remotely and used on-site. This makes the sector heavily dependent on the local energy mix and the level of electricity grid decarbonisation, which vary strongly between

countries. Furthermore, there is a high variety of building types within the sector (e.g. retail shops, hospitals, warehouses), leading to considerable variation in emission profiles, due to their different purposes and specifications.

Technologies and solutions are available today to build low to net zero buildings, and in certain markets this is already being made mandatory through local regulations (e.g. RE2020 in France). However, around 80% of the buildings that exist today are still expected to exist in 2050<sup>44</sup>. For this existing stock, a significant acceleration in renovations will be required.

To get on track with the IEA NZE scenario by 2030, buildings' energy intensity (both residential and non-residential) will have to decrease by 35% compared to 2022. This is four times faster than over the 2010-2022 period, which highlights the challenge ahead.

**■ APPROACH****Emission scope**

Scope 1, 2 and part of scope 3 are included (scope 3 is limited to category 13, downstream leased assets, which accounts for tenant's scope 1 and 2 emissions).

CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and F-gases (when data is available) are included.

**Value chain**

BNP Paribas focuses on the emissions from building utilization (ownership and exploitation), as this accounts for c. 75% of the emissions across the sector's value chain. Construction-related emissions are not included. However, a significant part of these are already subject to specific alignment targets of the Group (production of cement and steel).

<sup>40</sup> Subject to data and methodology availability.

<sup>41</sup> CRREM : Carbon Risk Real Estate Monitor.

<sup>42</sup> Non-residential direct & indirect emissions, excluding construction. Source: United Nations Environment Programme (2024), Global Status Report for Buildings and Construction.

<sup>43</sup> IEA, Tracking Buildings.

<sup>44</sup> Source: World Economic Forum, 'To create net zero cities, we need to look hard at our older buildings', 8 Nov. 2022.

Within the building utilization phase, the scope aligns with the Group's definition of the real estate sector, which excludes owner-occupied real estate. It therefore focuses on emissions from buildings owned by real estate investors, including their tenants' emissions, under a whole-building approach.

For secured lines, the emissions are measured at asset property level, while for unsecured financing the emissions are measured at property portfolio level, as disclosed by the Real Estate Trust Investments (REITs).

#### Financial scope

The Group prioritized its largest markets and portfolios where sufficient data could be obtained:

- Secured financing portfolios of CIB EMEA and Commercial & Personal Banking in France
- Unsecured-REITs financing portfolio of CIB in EMEA and Commercial & Personal Banking in France and Belgium

As of December 31, 2022, exposure to the Commercial Real Estate sector represented c. 1.4% of BNP Paribas total financing.

#### Metrics

The chosen metric is an emission intensity, defined as kilogram of CO<sub>2</sub>e per square metre. To come to an aggregated metric, emission intensities are weighted by loan exposures.

#### Data sources

For the secured portfolio, the Bank has leveraged on collected Energy Performance Certificates (EPCs) that are directly related to the collateralized assets. This was complemented by information obtained from public databases, e.g. ADEME and Base des Notaires in France. Where no direct emission intensity was provided on the EPC, energy intensity or labels were converted by using national emission factors and appropriate EPC scales.

For the unsecured-REITs portfolio, the Bank has mostly leveraged the information disclosed by clients in their annual / sustainability reports. When available, market-based information was used.

Where no specific asset or company data was available, the Bank used additional assumptions by leveraging existing data on similar assets (considering at least country and building type), or on a proxy basis (using ADEME).

The availability of the EPC information varies strongly between countries. There is a high dependency on a country's regulations (including privacy laws) and data infrastructure. As a result, in certain markets, the data collection has been limited to such an extent that these markets could not be included in scope today.

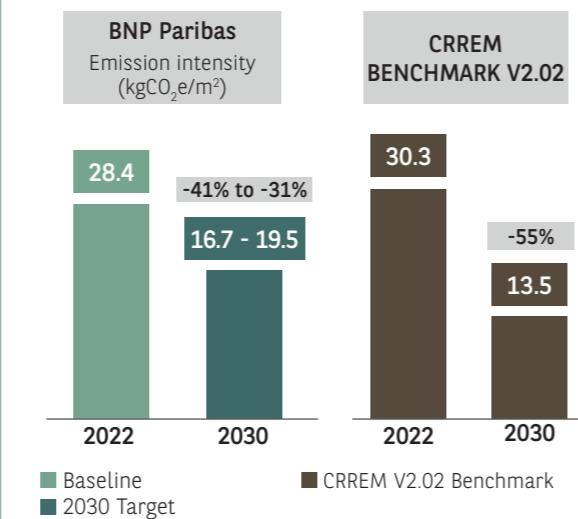
#### BENCHMARK METHODOLOGY & TARGET SETTING

BNP Paribas uses CRREM scenario V2.02, as it provides granular decarbonisation pathways at a country and building - type

level. This granularity allows the Group to take into account the diverse starting points across building types and countries and to monitor our clients' progress by comparing to the relevant decarbonisation curves. The CRREM provides fully aligned 1.5°C decarbonization pathways for the real estate sector.

While the Bank aims at maintaining a stable benchmark allowing to track and compare progress over time, it also anticipates that the portfolio composition may change in the future. If a material change in the portfolio mix occurs, BNP Paribas may adjust the benchmark to ensure it remains representative for the underlying asset types and countries. In addition, BNP Paribas aims to improve its data quality and coverage for the sector. This could also result in an adjustment to the benchmark.

#### BNP Paribas' 2030 commitment for the Commercial Real Estate sector



At end-2022, BNP Paribas' emission intensity on the covered Commercial Real Estate scope was 28.4 kgCO<sub>2</sub>e/m<sup>2</sup>, which is 6% below the comparable CRREM benchmark. The portfolio benefits from an exposure to large Real Estate Investors, whose assets, on average, exhibit a slightly better performance than the 2022 CRREM benchmark.

**BNP Paribas sets an intermediate target for 2030 in the form of a range of 16.7 to 19.5 kgCO<sub>2</sub>e/m<sup>2</sup>, representing a reduction range of 41% to 31%.**

This reduction range remains lower than what the CRREM V2.02 trajectory would prescribe for 2030. The set target range reflects the current projections by the relevant countries for their building and energy sectors under existing national measures<sup>45</sup>, factoring in a degree of uncertainty as well as an active steering of the Group's portfolio.

The Group's ability to achieve the target is highly dependent on factors that are outside the control of BNP Paribas, such as the evolution of the energy mix within countries, the development of local EPC regulations, or the national net zero transition strategies for the real estate sector.

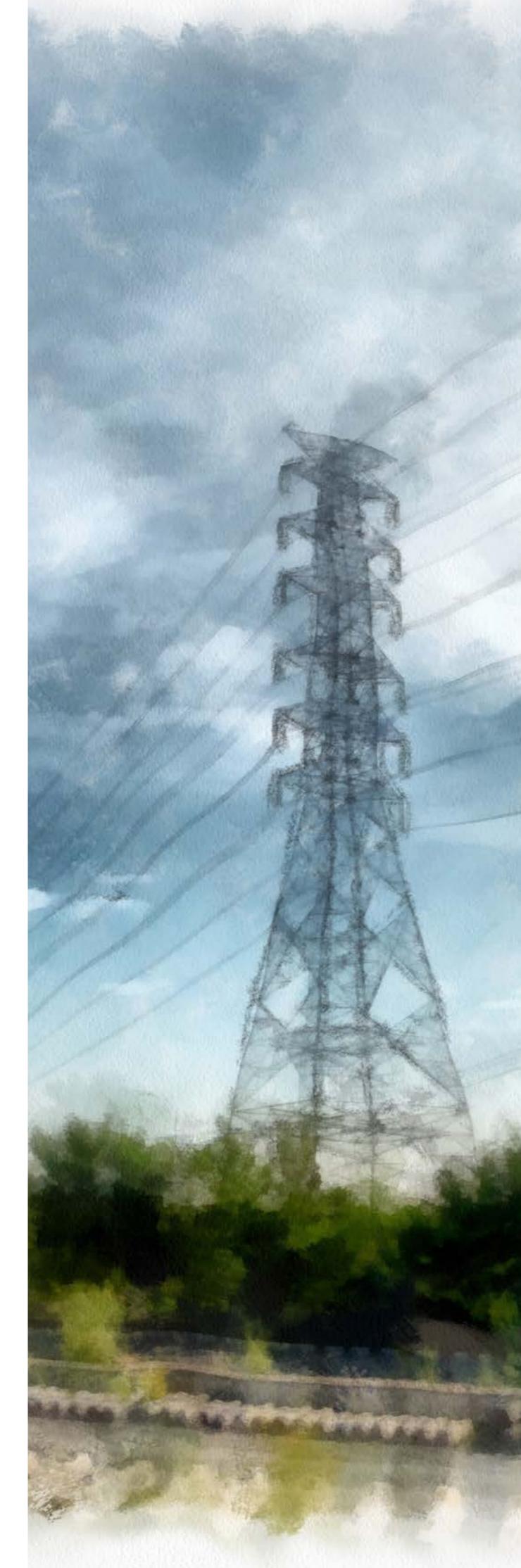
#### ■ DECARBONISATION ENABLERS

As noted, the sector's transition is heavily reliant on retrofitting the existing building stock. When considering operational emissions, this can be achieved through 2 main levers: by reducing energy consumption and by sourcing cleaner energy.

<b>Building's energy consumption</b>	Reducing the energy consumption through energy efficiency and management measures (e.g. high quality isolation, improved systems efficiency, adjusting to consumption patterns).
<b>Energy source &amp; mix</b>	<p>Sourcing low to zero emitting energies for building operations (e.g. green electricity, bio energy):</p> <ul style="list-style-type: none"> <li>- At building level, it requires adaptations to allow for cleaner energy sourcing (e.g. electrification of heating). The owner may also be able to ensure sourcing of green energy from its suppliers.</li> <li>- At location / country level, it requires decarbonisation of the power generation mix (this lever is however not in the hands of building owners).</li> </ul>

BNP Paribas identified several transition levers that it aims to implement. For instance, Commercial & Personal Banking in France will increase its share of financing of green assets (following EU Taxonomy, FrenchRE2020 and/or high scores under well-established independent sustainable assessment methods). The origination teams across the Bank will include climate impact as a decision criterion in their business decisions. With respect to the unsecured financing to REIT clients, BNP Paribas will monitor their climate targets and support them in their net zero trajectory.

<sup>45</sup>Countries' submissions to the United Nations Framework Convention on Climate Change under the With Existing Measures (WEM) scenarios, which account for domestic policies and measures already in place.





Emission scope	GHG Considered	Scenario	Data sources	Sector share of total emissions
1, 2	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O F-gases <sup>46</sup>	CRREM <sup>47</sup> Global Pathways V2.02	- CRREM V2.02 - ADEME - External providers	17% of global GHG emissions <sup>48</sup>
2022 Credit exposure		2022 Baseline		Metric
8.5% of BNP Paribas' total gross exposure to credit risk		France: 20.2 Italy: 34.4 Belgium: 59.7 Group: 35.5		kgCO <sub>2</sub> e/m <sup>2</sup>

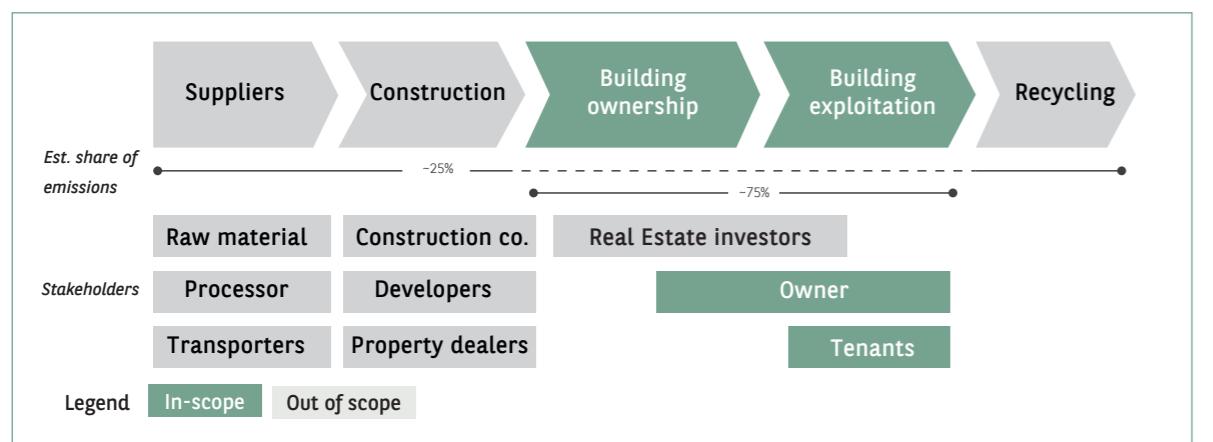
## ■ SECTOR CONTEXT

The residential real estate sector accounts for approximatively 23% of the global GHG emissions, divided between construction activities (embodied emissions - scope 3) and building operations encompassing building ownership and usage (operational emissions - scopes 1 & 2), contributing for c. 6% and c. 17% respectively.

Whereas buildings' minimum performance standards are increasing, the challenge to successfully decarbonize this sector relies mostly on the renovation potential of existing buildings.

Europe is composed of 229 million residential dwellings<sup>49</sup> and 75% of this building stock ought to be renovated by 2030.

The current renovation rate is well below expectations; increasing energy prices are boosting homeowners' willingness to improve their properties but inflationary environment is also lowering the purchasing power required to do so, especially for more vulnerable households. The rhythm is also hindered by the lack of certified craftspeople and of availability of construction materials.



## ■ APPROACH

### Geographical scope

As of December 31, 2022, the residential real estate sector represented c. 8.5% of BNP Paribas' total gross exposure to credit risk. The French, Italian and Belgian residential mortgage exposures represent 83% of BNP Paribas' residential mortgages. All the other mortgage markets are also strongly engaged in supporting clients' energy transition.

### Financing scope

The baseline calculation accounts for scope 1 and 2 emissions, in line with CRREM methodology.

CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and F-gases (when data is available) are included.

### Value chain

BNP Paribas has focused on building ownership and exploitation (scope 1 and 2), which means energy used for the home, representing 75% of CO<sub>2</sub> emissions for the entire building life. Regarding the rest of the value chain (scope 3), transmission and distribution losses are excluded, as recommended by CRREM.

### Metrics

At country portfolio level, intensity-based metric expressed in kilogram of CO<sub>2</sub> equivalent per square metre, is weighted on the financed squared meters, aligned with the PCAF methodology. At Group level, to be representative of the multicountry portfolio, intensity-based metric is weighted by the number of assets the Group finances in each country.

### Data sources

BNP Paribas has used energy performance certificates (EPC) to compute the emission intensities of the residential real estate portfolio, which is dependent on data availability for each country:

- In France, the mortgage loan database was matched with both proprietary and public EPC databases (e.g. ADEME), which allowed to collect EPCs for 59% of the portfolio's outstanding. The other part was modelled from different sources.
- In Belgium, the collected EPCs represent 14% of the portfolio's outstanding. For the remaining 86%, EPCs were approximated based on the most granular geographical EPC label mix publicly available. The Belgian EPCs only display energy consumption, hence an emission factor was estimated (based on CRREM's latest methodology) to convert it into GHG emissions.
- In Italy, an independent appraisal company specialized in credit bureau, CRIF<sup>50</sup>, has provided EPCs based on the unique cadastral references of the financed dwellings (16% were matched with regional databases and 84% were modelled).

Since Q4 2023, BNP Paribas collects 100% of EPCs on eligible mortgages at dwelling acquisition in France, Italy, and Belgium. It will strongly improve the quality of information over time.

## ■ BENCHMARK METHODOLOGY & TARGET-SETTING

BNP Paribas has decided to use the latest net zero pathways published by the CRREM as a benchmark for the decarbonisation of its residential real estate portfolio. It is aligned with a 1.5-degree scenario and with energy reduction pathways tailored per country (France, Italy, Belgium) and building type. At year-end 2022, the CO<sub>2</sub>e intensity of our mortgage portfolios was:

- 20.2 kgCO<sub>2</sub>e/m<sup>2</sup> in France,
- 34.4 kgCO<sub>2</sub>e/m<sup>2</sup> in Italy,
- 59.7 kgCO<sub>2</sub>e/m<sup>2</sup> in Belgium.

At Group level, weighted by the number of assets, it represented 35.5 kgCO<sub>2</sub>e/m<sup>2</sup>.

A large part of the difference between the results can be explained with the disparities in the energy mix of the three countries.

For the time being, it was decided not to set quantitative net zero targets for BNP Paribas' credit portfolio in the residential real estate sector by considering the following:

- Decarbonizing the residential real estate sector is, to a great extent, dependent on the energy mix of the country, varying across the European countries.
- The sector faces regulatory changes and uncertainty: local regulations are still evolutive and the national transpositions of the revised European Energy Performance Building Directive (EPBD) are yet to be determined.
- Defining a clear pathway towards energy efficiency in residential real estate, enabling a just transition, and addressing clients' needs is thus essential to BNP Paribas' decarbonisation strategy. However, the Group is not able

to unleash the full renovation potential by itself: collective actions of policy makers, financial institutions, industry experts and consumers are required.

- BNP Paribas wants to support its clients in the transition without penalising access to housing in a tight macroeconomic context.

## ■ DECARBONISATION ENABLERS

To decarbonise its portfolio, BNP Paribas is positioning itself as a "Trusted Companion" for clients to support them in their home acquisition and in their energy transition. The "My Sustainable Home" strategy towards net zero covers four priorities:

### 1. Increase clients' awareness and advise them based on EPCs collected and self-assessment tools.

The Group systematically collects EPCs and upskills advisors to better support clients' during their home projects and equip them with home self-assessment tools. It will allow them to carry out online diagnostics and to understand renovations priorities, project budget estimations and impacts on EPCs and home valuations.

### 2. Encourage clients to finance more efficient properties, via incentivising acquisition offers and support first-time buyers in this process.

The Group systematically collects EPCs and offers attractive mortgage terms and preferential rates to its clients in Belgium and in Italy who are buying a home with an energy efficient EPC label. In line with the EU policy guidance for a fair and inclusive transition towards climate neutrality, it also recognizes the need to facilitate access to home-ownership, especially for first-time buyers and young people. Thus, the Bank supports them via innovative financing offers like "Happynest", a rent-to-own solution of energy efficient properties in Belgium.

### 3. Address financing needs of renovations via dedicated loans integrating governmental grants or discounts for home acquirers and existing homeowners.

BNP Paribas aims at supporting clients with financing solutions like dedicated renovation loans and governmental backed loans. In addition, it supports the financing of renovations in co-ownerships in Belgium and in France.

### 4. Expand to a beyond banking role by partnering with experts to propose an end-to-end energy renovation journey for clients and prospects.

BNP Paribas' goal is to enrich its support with beyond banking services especially on energy renovations: in France, the Commercial Bank and the Domofinance joint-venture are partnering with IZI by EDF, to provide clients with an end-to-end journey (certified craftspeople, works' inspection, and an EPC post works). BNP Paribas Personal Finance partnered with Effy to boost energy renovations. In Italy, BNL ABITO also provides clients with many beyond banking services.

SeePart II. Section 3. *BNP Paribas supports the low-carbon transition of all its clients* for more examples.

<sup>46</sup> Subject to data and methodology availability.

<sup>47</sup> Residential direct and indirect emissions, excluding construction. Source: United Nations Environment Programme (2024), Global Status Report for Buildings and Construction.

<sup>48</sup> Carbon Risk Real Estate Monitor

<sup>49</sup> ECB Data Portal 2023 Annual figures for residential properties all dwelling types [https://data.ecb.europa.eu/data/datasets/RESH/RESH.A.B6\\_T.N\\_TR.NPRO4FO\\_Z.N\\_Z](https://data.ecb.europa.eu/data/datasets/RESH/RESH.A.B6_T.N_TR.NPRO4FO_Z.N_Z)

<sup>50</sup> CRIF: Centrale Rischi Finanziari.

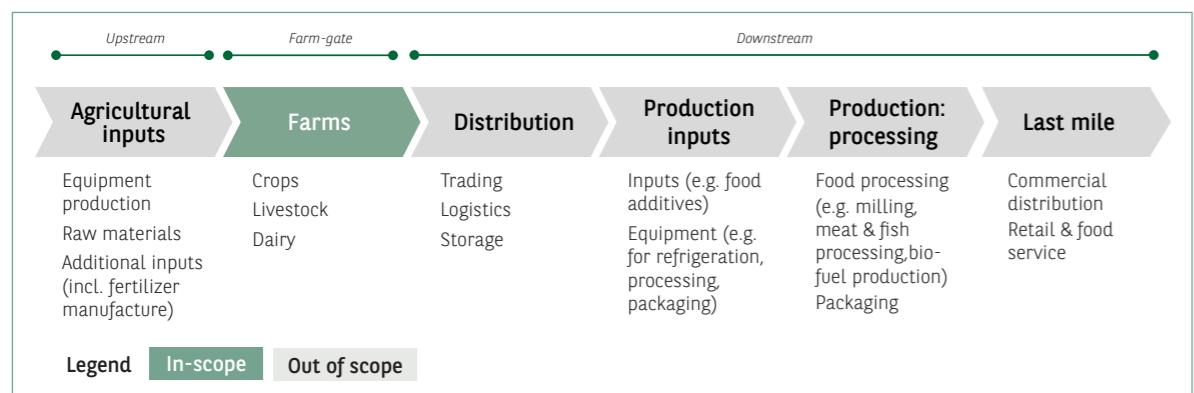


Emission scope	GHG considered	Sector share of total emissions	2023 Credit exposure
1 & 2	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	21% of global GHG emissions	<0.4% of BNP Paribas' total gross exposure to credit risk

## ■ SECTOR CONTEXT

In 2021, the farm gate and land use change represented 21% of global greenhouse gas emissions, and contributed for 39% of methane (CH<sub>4</sub>), 74% of nitrous oxide (N<sub>2</sub>O), and 12% of carbon dioxide (CO<sub>2</sub>) emissions globally, all excluding pre and post-

production processing<sup>51</sup>. Emissions from within the farm gate and from land use change, together, represented 67% of global agriculture, agribusiness & food systems emissions.



## ■ PORTFOLIO DESCRIPTION

### Value chain

In its approach to the decarbonisation of its agriculture portfolio, BNP Paribas, like several other financial institutions and in line with WBCSD recommendations<sup>52</sup>, focuses on the Farm segment, upstream from food processing activities. The Farm segment scope 1 & 2 includes emissions from land use change up to the farm gate (crop/livestock production process and associated on-farm energy use).

BNP Paribas' exposure to agriculture (Farm segment) is essentially resulting from its retail activities in Belgium, France, Italy and Poland. BNP Paribas' portfolio is mainly exposed to farmers involved in growing cereals, with other activities such as dairy, pigs' raising and breeding, poultry farming and viticulture. Thus, its portfolio is barely exposed to cattle farming or rice cultivation, which are two highly emissive agriculture commodities.

As of 31 December 2022, exposure to the Farm segment represented less than 0.4% of BNP Paribas' total gross exposure to credit risk.

## ■ APPROACH TO TARGET-SETTING

It was decided not to set quantitative net zero targets for BNP Paribas' credit portfolio in the agriculture sector, after taking into consideration the following:

- Agriculture is a very fragmented sector with a large variety of commodities, different emission profiles per crop, product and country, local patterns of weather and soils, varying practices with different environmental footprints, etc. The fragmented client base and the absence of climate data at client level create important challenges for portfolio alignment.
- Other technical challenges include nascent methodologies and the absence of suitable scenarios for target-setting. Utilisation of statistical methodologies, which require further developments, may help assess the emissions profile of the portfolio but would not be precise at the individual client or farm level.
- While more work is required to precisely assess the emission intensity of BNP Paribas' portfolio, a preliminary analysis shows that BNP Paribas' agriculture portfolio is likely to be less emissive than the sector average due to its low exposure to cattle and rice.
- The technical challenges listed above are shared by many banks and very few financial institutions similar to BNP Paribas have published quantitative climate targets for this sector so far.

## ■ SUSTAINABILITY DRIVERS AND SUPPORT TO THE SECTOR

### Holistic approach

BNP Paribas' roadmap considers official transition strategies for the agriculture sector at global, European and national levels, of which the COP28 agreement (art. 28), Kunming-Montreal GBF (target: "excess nutrients lost to the environment by at least half including through more efficient nutrient cycling and use; reducing the overall risk from pesticides (...) by at least half including through integrated pest management, based on science, taking into account food security and livelihoods"), the European regulations (Common Agricultural Policy, Fit for 55 and Farm to Fork targets on organic farming and pesticide reduction), as well as relevant national ones.

The sustainable transition of Agriculture cannot be analysed only through the climate prism, it needs to be holistically addressed (as in the public strategies listed above). BNP Paribas proposes five inter-related sustainability drivers. The first three strongly focus on decarbonisation, and the last two expand the approach to immediately related topics.

**(i) Biomethane, biogas and digesters, (ii) agrivoltaics and on-farm solar:** these renewable energy generation technologies hold promise for decarbonising on-farm energy use. With growing recognition from governments of their potential (and associated with subsidy schemes), adapted green financing solutions for such projects, at both farm and cooperative level, can have a significant impact on the sector's decarbonisation.

**(iii) Sustainable agriculture practices** which contribute to soil preservation and enhance soil fertility while increasing carbon sequestration<sup>53</sup> and minimising pollution (incl. acidification, eutrophication and pesticides). These practices are based on agroecology concepts such as organic farming or regenerative agriculture<sup>54</sup>.

**(iv) Sustainable water management:** Rising stress on water resources have implications on agri-food systems as 72% of global freshwater use is for agriculture. Sustainable water management aims at reducing the dependency on water by adapting crop and plant variety, increasing diversification and providing water solutions to develop better irrigation practices.

**(v) Breeding and animal welfare:** European animal feed is highly dependent on oleo-protein (70% of European proteins are imported, including soy, a main driver of deforestation). Breeding and animal welfare cover efforts to mitigate risks related to soybean import dependence, to preserve and increase animal welfare, and to improve animal feed quality.

The promotion and incentivisation of sustainable practices are expected to contribute significantly to farmers' transition journey.

### Current transition support initiatives

BNP Paribas' support to the sustainable transition of agriculture is already materialized by a pool of experts within BNP Paribas Polska Bank, on which the Group leverages to build up its pan-European competence with a dedicated sustainable agriculture community. For instance, BNP Paribas Polska Bank offers a unique solution to its clients to estimate their GHG emissions, and evaluate potential for carbon reduction and storage in soils, depending on their farming practices (Agronomist platform, with 30,000 active users).

In Italy, BNL is active in the financing of biomethane/biogas plants with EUR 128 million loans granted as of end of 2023 (see Part II. Section 3. BNP Paribas supports the low-carbon transition of all its clients).

Furthermore, BNP Paribas leverages its in-depth knowledge of European tech and innovative companies to support entrepreneurs enabling the Agri-Food transition through dedicated set-ups, namely in France (WAI), Belgium (IHubs), Poland (Innovative Companies), covering nearly a hundred AgTech/FoodTech companies. Additionally, BNP Paribas invested in the capital of AgTech and FoodTech companies, such as Klim, a German carbon farming platform that supports the agroecological transition of farmlands through carbon credits in setting projects within the food production value chain, and Agriodor, a French producer of biobased alternatives to chemical pesticides for agriculture.

<sup>51</sup> Source: FAOSTAT.

<sup>52</sup> Source: World Business Council for Sustainable Development (WBCSD) An Introductory Guide for Net Zero Target Setting for Farm-Based Agricultural Emissions.

<sup>53</sup> Regenerative agriculture principles aim to minimize soil disturbance, increase soil cover, diversify crop rotation and intercropping, minimize the use of external inputs (such as synthetic fertilizers and pesticides), increase natural and ecological habitat (such as hedges, buffer strips, etc.) and integrate organic matter and livestock elements.

<sup>54</sup> Source: <https://www.mckinsey.com/industries/agriculture/our-insights/the-agricultural-transition-building-a-sustainable-future/#.>

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

Gross exposure to credit risk		Climate methodology					Benchmark		Alignment progress				
	Exposure in-scope (€bn)	Share of BNP Paribas total exposure (%) <sup>55</sup>	Emission scope	GHG considered	Data sources	Metric	Units	Scenario	Benchmark [year]	Baseline [quarter-year]	Update (% change) [quarter-year]	Target [year]	Reduction (target vs. baseline) [year]
 Oil & Gas*	6.5 <sup>56</sup>	~0.4% [2023]			IEA NZE scenario Wood Mackenzie 2006 IPCC Guidelines	Upstream Oil Financing	Gross exposure to credit risk (EUR bn)	IEA NZE 2050	5.0 [Q3 2022]	3.0 (-40%) [Q4 2023]	≤1.0 [2030]	-80%	
	7.1 <sup>57</sup>	n.a		1, 2 & 3		Upstream Gas Financing			5.3 [Q3 2022]	3.5 (-34%) [Q4 2023]	≤3.7 [2030]	-30%	
						Financed Emissions			27.3 [Q3 2022]	15.9 (-42%) [Q4 2023]	8.2 [2030]	-70%	
 Power	34.3	~1.9% [2023]	1	CO <sub>2</sub>	IEA NZE scenario Asset Impact IEA WEO 2022	Emission intensity	gCO <sub>2</sub> /kWh	IEA NZE 2050	332 [2025]	208 [2020]	148 [2023]	≤146 [2025]	-30%
 Automotive	13.1	~0.7% [2023]	3	CO <sub>2</sub>	IEA NZE scenario S&P Global Asset Impact		gCO <sub>2</sub> /km WLTP	IEA NZE 2050	121 [2025]	183 [2020]	151 [2023]	≤137 [2025]	-25%
 Steel	4.6	~0.3% [2023]	1, 2 & partially 3	CO <sub>2</sub>	IEA NZE scenario Commodities Research Unit Public client disclosures		tCO <sub>2</sub> /t crude steel	IEA NZE 2050	1.2 [2030]	1.6 [2022]	1.5 [2023]	≤1.2 [2030]	-25%
 Aluminium	0.7	-0.04% [2023]	1 & 2	CO <sub>2</sub> PFC	IAI 1.5° scenario IAE NZE scenario Commodities Research Unit		tCO <sub>2</sub> e/t aluminium	IAI 1.5 Degree Scenario	8.9 [2030]	6.2 [2022]	5.8 [2023]	≤5.6 [2030]	-10%
 Cement	2.7	~0.1% [2022]	1 (Gross) & 2	CO <sub>2</sub>	IEA NZE scenario Public client disclosures		tCO <sub>2</sub> /t cementitious product	IEA NZE 2050	0.47 [2030]	0.67 [2021]	0.64 [2022]	≤0.51 [2030]	-24%
 Aviation	13.5	~0.7% [2022]	1 & 3, cat. 3 (airlines) or 3, cat.13 (lessors) Well-to-Wake	CO <sub>2</sub> N <sub>2</sub> O CH <sub>4</sub>	PACE MPP Prudent scenario Public client disclosures		gCO <sub>2</sub> e/RTK (Revenue Tonne Kilometre)	MPP Prudent scenario	785 [2030]	956 [2022]		≤785 [2030]	-18%
 Shipping	10.5	~0.5% [2022]	1 & 3, cat. 3 Well-to-Wake	CO <sub>2</sub> N <sub>2</sub> O CH <sub>4</sub>	DNV Asset Impact Public client disclosures		Annual Efficiency Ratio (AER) in gCO <sub>2</sub> e/dwt.nm (deadweight tonne times nautical miles)	IMO Revised Strategy Det Norske Veritas (DNV)	5.4 [2030]	8.3 [2022]		5.6 - 6.4 [2030]	-32% to -23 %
 Commercial Real Estate	27.2	~1.4% [2022]	1, 2, and, when applicable, 3 cat. 13 (downstream leased assets)	CO <sub>2</sub> N <sub>2</sub> O CH <sub>4</sub> F-gases <sup>58</sup>	CRREM V2.02 EPCs collected from clients and external providers Public client disclosures		kgCO <sub>2</sub> e/m <sup>2</sup>	CRREM V2.02	13.5 [2030]	28.4 [2022]		16.7 - 19.5 [2030]	-41% to -31%
 Residential Real Estate	165.8	~8.5% [2022]	1 & 2	CO <sub>2</sub> N <sub>2</sub> O CH <sub>4</sub> F-gases <sup>58</sup>	CRREM V2.02 EPCs collected from clients and external providers		kgCO <sub>2</sub> e/m <sup>2</sup>	CRREM V2.02		35.5 [2022]			

\*As of Q4 2023, the Oil and Gas exposure reduction targets by 2025 are achieved. Please see the results p. 45.

<sup>55</sup> Sector exposure corresponding to the value chain segments considered for the alignment metrics.

<sup>56</sup> Credit exposure to upstream Oil and Gas, based on the portfolio financing indicator in the report on the application of the PACTA methodology.

<sup>57</sup> Drawn exposure to upstream and refining companies.

<sup>58</sup> Subject to data and methodology availability.

<b>POWER GENERATION</b>					
<i>Power Generation operational metrics</i>					
Metric	2020	2021	2022	2023	2025 Target
Share of coal (%)	10	8	7	5	≤5
Share of renewables (%)	57	62	60	65	≥66

<b>AUTOMOTIVE</b>					
<i>Automotive operational metrics</i>					
Metric	2020	2021	2022	2023	2025 Target
Share of electrified vehicles (%)	4	7	14	15	≥25

Metrics	Baseline	2030 Target
<b>Transitioning in the energy sector financing</b>		
Financing to low-carbon, primarily renewable, energy production	EUR 32 billion at end-3Q2023, i.e. almost 55% of BNP Paribas' financing to energy production	<b>EUR 40 billion by 2030</b> representing <b>90% of the financed energy mix</b>
Financing to thermal coal	EUR 0.4 billion at end-September 2023	Completing the <b>exit from the thermal coal value chain</b> in European Union and OECD countries (and by 2040 worldwide).

Metrics	2023	2025 Target
<b>Engaging with clients to support them in their low-carbon transition</b>		
Amount of support to the transition of large corporate customers to low-carbon from January 2022	EUR 104 billion	EUR 200 billion

Metrics	2023	2025 Target
<b>Financing a more sustainable economy</b>		
Amount of sustainable loans	EUR 117 billion	EUR 150 billion
Amount of sustainable bonds	EUR 67 billion	EUR 200 billion
Amount of asset under management in open-ended funds distributed in Europe under article 8 & 9 according to the SFDR	EUR 254 billion	EUR 300 billion

Metrics	Baseline	2023	2025 Target
<b>Reducing own operational emissions</b>			
Greenhouse gas emissions tonnes of CO <sub>2</sub> equivalent per full time employee (tCO <sub>2</sub> e/FTE)	3.21 tCO <sub>2</sub> e/FTE in 2012	1.56 tCO <sub>2</sub> e/FTE	≤1.85 tCO <sub>2</sub> e/FTE by 2025

Metrics	Baseline	Targets
<b>Investment portfolios (NZAM and NZAOA commitments)</b>		
▪ <b>BNP Paribas Asset Management, member of NZAM</b>		
Carbon footprint (scope 1 & 2) of its investments in scope	2019	<b>Reducing by 30% by 2025 and by 50% by 2030</b>
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
▪ <b>BNP Paribas Cardif, member of NZAOA</b>		
Carbon footprint (scope 1 & 2) of equity and corporate bond portfolios held directly	2020	<b>Reducing by at least 23% by 2024</b>
Carbon intensity (scope 1 & 2) of office buildings held directly	2020	<b>Reducing by at least 12% by 2030</b>
Emission intensity of the Power Generation activities held directly in its equity and bond portfolio	2022	<b>Achieving an emission intensity of under 125 gCO<sub>2</sub>/kWh by 2024</b>

# APPENDIX: TCFD INDEX

	<b>Recommended disclosures</b>	<b>BNP Paribas Climate Report references</b>	<b>Pages</b>		<b>Part II – GOVERNANCE AND IMPLEMENTATION</b>	<b>Section - 3 BNP Paribas supports the low-carbon transition of all its clients</b>	<b>18-24</b>
<b>I - GOVERNANCE</b>	a) Describe the board's oversight of climate-related risks and opportunities.	<b>Part II – GOVERNANCE AND IMPLEMENTATION: A growing mobilization to accelerate the energy transition</b>  <b>Section - 1.1</b> 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.	16		This section presents the impacts of climate-related risks and opportunities on the Group's businesses (with examples of business cases on pages 19-24).		<b>18-24</b>
	b) Describe management's role in assessing and managing climate-related risks and opportunities.	<b>Part II – GOVERNANCE AND IMPLEMENTATION</b>  <b>Section - 1.2</b> 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.	17		c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	<b>Part I – STRATEGY</b>  <b>Section - 3</b> BNP Paribas' business model is resilient to various climate scenarios  This section summarises our assessment on the resilience of the Group's strategy.	<b>14</b>
<b>II - STRATEGY</b>	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	<b>Part I – STRATEGY</b>  <b>Section - 2.1</b> Climate change and its consequences are identified as risk drivers for BNP Paribas	10-12			<b>Part II – RISK MANAGEMENT</b>  <b>Section - 2.3</b> 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 (among others IEA's NZE scenario), to assess the resilience of its strategy. Selected benchmark scenarios include those from IEA (NZE), NGFS and IPCC.	<b>34-36</b>
		<b>Section - 2.2</b> The energy transition also represents opportunities for BNP Paribas  The tables "Examples of potential impacts of transition risks", "Examples of potential impacts of physical risks" and "Examples of potential climate-related opportunities for BNP Paribas", classify potential transition and physical risks, and opportunities, over the short, medium and long-term for BNP Paribas.	13				
		<b>Part I – STRATEGY</b>  <b>Section - 1.1</b> On track for sustainability within the 2025 Strategic Plan  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.	5		<b>III – RISK MANAGEMENT</b>  a) Describe the organization's processes for identifying and assessing climate-related risks.	<b>Part III – RISK MANAGEMENT</b>  <b>Section - 2.2</b> 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.	<b>30-33</b>
	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	<b>Section - 1.2 Timeline: BNP Paribas' strong commitments to combat climate change</b>	6-7			<b>Section - 2.4</b> New tools to further assess and monitor climate risk  This section describes how BNP Paribas monitors climate-related risks at country level and develop new tools to assess physical risks	<b>37-38</b>
		<b>Section - 1.3 Committed to a net zero economy by 2050: BNP Paribas monitors its financing and investment activities</b>  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.	8-10			<b>Part III – RISK MANAGEMENT</b>  <b>Section 3 – Focus on key risks</b>  This section presents key risks (credit risk, operational risk and market risk) and illustrates how they are managed.	<b>38-39</b>

<b>IV - METRICS AND TARGETS</b>	<p>a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.</p> <p><b>Part III - RISK MANAGEMENT</b></p> <p><b>Section - 1 Detailed exposures per sector</b></p> <p><b>Section - 2.2 Identifying the climate-related risk events</b></p> <p><b>Section - 2.3 Assessing potential impacts of climate risks through climate scenario analyses and stress testing</b></p> <p>These sections present metrics used by the Group to assess climate-related risks, in line the associated risk management processes</p>	26-27
		30-33
		34-36
		41-61
		62-65
<p>b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.</p>	<p><b>Part I - STRATEGY</b></p> <p><b>Section - 1.4 BNP Paribas reduces its own operational emissions</b></p> <p>This section discloses the Group's operational GHG emissions, i.e. scope 1, scope 2, and scope 3 cat. 6 (business travels).</p>	10
	<p><b>Part IV - METRICS, TARGETS &amp; ALIGNMENT PROGRESS</b></p> <p><b>Section - 2 Overview of BNP Paribas' main climate-related metrics, targets, and alignment progress</b></p>	62-63
<p>c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.</p>	<p><b>Section - 1.2 Alignment progress update on 2022 and 2023 commitments</b></p>	44-50
	<p><b>Section - 1.3 2024 new portfolio alignment targets</b></p> <p>These sections present the main targets used by the Group to assess and manage climate-related risks and opportunities and the performance in 2023 against these targets. In particular, it displays the 2023 alignment progress updates in NZBA sectors in addition with new sectors, with a description of the benchmark methodology and target-setting approach.</p>	51-57

## Glossary

<b>ACPR:</b> Autorité de contrôle prudentiel et de résolution (French Prudential Supervisory and Resolution Authority)	<b>FPSO:</b> Floating production storage and offloading
<b>ADEME:</b> Agence de l'Environnement et de la Maîtrise de l'énergie (French public agency for energy efficiency)	<b>FSTF:</b> Financial Services Task Force
<b>AER:</b> Annual Efficiency Ratio	<b>FTE:</b> Full-Time Equivalent (Employee)
<b>ALMT:</b> Asset and Liability Management Treasury	<b>g:</b> Gram
<b>BEV:</b> Battery Electric Vehicle	<b>gCO<sub>2</sub>/km:</b> Gram of carbon dioxide per kilometre
<b>C2A:</b> Climate Analytics and Alignment	<b>gCO<sub>2</sub>/kWh:</b> Gram of carbon dioxide per kilowatt-hour
<b>CCCA:</b> Collective Commitment to Climate Action	<b>gCO<sub>2</sub>e/MJ:</b> Gram of carbon dioxide equivalent per mega joule
<b>CCIRC:</b> Comité de Contrôle Interne, des Risques et de la Conformité (Internal Control, Risk and Compliance Committee)	<b>GDP:</b> Gross Domestic Product
<b>CEO:</b> Chief Executive Officer	<b>GFANZ:</b> Glasgow Financial Alliance for Net Zero
<b>CGEN:</b> Comité de gouvernance, d'éthique, des Nominations et de la RSE (Governance, Ethics, Nominations and CSR Committee)	<b>GHG:</b> Greenhouse Gases
<b>CH<sub>4</sub>:</b> Methane	<b>Gt:</b> Gigatonne
<b>CIB:</b> Corporate and Institutional Banking	<b>GW:</b> Gigawatt
<b>CII:</b> Carbon Intensity Factor	<b>IAI:</b> International Aluminium Institute
<b>CO<sub>2</sub>:</b> Carbon dioxide	<b>IAM:</b> Integrated Assessment Model
<b>CO<sub>2</sub>e:</b> Carbon dioxide equivalent is the number of metric tonnes of CO <sub>2</sub> emissions with the same global warming potential as one metric tonne of another greenhouse gas	<b>IATA:</b> International Air Transport Association
<b>COP:</b> Conference of Parties	<b>ICAAP:</b> Internal Capital Adequacy Assessment Process
<b>CoR:</b> Cost of Risk	<b>ICE:</b> Internal Combustion Engine
<b>CRREM:</b> Carbon Risk Real Estate Monitor	<b>ICT:</b> Information and Communication Technology
<b>CRU:</b> Commodities Research Unit	<b>IEA:</b> International Energy Agency
<b>CSR:</b> Corporate Social Responsibility	<b>IMO:</b> International Maritime Organization
<b>DNV:</b> Det Norske Veritas	<b>IPCC:</b> Intergovernmental Panel on Climate Change
<b>dwt.nm:</b> deadweight tonne times nautical miles	<b>IPCC (AR6):</b> Sixth Assessment Report of the Intergovernmental Panel on Climate Change
<b>EAD:</b> Exposure At Default	<b>IPS:</b> Investment & Protection Services
<b>EBA:</b> European Banking Authority	<b>IT:</b> Information Technology
<b>ECB:</b> European Central Bank	<b>km:</b> Kilometre
<b>EMEA:</b> Europe, Middle East, Africa	<b>KPI:</b> Key Performance Indicator
<b>EPC:</b> Energy Performance Certificates	<b>Kunming Montreal GBF:</b> Global Biodiversity Framework
<b>ESG:</b> Environmental, Social and Governance	<b>kWh:</b> Kilowatt-hour
<b>EU:</b> European Union	<b>LCTG:</b> Low-Carbon Transition Group
<b>EV:</b> Electric Vehicle	<b>LDV:</b> Light-Duty Vehicle
<b>F-gases:</b> Fluorinated greenhouse gases	<b>LNG:</b> Liquefied Natural Gas
<b>FC:</b> Fuel-Cell vehicle	<b>Midcap:</b> Mid-capitalization companies
	<b>Mission Possible Partnership</b>
	<b>MJ:</b> Megajoule
	<b>Mt:</b> Megatonne
	<b>MW:</b> Megawatt
	<b>MWh:</b> Megawatt-hour
	<b>NACE:</b> Nomenclature statistique des Activités Economiques (Classification of Economic Activities)
	<b>NEST:</b> Network of Experts in Sustainability Transitions
	<b>NGFS:</b> Network of supervisors and central banks for Greening the Financial System
	<b>NZAOA:</b> Net Zero Asset Owner Alliance
	<b>NZAM:</b> Net Zero Asset Manager initiative
	<b>NZBA:</b> Net Zero Banking Alliance
	<b>NZE:</b> Net Zero Emissions
	<b>NZE 2050:</b> The IEA's Net Zero Emissions by 2050 Scenario
	<b>N<sub>2</sub>O:</b> Nitrous oxide
	<b>OECD:</b> Organisation for Economic Cooperation and Development
	<b>PACE:</b> Platform for Analysing Carbon Emissions
	<b>PACTA:</b> Paris Agreement Capital Transition Assessment
	<b>PFC:</b> Perfluorocarbons
	<b>PHEV:</b> Plug-in Hybrid Electric Vehicle
	<b>RAS:</b> Risk Appetite Statement
	<b>RAF:</b> Risk Appetite Framework
	<b>RCP:</b> Representative Concentration Pathway
	<b>REIT:</b> Real Estate Trust Investment
	<b>REMIND:</b> Regional Model of Investment and Development
	<b>RTK:</b> Revenue Tonne Kilometre
	<b>SAF:</b> Sustainable Aviation Fuels
	<b>SBTi:</b> Science-based Targets Initiative
	<b>SME:</b> Small and Medium-Sized Enterprise
	<b>SMI:</b> Sustainable Markets Initiative
	<b>t:</b> tonne or metric tonne
	<b>TCFD:</b> Task force on Climate related Financial Disclosures
	<b>UN:</b> United Nations
	<b>UNEP FI:</b> United Nations Environment Programme Finance Initiative
	<b>URD:</b> Universal Registration Document
	<b>WBCSD:</b> World Business Council for Sustainable Development
	<b>WLTP:</b> Worldwide harmonized Light Vehicle Test Procedure

## Disclaimer

This report was prepared in May 2024.

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

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The ESG Transparency and Performance team within Group CSR expresses gratitude to all BNP Paribas' employees who contributed to the production of this report.

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