FOSSIL FUELS: OVERVIEW OF ENERGY TRANSITION STRATEGIES IN THE PARIS FINANCIAL CENTRE

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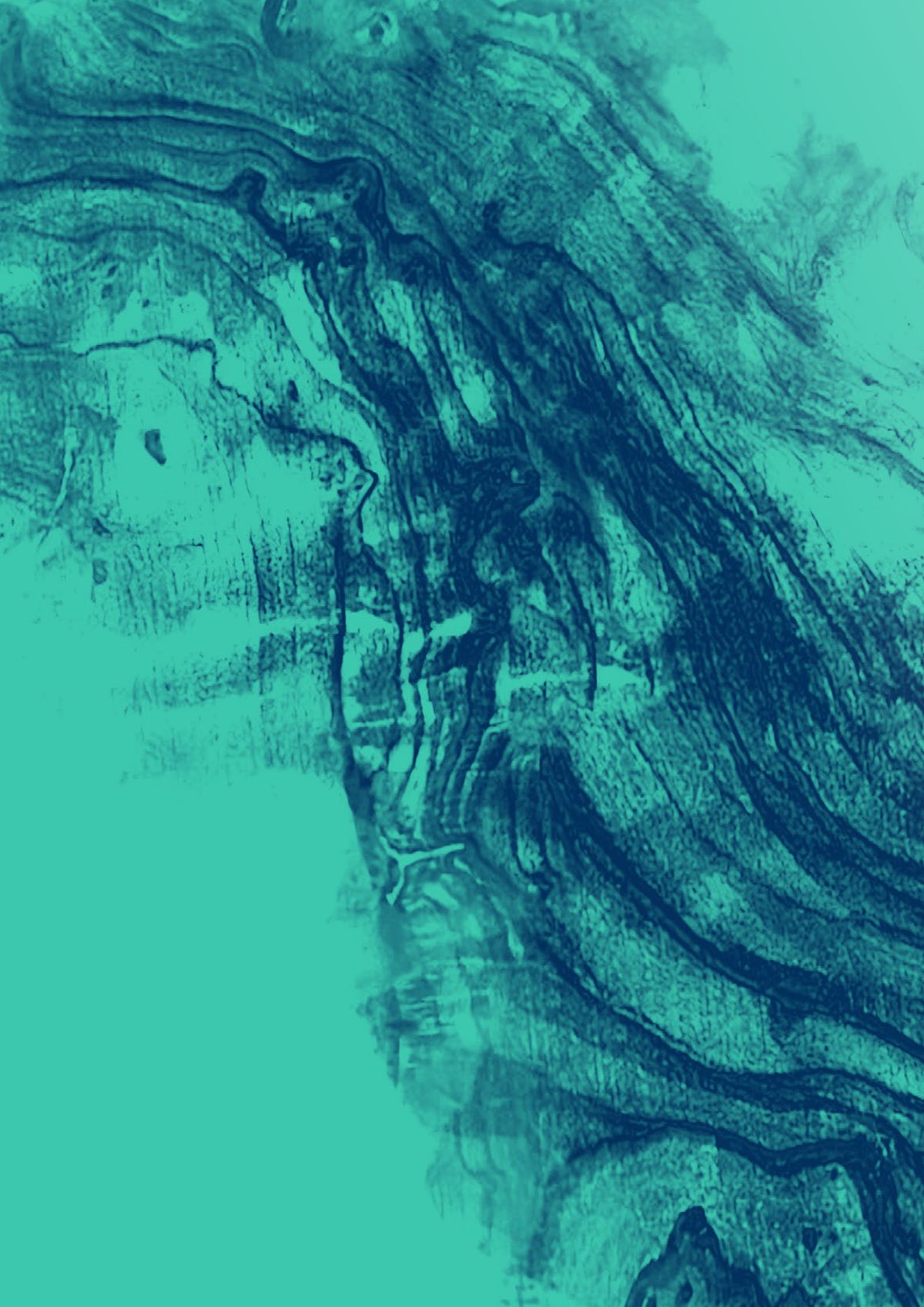

INTRODUCTION

In this report, the Institute for Sustainable Finance (Institut de la Finance Durable – IFD) provides an overview of the climate strategies and actions of members of the Paris Financial Centre. Like the Overview of strategies to combat deforestation (published by the IFD in March 2024), it aims to share best practices and climate strategies by type of financial institution in order to accelerate market momentum and inspire international financial markets. Climate scenarios are essential tools for implementing a climate strategy and understanding the path taken by stakeholders. 15 financial institutions from the Paris Financial Centre (banking groups, insurers and asset management companies) agreed to take part by presenting their climate strategy, tools and actions. The IFD has identified 10 best practices for the correct use of climate scenarios in climate strategies by financial institutions.

A TASKFORCE TO SHARE KNOWLEDGE ON FOSSIL FUEL TRAJECTORIES

Financing green and transition activities is essential to help build the low-carbon economy of tomorrow. At the same time, achieving climate objectives also means reducing the use of fossil fuels, which account for 80% of global greenhouse gas emissions, according to a trajectory that allows for a gradual alignment towards carbon neutrality, which must combine carbon constraints with technical and economic feasibility.

More than a year ago, the IFD set up a taskforce to share market knowledge on fossil fuel trajectories. The objective was to accelerate the deployment of tools for understanding 1.5°C aligned scenarios adapted to financial institutions.

Given the wide range of players' current commitments, science must serve as a compass to constantly remind them of the reality of the climate challenge. The work began with an analysis of the main baseline energy/climate scenarios. A series of interviews with climate experts and scientists was held, making it possible to compare methodologies and draw lessons for investors and financiers. This work gave rise to an initial publication, Fossil energies: analysis of trajectories compatible with a 1.5°C scenario in June 2024, which aimed at drawing the main lessons from climate scenarios aligned with the Paris Agreement.

As the climate action and fossil fuel financing strategies of companies and financial institutions in particular is under close scrutiny, **this report aims to build a toolbox that institutions can use individually to further their climate strategy and action**.

THE CLIMATE STRATEGIES OF THE PARIS FINANCIAL CENTRE: OVERVIEW OF METHODOLOGIES AND ACTION PLANS

Beyond the commitments already made by the stakeholders, the methodology for applying these commitments is fundamental. Most players in the Paris Financial Centre have a decarbonisation action plan that they implement on a daily basis. Many of them are already developing their own methodologies or applying benchmark methodologies.

Reducing exposure to the fossil fuel sector is a priority shared by all institutions contributing to the overview. This strategy of disengaging from fossil fuels is accompanied by a strong desire among market players to finance the transition, which has effectively resulted in a significant increase in financing in recent years. However, momentum needs to be further amplified to support the transformation of the real economy.

This overview shows that most market players use scenarios from the International Energy Agency (IEA) or the IPCC to build their climate strategy (87% of participants). More specifically, 80% of the volunteers who took part in the overview cite the IEA's Net Zero Emissions scenario as a benchmark used in the development of their strategy.

Whether through the choice of scenarios or the use of guides produced by the GFANZ[1] Net Zero Alliances, the vast majority of respondents refer to scenarios incorporating zero or low overshoot consistent with the recommendations of the scientific community. These scenarios prioritise the massive development of low-carbon energies, increased electrification and significant gains in energy efficiency, without relying too heavily on solutions to eliminate CO_2 in the atmosphere.

All players contributing to the overview are engaged in a GFANZ alliance, for example the Net-Zero Banking Alliance (NZBA), the Net-Zero Asset Owner Alliance (NZAOA) and the Net Zero Asset Managers Initiative (NZAMI).

1 Glasgow Financial Alliances for Net Zero.

INTEGRATION OF CLIMATE SCENARIOS INTO PLAYERS' STRATEGIES: 10 BEST PRACTICES

As part of this overview, the IFD has identified 10 best practices for the correct use of climate scenarios in climate strategies by financial institutions.

First of all, financial actors should take a rigorous and cautious approach to climate scenarios. Using benchmark climate scenarios from the scientific community is useful to understand the major global trends and thus build a science-based climate strategy (Best Practice 1), while identifying the most relevant physical indicators (Best Practice 2). Regularly updating the baseline scenario is necessary to be up to date with the most recent data on the actual progress of technologies and changes in demand (Best Practice 3). Referring to a single baseline scenario and sticking to it ensures consistency in investment and financing decisions (Best Practice no. 4), which does not preclude supplementing it with specific sectoral and geographical scenarios while ensuring overall consistency. Where they exist, prioritising the scenarios made available by governments and leading international organisations is a good way to ensure consistency with international climate commitments, whether at the global, regional or national level (Best Practice 5).

Next, the choice of the baseline climate scenario draws on the best available scientific knowledge. In line with the scientific consensus, financial institutions should use scenarios aligned with a 1.5°C trajectory with zero or low overshoot, with limited use of negative emission technologies which are still not very mature (Best Practice 6) and realistic use of decarbonisation levers (Best Practice 7).

Finally, on this basis, the players should set out quantified and budgeted tangible action and a provisional timetable. It is preferable to set objectives and quantify climate trajectories, as far as possible (Best Practice 8). Monitoring a ratio that compares financing and investments in low-carbon energies with those in fossil fuels can be a good way to manage the transition for financial players (Best Practice 9), as can setting medium- and long-term transition points (Best Practice 10).

The Paris Financial Centre has developed a dynamic that is unique in the world, with ambitious commitments and tangible actions to contribute to the goal of carbon neutrality by 2050. But the climate emergency requires faster and stronger action. The current trajectory of global warming is well above the objectives of the Paris Agreement. Tackling climate change requires global action: for the ambition to translate into significant emission reductions, there needs to be ongoing dialogue and resolute joint action between policymakers, financial sector players and the real economy. Financial institutions cannot act alone: public policies that encourage the acceleration of action by companies and households are necessary for financial institutions to support the transition and play their essential role in financing the energy sector, by fostering the transition from fossil fuels to low-carbon energy sources. For several years now, the Paris Financial Centre has been actively working on the practical implementation of financing solutions aimed at supporting the decarbonisation of the economic system.

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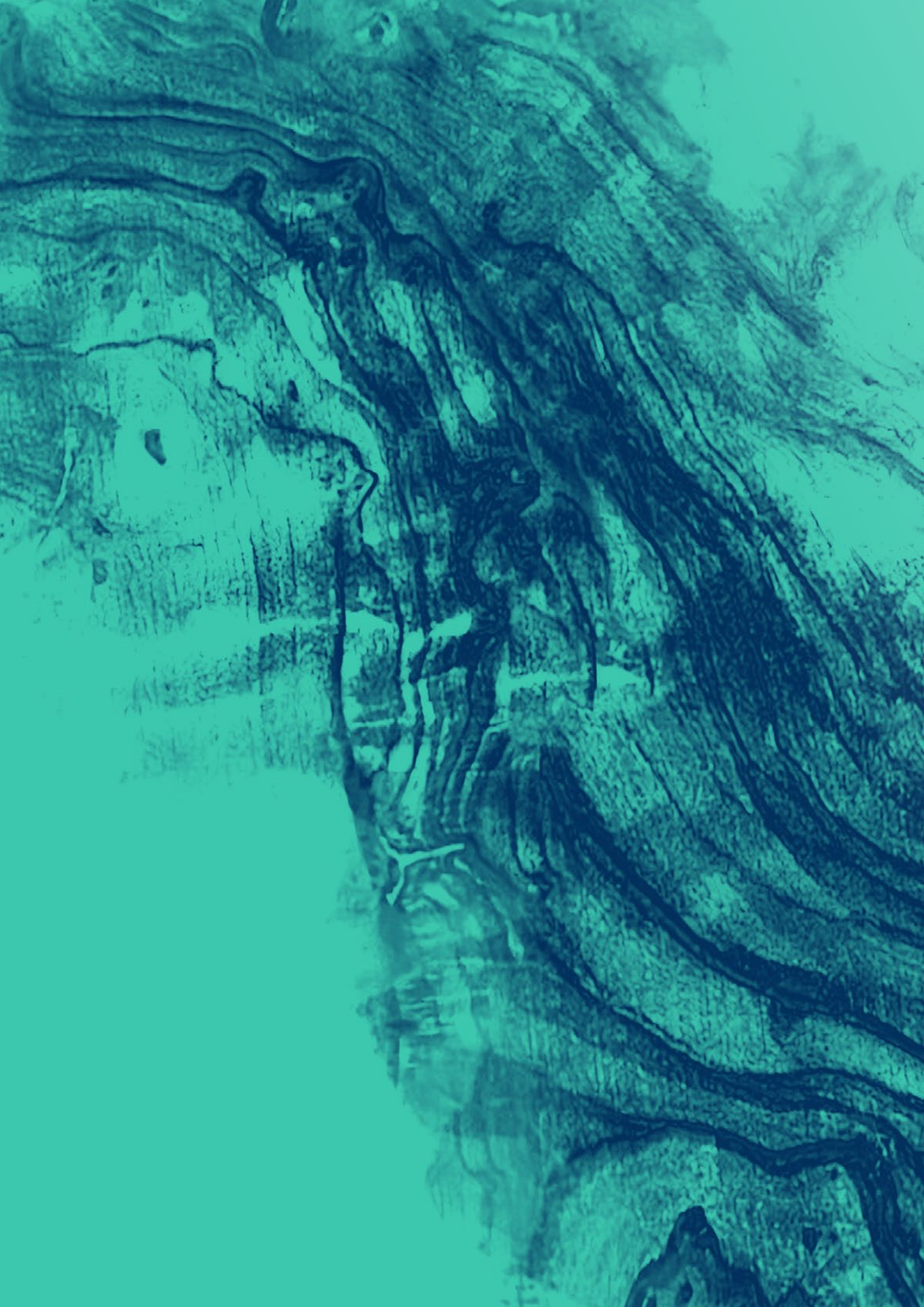


I. UNDERSTANDING CLIMATE SCENARIOS COMPATIBLE WITH A 1.5°C TRAJECTORY TO DEFINE A FINANCIAL STRATEGY

A. REMINDER: WHAT IS THE ENERGY TRANSITION?

1. MAJOR LESSONS LEARNED FROM CLIMATE SCENARIOS COMPATIBLE WITH A 1.5°C TRAJECTORY

The first phase of the taskforce's work aimed to identify the key messages of the main existing energy and climate scenarios aligned with a 1.5°C objective. The work was based on six scenarios from leading institutions in climate modelling: the International Energy Agency (IEA), Networking for Greening the Financial System (NGFS, based on the work of research laboratories), the International Renewable Energy Agency (IRENA) and BloombergNEF (BNEF). While these scenarios are based on different methodologies and assumptions, the objective is to identify major trends, despite the wide range of approaches taken by the scenarios in question. The scenarios are based on a physical analysis of energy systems and CO_2 emissions, but some also propose a projection in terms of the necessary investments. A comparative analysis of the two components was presented in the first report published by the IFD in June 2024 Fossil energies: analysis of trajectories compatible with a 1.5°C scenario: we summarise it here.

Energy trajectories: the 1.5°C scenarios outline a possible but narrow common path.

1. *To achieve net zero emissions by 2050, decarbonisation of the energy sector – both in energy use and in energy production – is a priority.*

2. *To decarbonise energy usage and production, prioritising solutions based on using electricity for more applications and improving energy efficiency is essential, as these are the most effective and affordable methods for reducing CO_2 emissions in most cases (providing carbon reduction at the lowest cost per tonne of CO_2 abated).*

3. *Major solutions for decarbonising energy uses and production are already mature: electric vehicles, heat pumps, substitution of carbon-intensive means of electricity production (particularly coal) by low-carbon means of electricity production.*

4. *By 2050, final energy demand is expected to fall (notably by removing fossil fuels from the energy mix), and at the same time electricity demand is set to rise.*

5. *By 2050, coal and oil consumption will need to have been drastically reduced. The sharp decline in gas demand is also very clear, although more variable depending on the scenarios.*

6. *Meeting the increase in demand for low-carbon electricity requires a very significant increase in production, via a diversified mix based mainly on strong growth in renewable energies.*

7. *The anticipated role of hydrogen varies from scenario to scenario because its production cost is still very high and should be targeted primarily at the sectors most difficult to decarbonise.*

8. *CC(U)S and negative emission solutions (BECCS, DACCS, afforestation) will probably be necessary to reach the 1.5°C target, but these drivers are constrained, in particular by physical limits.*

Investment trajectories: the 1.5°C scenarios are based on radically different investment ratios.

1. *To meet the trajectories limiting global warming to 1.5°C, investments in fossil fuels should be halved, or even quartered, by 2050 compared to 2020. According to the IEA, these investments should even be halved by 2030, and should not finance new production projects.*

2. *Investments in low-carbon energy supply must be multiplied by 2.5 to 3 times by 2030 compared to 2020 levels.*

3. *The ratio of investments in the energy transition to fossil fuel investments should be $10 to $1 by 2030, compared to $1 to $1 just five years ago and $1.7 to $1 today.*

2. THE ENERGY TRANSITION IS A HANDOVER BETWEEN FOSSIL FUELS AND LOW-CARBON ENERGY SOURCES

All the climate scenarios highlight two simultaneous phenomena leading to relatively stable overall demand for primary energy between now and 2050 (despite differences between the scenarios):

→ A decrease in the share of fossil fuels in primary energy demand: between 2030 and 2050, depending on the scenarios, the share of fossil fuels in primary energy demand is divided by 2 or even 4[2]. Demand for coal and oil falls drastically in all scenarios to reach residual levels by 2050. The long-term role of gas in the transition is more variable, with demand divided by 1.5 or 20 by 2050 depending on the scenario[3].

→ Increasing the share of electricity (mainly from low-carbon production) in final energy demand also improves energy efficiency: between 2030 and 2050, depending on the scenarios, the share of electricity in final demand is multiplied by at least 2[4].

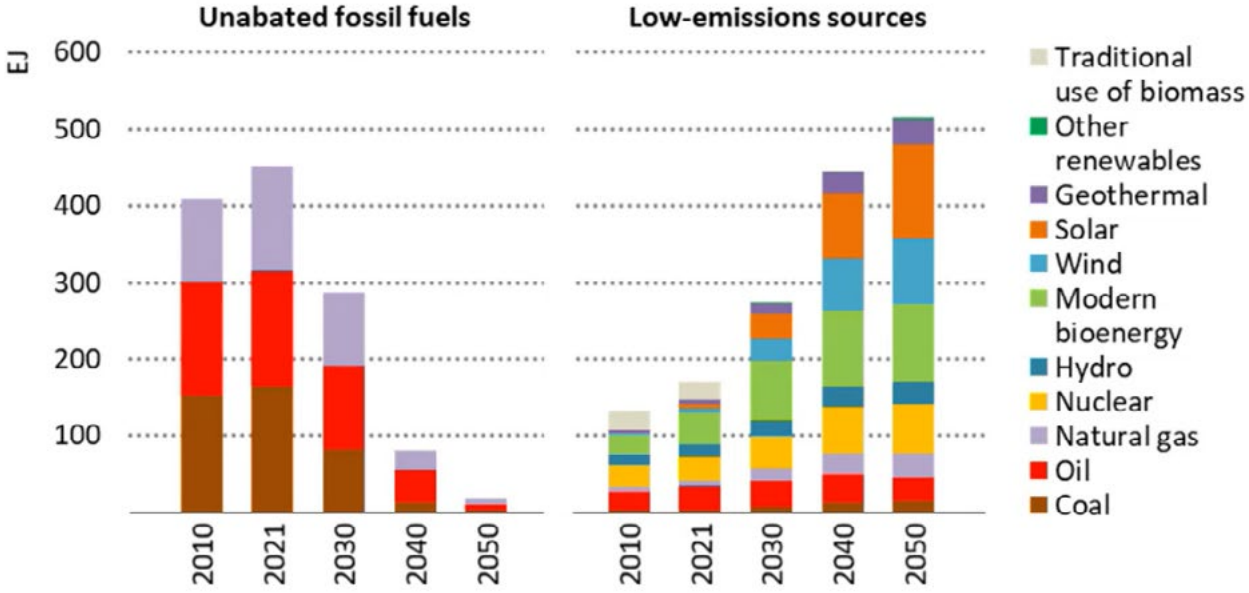


Figure - Evolution of energy production sources in the overall energy system under the IEA NZE scenario (source: IEA - WEO 2022)

2 IFD, Fossil energies: analysis of trajectories compatible with a 1.5°C scenario, June 2024.

3 *Ibid.*

4 *Ibid.*

The energy future is driven by low-carbon technologies: solar, wind, geothermal, bioenergy, hydro power, nuclear power, etc. The aim is to make the best use of all carbon-free sources. In climate scenarios compatible with the 1.5°C target (as in the IEA NZE above), the vast majority of the residual fossil fuels still consumed after 2050 is combined with carbon capture and storage (CCS) technologies.

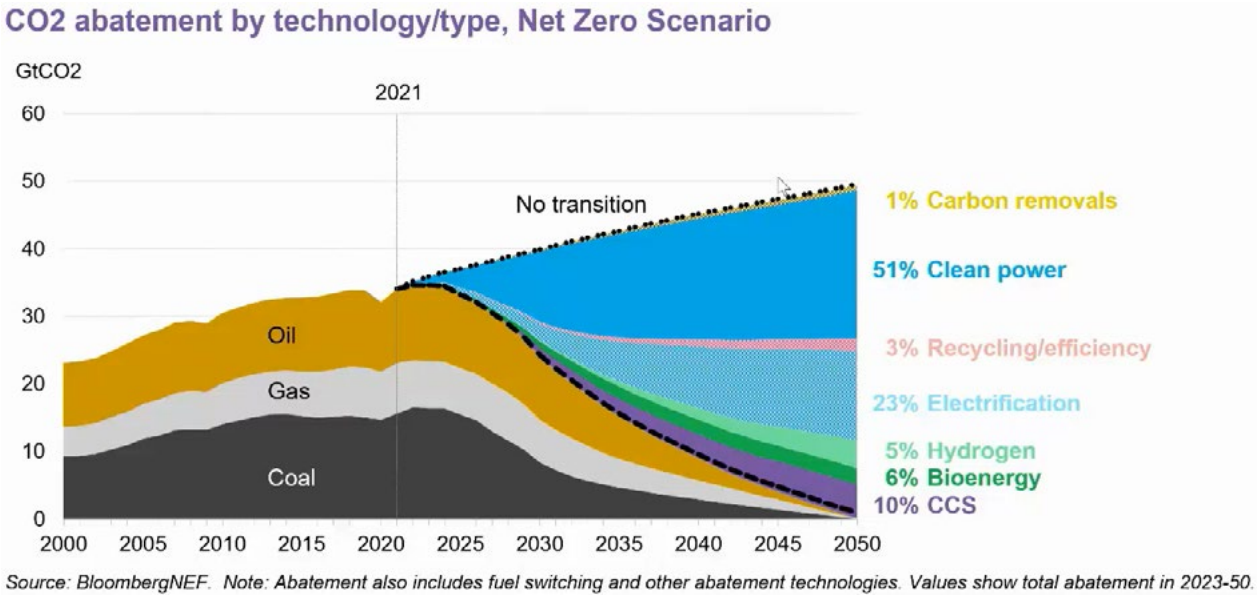


Figure - Reductions in CO2 emissions from burning fossil fuels, NZS compared to a no-transition scenario, covering the entire energy system (source: BloombergNEF - NEO 2022)

The vast majority of the decarbonisation effort (more than 75% here in the BloombergNEF Net Zero scenario) is based on the development of low-carbon electricity generation capacity (51%) combined with the electrification of the energy sector (23%) and an increase in energy efficiency (which accounts for a smaller share in the BNEF scenario than in the IEA scenario). The last quarter concerns technologies that are not yet mature (hydrogen, bioenergy outside the electricity sector, carbon capture and storage, direct carbon capture in the air, etc.).

Focus - Short- and medium-term objectives to remain below 1.5°C according to the IEA

The IEA carried out this exercise for its NZE scenario by setting short- and medium-term objectives to be met to align with the scenario. These objectives have several milestones:

→ From now, "no new oil and gas fields approved for development and no new coal mines or mines extensions without CCS"[5]: investment in new extraction projects cannot be considered as being aligned with the NZE scenario;

→ By 2025, no more fossil-fuel boiler sales;

→ By 2030, no more coal-fired power plants without CCS in developed economies[6];

→ 100% zero carbon electricity in developed countries from 2035 (and from 2040 in the rest of the world);

→ By 2040, half of existing buildings have undergone energy efficiency renovations;

→ From 2035, 100% of car sales are electric.

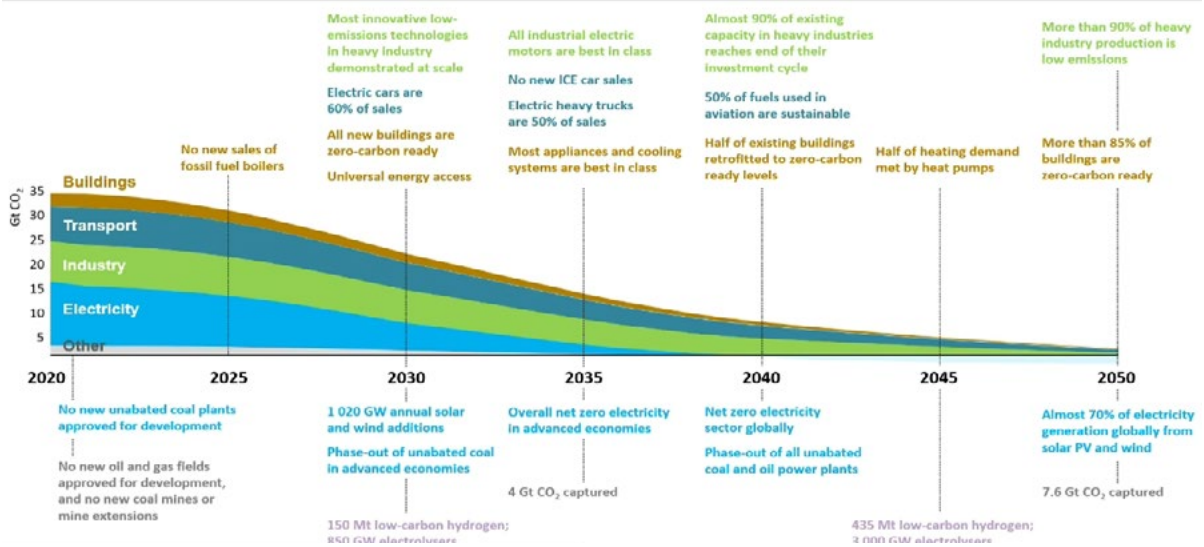


Figure - The main milestones to reach 1.5°C in the IEA NZE (source: IEA - WEO 2022)

5 WEO 2022, IEA.

6 The wording of the IEA is "Phase out of unabated coal in advanced economies", with the following definition: "Advanced economies: OECD regional grouping and Bulgaria, Croatia, Cyprus, Malta and Romania."

A transition manifested in the associated investments

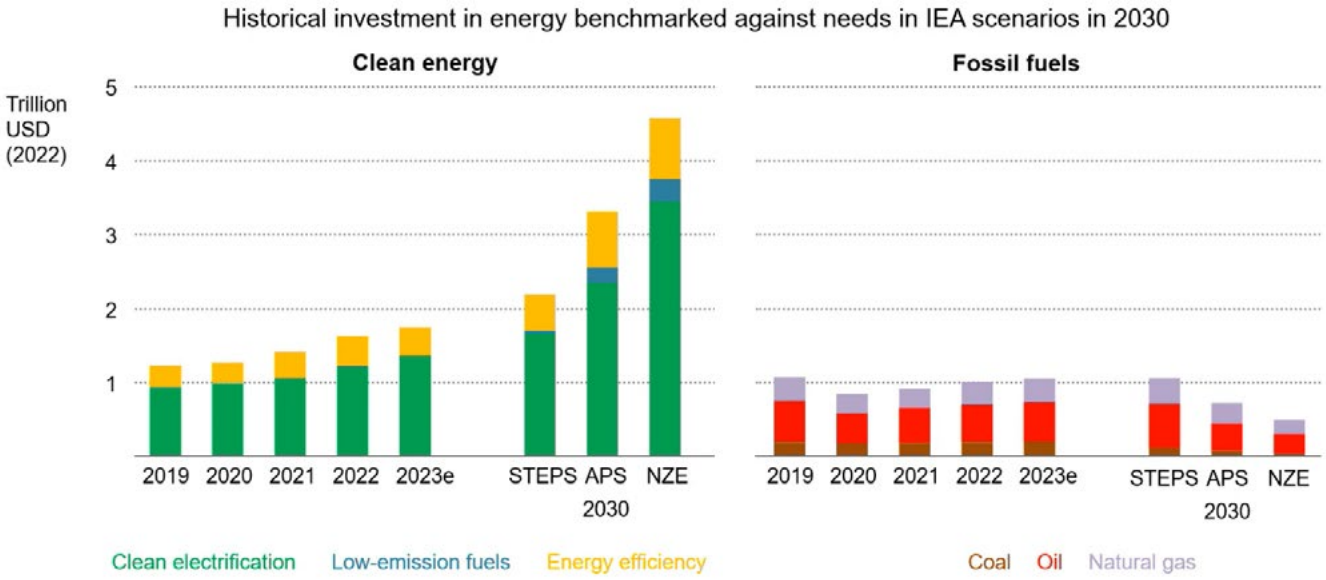


Figure - Comparison of investments in low-carbon and fossil fuels in the IEA scenarios (source: IEA - WEO 2022)

According to the IEA[7], while the global investment ratio was around $1 investment in the energy transition (low-carbon energy production and energy efficiency) for $1 in fossil fuels five years ago, it is now $1.7 for $1. But to be on a net zero trajectory by 2050, this ratio will need to be $10 to $1 in 2030. Of this $10 investment for the low-carbon transition, $6 should be invested in low-carbon energy production (including storage, grid, etc.) – essentially electricity. Current investments in low-carbon energy are currently not sufficient to offset the impact on total energy production caused by the necessary decline in investments in fossil fuels. In 2030, there are still residual investments in fossil fuels (for energy efficiency, CCS, non-energy uses, etc.).

7 IEA - WEO 2023.

B. THE MAIN DECARBONISATION LEVERS FOR THE GLOBAL ECONOMY IN A 1.5°C SCENARIO: OPPORTUNITIES AND PHYSICAL AND SOCIO-ECONOMIC LIMITS

Understanding the various levers for decarbonising the global economy is a necessary prerequisite for any climate strategy. Understanding the alternatives to fossil fuels facilitates their development through the financing and investments allocated. Among many levers, five are often mentioned and will be considered in this section: renewable energy and decarbonised energies as a whole, such as hydropower and nuclear power; carbon capture, disposal and storage technologies; biomass; hydrogen; and energy efficiency. The grid improvement investments needed to handle increased electrification and the intermittency of renewable energies (storage, in particular via batteries, flexibility and interconnections) must also be considered.

Analysing the physical and socio-economic feasibility of these trajectories is essential because climate scenarios do not always fully take into account the physical limitations of the development of each decarbonisation lever. The main reason for this is that the future development and scaling up of these technologies is still uncertain. It is difficult to predict the technological advances that will emerge within 25 years, and even more so within 50 years. But the current state of science can give some indication of the development potential of each lever. Some are subject to major physical constraints. For example, the infrastructure needed to develop CCS/CDR is a serious obstacle to its large-scale development. For biomass, land availability will be the leading limiting factor. With regard to hydrogen, as electrolysis technologies are very energy-intensive, the development of so-called “green” hydrogen will always remain relatively expensive.

This section aims to summarise a few key elements in understanding the various decarbonisation levers. A clear lesson can be drawn from this analysis: none of the decarbonisation levers alone provides a magic solution, they all have their advantages and disadvantages. This means it will be necessary to combine and adapt them to the most efficient uses in order to limit the cost of the transition and optimise energy use.

1. RENEWABLE ENERGIES: TOWARDS EXPONENTIAL GROWTH?[8]

To succeed in the energy transition at the global level, climate scenarios aligned with a 1.5°C objective point to the exponential development of renewable energies associated with the electrification of uses. While the focus here is on energy production, these investments cannot be made without a significant concomitant effort on energy storage capacities (in particular batteries) and grid improvements (flexibility and interconnections) due to the intermittent nature of renewable energy. The development of renewable capacities must also go hand in hand with the development of decarbonised, controllable production resources such as hydroelectric and nuclear power.

Need for massive development of renewable energy

Meeting the increase in demand for low-carbon electricity requires a very significant increase in production, via a diversified mix based mainly on strong growth in renewable energies. Ahead of COP 28, the IEA recommended that signatory states triple renewable energy capacity by 2030. This appeared in the final text of the agreement signed by the 198 governments present. A tripling of global renewable energy capacity in the electricity sector from 2022 levels by 2030 would bring this capacity to more than 11,000 GW, in line with the IEA NZE scenario[9].

Renewable energies are key to massively increasing electricity production. This involves massive deployment of solar and wind capacity to replace fossil energy production, a trend seen in all scenarios. Solar energy production is expected to increase by a factor of 40 on average between 2020 and 2050, and wind power by a factor of 15[10]. At the same time, controllable low-carbon energies such as hydroelectric and nuclear power should also be developed, depending on the local context and political choices.

Can renewable energy be developed at the pace projected by climate scenarios?

The International Energy Agency is reassuring about the capacity to develop renewable energy at the pace required to achieve the climate objectives of the Paris Agreement. Growth in renewable energies is currently exponential: annual additions of global renewable capacity have increased by nearly 50% to reach nearly 510 gigawatts (GW) in 2023, the fastest rate of growth in the past two decades. This is the 22nd year in a row that renewable capacity additions have set a new record[11].

According to the IEA, under existing policies and market conditions, global renewable energy capacity is expected to reach 7,300 GW by 2028. These trajectories are upward projections compared to their last publication in light of global progress made in one year. This growth trajectory would make it possible to increase current global capacity by a factor of 2.5 by 2030. While this is admittedly not up to the target of tripling, it is still possible to close the gap to reach more than 11,000 GW by 2030.

8 This section was drafted thanks to contributions by the International Energy Agency.

9 IEA (2024), Renewables 2023, IEA, Paris https://www.iea.org/reports/renewables-2023

10 IFD, Fossil energies: analysis of trajectories compatible with a 1.5°C scenario, June 2024.

11 IEA (2024), Renewables 2023, IEA, Paris https://www.iea.org/reports/renewables-2023

Onshore wind and photovoltaic solar power are cheaper than new and existing fossil fuel plants. In 2023, the IEA estimates that 96% of new onshore photovoltaic and wind power plants had lower production costs at company level than new coal and natural gas plants[12]. In addition, three-quarters of new wind and photovoltaic solar power plants offered cheaper electricity than existing fossil fuel plants. Wind and solar photovoltaic systems will become more competitive over the forecast period.

According to the IEA, governments merely need to accelerate their efforts slightly to align with the objectives of tripling renewable energies, by 1) addressing political uncertainties and delayed policy responses to the new macroeconomic environment; 2) investing more in network infrastructure to enable faster expansion of renewable energy; 3) simplifying administrative and authorisation procedures and addressing social acceptance; 4) providing more finance for emerging and developing economies. Also according to the IEA, solving these problems would lead to a nearly 21% increase in the growth of renewable energy, which would put the world on track to meet the commitment to triple global consumption.

The development of renewable energies must be supported by the development of networks and controllable low-carbon energies that ensure energy security.

The development of renewable energies means that energy production is intermittent. This adds to the investment needed to improve energy security (storage, particularly batteries, flexibility and interconnections). Whatever the scenario, investment needs in the grid, storage and flexibility are multiplied by 4 or 5, and double from 2030 compared with 2020 in the 1.5°C compatible scenarios[13].

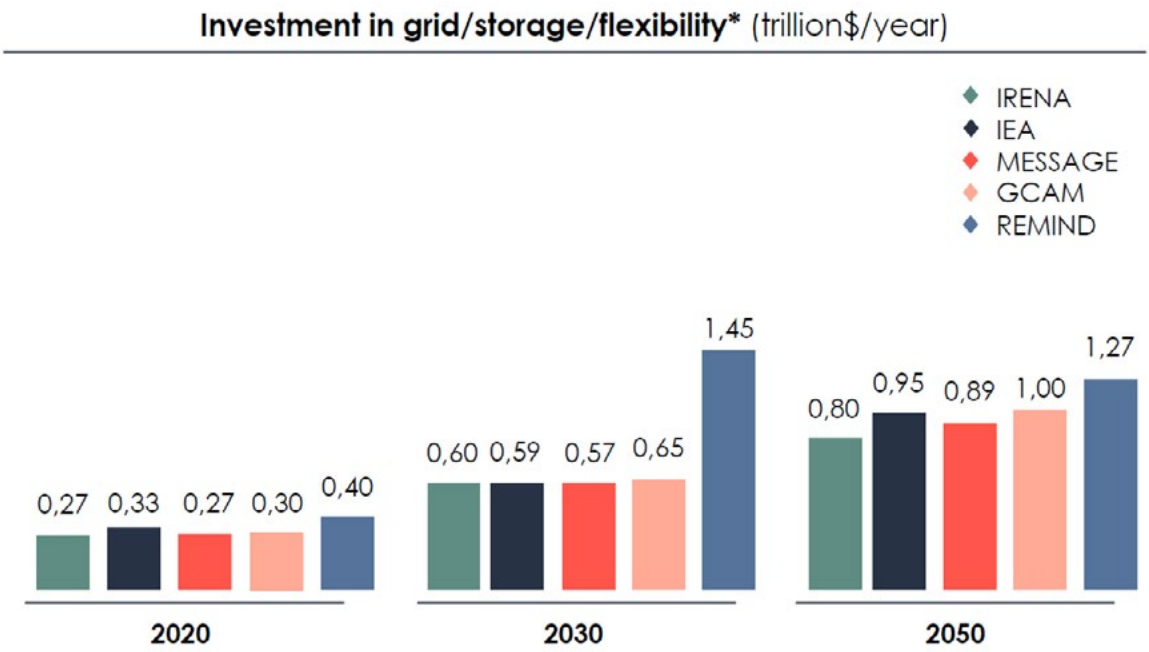


Figure - Investment in the energy network (Source: Carbone 4, IFD)

12 *Ibid.*

13 Institut de la Finance Durable, 'Fossil fuels: analysis of trajectories compatible with a 1.5°C scenario', June 2024

Intermittency also means that we have to over-equip the grid in terms of renewable energy capacity, and above all, for a certain period of time, we will have to generate additional electricity from fossil fuels in order to continue to ensure grid stability.

It is therefore necessary to develop the production of controllable low-carbon energies at the same time. Among decarbonated energies, nuclear energy plays an important role in the global trajectory of energy security towards the 'zero emissions' objective, as it is a controllable energy. In the IEA's NZE scenario[14], nuclear power generation capacity doubles from 413 GW at the start of 2022 to 812 GW in 2050. Annual nuclear capacity additions reach 27 GW per year in the 2030s, which is higher than in any previous decade. The global share of nuclear power in total generation reaches 8% in 2050. Emerging and developing economies account for more than 90% of global growth, with China expected to become the world's largest nuclear power producer before 2030. Advanced economies collectively record a 10% increase in nuclear power, with retirements offset by new plants, mainly in the US, France, the UK and Canada. Annual global investment in nuclear power rises from USD 30 billion in the 2010s to more than USD 100 billion by 2030, and remains above USD 80 billion until 2050.

Nuclear energy is recognised as a means of producing low-carbon electricity that will help to achieve carbon neutrality objectives, notably in the final agreement of COP 28 (Dec. 2023) and in Regulation (EU) 2024/1735 of 13 June 2024 'on the establishment of a framework of measures to strengthen the European ecosystem for the production of "net-zero" technology products and amending Regulation (EU) 2018/1724, which lists nuclear fission energy technologies in particular in Article 4 (list of net-zero technologies)'. On Tuesday 6 February 2024, the European Commission also stated that it was counting on the development of small nuclear reactors (SMRs) to achieve the EU's climate objectives, with a view to 'deploying the first reactors by 2030'[15]. Meeting in New York, the representatives of 14 banks and financial institutions also declared their readiness[16] to give greater support to the civil nuclear sector in order to achieve the objective set by COP28: tripling the sector's capacity by 2050.

14 https://www.iea.org/reports/nuclear-power-and-secure-energy-transitions/executive-summary

15 https://single-market-economy.ec.europa.eu/industry/industrial-alliances/european-industrial-alliance-small-modular-reactors_en

16 https://www.ft.com/content/96aa8d1a-bbf1-4b35-8680-d1fef36ef067

2. CARBON CAPTURE AND STORAGE (CCS) AND CARBON DIOXIDE REMOVAL (CDR) TECHNOLOGIES : LIMITED BY PHYSICAL STORAGE CAPACITIES[17]

Two crucial assumptions in climate models concern the availability of methods for removing CO_2 from the atmosphere (carbon dioxide removal (CDR) - including direct air carbon capture and storage, bioenergy carbon capture and storage and afforestation technologies) and carbon capture and storage (CCS) technology, neither of which have yet been deployed on a large scale.

These technologies will probably be necessary to achieve the 1.5°C target, but they have major constraints, particularly in terms of physical limits. Beyond the physical constraints, another limiting factor will also be the cost of these projects. The way in which these technologies and CO_2 emissions are regulated (e.g. through carbon pricing) will ensure or prevent their economic viability.

Clearly distinguish CCS and CDR

CCS and the CDR are often confused in the context of carbon management (a general policy concept combining CCS and CDR).

→ CCS and CCU can help reduce the total amount of new fossil fuel-based CO2 emitted into the atmosphere:

- Carbon capture and storage (CCS): captures and stores CO2 deriving from a point source (e.g. a coal or gas power plant). If implemented effectively, CCS can help mitigate most of the new CO_2 emissions generated by the point source.

- Carbon capture and utilisation (CCU): the reuse of carbon captured in products or processes. the reuse of carbon captured in greenhouses, beverages) or as an ingredient in new products (e.g. concrete, fuels, chemicals). CCU generally does not lead to long-term carbon storage, but rather to delayed emissions, making the impact of CCU on emission reductions complex to measure.

→ Carbon dioxide removal (CDR): removes CO2 from the atmosphere and stores it in geological, terrestrial or oceanic reservoirs, resulting in a net reduction in the concentration of CO2 in the atmosphere (if certain conditions are met, including the “permanence” of the storage). Alongside drastic emission reductions, which remain the main priority, CDR plays a limited role in achieving net zero emissions by “offsetting” limited volumes of residual emissions that are difficult to eliminate, and can contribute to the achievement of net negative emissions if the amount of CDR is greater than residual emissions. This includes:

- Direct air carbon capture and storage (DACCS), which requires very large quantities of renewable energy, at a time when low-carbon energy is still a scarce resource.

- Bioenergy with carbon capture and storage (BECCS), which often plays a major role in the net zero scenarios included in IPCC reports, as it is considered to solve two problems at the same time: the provision of carbon-neutral energy and the elimination of CO_2 from the air. Yet the “carbon neutrality” of bioenergy remains highly controversial (the current IPCC accounting rules that count bioenergy as “carbon neutral” are challenged

17 This section was written thanks to the invaluable contribution of Alexandra Deprez, researcher at IDDRI.

as being incorrect) and it is becoming increasingly clear that the scope for sustainable expansion of bioenergy is very limited.

These technologies will probably be needed to achieve climate goals...

CC(U)S and negative emission solutions will be required to achieve the 1.5°C target. The long-term role of CC(U)S in the 1.5°C scenarios is relatively variable: some are ambitious in their working assumptions while others are more cautious. While storage capacities were almost zero in 2020, the annual carbon capture and storage capacity is multiplied by a factor of 3 to 10 between 2030 and 2050 depending on the scenarios: there is a very wide range of capacity expected in 2050 (ranging from 3.2 $GtCO_2e$ to 10.9 $GtCO_2e$ per year - three times as much)[18].

...But there are significant uncertainties and limits regarding their development

For CCS

CCS technology dates back 50 years but it has not yet been developed on a large scale for many reasons. Currently, the adoption of CCS faces obstacles in terms of technology, the economy, institutions, ecological and environmental concerns and socio-cultural factors:

→ The economic viability of CCS deployment remains uncertain at this time[19]. The IPCC presents CCS as the most expensive and least promising mitigation option for the energy and industrial sector up to 2030 compared to other alternatives. The implementation of CCS significantly increases the investment costs of a coal or gas power plant, almost doubling costs compared to a CCS-free plant[20].

→ CCS is also decades away from large-scale deployment, and faces scale limitations due to geological carbon storage constraints.

→ The implementation of CCS requires significant increases in certain resources and chemicals, especially water. Power plants equipped with CCS technology may face intermittent shutdowns due to water scarcity[21].

→ CCS requires large amounts of energy, which would have to be low-carbon energy to align with a zero emissions trajectory[22].

18 *Ibid.*

19 IPCC AR6 WGIII, Chapter 4.

20 IPCC AR6 WGIII, Chapter 6.

21 IPCC AR6 WGIII, Chapter 6.

22 https://climatenetwork.org/wp-content/uploads/2021/01/can_position_carbon_capture_storage_and_utilisation_january_2021.pdf

Many associated risks:

→ Freezing of fossil fuel dependency/delay in phasing out fossil fuels - when CCS is implemented in the electricity sector or future deployment plans, this may delay action needed to reduce GHG emissions. CCS used in the electricity sector (rather than in heavy industry) has a deterrent effect on mitigation measures; it encourages continued investment in fossil fuel production, with the risk of locking in irreversible effects. The majority of the current deployment of CCS is used for enhanced oil recovery (EOR)[23], and as such increases the total volume of fossil fuels extracted.

→ Risks of leakage and impacts on ecosystems and global warming. Although it is difficult to obtain a fully watertight system, studies indicate[24] that an acceptable average leakage rate would be between 0.1% and 0.0001% of stored carbon[25]. A leakage rate of more than 0.1% per year could make the entire CCS process ineffective in tackling the climate crisis. Given that CCS has not yet been deployed on a large scale, there remains considerable uncertainty as to the extent of the risk of leakage.

In view of these elements, the use of CCS/CCUS should be prioritised in specific industrial sectors where there is no alternative solution to reduce CO_2 emissions.

For CDR

According to the IPCC, *"CDR deployed at scale is unproven and reliance on such technology is a major risk in the ability to limit warming to 1.5°C"*[26]. However, many models rely on very large-scale CDR, with elimination achieved either by sequestration of carbon by reforestation and afforestation, or by bioenergy with CCS (BECCS). This dependence is very controversial among the scientific community.

Models aimed at minimising total system costs often favour CDR: subsequent carbon removal offers a way to push costs back decades into the future, resulting in lower discounted costs. However, this distant horizon increases the uncertainty of deployment. In addition, if CDR solutions cannot be deployed as expected, it will be too late to adjust the gross emissions that have already occurred.

Forests and BECCS both require considerable land area. For example, capturing 11.5 Gt of CO_2 per year using BECCS (compared to current annual global emissions of 40 Gt of CO_2) would require a land area of 380 to 700 million hectares, which is equivalent to 25 to 46% of the world's arable land. Capturing the same amount with forests would require three times as much land as BECCS (IPCC, 2022). This land requirement raises concerns about competition with food production and impacts on biodiversity where wild land is converted. Taking these limitations into account, researchers estimated what could be considered the maximum sustainable potential of different approaches to CDR (de Coninck et al., 2018; Fuss et al., 2018).

23 https://ieefa.org/articles/carbon-capture-decarbonisation-pipe-dream

24 Günther, P.; Ekardt, F. Human Rights and Large-Scale Carbon Dioxide Removal: Potential Limits to BECCS and DACCS Deployment. Land **2022**, 11, 2153. https://doi.org/10.3390/ land11122153

25 PCC AR6 WGIII, Chapter 6: "It is estimated that geologic sequestration is safe with overall leakage rates at <0.001% yr-1" (Alcade et al., 2018).

26 Rogelj, Shindell et Jiang, 2018, Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels, p. 96, link.

High construction and/or operating costs: the current costs of DACCS systems (around $600-3,000 per tonne of CO_2/year) could be reduced to $100-600 per tonne by 2050, with $100 per tonne being very difficult to achieve[27]. By way of comparison, the IPCC estimates that the current cost of BECCS is in the range of $15 to $400/tonne; afforestation/reforestation can cost as little as $10/tonne; and emission reduction options such as the net lifetime costs of renewable energy are less than $0/tonne.

Technologies are heavily constrained by site availability

There is a risk that the availability and accessibility of geological storage spaces are currently overestimated: geological storage capacity is limited by various factors, such as the time needed to develop geological storage space.

Solutions to generate negative emissions are highly constrained. Recent analysis shows that very few models remain within reasonable limits corresponding to the actual capabilities of these solutions. In particular, carbon storage capacities are limited. Recent analyses estimate that "*the maximum CO_2 storage capacity (...) is 8.6 $GtCO_2$ per year around mid-century, after accounting for real-world regional differences in storage capacity and injection rates*"[28].

Even at potentially achievable levels, uncertainties remain as to whether and how CDR or CCS can be achieved. The deployment of CCS to date has constantly fallen short of expectations. After more than 30 years of efforts to market CCS, at the end of 2022 there were only 27 CCS facilities in operation, with a total nominal capacity of 36Mt of CO_2 (0.1% of global emissions). Only five of these facilities are intended to ensure long-term CO_2 storage (Global Institute for CCS, 2021).

Ensure high integrity and sustainable implementation of carbon removal technologies[29]

Considerable effort will be required for CDR to contribute to staying within and not exceeding the 1.5°C limit. This will require good CDR governance, which must give priority to significant emission reductions, and which should also, as a minimum:

→ *Separate emissions reduction targets from CDR targets in the next net zero target by setting realistic and sustainable levels of CDR*;

→ *Clarify what really comprises CDR and what falls under emission reductions.* To do this, it is necessary (1) to clarify that carbon capture and storage or use (CCS/CCU) are not CDR, as they capture fossil CO_2 from fossil fuels at source (e.g. factories and power plants) rather than removing CO_2 from the atmosphere, and (2) to distinguish activities that store carbon for short periods (decades, such as carbon sequestration in the soil) from more permanent CDR (from centuries to millennia; e.g. ecosystem restoration, CDR with geological storage, etc.);

27 John Young, Noah McQueen, Charithea Charalambous, Spyros Foteinis, Olivia Hawrot, Manuel Ojeda, Hélène Pilorgé, John Andresen, Peter Psarras, Phil Renforth, Susana Garcia, Mijndert van der Spek, "The cost of direct air capture and storage can be reduced via strategic deployment but is unlikely to fall below stated cost targets", One Earth, Volume 6, Issue 7, 2023, Pages 899-917, ISSN 2590-3322, https://doi.org/10.1016/j.oneear.2023.06.004

28 Achakulwisut et al., (2023), Global fossil fuel reduction pathways under different climate mitigation strategies and ambitions, Nature Communications.

29 Alexandra Deprez, IDDRI, 14 September 2023, https://www.iddri.org/en/publications-and-events/blog-post/carbon-dioxide-removal-five-principles-science-based-sustainable

→ *Establish "nature-based" CDR on sound ecosystem science*. Priority must be given to ecosystem restoration (e.g. natural forest regeneration, etc.), which provides a unique opportunity to restore degraded land carbon sinks with high carbon capture capacity, as well as biodiversity and adaptation co-benefits (despite limitations in terms of sustainability and feasibility). Monoculture tree planting (e.g. afforestation) does not meet the "nature-based" definition and raises concerns about negative impacts on food security and biodiversity;

→ *Minimise the deployment of CDR methods related to land use change* to prevent climate objectives from being achieved at the expense of other major sustainable development priorities (food security, employment and income, protection of biodiversity);

→ *Ensure that CDR credits in carbon markets are not used to offset current emissions, but rather to offset actual residual emissions*.

While investments in carbon capture and removal technologies need to increase, to remain credible in terms of physical constraints they must complement investments in reducing gross greenhouse gas emissions, especially as the effectiveness of these technologies remains uncertain on a large scale.

3. BIOMASS AND BIORESOURCES: A FRAGILE DECARBONISATION LEVER WITH QUESTIONABLE SUSTAINABILITY AND IN COMPETITION WITH THE USE OF LAND FOR FOOD PRODUCTION DUE TO ITS LIMITED AVAILABILITY[30].

Most climate scenarios rely on increased use of biomass as a lever for decarbonisation. The most cautious scenarios forecast that levels in 2050 will be equal to or even below current levels. Biomass is a fragile decarbonisation lever given its limited availability and competition with land use for food production.

Scenarios for the use of biomass vary by a factor of 1 to 9. This uncertainty is a critical point that shows that most scenarios focus on the outlook for demand for bioresources for energy use and that food use and conservation are not considered. The most ambitious scenarios therefore take very little account of the supply of biomass for energy use.

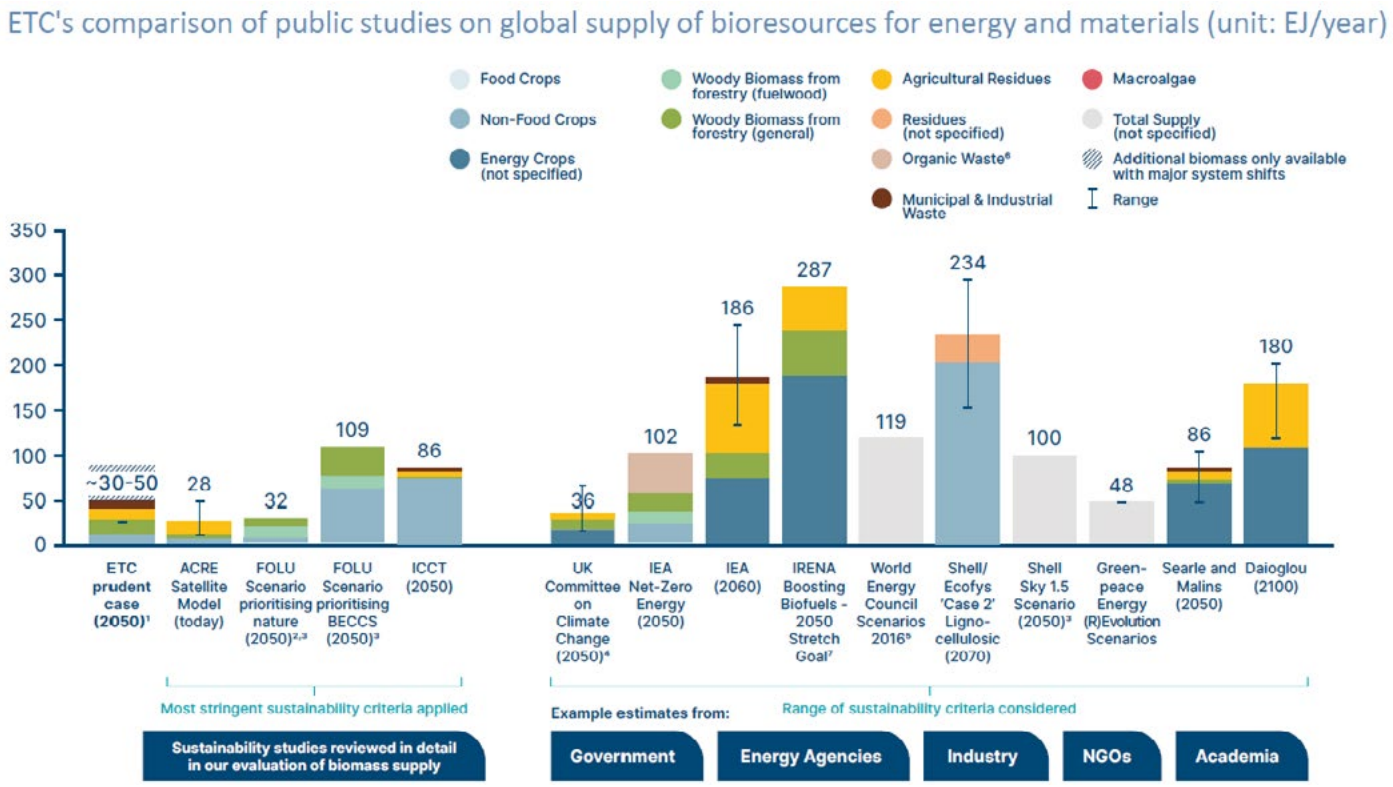
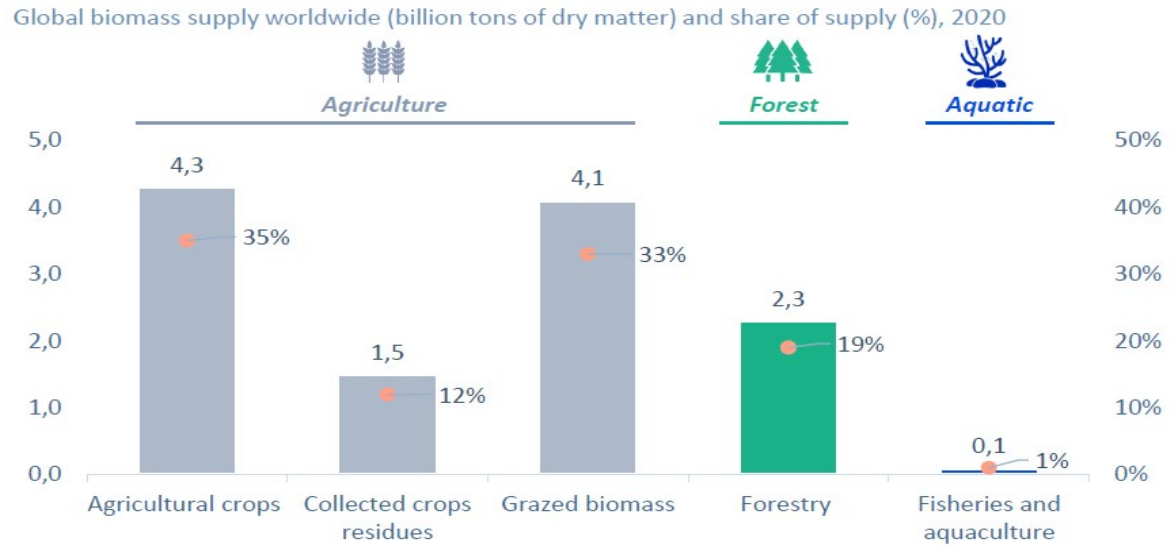


Figure – Comparison of the supply of biomass for energy and materials among climate scenarios (sources: Energy Transitions Commission, Bioresources within a Net-Zero Emissions Economy, 2021)

30 This section was written thanks to the invaluable contributions of Alexandra Deprez, researcher at IDDRI, and the teams of the consulting firm Blunomy, in particular Inès Galichon, Emmanuel Julien and Sébastien Holl, following a presentation to the taskforce on issues relating to biomass.

What biomass resources are there today?



Sources: [1] FAOSTAT & Blunomy analysis ; [2] UNEP, Food Waste Index Report 2021, based on data from Mbow et al., 2019 [3] Energy Transitions Commission, Bioresources within a Net-Zero Emissions Economy, 2021

Figure – Composition of biomass worldwide (source: Blunomy)

Key facts:

→ ~8%-10% of global greenhouse gas emissions are associated with food waste[31]. The inefficiency of food systems generates huge volumes of bioresources (residues, losses, waste) that could theoretically be recovered.

→ 40% of forest resources consumed are used for traditional energy purposes (e.g. cooking)[32], which is expected to be phased out by 2030 in the IEA NZE scenario[33].

→ Aquatic biomass is not yet technologically ready to produce large-scale bioenergy or materials in all industries.

→ In the European Union, biofuels account for 1.7% of total agricultural biomass flows, including crops and their residues. The European Renewable Energy Directive (RED III) caps the share of biofuels from food and feed crops and sets sustainability criteria for raw materials.

31 UNEP, Food Waste Index Report 2021, based on data from Mbow et al., 2019.

32 Transitions Commission, Bioresources within a Net-Zero Emissions Economy, 2021.

33 This is a strong and unrealistic assumption when looking at the pace of adoption of clean cooking solutions in recent years.

What forms of carbon capture are available through biomass?

Biological forms of carbon capture are sometimes also called nature-based CDR. These practices have completely different climate, environmental and social impacts and are often grouped under the same term. It is essential to distinguish between them:

→ Nature-based CDR: only ecosystem restoration practices based on sound ecosystem science that prioritise the protection of biodiversity can be considered nature-based CDR. For example, restoration of natural forests, agro-forestry, reforestation of mixed native species. As well as allowing significant carbon storage, these practices also offer key benefits such as biodiversity conservation and adaptation, and they help boost the resilience of existing forest carbon sinks to CO_2 emissions. Although the restoration of nature cannot be a substitute for a significant reduction in emissions, it can help limit warming to 1.5°C when combined with the phase-out of fossil fuels.

→ Monoculture forests: Monoculture afforestation or reforestation cannot be considered as a nature-based emission reduction measure because these solutions do not have significant related benefits, they require large amounts of water and nutrients, and they destroy biodiversity. Afforestation also poses significant risks in terms of population displacement, food security and biodiversity loss.

Uncertainties about biomass supply in the future

→ Climate change: impact of global warming and climate hazards on: Agricultural yields, crops dedicated to bioenergy and agricultural residues; forest yields, with fires and the deterioration of forest health (pathogens, high mortality of certain species, etc.).

→ Consumer behaviour: evolution of meat consumption that could free up land; willingness to pay (including with a premium) for biosourced products (e.g. bioplastics or biomaterials for the construction industry); rate of consumption and waste production.

→ The market: pace of phasing out of traditional biomass for cooking and heating in developing countries; expansion of recycling infrastructure; development of seaweed; competition for raw materials (e.g. the race to secure raw materials in the aeronautics industry); competition from fossil carbon and captured carbon.

→ Public policies and macroeconomic context: national and regional land use and/or biomass plans; subsidies for the use of biomass instead of low-carbon alternatives; soil sealing rates; deforestation and reforestation policies; waste prevention and reuse policies.

→ Development of sustainable practices: development of sustainable management practices for agriculture and forestry; evaluation of sustainability criteria.

Limited land availability

Bioresource production should not be considered solely from an energy perspective, but should be part of a broader assessment of the best use of land:

→ Bioresources are much more land-intensive than other decarbonisation options in a net zero economy.

→ Decisions on land use (regenerative agriculture, forest and land conservation, nature-based solutions, renewable energy production, etc.

→ Deforestation must be stopped quickly, which requires a change in agricultural practices, as the expansion of agriculture accounts for nearly 90% of global deforestation in certain geographical areas (Latin America, Indonesia, Malaysia, West Africa).

→ Biodiversity and/or carbon-rich lands such as forests must be maintained; changes in land use and deforestation must be eliminated.

Most of the IPCC net zero scenarios – which inform countries and non-government stakeholders of net zero plans and its understanding of what is required to maintain a temperature of 1.5C – still provide for a massive increase in greenhouse gas emission reduction (BECCS and reforestation), ignoring the massive land use that would compromise biodiversity (thereby countering the objectives of the Montréal-Kunming Global Biodiversity Framework) and food security.

Recent research clearly shows that there is no longer any scope for changes in land use. Large-scale bioenergetic crops for BECCS (i.e. 5 GtCO2e per year or even much less) require huge volumes of land (up to several times the size of India)[34], and "would likely take the Earth system boundaries associated with freshwater use, biosphere integrity, and biochemical flows to the tipping point".[35]

There is a significant risk that carbon capture by biomass will not live up to its promises. Countries have collectively committed to allocating 1.2 billion hectares of land to carbon capture by 2060, almost the same area as the world's cropland[36], which is a completely unrealistic commitment. As a result, reductions may never occur as expected (due to the effects of climate change on living organisms, tipping points, technological failures, etc.).

34 Rockström, J., Gupta, J., Qin, D. et al. Safe and just Earth system boundaries. *Nature* **619**, 102–111 (2023). https://doi.org/10.1038/s41586-023-06083-8

35 Felix Creutzig, Karl-Heinz Erb, Helmut Haberl, Christian Hof, Carol Hunsberger, Stephanie Roe, Considering sustainability thresholds for BECCS in IPCC and biodiversity assessments, GCB Bioenergy. Volume 13, Issue 4 p. 510-515, 2021, https://doi.org/10.1111/gcbb.12798

36 https://landgap.org/

The multiple risks of biomass

The use of bioresources has potential risks and drawbacks that need to be identified, avoided and mitigated to ensure sustainable outcomes:

Biomass cannot be considered neutral or negative in terms of CO_2 emissions. Various factors influence the carbon reduction potential: land use change (deforestation or abandoned cropland); means of production (conventional or organic agriculture, logistics, waste collection); biomass source (dedicated land, waste recycling, aquatic biomass); use of bioresources (materials or energy); other indirect impacts (competition for agricultural land contributing to deforestation in other regions).

The use of bioresources can have significant negative effects on the environment: the conversion of land rich in biodiversity can contribute to the loss of ecosystem services; the use of intensive farming methods can increase chemical pollution and water scarcity; excessive collection of agricultural residues (as opposed to their return to the soil) can lead to the loss of nutrients and carbon and degrade soil health.

Social factors must also be considered: the impact on affordability and availability of food through competition for land; the increase in local air pollution due to the combustion of biomass; the violation of the rights of indigenous peoples or local communities.

Prioritise the uses of biomass

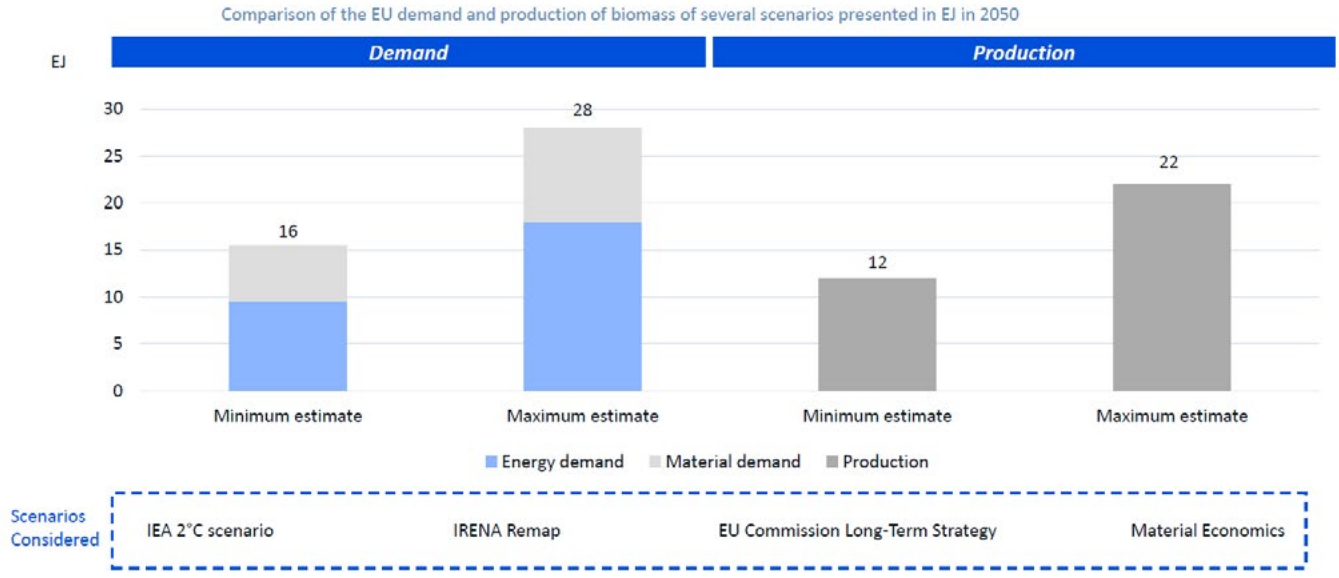


Figure – Comparison of biomass demand and supply in the EU under several scenarios in 2050, in EJ (source: Blunomy, Material Economics[37])

37 https://materialeconomics.com/latest-updates/eu-biomass-use

There is a global risk that the supply of sustainable biomass will be insufficient to meet the potential demand set out in the scenarios. In Europe, biomass production may not be sufficient to meet the projected demand for the EU in 2050. Uses must be prioritised. The potential demand for biomass far exceeds the available supply and non-biogenic decarbonisation alternatives in the different sectors of use should be prioritised where possible.

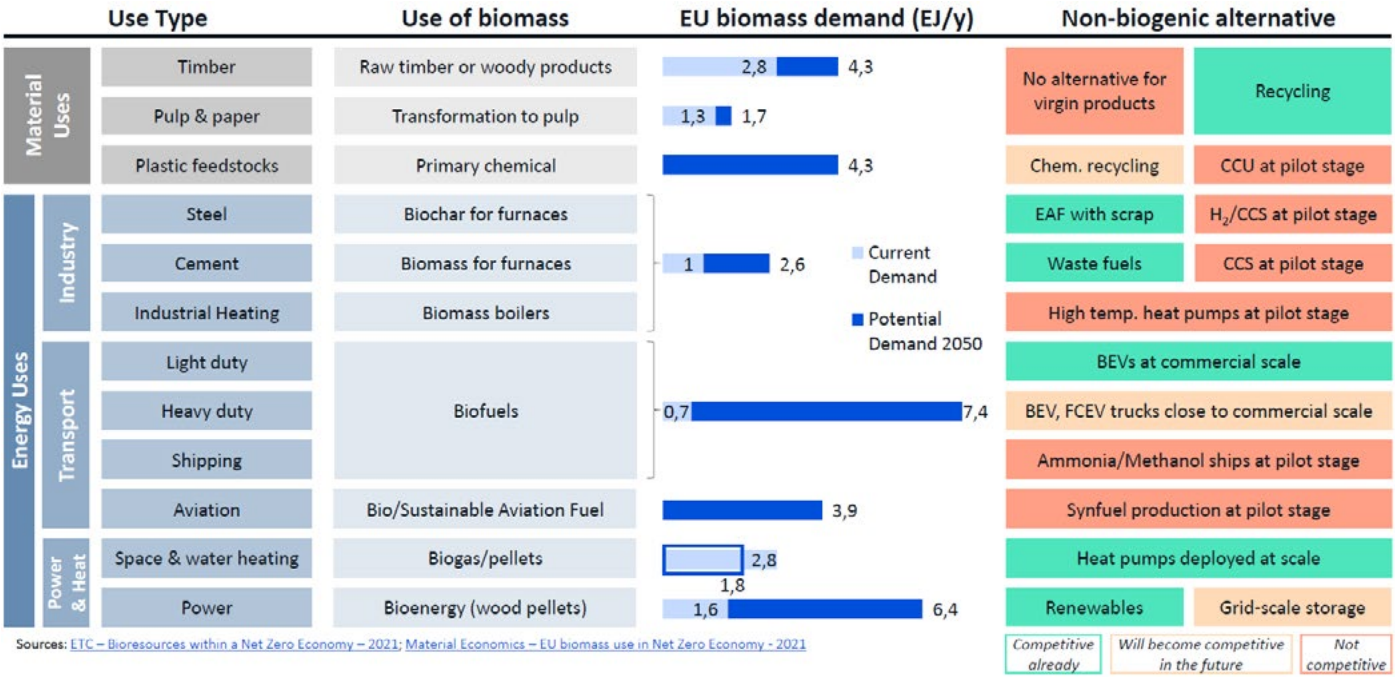


Figure – Uses of biomass and the existence of alternatives
(sources: Energy Transitions Commission[38], Material Economics[39], Blunomy)

While biomass can act as a biological form of carbon capture, this function is lost when the biomass is burned to produce energy, releasing the stored carbon into the atmosphere. This is why scientists talk about a “carbon debt” when biomass is used on a large scale to produce energy. Thus, in line with the recommendations of the Energy Transitions Commission on the prioritisation of biomass uses, the main priority use of biomass must be as a material or raw material, and not as a large-scale energy source.

38 https://www.energy-transitions.org/publications/bioresources-within-a-net-zero-economy/

39 https://materialeconomics.com/latest-updates/eu-biomass-use

4. HYDROGEN: A HIGH-POTENTIAL TECHNOLOGY STILL UNDER DEVELOPMENT[40]

The anticipated role of hydrogen varies from scenario to scenario because its production cost is still very high, and should be targeted primarily at the sectors most difficult to decarbonise.

A secondary role in decarbonising the economy

The long-term role of hydrogen in the 1.5°C scenarios is variable, but some scenarios project significant growth in its development, for example, the IEA NZE, which projects a five-fold increase in demand between 2020 and 2050. Nevertheless, hydrogen remains, in all cases, of secondary importance. In BloombergNEF's net zero scenario, hydrogen accounts for 5% of CO_2 abatements in 2050. Hydrogen production is multiplied by a factor of between two and ten between 2030 and 2050 depending on the scenarios[41]. In all scenarios, low-carbon hydrogen accounts for the majority of hydrogen production. Low-carbon hydrogen is produced by electrolysis either from natural gas with CCS (blue hydrogen) or from renewable energy (green hydrogen).

High production cost

This technology plays a secondary role because of its high cost and low energy efficiency. For green hydrogen (produced from renewable energy by electrolysis), the cost was at best above €75/MWh in 2020[42]. By way of comparison, these costs are systematically higher than the cost of renewable energies, which varied by type (solar, onshore wind, offshore wind, geothermal, etc.) and project, at between €23/MWh and €71/MWh on the same date[43]. However, with the falling cost of electrolysis, the authors estimate that the cost of green hydrogen could fall to less than €40/MWh by 2035[44], which could potentially be more competitive, depending on uses. This structurally high cost is explained by the fact that the resource is unreadily available and by its low energy efficiency (significant need for renewable energies to produce one energy unit by electrolysis). However, this premium for green hydrogen could coexist with cheaper renewable energy prices, since hydrogen is intended to replace uses where electrification is not the most suitable solution for decarbonising energy consumption. It should therefore also be compared with the cost of producing grey or blue hydrogen.

Beyond the issues of production costs, the hydrogen sector needs to consolidate. Producing sustainable hydrogen requires significant quantities of energy and therefore a large low-carbon energy sector as well as the establishment of appropriate infrastructure, transport and storage solutions. In an initial phase, the development of hydrogen could focus on certain industrial areas where demand would be sufficient in the long term. Subsequently, if the use of hydrogen is extended to the whole country, this requires heavier infrastructure investment for more widespread use.

40 This section was written thanks to the invaluable contributions of Inès Bouacida, researcher at IDDRI, following a taskforce presentation on hydrogen issues.

41 IFD, Fossil energies: analysis of trajectories compatible with a 1.5°C scenario, June 2024.

42 Inès Bouacida, Nicolas Berghmans, "Hydrogen for climate neutrality: conditions for deployment in France and Europe", January 2022, IDDRI, link.

43 ADEME, "The cost of renewable energies and recovery in France", 2019.

44 Inès Bouacida, Nicolas Berghmans, January 2022.

Target the use of hydrogen on sectors that are difficult to decarbonise

Given its cost and these constraints, the use of green hydrogen must be targeted at the sectors the most difficult to decarbonise by alternative means. Even though it is expensive to produce, it has significant advantages as an energy vector compared to other low-carbon energy sources: it has a high energy density (mass but not volume) and is easy to store compared to electricity. The hierarchy of final uses for hydrogen is important to consider when investing in “no-regret” hydrogen production projects:

1. Green hydrogen to replace fossil hydrogen in existing uses (ammonia, methanol, fertilizer, etc.).

2. Green hydrogen for new uses that have few decarbonisation options (maritime transport, steel industry, network flexibility).

3. Where appropriate, green hydrogen for new uses that have good decarbonisation options (road transport, low-temperature heat).

As we have seen, however, hydrogen is much less competitive for electricity generation.

5. ENERGY EFFICIENCY AND FUEL ECONOMY: THE BEST ENERGY IS THAT NOT CONSUMED, BUT WHAT ARE THE REALISTIC LEVERS?[45]

Doubling energy efficiency by 2030

Energy efficiency is currently receiving special attention from global policy-makers given its important role in improving energy security and accessibility, and in accelerating the transition to clean energy. However, the estimated rate of increase in energy intensity - the main measure of energy efficiency in the global economy - is expected to fall below long-term trends to 1.3% in 2023, down from 2% a year earlier[46].

To be in line with the IEA NZE, a scenario compatible with a 1.5°C temperature rise, global energy efficiency gains need to be 4% per year until 2030, which would reduce current energy bills in advanced countries by one third and allow 50% of CO_2 emissions reductions to be achieved by 2030. At COP 28, governments agreed to double progress in energy efficiency by 2030, from a rate of 2% per year to 4%.

Promising examples

Since the start of the energy crisis in early 2022, action has multiplied, with countries accounting for 70% of global energy demand having introduced or significantly strengthened energy efficiency measures[47]. Annual investment in energy efficiency has increased by 45% since 2020, with particularly strong growth in electric vehicles and heat pumps. Nearly one in five cars sold today is an electric vehicle, and global heat pump sales growth is now outpacing that of gas boilers in many markets.

According to the IEA's Government Energy Spending Tracker, since 2020, nearly $700 billion has been spent to support energy efficiency investments, of which 70% in just five countries: the United States, Italy, Germany, Norway and France. The 2022 Inflation Reduction Act in the United States includes $86 billion for energy efficiency actions, while the European Union has strengthened its energy efficiency directive to curb energy demand.

After an 8% improvement in energy intensity in the European Union in 2022, another exceptionally high performance was achieved in 2023, with a 5% gain. The US is also on track for a 4% improvement in 2023. These regional examples therefore show that the target of 4% per year at the global level is achievable, although it requires a significant effort by governments and economic actors.

45 This section was written thanks to the invaluable contributions of the teams of the International Energy Agency, in particular Nicholas Howarth and Tanguy de Bienassis.

46 IEA (2023), Energy Efficiency 2023, IEA, Paris https://www.iea.org/reports/energy-efficiency-2023

47 *Ibid.*

An ambitious but achievable goal

According to the IEA[48], to improve energy efficiency from 2% to 4% per year, policies must result from three global actions of equal importance:

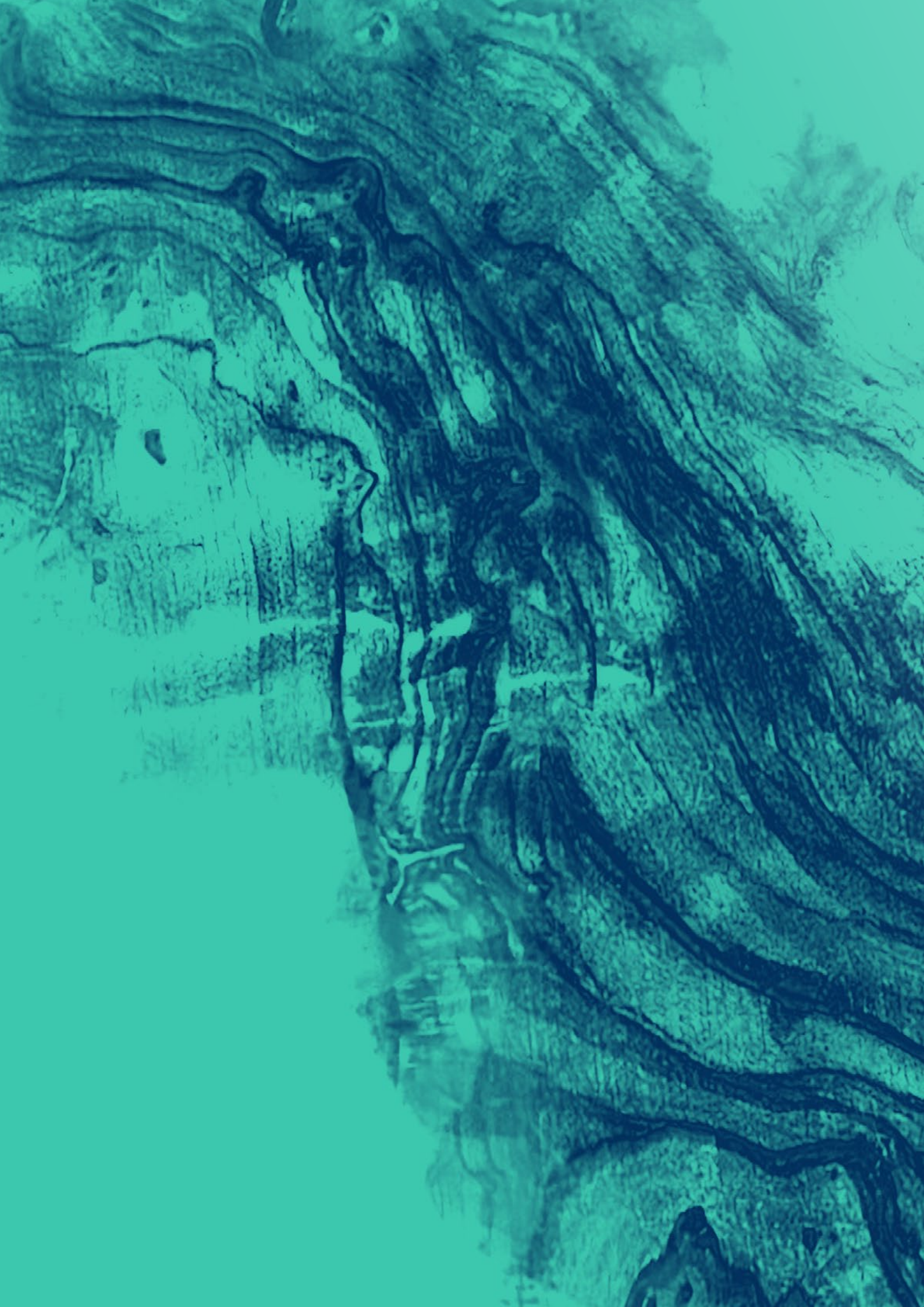
→ The shift to more efficient fuels (0.7 percentage points). Much of this improvement comes from the electrification of existing fossil fuel systems, for example through heat pumps in buildings and electric vehicles in transportation. Electric technologies are radically more efficient in the provision of energy services, resulting in significant efficiency gains.

→ Improved technical efficiency (0.7 percentage points). Significant savings can be achieved through the construction of new buildings, better renovations, better insulated buildings, the use of more efficient air conditioners, engines, refrigerators and other appliances, the use of more fuel-efficient vehicles and the improvement of industrial processes to make them more energy efficient.

→ More efficient use of energy and materials, avoiding demand (0.8 percentage points). Examples include changes in consumer behaviour, such as adjusting room heating temperatures and using public transport, walking or cycling rather than private cars. Minimising the material content of products by recycling metals and plastics can also drastically reduce the energy needed to make them. Greater circularity and more efficient supply chains, as well as a shift towards less energy-intensive services and activities, will also have an important role to play.

These are three ambitious but achievable levers, for which the technology is available in the vast majority of cases. In most sectors, governments can make rapid progress by building on best practices in existing policies and accelerating the deployment of technologies already available. For example, lighting standards in the European Union, India, Japan, South Africa and the United Kingdom are already at or above the level set in the NZE scenario. Similarly, all industrial electric motors of a certain power sold in the European Union, Japan, Switzerland, Turkey and the United Kingdom must comply with the efficiency class provided for in the NZE scenario. Similar cases can be found for construction regulations and improvements to vehicle standards that are expected to come into force by 2030.

48 *Ibid.*



II. HOW ARE FINANCIAL INSTITUTIONS IN THE PARIS FINANCIAL CENTRE IMPLEMENTING THE CLIMATE TRANSITION?

The Paris Financial Centre has been a pioneer in defining and implementing some of the most ambitious decarbonisation trajectories in the world for the fossil fuel sector, starting with thermal coal. At COP 21 in 2015, Paris was the first financial centre to announce its adherence to the scientific consensus on the impact of greenhouse gas emissions.

In 2019, the Paris Financial Centre published a statement in which it made strong commitments to combat climate change and contribute to the goal of carbon neutrality by 2050[49]. The professional federations representing financial players[50] have worked to encourage their members to withdraw from thermal coal.

A. THE MOBILISATION OF THE PARIS FINANCIAL CENTRE REFLECTS A STRONG DESIRE TO ACHIEVE THE OBJECTIVES OF THE PARIS AGREEMENT

The mobilisation of players in the Paris Financial Centre[51] in recent years has produced tangible results.

1. CUTTING-EDGE COAL DISENGAGEMENT POLICIES

French banks have been pioneers in excluding the most carbon-intensive fossil fuels, starting with thermal coal. In 2019, the main French banks collectively committed to fully phase out of thermal coal by 2030 (for activities in OECD countries) and 2040 (for the rest of the world). To date, French banks 1) no longer finance any new coal-fired power plant or thermal coal mine projects, 2) refuse to enter into a relationship with customers whose share of electricity generated from coal exceeds a set threshold (25%-30% depending on the bank), 3) are among the only ones to ask their customers to put in place a plan to exit the thermal coal sector with deadlines aligned with their collective objective.

In addition, all French insurers have implemented policies to phase out thermal coal, as have 82% of responding asset management companies in 2023 (representing 66% of assets under management). Since 2017, French insurers have individually committed to stop investing in new coal-related projects.

49 https://institutdelafinancedurable.com/en/actualites/declaration-of-place-a-new-step-for-green-and-sustainable-finance/

50 The French Banking Federation (FBF), French Insurers (FA) and the French Asset Management Association (AFG)

51 The figures cited in this section come from the latest surveys carried out by the professional federations. FBF (September 2024), AFG (November 2024) FA (December 2024).

2. REDUCED EXPOSURE TO OIL AND GAS

The main French banks have oil and gas policies restricting financing in this sector. In 2021, they set an unrivalled single common objective for unconventional oil and gas resources[52]: to no longer finance any project relating to unconventional oil and gas or companies whose share of unconventional resources in exploration and production exceeds 30% of their activity from January 2022 (variable depending on the bank). Several banks have set individual targets that go beyond this collective target (lower exclusion thresholds or broader excluded activities).

As far as insurers are concerned, in 2021, they each committed to establish policies for dialogue with oil and gas companies and to stop financing companies that would not abandon new unconventional fossil fuel production projects. At the end of 2023, insurers having implemented policies for fossil fuels accounted for 99% of assets under management, and 99% of assets under management for unconventional fossil fuels. As for asset management companies, 55% said they had a strategy for unconventional fossil fuels in 2023.

3. THE LOW WEIGHTING OF FOSSIL FUELS IN MARKET PLAYERS' BALANCE SHEETS

At the end of 2023, the fossil fuels sector accounted for less than 0.75% of the balance sheets of the main French banks, of which 0.02% for thermal coal (residual exposure of €2.2 billion) and less than 0.73% for oil and gas (balance sheet exposure of €66 billion). The exposure of French banks to the oil and gas sector decreased by a further 16% in 2023. This low weight in banks' consolidated balance sheets means that French banks are not economically dependent on the fossil fuel sector as a whole.

In 2023, 0.2% of insurers' investments are exposed to coal, 0.9% to oil and gas (1.3% at end-2022). For asset management companies, only 0.66% of assets under management are exposed to coal and 2.5% to gas and oil[53].

52 At the time, unconventional oil and gas covered shale oil, shale gas and oil sands. This collective definition was extended in 2023 to include extra-heavy oil (API gravity < 10).

53 Exposure to fossil fuels calculated based on the lists of Urgewald, a German environmental NGO created in 1992. It studies the players involved in the coal and oil and gas value chain. It regularly publishes lists of these players: the Global Coal Exit List (GCEL) and the Global Oil and Gas Exist List (GOGEL).

Focus the French regulatory framework

The progress of the French market in terms of policies to exit fossil fuels has been made alongside the creation of a national regulatory framework on the subject since 2021, with the publication in the Official Journal of the Decree implementing Article 29 of the Energy and Climate Law.

This decree amending the French Monetary and Financial Code imposes two transparency obligations on the asset managers and owners of financial assets: the publication of their exposure to fossil fuels, and the presence of a policy to exit coal or unconventional oil and gas.

III-5° of Article D. 533-16-1 of the French Monetary and Financial Code requires the disclosure of the share of assets in companies active in the fossil fuel sector. The disclosure of the share of assets in companies active in the fossil fuel sector aims to identify the most exposed financial players and those likely to engage or divest. In addition, III-6° f) of Article D. 533-16-1 of the French Monetary and Financial Code requires the disclosure of information on "Changes in the investment strategy in connection with the strategy of alignment with the Paris Agreement, and in particular the policies put in place with a view to a gradual exit from coal and unconventional oil and gas, specifying the exit timetable as well as the share of total assets managed or held by the entity covered by these policies".

4. SHARP INCREASE IN MARKET FINANCING FOR THE TRANSITION

In 2023, banks increased their green and sustainable loans to all sectors of the economy by more than 50% in one year, from €216 billion in 2022 to €337 billion in 2023 (representing an increase of 4.4x between 2020 and 2023). Their outstanding financing for renewable energy projects exceeded €73 billion at the end of 2023, i.e. growth of 42% year-on-year and 74% in two years. Two-thirds of their outstanding loans in the electricity production sector are from non-fossil sources (renewable energy and nuclear). French banks are among the world leaders in financing renewable energies with four French banks ranked in the top 10 on the global renewable energy project financing market in 2023[54].

For insurers, at the end of 2023, €171 billion in assets under management (8.3% of total assets) were held in green investments (a 13% increase since the end of 2022). Assets under management in responsible investments (within the meaning of the SFDR) continued to grow, with an increase of 5.8% compared to 2022 (already up 6.9% compared to 2021).

54 IJ Global / Infrastructure and Project Finance League Table Report Full Year 2023.

B. THE CLIMATE STRATEGIES OF THE PARIS FINANCIAL CENTRE: METHODOLOGIES AND ACTION PLANS

1. THE PARIS AGREEMENT IS AT THE HEART OF THE CLIMATE STRATEGIES OF PLAYERS IN THE PARIS FINANCIAL CENTRE

The Paris Agreement and the work of the IPCC are omnipresent references in stakeholders' climate strategies. With the aim of accelerating the transition to a low-carbon economy, **all participants in the overview refer to the Paris Agreement.** There is a strong desire widely shared by all market players to align with carbon neutrality targets by 2050 to limit the rise in average temperatures to 1.5°C. To achieve this ambition, **all the participants in the overview have set out action plans to implement this transition**. Most participants have explicit intermediate objectives (with a major milestone in 2030).

Climate strategies are reflected in their investment and financing decisions. As evidenced by banks: "*On a daily basis, French banks' resolve in terms of fostering the transition is reflected in the fact that they choose not to participate alongside European, American and Asian banks in financing deals for the oil and gas sector.*"[55]

2. A WIDE SCOPE OF SECTORS COVERED BY CLIMATE STRATEGIES

Reducing exposure to the fossil fuels sector is a priority shared by all participants in the overview. **This strategy of disengagement from fossil fuels is accompanied by a strong commitment to finance the transition.** Many market players promote the sharp increase in their transition financing over the past several years. Some have action plans specific to financing low-carbon energy.

Players also apply their climate strategy in energy-intensive sectors in order to influence demand. As some sectors (industry, transport, real estate) are highly dependent on fossil fuels for their processes, their decarbonisation is also encouraged and financed: replacement of fossil fuels by low-carbon energies, improvement of energy efficiency, etc. Market players are therefore also setting targets for the decarbonisation of their portfolios exposed to other sectors with high emissions due to their consumption of fossil fuels (cement, steel, aluminium, automotive, transport and real estate, etc.).

55 https://www.fbf.fr/uploads/2024/04/FBF-2024_Les-banques-francaises-leaders-du-financement-de-la-transition-ecologique.pdf (April 2024).

3. IMPLEMENTATION OF ENGAGEMENT STRATEGIES

The vast majority of market players have precise and detailed strategies for engaging with their customers and/or issuers. Engagement strategies contain escalation processes that can sometimes go as far as exclusion in the event of failure.

For each sector, most players have monitoring and management indicators to engage in ongoing dialogue with companies. Among banks, participants in the overview have teams dedicated to supporting businesses. In particular, banks have an engagement approach aimed at encouraging innovation, particularly in the renewable energy sectors. In the case of management companies and insurers, players apply a stringent voting policy so that companies in the most carbon-intensive sectors adopt a transition strategy aligned with the objectives of the Paris Agreement.

4. ROBUST EXCLUSION STRATEGIES FOR FOSSIL FUELS

Most players have exclusion policies for the fossil fuel sector. They develop their exclusion policy in detail and often publish it. For some players, each sector policy describes restrictions on corporate financing, or more broadly on the financial products and services granted.

The exclusions mainly cover:

Thermal coal: all participants in the overview have a strict exclusion policy regarding thermal coal, whether for the development of new thermal coal mines, coal-fired power plants or dedicated infrastructure.

Oil and gas: all participants in the overview have an oil and gas policy with exclusions covering different scopes and exclusion thresholds.

5. A WIDE RANGE OF METHODOLOGICAL TOOLS IS USED, WITH THE IEA'S NET ZERO EMISSIONS SCENARIO A WIDELY USED REFERENCE POINT

Most market players use internationally recognised scenarios to build their climate strategy (87% of participants). **For the vast majority of players (80% of participants), the IEA's Net Zero Emissions scenario is an essential benchmark** for their energy and climate strategy. The IPCC pathways (P1 and P2) are also mentioned, but to a lesser extent, either in addition to the IEA scenario or as a substitute.

Focus Summary of the IPCC pathways[56]

IPCC Special Report on Global Warming of 1.5°C (2018).

In October 2018, the IPCC published a special report to assess the impacts of global warming of 1.5°C in line with the objectives of the Paris Agreement. This document describes four pathways (P1, P2, P3 and P4), each representing a trajectory of CO_2 emissions associated with a different set of assumptions:

→ **Pathway P1** projects a decline in global energy demand by envisaging a profound societal and institutional transformation in the way energy services are consumed and produced. P1 can be included in SSP2 category (see below), with which they share certain narrative elements, and the main input assumptions (population and GDP in particular).

→ **Pathway P2** belongs to the SSP1 category. It is based on the same narrative and the same input assumptions, and aims to limit the temperature rise to 1.5°C.

→ **Pathway P3** belongs to the SSP2 category.

→ **Pathway P4** belongs to the SSP5 category of so-called "technophile" scenarios (see below).

Narratives of the Shared Socioeconomic Pathways (SSPs)

SSP1: Sustainability (Taking the Green Road) - The world shifts gradually, but pervasively, toward a more sustainable path, emphasising more inclusive development that respects predicted environmental boundaries. Management of the global commons slowly improves, educational and health investments accelerate the demographic transition, and the emphasis on economic growth shifts toward a broader emphasis on human well-being. Driven by an increasing commitment to achieving development goals, inequality is reduced both across and within countries. Consumption is oriented toward low material growth and lower resource and energy intensity.

SSP2: Middle of the road - The world follows a path in which social, economic, and technological trends do not shift markedly from historical patterns. Development and income growth proceeds unevenly, with some countries making relatively good progress while others fall short of expectations. Global and national institutions work toward but make slow progress in achieving sustainable development goals. Environmental systems experience degradation, although there are some improvements and overall the intensity of resource and energy use declines. Global population growth is moderate and levels off in the second half of the century. Income inequality persists or improves only slowly and challenges to reducing vulnerability to societal and environmental changes remain.

56 See the Shift Project and AFEP report, "Energy-climate scenarios: Evaluation and instructions", 2019, link.

SSP3: Regional rivalry (A Rocky Road) - A resurgent nationalism, concerns about competitiveness and security, and regional conflicts push countries to increasingly focus on domestic or, at most, regional issues. Policies shift over time to become increasingly oriented toward national and regional security issues. Countries focus on achieving energy and food security goals within their own regions at the expense of broader-based development. Investments in education and technological development decline. Economic development is slow, consumption is material-intensive, and inequalities persist or worsen over time. Population growth is low in industrialised and high in developing countries. A low international priority for addressing environmental concerns leads to strong environmental degradation in some regions.

SSP4: Inequality (A Road Divided) - Highly unequal investments in human capital, combined with increasing disparities in economic opportunity and political power, lead to increasing inequalities and stratification both across and within countries. Over time, a gap widens between an internationally-connected society that contributes to knowledge- and capital-intensive sectors of the global economy, and a fragmented collection of lower-income, poorly educated societies that work in a labour intensive, low-tech economy. Social cohesion degrades and conflict and unrest become increasingly common. Technology development is high in the high-tech economy and sectors. The globally connected energy sector diversifies, with investments in both carbon-intensive fuels like coal and unconventional oil, but also low-carbon energy sources. Environmental policies focus on local issues around middle and high income areas.

SSP5: Fossil-Fuelled Development (Taking the Highway) - This world places increasing faith in competitive markets, innovation and participatory societies to produce rapid technological progress and development of human capital as the path to sustainable development. Global markets are increasingly integrated. There are also strong investments in health, education, and institutions to enhance human and social capital. At the same time, the push for economic and social development is coupled with the exploitation of abundant fossil fuel resources and the adoption of resource and energy intensive lifestyles around the world. All these factors lead to rapid growth of the global economy, while global population peaks and declines in the second half of the century. Local environmental problems like air pollution are successfully managed. There is faith in the ability to effectively manage social and ecological systems, including by geo-engineering if necessary.

Whether through the choice of scenarios (IEA NZE or the IPCC P1 and P2 pathways) or the use of guides produced by the Net Zero alliances (members of GFANZ), the vast majority of players assume limited use of CCS technologies and negative emissions. These scenarios thus primarily model the massive development of low-carbon energies and energy efficiency. By committing to the GFANZ Net Zero alliances (the case of all participants in the overview), most market players have committed to adopting scenarios with a zero or low overshoot (see below for more details).

The tools used are very diverse: many participants develop their own methodologies[57]. Others rely on recognised tools, either as a complement, or as their primary methodology:

- The PCAF (Partnership for Carbon Accounting Financials) and PACTA (Paris Agreement Capital Transition Assessment) methods are used to align and calculate the carbon footprint of portfolios
- GHG Protocol
- Science Based Targets initiatives (SBTi)
- Target Setting Protocol NZAOA
- NZBA Banking Alliance Guides
- ADEME ACT methodology
- Frequently used databases:
- Carbon 4 Finance
- Iceberg DataLab
- S&P Trucost
- MSCI
- Sustainalytics
- Global Coal Exit List and Global Oil & Gas Exit List of the NGO Urgewald

57 The European Commission's Joint Research Center carries out a "robustness check" that financial institutions can apply to issuers' transition plans, link here.

6. INCREASED PARTICIPATION IN NET ZERO ALLIANCES AND INTERNATIONAL PARTNERSHIPS

There is a wide variety of international climate initiatives. Net zero alliances and partnerships play a vital role in the collective dynamic to achieve the objective of the Paris Agreement. Those most often mentioned by participants in the overview include:

- Carbon Disclosure Project (CDP)
- Science-Based Targets initiative (SBTi) created by CDP, World Resources Institute (WRI), WWF and United Nations Global Compact (UNGC)
- Task Force on Climate-Related Financial Disclosures (TCFD)
- United Nations Environment Programme Finance Initiative (UNEP FI) Collective Commitment to Climate Action (CCCA)
- UNEP FI Principles for Responsible Banking (PRB)
- Equator Principles
- Climate Action 100+
- Principles for Responsible Investment (PRI)

The Glasgow Financial Alliances for Net Zero (GFANZ) are now central to the ecosystem. All participants in the overview are engaged in a GFANZ member alliance, including the Net-Zero Banking Alliance (NZBA), the Net-Zero Asset Owner Alliance (NZAOA) and the Net Zero Asset Managers Initiative (NZAMI)**.** The main French financial institutions are members of these alliances.

They provide their members with a conceptual and methodological framework for action to 1) align with a net zero trajectory by 2050, 2) set intermediate targets for reducing the CO_2 emissions generated by their portfolios, 3) report regularly on their progress.

C. NET ZERO ALLIANCES AT THE CENTRE OF INTERNATIONAL FINANCIAL COALITIONS: OVERVIEW AND BENCHMARKING[58]

To achieve net zero by 2050, major financial players around the world have come together and collaborate in international "alliances". Three of these alliances are under the aegis of the UN and more specifically the UNEP FI programme: the Net Zero Banking Alliance (NZBA), the Net Zero Insurance Alliance (NZIA), and the Net Zero Asset Owner Alliance (NZAOA). The Net Zero Asset Managers Initiative (NZAMI) is part of the Net Zero Investment Framework (NZIF). All of these financial sector alliances are part of an umbrella alliance: the Glasgow Financial Alliance for Net Zero (GFANZ). In spring 2024, the NZIA was replaced by the Forum for Insurance Transition to Net Zero (FIT), a more flexible framework.

The following section considers the conceptual and methodological differences between the various alliances.

1. STRUCTURAL DIFFERENCES

Alliances of different sizes

GFANZ represents around 40% of global private financial assets[59].

The NZBA comprises 144 banks from 44 countries, representing $74 trillion in assets, i.e. 41% of global banking assets[60] and 65% of European bank assets[61]. The NZAOA has 86 members, or $9.5 trillion in assets[62], and 40% of European institutions' assets under management[63]. The FIT currently has 20 members[64].

GFANZ also includes the NZ Financial Service Providers Alliance, the NZ Investment Consultant Alliance, and the Venture Capital Alliance, which are less well known[65].

The Paris Aligned Asset Owners group, which uses the Net Zero Investment Framework, has 56 members representing more than $3 trillion in assets[66]. The Net Zero Asset Managers Initiative has 315 signatories covering $57 trillion in assets under management[67].

A more or less formal framework for collaboration

The UNEP FI is the secretariat of the NZBA, NZAOA and NZIA, but members are responsible for the organisations' governance. After the dissolution of the NZIA, the FIT provides a more flexible framework for the alliance of insurers.

58 This section was written thanks to the invaluable work of Lola Kerdiles, IFD Sustainable Finance Project Manager

59 https://www.gfanzero.com/

60 NZBA Progress Update 2023, p. 2.

61 Platform on Sustainable Finance, Monitoring Capital Flows to Sustainable Investments: Interim Report, April 2024, p. 51.

62 NZAOA, Progress Report 2023, p. 7.

63 Platform on Sustainable Finance, op. cit., p. 50.

64 https://www.unepfi.org/members/

65 For example, NZICA has committed to "align" with NZAMI within two years, and the VCA allows members to use carbon offsetting.

66 https://www.parisalignedassetowners.org/

67 https://www.netzeroassetmanagers.org/

The PAAO and NZAMI are independent of any international institution and are based on the Net Zero Investment Framework.

These alliances offer methods that allow their members to set decarbonisation targets, but each actor remains sovereign in terms of how they set their own targets and implement commitments voluntarily by joining the alliance.

2. METHODOLOGICAL DIFFERENCES

Variations of a common scheme

The alliances are based on a common foundation: the signing of a commitment, broken down into Guidelines, and an accountability mechanism.

On joining the alliances, financial players commit to achieving net zero in their asset portfolios by 2050, setting intermediate targets for reducing the emissions generated by their portfolios, regularly reporting on their progress, and adapting their targets into an action plan, in particular by integrating the climate into their corporate governance and by engaging with their customers and public authorities.

NZAM is committed to "supporting" the goal of net zero by 2050. Accordingly, its members must set an intermediate target for the proportion of assets supposed to be "aligned" with net zero objectives by 2050. NZAM members therefore undertake to set a target for the proportion of assets under management that are supposed to be aligned with a net zero target, and not to reduce the volume of emissions financed[68].

Use of different scenarios

Not all alliances use the same baseline scenarios, they do not always refer to them explicitly, and they do not always provide a uniform methodology for setting intermediate targets.

For example, the NZBA allows a free choice of reference scenario[69]. However, there are many safeguards: these scenarios must be "aligned" with a 1.5°C trajectory, and come from "credible" and "recognised" sources. Banks must disclose the chosen scenario and explain the reasons for their choice. The IEA and IPCC models are "highly recommended". Others may be chosen, provided they allow for a low or zero overshoot, have low dependence on negative emissions and, where appropriate, they must be scientifically supported. Furthermore, the use of carbon credits must be residual, additional and certified[70].

The NZAOA specifies that members should use the IEA or OECM scenarios to allocate carbon budgets by sector[71]. In addition, members shall not make their climate neutrality strategy dependent on negative emissions and must prioritise emissions reduction[72]. NZAOA members must set targets in at least three

68 For the asset to be considered aligned, the company simply has to have committed to set reduction targets.

69 NZBA, Target Setting Protocol, Guideline 3, p. 17.

70 NZBA, Target Setting Protocol, p. 12.

71 NZAOA, Target Setting Protocol, Fourth Edition, p. 30.

72 *Ibid.*, p. 11.

out of four fields[73]: engagement, sectoral reduction targets, portfolio reduction targets, or investment in climate solutions. The setting of engagement targets is mandatory.

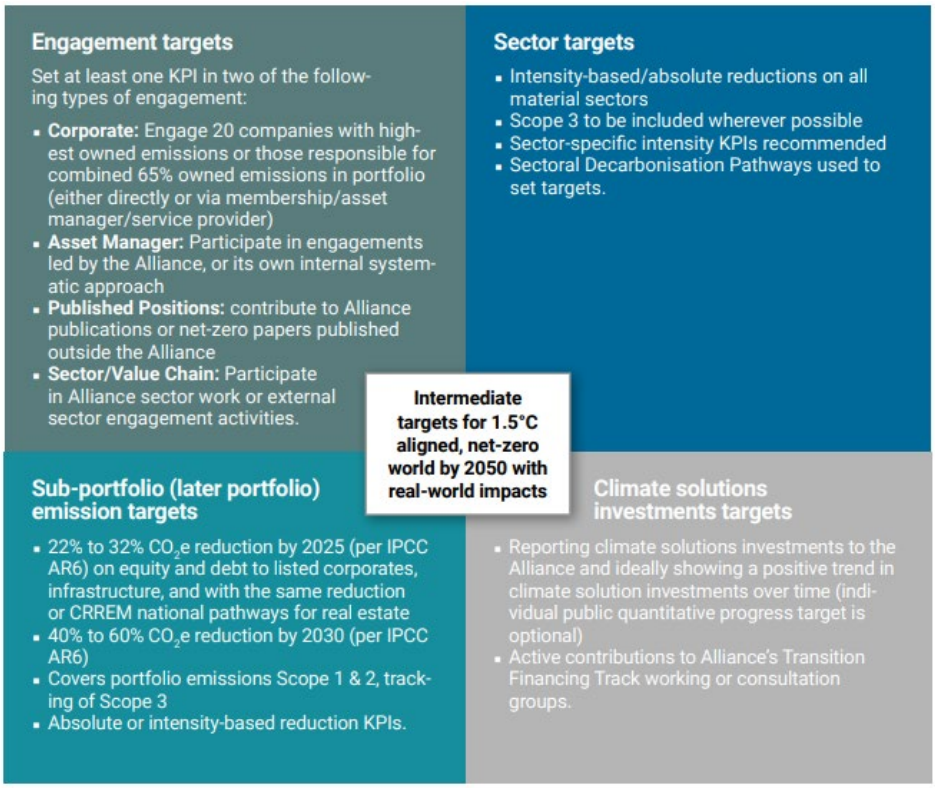


Figure I: Summary of four-part target-setting approach

The NZIA allows its members to choose between the global or sectoral approach for decarbonisation targets, and between intensity or absolute targets. It refers to the scenarios cited by the IPCC AR6 WGIII C1[74]. However, it sets a minimum threshold for reducing portfolio emissions by 34% by 2030 in line with the IEA's work. The NZIA Reduction Target Setting Protocol states that the use of negative emission technologies should not be incorporated into progress in reducing emissions.

The NZAM refers to the NZIF, which does not mention a baseline scenario. However, the NZIF specifies that the scenarios chosen by investors must be explained, associated with a 50% probability of limiting warming to 1.5°C, achieve net zero by 2050, provide for different trajectories by region and by sector, reach a peak in emissions in the same year or the following year, ideally be a multi-sectoral model taking into account all sources of emissions, and rely on a limited volume of negative emission technologies. Investors must explain the chosen scenario, its main assumptions and limitations, and the reasons why the chosen scenario does not comply with the aforementioned conditions, if applicable.[75] In addition, the NZIF allows for the possibility of referring to the scenario produced by the IEA in the near future.

73 *Ibid.*, p. 11.

74 NZIA, Target Setting Protocol, p. 21.

75 *Ibid.*, p. 11.

Some alliances also cite the Science-Based Targets initiative (SBTi), allowing for collaboration and an aligned target setting methodology. Some alliances such as the NZAOA encourage members to seek SBTi validation.

The approach to fossil fuels

The alliances encourage financial players to engage in dialogue with companies and public authorities to support the setting of ambitious targets for the decarbonisation of their fossil fuel portfolio. In addition, members undertake to establish intermediate emission reduction targets in the most carbon-intensive sectors in their portfolios.

The alliances are not prescriptive in terms of the method or the scale of the decarbonisation targets of each sector. For example, the NZAOA has published position papers on coal[76] and on gas and oil[77], which can be summarised as follows:

→ Members should not provide new funding to infrastructure whose purpose or emissions cannot be aligned with the alliance's net zero target (itself guided by the IPCC, OECM and IEA scenarios).

→ For oil, members should not fund assets that are not aligned with 1.5°C, scientific or governmental reference scenarios. In particular, upstream projects after 2021 should not be financed.

→ For gas, members should not invest in assets that are not aligned with scientific or government 1.5°C scenarios.

→ For coal, members should not finance new facilities, should immediately terminate any new facilities project, and exit all existing production infrastructure by 2040, in line with IEA scenarios.

Figure 5: Positions on oil, gas and associated energy infrastructure project investment

Fuel	Oil	Gas
Upstream	No new oil fields should be financed, built, developed, or planned. Investment should be limited to existing oil fields.	No new gas fields should be financed, built, developed, or planned. Investment should be limited to existing gas fields.
Mid-stream	Investment in oil pipeline distribution and storage should be limited to brownfield projects.	Investment in gas pipeline transmission, distribution and storage should be limited to brownfield projects. Investments in the conversion of gas pipelines to transport hydrogen are acceptable. No investment in new midstream infrastructure for gas, unless aligned with 1.5°C low/no overshoot pathways.
Downstream	No investment should be made in oil-fired power generation infrastructure. Investment in refineries and petrochemicals should be limited to brownfield projects (e.g., to promote efficiency or eliminate fugitive methane emissions).	No investment should be made in unabated new baseload gas-fired power generation or in infrastructure using gas as a fuel to produce hydrogen in the absence of carbon capture, utilisation and storage (CCUS). No new gas infrastructure unless it is designed with carbon reduction measures sufficient to align with 1.5°C low/no overshoot pathways.

76 NZAOA, Thermal Coal Position, 13 February 2024.

77 NZAOA, Position on the Oil and Gas Sector, March 2023.

In addition, members choosing to set sectoral reduction targets must cover the oil and gas sector, as well as utilities (including coal)[78].

For the other alliances, the issue of fossil fuels is addressed by the baseline scenario chosen, then by the methodologies for setting targets aligned with the umbrella commitment of carbon neutrality by 2050 to which the alliances refer. For example, NZAMI allows its members to choose between three methodologies: the PAAI Net Zero Investment Framework, the SBTi, and the NZAOA Target Setting Protocol.

3. IMPLEMENTATION IN PROGRESS

The NZBA's 2024 implementation report shows that 97% of its members who had committed to set emission reduction targets (within 18 months of joining) did so. Of these banks, 36 have set targets for the coal sector and 60 for the oil and gas sector[79].

The third NZAOA Progress Report shows that 69 of the 86 members have set emission reduction targets. 67 have set targets per sub-portfolio, 69 have set targets for engagement, 68 have set targets for climate solutions, but only 9 have set targets per sector. For the oil and gas sectors, (the metrics used to define the sectoral targets being operational carbon intensity for Scopes 1 and 2), the reduction targets are at least 11% and at most 43.2%, with an average of 28.7%[80]. With regard to compliance with the alliance's coal positions, 82% of the members who have taken positions on the subject comply with the three criteria[81].

As of November 2022, 39% of the assets managed by NZAMI members were covered by a target[82]. 87 signatories chose to use the PAAI reduction target setting methodology (NZIF). 39 chose the SBTi protocol and nine chose the NZAOA protocol. 23 use a combination, and 11 have their own methodology.

78 NZAOA, Target Setting Protocol, Fourth Edition, April 2024, p. 30.

79 NZBA, Progress Report 2024.

80 NZAOA, Third Progress Report, April 2024, p. 23.

81 *Ibid*., p. 24.

82 GFANZ, 2022 Progress Report, p. 14.

TABLE COMPARING THE MAIN CHARACTERISTICS OF THE GFANZ ALLIANCES

Sector alliance	Climate target	Scope of commitment	Role of CCS
NZBA	1.5°C - Net Zero 2050	"Targets shall at a minimum align with a goal to limit global warming to 1.5°C above the preindustrial average by the end of the century, be science-based and support the transition towards a net zero economy by 2050. Targets shall cover lending activities and capital markets arranging and underwriting activities (both equity and debt, by 1 November 2025), and should cover investment activities."	"The reliance on carbon offsetting for achieving end-state net zero should be restricted to carbon removals to balance residual emissions where there are limited technologically or financially viable alternatives to eliminate emissions. Offsets should always be additional and certified."
NZAOA	1.5°C - Net Zero 2050	"Transitioning its investment portfolios to net zero GHG emissions by 2050 consistent with a maximum temperature rise of 1.5°C above pre-industrial levels"	"Prioritise deep and rapid decarbonisation across all sectors, particularly the carbon-intensive industries. 2. Track progress against net zero goals and ensure accountability such that the employment of carbon removals does not deter or detract from decarbonisation efforts and/or ambition on a wider scale"
NZIA	1.5°C - Net Zero 2050	"Transitioning all operational and attributable greenhouse gas (GHG) emissions from its insurance and reinsurance portfolios to net zero emissions by 2050 consistent with a maximum temperature rise of 1.5°C by 2100 in order to contribute to the implementation of the Paris Agreement."	"The reliance on carbon offsetting for achieving end-state net zero should be restricted to carbon removals to balance residual emissions where there are limited technologically or financially viable alternatives to eliminate emissions. Offsets should always be additional and certified"
NZAMI	1.5°C - Net Zero 2050	"Support the goal of net zero greenhouse gas ('GHG') emissions by 2050, in line with global efforts to limit warming to 1.5°C ('net zero emissions by 2050 or sooner')"	"Prioritise the achievement of real economy emissions reductions within the sectors and companies in which we invest. If using offsets, invest in long-term carbon removal, where there are no technologically and/or financially viable alternatives to eliminate emissions"

Source: IFD.

	Recommended methodologies	Fossil fuel policy	Implementation
	NZBA Guidelines	Indirectly via the choice of a baseline scenario and the setting of targets for the most carbon-intensive sectors, including coal and oil and gas.	97% of members who should have set sectoral decarbonisation targets by May 2024 had done so.
	NZAOA Target Setting Protocol.	Position Papers on coal and gas and oil, aligned with IEA scenarios.	80% of members have set emissions reduction targets.
	NZIA Target Setting Protocol.	Indirectly through the choice of a scenario.	Not available.
	Choice between SBTi methodologies or NZAOA or NZIF target setting protocols	Unspecified, this will depend on the chosen methodology.	39% of the assets managed by members are covered by a target.

COMPARISON TABLE OF GFANZ TARGET SETTING METHODOLOGIES

	Baseline scenario	Scope of targets and emissions scopes concerned
NZBA Guidelines	"Scenarios and scenarios derived from IPCC-qualifying models that meet Criteria" defined in the guidelines (p. 17).	Scope 1, 2 and as far as possible 3. "The targets shall cover a significant majority of a bank's Scope 3 financed emissions, including those from all or a substantial majority of a list of carbon-intensive sectors (detailed below). Banks' targets shall include their clients' Scope 1, Scope 2 and Scope 3 emissions."[83]
NZAOA TSP	For sector targets: "One Earth Climate Model (Teske et al. 2020) or the IEA model to set sector targets"[88]. For targets by portfolio: "IPCC 1.5°C SR scenarios"[89].	Scope 1, 2 and as far as possible 3. "Targets shall be set on the members' own Scope 3 emissions related to investments. Alliance members should set net zero targets on their own Scope 1 and 2 emissions. Members shall set targets on Scope 1 and 2 emissions for their underlying holdings and should do so on Scope 3 of underlying holdings for 'priority sectors' as soon as possible. At the portfolio level, Alliance members should track portfolio company Scope 3 emissions, but are not yet expected to set targets until interpretation of these emissions in a portfolio context becomes clearer and data becomes more reliable"[90]

83 NZBA, Guidelines, p. 7.

84 NZBA, Guidance, p. 4.

85 NZBA, Guidelines, p. 8.

86 NZBA, Guidance, p. 10.

87 NZBA, Emerging Practice: Climate Target Setting for Oil & Gas Financing, May 2024.

88 NZAOA, Target Setting Protocol, p. 32.

89 NZAOA, Target Setting Protocol, p. 12.

90 NZAOA, Target Setting Protocol, p. 11.

91 NZAOA, Target Setting Protocol, p. 11.

92 NZAOA, Target Setting Protocol, p. 15.

93 NZAOA, Target Setting Protocol, p. 71.

	Intermediate targets	Absolute or intensity targets	Specific integration of fossil fuels
	"Banks shall set, at a minimum, a 2030 (or sooner) and 2050 target. Further intermediate targets shall be set at least every five years after the initial intermediate target. As each subsequent intermediate target year is approached, the next intermediate five-year target shall be set. An overview of planned actions to meet the targets shall be provided."[84]	"Targets shall be set based on: – Absolute emissions; and/or – Sector-specific emissions intensity (e.g., CO_2e/ metric)"[85]	"Within 36 months of signing the Commitment, sector-level targets shall be set for all, or a substantial majority of, the carbon-intensive sectors. These sectors include agriculture; aluminium; cement; coal; commercial and residential real estate; iron and steel; oil and gas; power generation; and transport. Any client with more than 5% of revenue coming directly from thermal coal mining and coal-powered electricity generation activities shall be included in the scope of targets."[86] Guidance published in May 2024[87]
	"The Alliance Commitment requires its members to publish interim targets on a five-year cycle. To maintain consistency with the Alliance reporting cycle, public targets issued more than three years prior should not be considered"[91]	For sector or portfolio targets: "Absolute or intensity-based."[92]	"For coal, Alliance members shall follow the Alliance's position paper regarding thermal coal. – For oil, members shall not finance assets which are not aligned with science-based or government-issued regional/national 1.5°C degree pathways, especially not finance upstream greenfield projects beyond those already committed by the end of 2021. – For gas, members shall not invest in assets which are not aligned with science based or government-issued regional/national 1.5°C degree pathways."[93]

COMPARISON TABLE OF GFANZ TARGET SETTING METHODOLOGIES

	Baseline scenario	Scope of targets and emissions scopes concerned
NZIA TSP	"Intergovernmental Panel on Climate Change (2021–2022): 6th Assessment Report" or "International Energy Agency (2021): Net Zero by 2050: A roadmap for the global energy sector"[94]	Scope 1, 2 and as far as possible 3 directly concerning the company. "NZIA members shall individually set portfolio target boundaries for a material and relevant portion of their respective portfolios where reliable data is available"[95] "The Protocol addresses a re/insurer's Insurance-Associated Emissions (IAE), i.e. Scope 3. In particular, a re/insurer's emissions from its own operations (Scope 1, Scope 2, Scope 3) and asset management activities (Scope 3) are outside the scope of the Protocol, as they are covered by other relevant protocols."[96]
NZIF	Free choice subject to certain guarantees.	Percentage of assets of companies that say they are aligned. "A 5-year portfolio coverage target for increasing the percentage of AUM in material sectors that are i) achieving net zero, or, meeting the criteria to be considered ii) 'aligned' to net zero, or iii) 'aligning' to net zero. An engagement threshold which ensures that at least 70% of financed emissions in material sectors are either assessed as net zero, aligned with a net zero pathway, or the subject of direct or collective engagement and stewardship actions."[99][100]
SBTi[103]	"Well below 2°C scenario"[104]	Scope 1, 2 and as far as possible 3. "Financial institutions (FIs) must set a target(s) that covers institution-wide Scope 1 and Scope 2 emissions, as defined by the GHG Protocol Corporate Standard, and Scope 3 investment and lending activities as per FI-C15 and FI-C16. FIs may set targets for remaining Scope 3 emissions categories as per FI-R9."

Source: IFD.

94 NZIA, Target Setting Protocol, p. 5.

95 NZIA, Target Setting Protocol, p. 11.

96 NZIA, Target Setting Protocol, p 15.

97 NZIA, Target Setting Protocol, p. 18.

98 NZIA, Target Setting Protocol, p. 25.

99 NZIF, IIGCC Target Setting Guidance, p. 5.

100 "An aggregated 5-year portfolio coverage target and engagement threshold should cover at least listed equity, corporate fixed income, and real estate. Sovereign bonds may be considered separately," *Ibid.*, p. 6.

101 NZIF, IGCC, Target Setting Guidance, p. 19.

102 NZIF, IIGCC Target Setting Guidance, p. 19.

103 The SBTi framework is particularly useful for investors in their portfolio management.

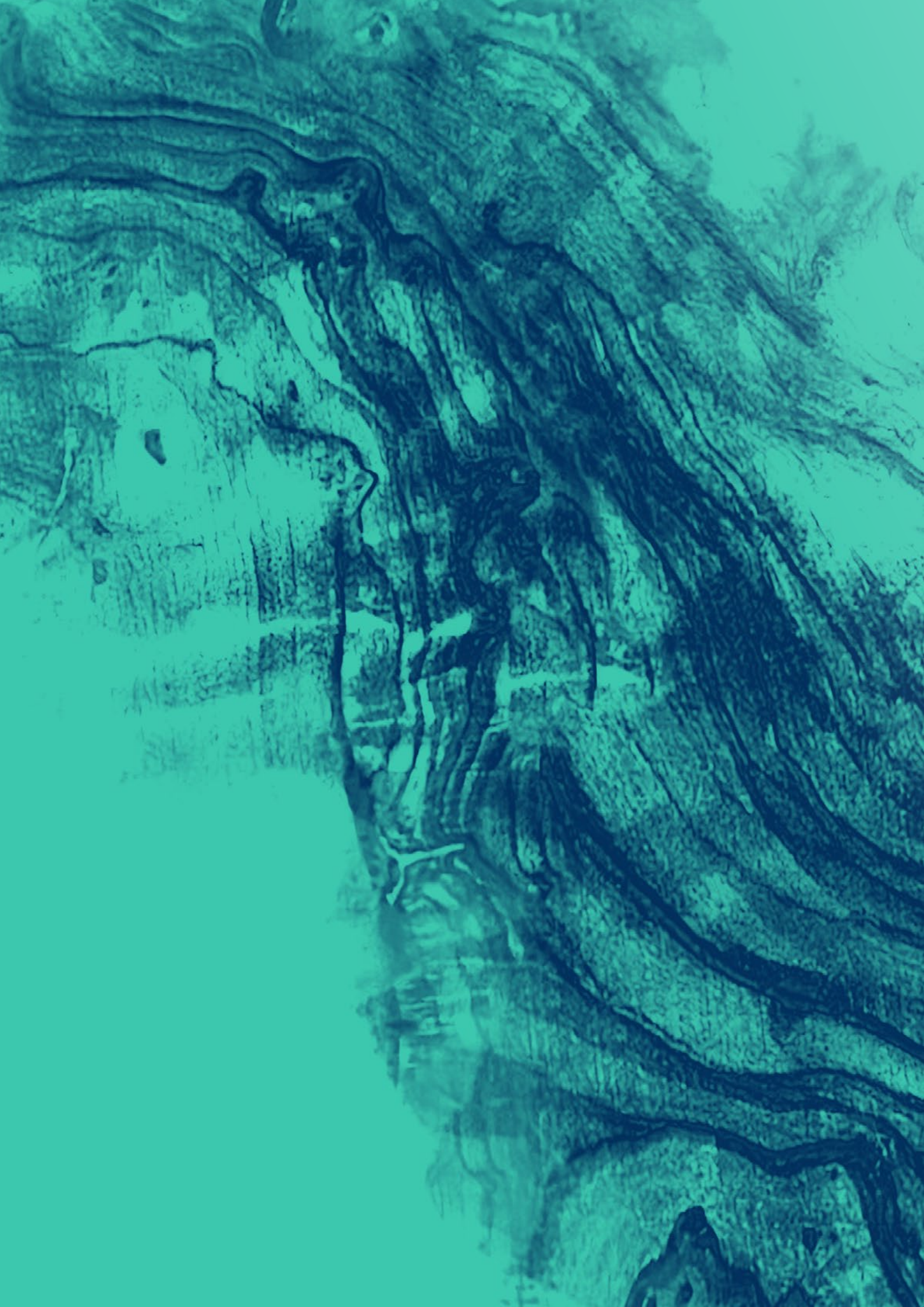
104 SBTi, Financial Sector Science Based Targets Guidance, August 2022.

105 SBTi, Financial Sector Science Based Targets Guidance, p. 31.

106 SBTi, Financial Sector Science Based Targets Guidance, p. 47.

107 SBTi, Financial Sector Science Based Targets Guidance, p. 96.

	Intermediate targets	Absolute or intensity targets	Specific integration of fossil fuels
	"NZIA members shall adopt a target year no later than 2030 for their near-term targets, and thereafter publish interim targets every five years in 2035, 2040, and 2045."[97]	"NZIA members may also choose between intensity-based or absolute overarching emissions reduction targets. […] Reduction target shall result in absolute emissions reductions in line with the minimum threshold of 34%. NZIA members may also choose, at their discretion, to adopt an intensity-based overarching emissions reduction target that results in absolute emissions reductions greater than 60%."[98]	Not specified.
	"The Net Zero Investment Framework currently recommends 5 year asset level portfolio coverage targets, and <10 year portfolio level emissions reduction and investment in climate solutions targets."[101]	"Absolute or intensity"[102]	Not specified.
	"Targets must cover a minimum of 5 years and a maximum of 15 years from the date the target is submitted to the SBTi for an official validation" "Financial institutions are encouraged to develop such long-term targets up to 2050 in addition to midterm targets"[105]	"Intensity targets for Scope 1 and Scope 2 emissions are only eligible when they lead to absolute emissions reduction targets in line with climate scenarios for keeping global warming to well-below 2°C or when they are modelled using an approved sector pathway."[106]	"FI-R10 – Phaseout of thermal coal investments: Financial institutions should establish a policy within six months from the time of target approval that they will phase out financial support to thermal coal across all their activities in line with a full phaseout by 2030 globally. FI-R11– Disclosure of Fossil Fuel Investments and Lending: Financial institutions with approved SBTs should annually disclose [information]."[107]



III. BEST PRACTICES: SCIENCE AS A COMPASS FOR CLIMATE ACTION AT THE HEART OF FINANCIAL STRATEGY

CLIMATE SCENARIOS: ESSENTIAL FOR THE PROPER IMPLEMENTATION OF CLIMATE COMMITMENTS

Financial companies are increasingly being called upon by stakeholders to produce information on their alignment with the objectives of the Paris Agreement. **Committing to aligning a portfolio with a Net Zero 2050 or 1.5°C trajectory requires defining which baseline trajectory to follow between now and 2050.**

Analysis of the trajectories compatible with a 1.5°C scenario shows the wide range of possible trajectories. The scenarios are based on very different assumptions depending on the decarbonisation levers used in their modelling. They have varying degrees of ambition in terms of technological and industrial development depending on the types of decarbonisation levers. Scenarios are trajectories to reach a specific point in the future: any prospective exercise is inherently uncertain, especially over periods of time spanning several decades or even a century. **But the scenarios adopted by financial institutions are essential to understand the path they take, their narrative on the future and thus their transition strategy.**

Message no. 1: **Forward-looking exercises are invaluable in managing an organisation's transition.**

Forward-looking analysis by scenario is a useful method to address energy and climate issues (mitigation and adaptation), and to understand the associated uncertainties. As the Shift Project report for AFEP points out, "*This method has gained recognition for modelling access to resources for an organisation within an uncertain future (it has been used for example in wartime economy and reconstruction planning). Energy operators, including oil and gas companies, frequently use this method as well. Applying scenario-based foresight analysis to energy transition and climate-related issues offers multiple valuable ways of helping companies' managers to identify business disruptions, manage uncertainties and finally build more robust strategies*"[108].

Message no. 2: **Information on the chosen baseline scenario as well as on working hypotheses is necessary for a proper understanding of the climate commitments of financial institutions**

Financial institutions must base their strategy on a baseline climate scenario (IPCC, IEA, BNEF, NGFS, etc.) that can be adapted to their scope of activity (both geographical and sectoral). What is most important is the transparency of the working hypotheses and the baseline scenario used: decarbonisation levers, tangible actions (quantified, budgeted), and provisional timetable. The financial institution's alignment with the objective of the Paris Agreement can be assessed on this basis. This detailed trajectory is essential to be able to compare the vision with the tangible actions the institution wishes to implement.

108 Energy-climate scenarios: Evaluation and Instructions, The Shift Project for AFEP, November 2019, link.

Message no. 3: **It is important to ensure that the assumptions used when drawing up the climate strategy are consistent with those of the institution's overall strategy.**

The climate strategy is not limited to a regulatory compliance exercise but is fully integrated into the financial institution's overall strategy. This consistency between the various strategic components is also recalled in European standards for the application of the CSRD.

A. APPROACH CLIMATE SCENARIOS WITH RIGOUR AND CAUTION

To implement a forward-looking analysis based on climate scenarios, the first step is to have a good understanding of the components of the scenario.

Best Practice 1: **Use benchmark scenarios from the scientific community to understand the major global trends and thus build a science-based climate strategy.**

There is a wide variety of climate scenarios modelled by a multitude of research institutes and international agencies. The first step is to recognise this diversity in order to understand the choices for the fight against climate change. Each of these scenarios reflects different "narratives" of the future based on different sets of assumptions. See the taskforce's first publication, Fossil energies: analysis of trajectories compatible with a 1.5°C scenario, published in June 2024, aimed at drawing the main lessons from climate scenarios aligned with the Paris Agreement.

Best Practice 2: **Identify the most relevant physical indicators to understand climate scenarios and monitor the implementation of the climate strategy by the organisation.**

Climate scenarios developed by research institutes and other international organisations are relatively complex because they include a large number of variables and indicators.

The global physical indicators to be monitored as a priority are:

- Greenhouse gas emissions (at the global level or for any relevant geographical sub-division);
- Overall primary energy demand (and electricity demand);
- Demand for gas, oil and coal;
- The supply of low-carbon energy (solar, wind, hydrogen, biomass, etc.);
- The annual carbon storage capacities of negative emission solutions (CCS, BECCS, DACCS, reforestation, etc.);
- Levels of investment in the energy transition and in fossil fuels (when scenarios make them available).

The indicators used to monitor the implementation of the organisation's climate strategy are to be determined by each financial institution according to the sectors covered. They must make it possible to monitor the various levers to be activated by companies.

Best Practice 3: Regularly update the baseline scenario to be up to date with the most recent data on the actual progress of technologies and changes in demand.

The assumptions made in the scenarios reflect the state of knowledge and how we can consider the different conditions under which the transition could take place. The decarbonisation trajectories in the different scenarios include assumptions regarding the mobilisation of multiple decarbonisation drivers (deployment of renewable energy, carbon capture and storage, carbon elimination technologies, hydrogen, biomass, energy efficiency, fuel economy, etc.). These assumptions may prove conservative or, on the contrary, ambitious compared to empirical observations and real developments.

By construction, some scenarios will rely more on the exponential development of low-carbon energies and a sharp decline in fossil fuels. Others will project a more gradual decline in fossil fuels, with optimistic assumptions about the capacity to scale up carbon capture and storage. Others expect major deployments of hydrogen and biomass. These different assumptions may be more or less likely depending on current scientific knowledge.

By nature, scenario modelling has limits for understanding the world. Like any modelling exercise, these scenarios are useful for projecting and anticipating major trends based on established assumptions, but they are not intended to make precise forecasts of the future[109].

Best Practice 4: Avoid cherry-picking scenarios: choose a baseline scenario and stick to it.

Using averages or data drawn from different scenarios (cherry-picking) to set quantitative objectives for an investment strategy is not a rigorous approach to building a climate strategy aligned with the 1.5°C target because each scenario is based on a set of coherent assumptions that makes it possible to comply with a predefined carbon budget. This means being vigilant in the use of scenarios and understanding each one's assumptions. It is therefore preferable to primarily use one baseline scenario for the overall investment strategy and to stick to it.

109 Regarding the limitations inherent in these models, see the report Fossil energies: analysis of trajectories compatible with a 1.5°C scenario (IFD, June 2024).

Best Practice 4a: If additional data is needed, round out the baseline scenario with specific sector or geographic scenarios, ensuring overall consistency.

There are cases where there may be a shortage of data in one scenario to cover the institution's entire geographical or sectoral scope. For example, for the French scope, it may be useful to refer to the trajectories of the National Low-Carbon Strategy rather than to global trajectories that do not take into account specific national commitments. Also, some sector models are much more granular in terms of data, enabling financial players to make their own projections. It is thus possible to supplement the global scenarios with sectoral scenarios or scenarios that specifically break down the trajectory of a geographical sub-scope. In this case, the consistency of the scenarios is verified and justifies the choices made.

Best Practice 5: Prioritise the use of scenarios made available by leading governments and international organisations, whether at the global, regional or national level.

Today, there is no detailed 1.5°C scenario subject to global consensus on how to implement the Paris Agreement. The international negotiation process at annual COPs leaves governments fully in control of their climate trajectories to achieve the objectives of the Agreement. However, certain scenarios are gradually emerging as benchmarks at the global level. The IPCC pathways are a first benchmark, but there is no single IPCC scenario, they are instead a database of thousands of scenarios compiled by researchers around the world. The IEA NZE, established with the support of 31 OECD member countries, was at the heart of discussions at COP 28 (in particular the objectives of doubling energy efficiency and tripling renewable energy production).

At the regional or national level, certain scenarios that are in line with the Paris Agreement vary in terms of their detail and objectives. For example, in France, the National Low-Carbon Strategy aims to be the reference scenario for the decarbonisation of the French economy. It requires the provision of granular data by the public authorities to be used by organisations (see point 4).

B. CHOOSE A BASELINE CLIMATE SCENARIO BASED ON THE BEST SCIENTIFIC KNOWLEDGE

As seen in the first part of the report, the scientific consensus provides a framework for the physical and socio-economic feasibility of these trajectories. The current state of science can also give some indication of the development potential of each of the levers. Some levers are subject to major physical constraints that need to be taken into account in the choice of reference scenarios.

Best Practice 6: Choose a scenario for a 1.5°C trajectory with zero or low overshoot, as negative emission technologies are not very mature at this stage.

The Intergovernmental Panel on Climate Change (IPCC) defines overshoot as exceeding the target temperature (1.5°C in 2100) during the current century - usually at between 1.5°C and 2°C - before returning to this level at the end of the century. Overshoot occurs when the carbon budget is exceeded before net zero is reached. The fundamental hypothesis of scenarios incorporating an overshoot is that once net zero is reached (generally in 2050), negative emission techniques would be available to make up for the lag accumulated in the first half of the century. This is an ambitious assumption, given that no negative emission techniques can currently be developed on a large scale. However, the scientific consensus is now converging to consider that it is impossible to meet the objective of limiting global warming to 1.5°C without a minimum overshoot (and therefore deployment of negative emission technologies between 2050 and 2100). Over and above the overshoot consideration, the chosen scenario must be based on reasonable volumes of negative emissions, including before 2050 and not only after this date[110] (see below).

It is therefore advisable to rely on scenarios with a low overshoot, i.e. scenarios with conservative assumptions regarding the development of negative emission technologies. In other words, to remain aligned with 1.5°C, it is above all necessary to drastically reduce emissions from 2030 to avoid exceeding the global carbon budget before 2050. This Best Practice is recommended by the GFANZ net zero member alliances.

Best Practice 7: Choose a baseline scenario based on a realistic mobilisation of decarbonisation levers in the light of the scientific consensus.

While it is difficult to anticipate the development of future decarbonisation technologies over several decades, scientific research can provide a framework for their technological maturity and their capacity for development given physical and socio-economic constraints. As climate science is evolving, regularly monitoring the pace of development of decarbonisation levers makes it possible to keep this monitoring framework up to date.

110 See the IPCC's work summarised into several negative emissions "ranges" by the IISD to filter out scenarios that would not meet this criterion, for example: https://www.iisd.org/publications/report/navigating-energy-transitions Recent research suggests that the ranges in question are still far too optimistic compared to actual capture capacities (see: https://www.nature.com/articles/s41467-024-51226-8) So these are optimistic assumptions.

To date, in the current state of the science (see Part I for more details), certain major trends must be considered by financial players when choosing reference scenarios:

→ **The continued strong growth of renewable energies and, more broadly, in low-carbon energies, particularly hydroelectric and nuclear power, which can be controlled.**

Ahead of COP 28, the IEA recommended that signatory states triple renewable energy capacity by 2030. This appeared in the final text of the agreement signed by the 198 governments present. Today, the growth of renewable energy is exponential: each year, the IEA increases its projections for the development of renewable energy capacity in light of global progress. In addition to the development of intermittent renewable energies, the scenarios also anticipate the development of all low-carbon energies, including hydropower and nuclear power, which is an integral part of international strategies to develop a low-carbon energy mix.

→ **Limited role of biomass given its low availability, conflicts of use, environmental impact and current regulations.**

As seen in the first part of the report, biomass is subject to conflicts of use. The first of these uses is for food, which already takes up the majority of the arable land available on the planet. With population growth and declining agricultural productivity due to climate change, it is difficult to imagine redirecting a significant share of land to biofuel production or electricity production, for example. For example, it would seem unreasonable to rely on biomass to decarbonise the transport sector. Priority should be given to the use of biomass for sectors that are difficult to decarbonise. Finally, it should be remembered that in the European Union scope, regulations (RED II Directive, 2018) very clearly govern the definition of bioenergies considered "sustainable", which greatly limits the use of biomass as a long-term energy solution[111].

→ **Although necessary to achieve carbon neutrality, the development of carbon capture, storage and disposal techniques is restricted, in particular by physical limitations.**

As seen in the first chapter, these technologies will probably be necessary to achieve the 1.5°C target, but they have major constraints, particularly in terms of physical limits and project costs. It thus appears that CCS and CDR should be prioritised for sectors where abatement is difficult.

According to Achakulwisut et al. (2023)[112], in scenarios limiting warming to 1.5°C with no or low overshoot, the global supply of coal, oil and natural gas (for all uses) decreases on average by 95%, 62% and 42%, respectively, between 2020 and 2050, but the long-term role of gas is highly variable. Increased gas use is made possible by increased carbon capture and storage (CCS) and carbon dioxide removal (CDR), but it is likely subject to inadequate model representation of regional carbon storage capacity and technology adoption, diffusion and dependence on trajectories. While CDR is constrained by the limitations arising from expert consensus, the respective modelled reductions for coal, oil and gas are 99%, 70% and 84%.

111 For more details: https://www.ecologie.gouv.fr/politiques-publiques/durabilite-bioenergies

112 Achakulwisut et al., (2023), Global fossil fuel reduction pathways under different climate mitigation strategies and ambitions, Nature Communications.

→ **Green hydrogen has varying importance in the transition as costs remain very high and the prospects for scaling up are uncertain; to be used in the first place for the sectors most difficult to decarbonise.**

Given the latest analysis of the development potential of hydrogen-based technologies, it is highly likely that hydrogen will continue to play a relatively minor role in decarbonising the global economy. Given its cost and the difficulty in developing it at scale, hydrogen must be prioritised for the sectors that are most difficult to decarbonise, in particular industry and heavy vehicle transport.

→ **Energy efficiency and electrification play a central role as the vast majority of technological solutions in this are already known and mature.**

Energy efficiency is a quick win: in addition to lowering CO_2 emissions, it increases energy security and lowers consumer bills. Energy efficiency techniques (electrification, energy renovation, improvement of industrial processes, heat recovery, etc.) are well known and mature enough to scale up quickly. In addition, the shift to electrification of industrial uses and processes will reduce CO_2 emissions.

C. DEFINE STRATEGIES WITH TANGIBLE, QUANTIFIED AND BUDGETED ACTIONS AND A PROVISIONAL TIMETABLE

Best Practice 8: Set objectives and quantify climate trajectories, as far as possible.

In this exercise of quantifying trajectories (which applies to Scope 3 category 15[113]), it is necessary to be as exhaustive as possible when the data and methodologies allow:

→ Specify the weight of each decarbonisation lever in terms of emission reductions;

→ Break down the trajectory by financial products and services, as methodologies allow;

→ Have quantified emission reduction targets, particularly for high-impact sectors;

→ Define targets for the fossil fuel sector and all sectors with high emissions;

→ Define absolute value objectives in the fossil fuel sectors and a phase out policy that can replace this target.

Best Practice 9: Monitor a ratio comparing financing and investments in low-carbon energies with those for fossil fuels.

Some scenarios model the investments needed in carbon-free energy (IEA, BloombergNEF, etc.). It can be useful to compare the activity ratios of financial players (financing, investments, financial services) with the major global investment trends needed to remain below the 1.5°C global warming target.

The challenge remains defining what enters the ratio numerator and the denominator. Beyond the opposition between low-carbon energies and fossil fuels, there is the question of the exact scope of energies considered to be low carbon[114], the integration of investments and financing in improving the flexibility of network and storage capacities, and the scope of investments and financing in fossil fuels across the entire sector value chain[115] (upstream, midstream, downstream, trading). Also, this ratio can consider outstanding positions (portfolio exposure) or financial flows and therefore may not reflect the same circumstances. Thus, regardless of the definition used, for any disclosure of these data, the aim is to ensure the transparency of the definitions and the comparability of the scopes with the definitions used by the institutions that produce these ratios to enable effective monitoring of the dynamics at play.

113 Investment-related emissions, as classified in Scope 3 Category 15 in the GHG Protocol Corporate Value Chain (Standard Scope 3), include greenhouse gas emissions associated with investees' operations, including investments in equity, debt and project financing that are not already included in Scope 1 or 2 emissions.

114 For the IEA, investments in low-carbon energy include "renewable energy, energy efficiency, low-carbon fuels, nuclear energy, battery storage and carbon capture, use and storage". However, we can question more specifically the relevance of integrating, in particular, certain unsustainable bioenergies or CC(U)S coupled with a fossil power plant, for example.

115 For the IEA, investments in fossil fuels include all investments in the entire value chain whether coal, oil or gas (including investments in the maintenance and optimisation of emissions from the extraction and processing activity as such).

In addition, two ratio variants are possible: a ratio whose covering both energy supply and demand (target ratio of 10:1 in 2030 for the IEA – energy financing ratio) or a ratio covering only energy supply (target ratio of 6:1 in 2030 for the IEA – energy supply financing ratio), the energy supply covering electricity generation, its transmission (therefore the grid), its storage, and the entire fossil value chain ratio denominator.

Best Practice 10: Establish medium- and long-term transition points.

The aim is to translate climate objectives into tangible, time-bound actions. Most of the GFANZ alliances recommend setting targets on a regular basis (every five years and at least an intermediate target for 2030). By way of illustration, the IEA[116] carried out this exercise for its NZE scenario by setting short- and medium-term objectives to be met in order to remain in line with the scenario.

D. NEXT STEPS TO CLARIFY THE FRAMEWORK FOR ACTION BY FINANCIAL PLAYERS IN THE ENERGY TRANSITION

Members of the Paris Financial Centre are firmly committed to the energy transition. To accelerate momentum, **a clarification of the framework for action is needed. Financial institutions cannot act alone to achieve a goal of carbon neutrality by 2050.** For the ambition to translate into significant emission reductions, there needs to be ongoing dialogue and resolute joint action between policymakers, financial players and the real economy. Public policies that foster the acceleration of action by businesses and households are necessary for financial institutions to play their role in supporting the transition of the real economy.

These climate trajectories fall under national and international commitments under the Paris Agreement but must be applied with as much granularity as possible so that financial players can follow them. As such, the IFD has identified two needs to successfully complete this transition:

Work on harmonising transition financing management indicators based on shared scenarios.

To establish a coherent strategy for financing the ecological transition and enable monitoring of the proper implementation of this strategy, a convergent approach on the definition of financing for the transition seems necessary**.**

The proper prioritisation of financing needs is a necessary prerequisite for mobilising savings and triggering transition investments by households, businesses and public sector players. The aim is to ensure the consistency of the various initiatives to converge towards a harmonised vision of what financing contributes to the climate transition.

116 See Part I.

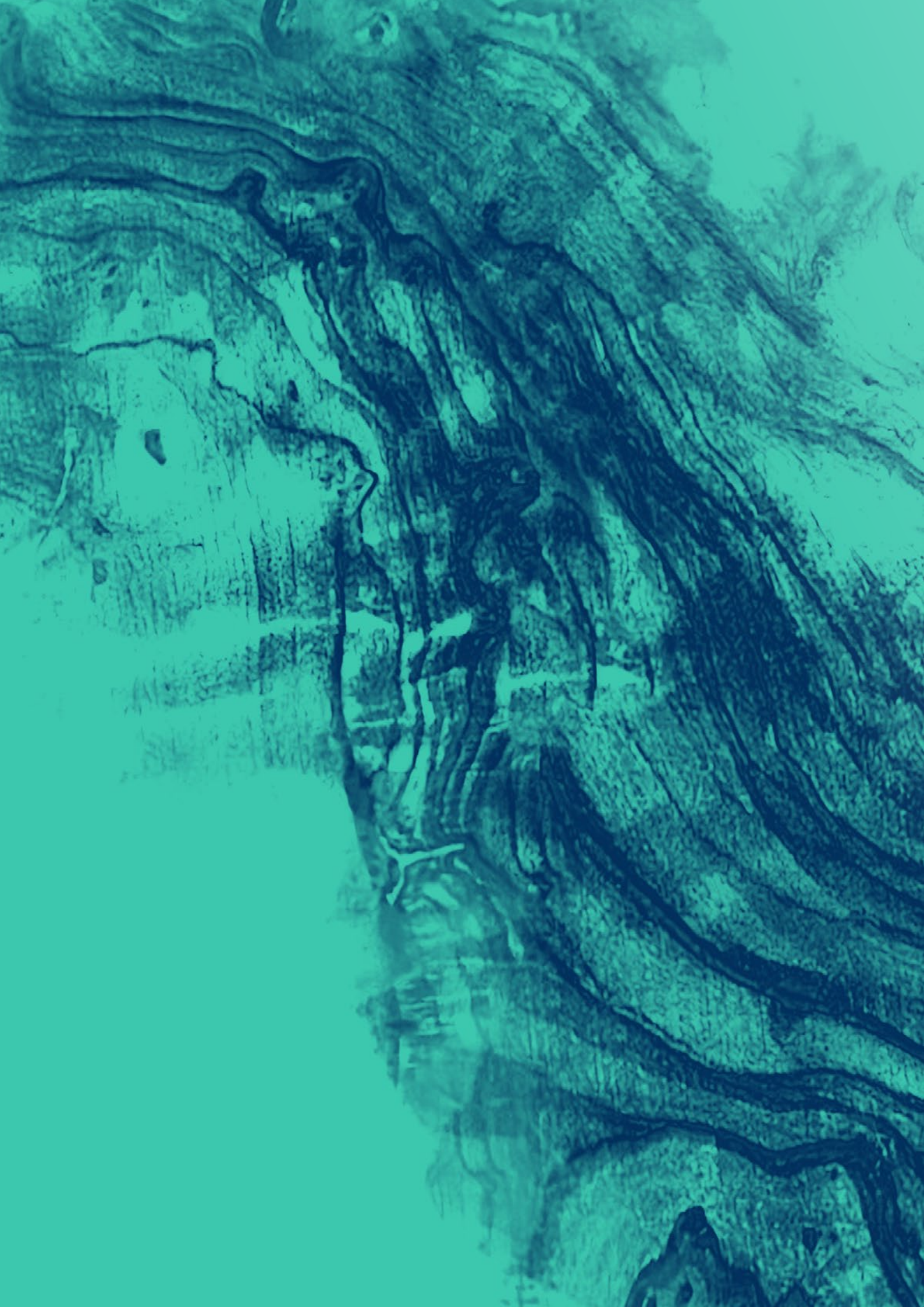
For example, in order for financial institutions to monitor financing ratios in low-carbon energies vs. fossil fuels (Best Practice 9), it may be necessary to converge towards a harmonised approach in the definition of financing for the carbon transition.

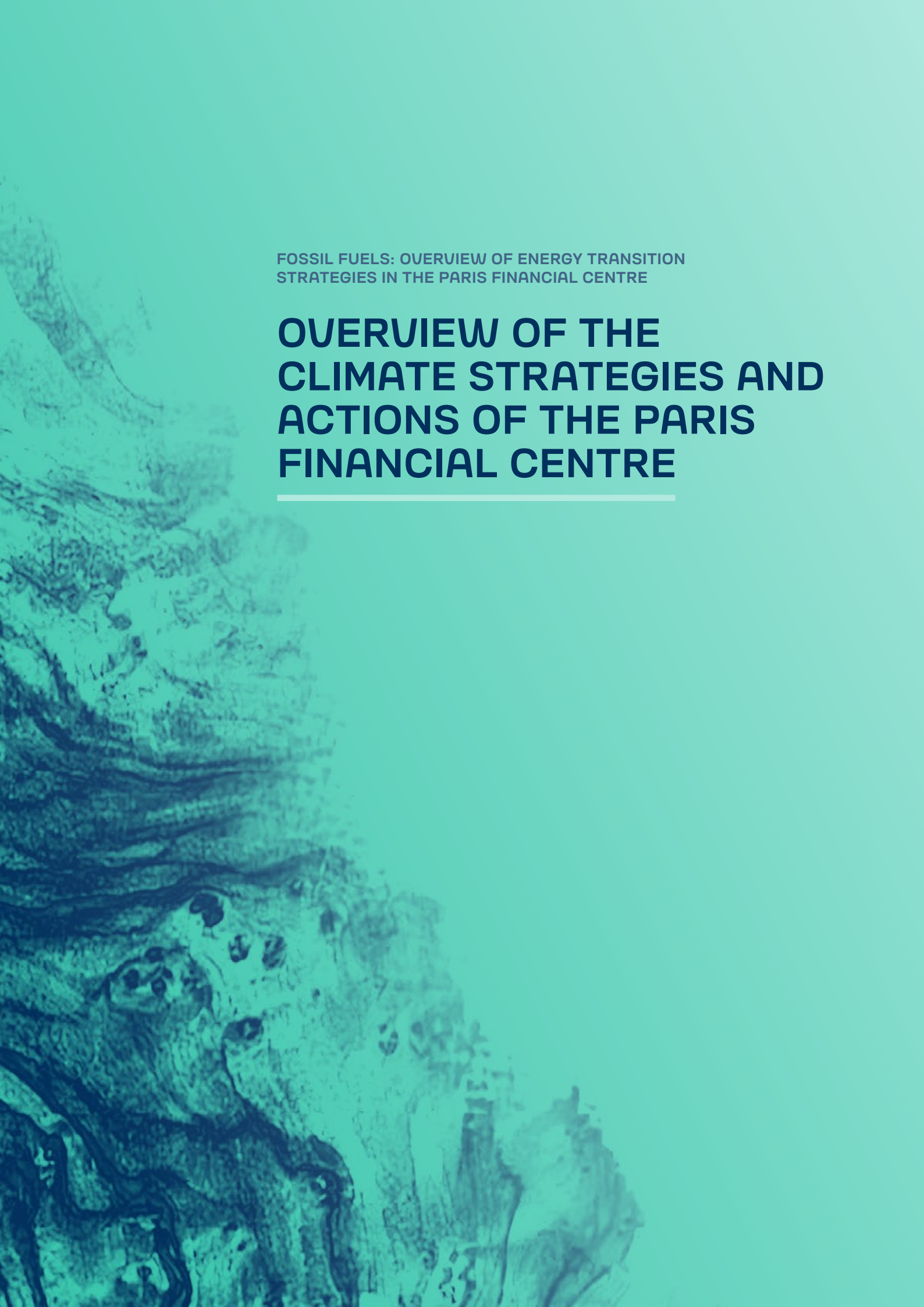
More generally, it would be useful to have a harmonised definition of the transition at European level and a European framework that clearly defines transition financing.

Provide financial institutions with granular scenarios so they can build their scenarios according to the sectoral and geographical composition of their financing and investment portfolios.

Many players (international organisations, research centres, businesses and NGOs) produce scenarios for the future marked by energy and climate issues. To date, these scenarios are mainly designed for the evaluation of public policies or for academic research. They are not intended to be used as is by businesses. Most scenario producers are aware of the difficulties faced by businesses. They are ready to work with them to build public energy-climate scenarios that are more accessible and tailored to their needs. The IEA's Finance Industry Advisory Board is now working with economic players to build tools accessible to financial players to help them understand their scenarios.

At the national level, the French Government, through the General Secretariat for Ecological Planning, was working on producing a National Low-Carbon Strategy with granular data to enable businesses to be able to implement the national plan in their respective transition plans. This work must be resumed. At the European level, the climate trajectories of the Green Deal should be broken down into granular scenarios that could be made available to businesses by the European Commission so that they can build a climate strategy.





FOSSIL FUELS: OVERVIEW OF ENERGY TRANSITION STRATEGIES IN THE PARIS FINANCIAL CENTRE

OVERVIEW OF THE CLIMATE STRATEGIES AND ACTIONS OF THE PARIS FINANCIAL CENTRE

15 financial players from the Paris Financial Centre agreed to present their climate strategy, tools and actions in detail. The objective of this section is to highlight the energy transition strategies, and in particular the fossil fuel strategies, of key financial institutions in the Paris Financial Centre. This presentation is divided into three sub-sections in order to understand the challenges and initiatives of each type of financial player faced with these challenges: banking groups, asset managers and insurers. The institutions prepared their own presentations for the IFD's dedicated taskforce.

A. BANKING GROUPS

The systemic role of banks puts them in a strategic position to address the energy transition through their financing policies.

SOCIÉTÉ GÉNÉRALE

1. GENERAL POLICY

Société Générale has firmly placed its ESG ambitions at the heart of its strategy and is carrying out a series of major initiatives to accelerate its contribution to the environmental transition.

Its climate strategy is based on three pillars: supporting its customers in their environmental transition, managing the potential climate impacts of its activities and managing its climate-related risks. To adapt to these challenges, which require the decompartmentalisation of sectors, in early 2021, Société Générale launched a major transition programme called "Shift" aimed at contributing to the design of relevant decarbonisation or low-carbon solutions across various value chains. The group has also rolled out the "ESG by Design" programme with the objective of integrating ESG criteria into all its processes and tools, through its risk management, compliance and financial planning frameworks. These programmes are accompanied by extensive employee training. Société Générale's ambition is to continue to develop its capacity for innovation in support of the transition and to support its customers as a key partner in their transition.

At the same time, the group has set itself specific objectives relating to its business activity, in particular to align its financing portfolios with trajectories compatible with the Paris Agreement. This involves both reducing exposures, particularly to fossil fuels, and strengthening sustainable finance actions. The group's action is also based on the conviction that part of the solution will come from emerging players in the transition who are designing new technologies. As such, Société Générale has announced a €1 billion transition fund to support future transition leaders, nature-based solutions and impact-based projects.

In insurance, Société Générale Assurances, as a long-term institutional investor, has a real lever it can draw upon in favour of the climate. Specific objectives have been set to align investment portfolios with trajectories compatible with the Paris Agreement, both in terms of reducing their carbon footprint and developing sustainable assets.

2. COMMODITIES CONCERNED AND SCOPE

The bank has published sector policies[117] in a number of sectors including thermal power plants, thermal coal[118], oil and gas (conventional and non-conventional). Each policy describes the scope covered (types of customers and transactions) and the exclusion criteria. On fossil fuels, these policies are supplemented by portfolio alignment targets that are more ambitious than the IEA NZE baseline scenario (1.5°C).

Oil & Gas:

→ 80% reduction in exposure to the oil and gas production sector by the end of 2030 compared to 2019, with an intermediate step of -50% in 2025;

→ 70% reduction in absolute greenhouse gas emissions in Scopes 1, 2 and 3 by the end of 2030 compared to 2019.

Thermal coal:

→ Total exit from the thermal coal sector by the end of 2030 for EU and OECD countries, and by 2040 for the rest of the world.

Electricity generation:

→ Target carbon intensity for the electricity generation sector of 125g CO_2e per kWh by 2030, down 43% compared with 2019;

→ This objective, which involves an energy mix that is increasingly less dependent on fossil fuels, encourages the financing of low-carbon electricity generation projects and, more generally, customers active in this ecosystem.

More broadly, Société Générale has set objectives for contributing to sustainable finance through a range of products including loans, bonds and advisory activities (structuring and investment). More specifically for the low-carbon energy component, Société Générale has developed an extensive franchise in various types of technologies and is a major player contributing to the development of **renewable energies**, but also to the **electrification of the economy** by financing interconnectors, gigafactories and charging infrastructure, for example.

117 Ethics and governance - Société Générale (societegenerale.com)

118 Steelmaking coal is covered in the Mining policy.

Indirectly, the subject of fossil fuels is also addressed through the "demand" component: the heavy industry, transport and real estate sectors are highly dependent on fossil fuels in their processes. Their decarbonisation requires, as a priority, a change in industrial processes and a reduction in energy consumption, which results in lower fossil energy consumption, either by replacing fossil fuels with low-carbon energies or by improving energy efficiency. Société Générale has therefore set decarbonisation targets in the **cement, steel, aluminium, automotive, maritime transport, aviation and commercial real estate sectors.** These targets apply to project financing and to its corporate clients and are detailed in its NZBA Progress Report[119].

It has also made the following commitments for insurance activities under the Net Zero Asset Owner Alliance:

1. Carbon footprint[120]: 30% reduction in the carbon footprint of equity and corporate bond portfolios by 2025 compared to 2018;

2. "Sustainable" assets under management[121]: doubling of "sustainable" assets between 2020 and 2025.

3. ENGAGEMENT STRATEGY

If the E&S review reveals that a customer does not meet a policy criterion, dialogue will be initiated to find ways to improve the situation in a time-limited process. The group will take appropriate measures if these E&S criteria are not met, or if the customer does not seek to meet them.

To facilitate this analysis and be able to share it with customers with a view to engaging discussions on their transition strategy, the group has developed a tool named TOP (Transition Opportunities Potential) specific to each sector (including oil and gas and electricity generation), with a transparent methodology.

For all large corporate clients in the most carbon-intensive sectors, the bank conducts an E&S review and pays particular attention to: (i) their carbon footprint; (ii) their climate objectives; (iii) the diversification of their activities; (iv) the resources deployed such as R&D and the level of investment devoted to activities in support of the transition; and (v) the governance in place to implement their climate objectives.

For insurance activities, the issuer engagement policy, which is an integral part of the sustainable finance strategy, aims to act as a catalyst for change and progress and is a complement to divestment.

The objective is to engage with the companies in which Société Générale Assurances invests to promote a transition to a sustainable, inclusive and low-carbon economy. This policy, mainly implemented through asset managers, covers the main contributors to the portfolio's carbon footprint.

4. EXCLUSION STRATEGY

Each sector policy[122] describes the restrictions on corporate financing or the financial products and services granted by the bank more broadly. This includes the financing of thermal power plants and the thermal coal sector as well as oil and gas exploration and production:

→ Société Générale has decided to no longer finance companies developing new thermal coal mines, coal-fired power plants and directly associated infrastructure;

→ It has decided to no longer finance new oil and gas fields or non-diversified upstream oil and gas companies (independent oil companies).

All restrictions are listed in sector policies[123], which aim to promote more sustainable business practices and reduce the environmental impact of the financing and financial services granted.

119 NZBA Progress Report 2024 (societegenerale.com).

120 In accordance with the Net-Zero Asset Owner Alliance protocol, the target was determined on Scope 1 + Scope 2 emissions.

121 Green bonds, climate and energy transition thematic funds (certified or similar), direct investments in infrastructure dedicated to the energy transition or renewable energies, infrastructure private debt, climate-themed equity funds, climate-themed bond funds, "Ambition Climat" marketplace funds.

122 Ethics and governance - Société Générale (societegenerale.com)

123 Ethics and governance - Société Générale (societegenerale.com)

5. METHODOLOGICAL TOOLS

The PCAF (Partnership for Carbon Accounting Financials) and PACTA (Paris Agreement Capital Transition Assessment) methodologies are used to align and calculate the carbon footprint of portfolios. For fossil fuels, the PCAF methodology is used to calculate the emissions financed in the oil and gas portfolio and the PACTA methodology is used to align the electricity generation portfolio using a physical intensity metric. The monitoring of metrics requires the collection of customer data on greenhouse gas emissions or carbon intensity, for which Société Générale uses IHS Markit (S&P), Bloomberg and Asset Impact datasets.

For these sectors, the baseline scenario used is the IEA NZE 2050 scenario, which is a 1.5°C scenario.

Each target is accompanied by a set of loan approval criteria, ensuring the selection of customers or projects that are compatible with the objectives set. The exclusion criteria mentioned in part 4 are part of these loan approval criteria.

For insurance, Société Générale Assurances relies on the supplier S&P Trucost to calculate carbon footprints.

6. ALLIANCES AND PARTNERSHIPS

Société Générale has joined several taskforces of financial institutions and major players in the sectors to combine expertise and work collectively on sector transition:

It is a signatory to GFANZ – NZBA; this alliance brings together banks to align their portfolios and activities with trajectories compatible with a maximum temperature rise of 1.5°C.

→ Société Générale has also partnered with specialist organisations, such as the Poseidon Principles for the maritime transport sector and the Rocky Mountain Institute in sectors such as steel, aviation and aluminium to develop common standards and tools to enable comparability between sectors.

→ Société Générale was the first European bank to join the Hydrogen Council, which brings together more than 120 members contributing to the deployment of hydrogen as part of the energy transition.

→ In insurance, Société Générale Assurances is a member of the following alliances: Principles for Responsible Investment, Net-Zero Asset Owner Alliance, and Finance for Biodiversity Pledge.

BNP PARIBAS

7. GENERAL POLICY

For BNP Paribas, the leading bank in the European Union and number one worldwide for the placement of green bonds in 2022 and 2023[124], contributing to a more sustainable economy is a priority. This commitment is at the heart of the group's company purpose and its 2025 strategic plan, driven by the goal of financing a carbon-neutral economy by 2050.

For several years, BNP Paribas has been guiding its business model towards supporting the energy and ecological transition of all its customers, in line with the objectives of the Paris Agreement. It has made pioneering commitments in terms of restricting the financing of the most harmful activities for the environment and the climate.

Over the past ten years, the group has shifted its lending activity towards energy production. The majority of its outstanding loans are now focused on low-carbon activities, which accounted for 65% of the total at end-September 2023 compared with 35% for fossil fuels. By 2030, low-carbon energy[125], and especially renewables, will account for 90% of BNP Paribas' financing in this sector.

8. COMMODITIES CONCERNED AND SCOPE

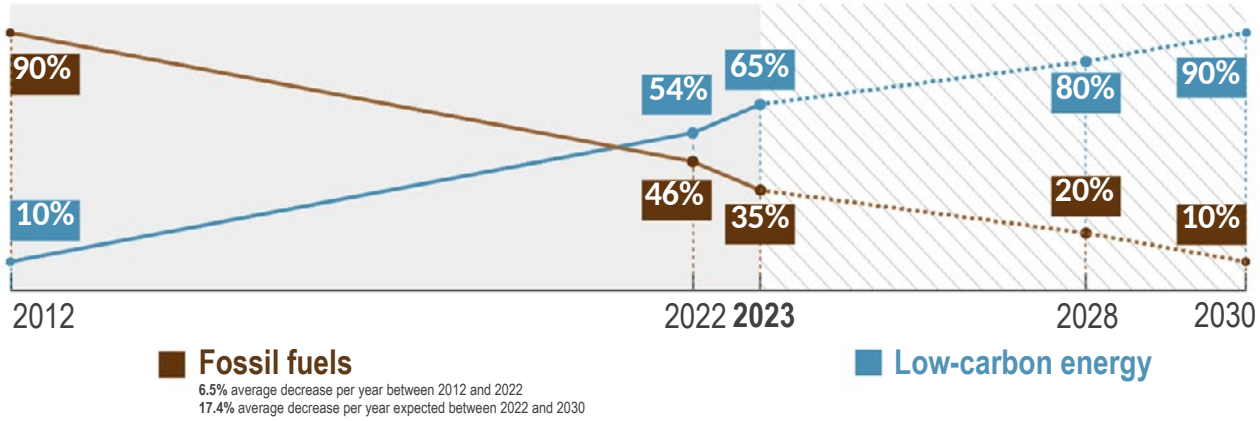
Since 2010, BNP Paribas has followed an environmental policy focused on financing the energy transition and limiting or stopping its financing of the most polluting industries. As such, the group, which has not financed any oil projects since 2016, no longer grants any financing to projects to develop new oil or gas fields, regardless of the terms. As announced in its Climate Report[126], in recent years it has also set increasingly ambitious targets in the sectors that emit the most CO_2:

→ Complete exit from the thermal coal value chain in the EU and OECD by 2030, and in the rest of the world by 2040.

→ In terms of oil and gas exploration and production, BNP Paribas has committed to reducing its credit exposure between September 2022 and the end of 2030 by 80% for oil (-40% achieved at end-2023) and by 30% for gas (target exceeded at end-2023, with a decrease of 34%), as well as reducing emissions financed in absolute terms for the sector by 70%.

→ With regard to energy production, the 2030 target mentioned above is for low-carbon energies to account for 90% of the credit exposure in this sector.

Weight of fossil fuels and low-carbon energies
in BNP Paribas' energy production credit exposures



124 Bloomberg.

125 Definition on page 5 of the BNP Paribas Climate Report.

126 https://cdn-group.bnpparibas.com/uploads/file/bnp_paribas_2023_climate_report.pdf

The group has also set emission intensity reduction targets for motor transport (-25% between 2020 and 2025), air transport (-18% between 2022 and 2030) and maritime transport (between -23% and -32% between 2022 and 2030), along with a target to promote the electrification of vehicle fleets. Lastly, the group has set targets to reduce greenhouse gas emissions for three key raw materials: steel (-25% between 2022 and 2030), aluminium (-10% between 2022 and 2030) and cement (-24% between 2021 and 2030).

9. ENGAGEMENT STRATEGY

With the involvement of all the group's business lines, the Corporate Engagement Department defines BNP Paribas' environmental strategy. It also works with the business lines to implement it.

To support the group's customers in their transition by encouraging innovation and adaptation, particularly in renewable energies, batteries and future technologies such as green hydrogen, BNP Paribas created the Low-Carbon Transition Group in 2021. Its 200 bankers are dedicated to supporting international corporate and institutional clients in accelerating their transition to a sustainable, low-carbon economy. There are also other initiatives aimed at SMEs and mid-caps as well as individual customers, in order to contribute to the decarbonisation of the economy – and in particular the energy, mobility and industry sectors – with a continuum of banking and non-banking solutions.

By 2025, the group plans to devote €200 billion to its customers' transition to a low-carbon economy, notably through sustainable credits and bonds.

10. EXCLUSION STRATEGY

BNP Paribas has incorporated environmental and social criteria into its financing and investment policies for nearly fifteen years[127]. The group has published a list of assets for which it excludes any transactions due to the environmental and social risks they represent.

Sector policies with environmental and social requirements in sensitive sectors have led to exclusions in the sectors of thermal coal-fired power generation, oil and gas and mining. There are several key dates:

→ 2011: publication of the first financing and investment policy with restrictive criteria for coal players;

→ 2017: the end of all support for companies and infrastructures specialising in the exploration and production of unconventional resources (shale oil or gas, tar sands, extra-heavy crude oil and coal methane), and in sensitive areas (Amazon, Arctic). BNP Paribas also ceased financing any coal-fired power plant project as of this date;

→ 2020: acceleration of the timetable for exiting thermal coal to before 2030 in EU and OECD countries and 2040 for the rest of the world;

→ 2023: the announcement of the end of all forms of financing for new oil and gas field development projects and the 2030 target to have reduced its financing for extraction/production by 80% for oil and 30% for gas compared to September 2022.

11. METHODOLOGICAL TOOLS

BNP Paribas' study of high-emissions sectors focuses on its credit portfolio, consisting of loans and treasury financing products. With the exception of the oil and gas sector, for which indicators are based on credit exposure and emissions financed in absolute terms, indicators for all sectors are based on CO_2 emission intensity, and where relevant other greenhouse gases, sometimes supplemented by operational indicators.

The financed emissions indicator for the oil and gas sector is based on the PCAF methodology and is specifically adapted to measure and monitor the impact of the group's exposure reduction strategy. It covers Scope 1 and 2 emissions for upstream and refining activities, as well as Scope 3 emissions for upstream activities (final combustion). Scope 1 and 2 emissions include methane emissions, which are expected to decrease by 75% by 2030 compared to 2020 levels in the IEA NZE scenario.

BNP Paribas relies on leading publications such as those of the IPCC, and mainly draws on the 2050 Net Zero Emissions scenario of the IEA, the International Energy Agency. The group develops alignment methodologies for each sector based on both internal expertise and market initiatives, such as the Pegasus Guidelines, the Poseidon Principles and the work of the Center for Climate-Aligned Finance of the Rocky Mountain Institute.

127 https://group.bnpparibas/en/our-commitments/transitions/financing-and-investment-policies

Already deployed for the group's 3,000 largest corporate clients and currently being deployed for businesses generating more than €50 million in revenue, BNP Paribas' ESG Assessment is the preferred tool for monitoring ESG performance and associated risks. This tool is used to assess customer compliance with the group's sector policies and the maturity of their ESG strategies (particularly climate) and their implementation. The ESG Assessment is a questionnaire divided into five parts covering the environment, social and governance aspects. It allows BNP Paribas' bankers to maintain strategic dialogue with the group's clients on the necessary transformation of their business model by offering them services adapted to these challenges.

12. ALLIANCES AND PARTNERSHIPS

Progress towards a carbon-neutral economy is only possible collectively. This is why BNP Paribas actively contributes to several working groups, alliances and coalitions, and has signed several important principles, including:

→ Net-Zero Banking Alliance (NZBA);

→ United Nations Environment Program (UNEP)'s Collective Commitment to Climate Action (CCCA);

→ Financial Services Task Force (FSTF) of the Sustainable Market Initiative (SMI);

→ UNEP-FI Principles for Responsible Banking (PRB);

→ Equator Principles.

CRÉDIT AGRICOLE

13. GENERAL POLICY

The Crédit Agricole group's climate transition plan is based on three complementary areas: accelerating the development of renewable energies, supporting the transition to a low-carbon economy and accelerating the withdrawal from fossil fuels. Drawing on its work on the decarbonisation trajectories of the customer portfolios of each of its major business lines (financing, investment, asset management and insurance) and on its operating footprint, it **has been working for more than twenty years** to help achieve carbon neutrality in 2050.

As a member of the Net Zero Banking Alliance since 2021, the group is committed to aligning emissions from its financing activities with a target of net zero emissions by 2050, in order to limit global warming to 1.5°C. To this end, the bank is committed to setting intermediate targets for 2030 for its most material sectors and to report annually on its progress.

This commitment is part of the Societal Project[128], a programme initiated by the group in 2019 which embodies the social and environmental dimension of its strategic vision and reflects its commitment to act in the interest of society.

14. COMMODITIES CONCERNED AND SCOPE

Crédit Agricole has 13 published CSR policies[129], some of which are dedicated to energy (oil and gas, shale oil and gas, thermal coal, nuclear energy and hydroelectricity). The purpose of these policies is to specify the rules of intervention and ESG criteria applied in its financing and investment policies.

On joining the Net Zero Banking Alliance, the group set decarbonisation targets in 2022 and then 2023[130] across eight sectors: oil and gas, electricity generation, commercial real estate, automotive, aviation, maritime transport, cement and steel. It is also committed to supporting the transition of the agricultural and residential sectors. These ten priority sectors cover around 60% of its assets under management and account for more than 75% of global greenhouse gas emissions. Details of the commitments are available in "Destination 2050 - Our climate transition plan".

On the strength of its commitments, Crédit Agricole has taken concrete measures to reduce its exposure to the energy sectors:

→ Total exit from the thermal coal sector by 2030 in the European Union and OECD countries, by 2040 in the rest of the world.

→ No financing of new fossil fuel mining projects.

→ Review of energy companies' corporate financing on a case-by-case basis, and discontinuation of financing of specialised independent energy companies.

→ Reduction of 75% in absolute terms in emissions financed (Scopes 1 and 2 of companies in the sector and Scope 3 of extraction players) in the oil and gas sector by 2030 (vs. 2020) vs. 30% announced in 2022, i.e. twice as fast as that provided for in the IEA NZE 2050 scenario.

→ 25% decrease in CACIB's exposure to oil extraction between 2020 and 2025.

→ 58% reduction in the intensity of financed emissions (Scope 1, electricity generation) in the electricity generation sector by 2030 (vs 2020).

... and support for renewable energy and low-carbon infrastructure:

→ Tripling of annual financing of renewable energy projects in France between 2020 and 2030 via CAT&E,

→ 80% increase in Crédit Agricole CIB's exposure to low-carbon energy between 2020 and 2025,

→ Strengthening of investment capacity in favour of the renewable energy sector by €1 billion

128 "Destination 2050, Our climate transition plan" (flippingbook.com).

129 Our sector policies | Crédit Agricole is the leading bank for individuals (credit-agricole.com)

130 PRESS RELEASE – Second Climate Workshop 14/12/2024.

15. ENGAGEMENT STRATEGY

For each material sector[131], one or more indicators have been or will be established to capture companies' performance and progress towards decarbonisation. These indicators are monitored and managed in order to engage in ongoing dialogue with customers and make informed financing decisions. Decarbonisation trajectories are therefore fully integrated into business processes. In total, more than 900 people are mobilised to deploy and monitor action plans.

The consideration of any adverse environmental and/or social impacts related to the financing of large companies is based on several pillars:

→ Application of the Equator Principles for project financing;

→ CSR sector policies;

→ An analysis of the environmental or social sensitivity of transactions, a process used to ensure compliance with the exclusion criteria set out in the various CSR sector policies or to analyse or even anticipate potential controversies with customers;

→ A second look at climate risks is included in the risk opinions issued on certain sector risk frameworks during their presentations to the Group Risk Committee, particularly for the most carbon-intensive sectors (oil and gas, commodity financing, automotive, aeronautics, maritime transport, etc.).

In addition, Crédit Agricole CIB has developed two complementary tools:

→ The Environmental and Social Risk Assessment Committee (CERES)

→ A rating system for environmental and social aspects applied to all its corporate clients.

16. EXCLUSION STRATEGY

The Crédit Agricole group has implemented a rigorous exclusion strategy as part of its CSR sector policies in order to structure activities and define exclusion scopes.

The group takes a selective approach through several commitments:

→ **Oil and gas**: exclusion of direct financing for the extraction of unconventional oil and gas (shale oil and gas, oil sands) and non-development of relations with companies that derive more than 30% of their activity from the extraction of these products; exclusion of direct financing for oil and gas extraction in the Arctic; annual analysis of the transition plan of oil and gas sector customers, based mainly on the choice of a baseline scenario (vs. Net Zero 2050 scenario) and on the strategy of divesting carbon energies and investing in decarbonisation, with a view to concentrating support on companies in the sector that adopt behaviour likely to limit their environmental and social impacts; more stringent selection criteria and reduction in financing of gas plants. In 2022, the group also decided to cease all financing of new oil extraction projects. In 2023, this commitment was extended to all fossil fuels and the group announced the end of all corporate financing for independent producers dedicated exclusively to oil and natural gas exploration and production. It no longer accepts bond issuance advisory mandates from companies involved in the exploration or production of fossil fuels, unless they are for green bonds or sustainability-linked bonds.

→ **Electricity**: finalisation of the withdrawal from coal-fired power plants; more stringent selection criteria and reduction in the financing of gas-fired power plants.

131 Oil and gas, power generation, residential real estate, commercial real estate, automotive, aviation, shipping, cement, steel, agriculture

17. METHODOLOGICAL TOOLS

The group uses industry methodologies and standards (GHG Protocol, PCAF, SBTi, etc.) to set well-considered targets based on projections and action plans provided. In the interest of transparency, Crédit Agricole S.A. wishes to reiterate that its methodologies are subject to change, as are the quality of the data and the reference scenarios.

As for other sectors, Crédit Agricole uses the methodology for accounting for financed emissions developed by Partnership for Carbon Accounting Financials (PCAF) on the oil and gas and electricity generation sector to calculate financed emissions based on its medium- and long-term financing (on-balance sheet exposure for oil and gas, and on- and off-balance sheet exposure for the electricity generation sector).

To do this, the group collects financial and physical data on its financing at the customer and project level from customer annual reports, S&P Trucost, and/or project financing applications.

Crédit Agricole has chosen to commit to reducing its emissions financed in absolute terms in the oil and gas sector, as the main way to decarbonise a barrel of oil is not to extract it in the first place and in intensity (gCO_2e/kWh) in the electricity generation sector in order to manage the financed electricity mix.

To align the portfolios of the oil and gas and electricity generation sectors with the objective of limiting global warming to 1.5°C, Crédit Agricole based its trajectories on the IEA NZE 2050 scenario and was supported by a dedicated Scientific Committee.

18. ALLIANCES AND PARTNERSHIPS

Crédit Agricole has been a signatory of the Science-Based Targets initiative (SBTi) since 2016 and in 2021 decided to join the Net Zero Banking Alliance, a group of global banks committed to aligning their portfolios and activities with net zero emissions by 2050.

The group participates in taskforces with its peers and forges partnerships to implement these principles and improve its impact:

→ In 2019, CACIB – one of the world's leading banks in maritime finance – co-founded with other financial institutions a global framework for assessing the climate alignment of financing portfolios, the Poseidon Principles.

→ To decarbonise the aviation sector, Crédit Agricole has co-created the Aviation Climate-Aligned Finance Working Group (ACAF) with other banks and with the support of the Rocky Mountain Institute (RMI) expert research centre.

→ Crédit Agricole is very active in the steel sector and, since 2022, has been one of the founding banks of the Sustainable Steel Principles (SSP) developed in partnership with the specialised institute Rocky Mountain Institute.

GROUPE BPCE

19. GENERAL POLICY

As a banker, insurer and asset manager, Groupe BPCE is committed to long-term growth by placing environmental, social and governance (ESG) issues at the heart of its development model. It published its ambitions in terms of societal and environmental impact in the Vision 2030 strategic plan in June 2024, setting out financial and non-financial performance targets.

The cooperative nature and regional roots of the Banque Populaire banks and the Caisses d'Epargne combined with the expertise of Groupe BPCE's global business lines – Natixis Corporate & Investment Banking (NCIB) and Natixis Investment Managers (Natixis IM) – make Groupe BPCE a key player in transitions and a preferred partner for all its customers.

With regard to fossil fuels, Groupe BPCE is convinced of the need to implement targeted action to promote the decarbonisation of the economy, by intervening on both supply and demand. To do this, it implements various actions across value chains for the benefit of all its customers.

20. COMMODITIES CONCERNED AND SCOPE

Groupe BPCE is focusing on financing the transition in order to reduce the use of carbon energies, while supporting each of its customers.

→ **Support for renewable energies:** For more than 25 years, Groupe BPCE has been committed to renewable energy, both in France and internationally, with the goal of increasing new financing in this area by 15% between 2024 and 2026.

→ **Support for "facilitators" of the energy transition**: Groupe BPCE encourages the development of transition metals, low-carbon hydrogen, carbon capture technologies, bioenergies and sustainable fuels, in particular through advisory services in strategic sectors.

→ **Comprehensive service offerings for all customers**: Groupe BPCE offers financing solutions specifically designed to support transitions and help its customers implement solutions that foster the decarbonisation of the economy:

- Groupe BPCE supports companies of all sizes, from SMEs to major international groups, as well as entities from the public sector and the social and solidarity economy in their transition efforts.
- For its BtoB customers, particularly SMEs, Groupe BPCE offers solutions to support the energy transition, in partnership with Naldeo for industrials, and Economies d'Energies. Groupe BPCE also incorporates ESG issues into the analysis of business models, adapting its approach to the size and sector of each company.
- For its individual customers, Groupe BPCE offers energy renovation services for homes in France, working with partners such as Cozynergy, Izi By EDF, ADEME and Leroy Merlin. These solutions cover a variety of needs, ranging from energy performance assessments to completion of renovation work, while also including financing and assistance with obtaining government grants.

Groupe BPCE takes a selective approach to financing fossil fuels, which remain necessary for the proper functioning of society until low-carbon energies reach their full capacity and maturity.

→ **Exclusion of sectors incompatible with the energy transition**: since 2015, Groupe BPCE has implemented CSR policies that exclude coal and unconventional oil and gas.

→ **Selective approach for oil and gas financing**: Groupe BPCE has discontinued new financing for oil extraction projects and has adopted a selective approach for gas projects, taking into account environmental and geopolitical issues. Groupe BPCE analyses energy companies' transition plans and adapts its support accordingly.

→ **Net zero trajectory**: a trajectory for 2050 has been set, with intermediate targets to be achieved by 2030 for the most carbon-intensive sectors, including oil, gas, electricity generation, as well as for transport (aviation, automotive), heavy industry (steel, aluminium, cement) and commercial real estate. For oil and gas, the objective is to reduce the CO_2 emissions associated with the end-use of financed production by 70% between 2020 and 2030. Groupe BPCE aims to publish a position on the eleven most carbon-intensive sectors.

21. ENGAGEMENT STRATEGY

Customers' actions are shared and evaluated through regular discussions that identify the risks associated with climate change and the opportunities to provide support with financing, investment and service solutions.

Transactions are subject to in-depth review by all parties involved within Groupe BPCE at each stage of the process, from origination to eventual final validation.

22. EXCLUSION STRATEGY

Groupe BPCE supports its customers' transition and engages in dialogue based on the criteria set out in these policies. Depending on the practices of the companies and the pace of their implementation, this dialogue may lead to a reassessment of business relations, in accordance with the contractual agreements in force.

23. METHODOLOGICAL TOOLS

Groupe BPCE is gradually incorporating the most recent advances in data, scientific scenarios, standards and carbon assessment methodologies in order to comply with a carbon neutrality trajectory. Its commitments are based in particular on the International Energy Agency's (IEA) Net Zero Emissions by 2050 (NZE 2050) scenarios and WEO 2021.

Climate governance is central to Groupe BPCE's governing bodies. Aligning BPCE's portfolios with carbon neutrality is a strategic issue that is the subject of decisions at the highest level of Groupe BPCE's governance.

In order to achieve its objectives, Groupe BPCE:

→ **Leverages its networks of experts** who work with customers to provide them with the solutions needed to meet the challenges of the transition.

→ **Develops proprietary tools to measure and manage the climate impact of its financing,** such as the Green Weighting Factor applied to the Natixis CIB portfolio since 2018. These tools guide operational financing decisions and enable monitoring of the published decarbonisation trajectories.

→ **Uses an ESG data platform** to collect, standardise and distribute the ESG data needed for different uses in all the group's information systems

→ **Has targeted and ambitious ESG training objectives for all employees, with modules adapted to the business line and level of expertise.**

24. ALLIANCES AND PARTNERSHIPS

→ Member of the PRB (Principles for Responsible Banking)

→ Member of the PRI (Principles for Responsible Investment)

→ Member of the Net Zero Banking Alliance (NZBA)

→ Member of the Net-Zero Asset Owner Alliance (NZAOA)

→ Member of the Equator Principles via Natixis CIB

To complement the solutions provided to its customers, Groupe BPCE has partnerships with Cozyenergy, IZI by EDF, Leroy Merlin, ADEME, NALDEO, Economies d'Energies, etc.

LA BANQUE POSTALE

25. GENERAL POLICY

Since its creation in 2006, La Banque Postale has chosen a unique approach: by refusing to finance energy projects based on fossil fuels and fostering the development of renewable energies, it has waived development opportunities and chosen to support the sustainable growth of the energy needs of society. This vision was reinforced in 2021 with the publication of two risk management policies related to the coal sector, followed by oil and gas (see below).

It was the first bank in the world to commit to a total exit from these sectors by 2030. This ambitious commitment, made in consultation with NGOs, is an essential step towards achieving its goal of net zero emissions by 2040 (provided that governments and companies take the necessary actions in this direction).

26. COMMODITIES CONCERNED AND SCOPE

La Banque Postale published a climate policy on coal and then on oil and gas. Under these policies, La Banque Postale fosters the development of electricity production based on renewable energies.

At the end of 2023, La Banque Postale's exposures to companies that do not comply with the principles set out in its oil and gas policy accounted for 0.01% of outstanding financing granted to companies, in line with its objective of zero exposure by 2030. The net exposure to fossil fuels at the end of 2023 was €1.89 million.

As part of its three mission-driven company statutory targets, the bank has set a target of €5.6 billion deployed for renewable energy projects by 2025 and €6.3 billion by the end of 2026. By 2023, €4.6 billion had already been mobilised, representing nearly 13% of all financing granted to companies.

27. ENGAGEMENT STRATEGY

La Banque Postale does not conduct direct shareholder engagement due to its activities. Shareholder engagement is carried out by its asset management subsidiary, LBP AM, and its insurance subsidiary, CNP Assurances.

28. EXCLUSION STRATEGY

La Banque Postale excludes from its financing and investment universe the companies listed on the Global Coal Exit List (GCEL) of the NGO Urgewald and their subsidiaries. For drilling and mining industries, the exclusion applies to all companies whose activity is identified by the NACE B5 code.

In terms of project financing, La Banque Postale has undertaken to no longer finance mining or coal power plant projects or related projects, such as coal import and export railways or terminals.

More generally, La Banque Postale strongly encourages its customers to close and not sell assets in order to participate effectively in the decarbonisation of the global mix.

With regard to the oil and gas sector, La Banque Postale aims to completely exit the oil and gas sectors by 2030. Based on this principle, it undertakes not to finance any energy projects based on oil and gas. With regard to companies in the sector, and in particular those listed in the Global Oil and Gas Exit List (GOGEL) of the NGO Urgewald, as well as companies whose activity is oil refining (activity identified by NACE code C.19.2.), the bank undertakes to no longer provide them with financial services (loans, account keeping, means of payment, factoring, etc.), to run off existing services and exposures until 2030, not to invest and to gradually divest them until 2030.

However, companies in the coal, oil and gas sector with scientifically credible transition plans will be re-integrated into the Bank's financing and investment universe in order to support the transition. La Banque Postale also finances or invests in renewable energy projects carried out by companies in the sector.

29. METHODOLOGICAL TOOLS

Having made a historic decision not to support the development of fossil fuels, a position reinforced by its two risk management policies relating to the coal and oil and gas sectors constructed according to the recommendations of scientific experts, it is not necessary for La Banque Postale to carry out specific monitoring of its exposures. The challenge for the Bank is to ensure that new financing and investment transactions involving companies in these sectors comply with the principles set out in both policies. At the end of 2023, La Banque Postale's exposures to companies that do not comply with the principles set out in its oil and gas policy accounted for 0.01% of outstanding financing granted to companies, in line with its objective of zero exposure by 2030.

As mentioned above, at the end of 2023 La Banque Postale mobilised €4.6 billion for the development of renewable energy projects.

It is also in line with the messages conveyed by NGOs and scientific experts, in particular the International Energy Agency, which makes achieving carbon neutrality conditional on stopping the financing of new oil and gas projects.

30. ALLIANCES AND PARTNERSHIPS

La Banque Postale has been a member of the NZBA since its creation in April 2021. Since 2017, it has also committed to the SBTi, and was one of the first banks to have decarbonisation trajectories aligned with the Paris Agreement validated by the initiative.

CRÉDIT MUTUEL ARKÉA

31. GENERAL POLICY

Crédit Mutuel Arkéa, a company with a mission, has included in its articles of association an objective dedicated to supporting the environmental transition of its stakeholders.

In 2020, it adopted a climate strategy covering the entire group. As part of this strategy, Crédit Mutuel Arkéa has opted for a total phase-out of coal by the end of 2027 and of non-conventional fossil fuels by 2030.

It is also implementing this climate strategy through other sectoral policies and 2030 climate targets, the aim of which is to steer financing and investment towards a low-carbon economy.

In addition to these policies, and in order to support the transition, the Group has adopted an objective in its Enterprise to Mission roadmap to develop its production of credits earmarked for environmental transition projects (renewable energies, sustainable mobility, energy renovation, etc.).

32. COMMODITIES CONCERNED AND SCOPE

Crédit Mutuel Arkéa has adopted the following sectoral policies with a view to complying with the Paris Agreements:

→ Coal: complete phase-out by the end of 2027 for the entire group (banking, asset management, life insurance, private equity). This exit concerns the financing of players and projects.

→ Oil and gas: in accordance with criteria aligned with the recommendations of the IEA's 'net zero emissions' scenario, withdrawal from banking, life insurance and private equity by the end of 2030. This exit concerns the financing of players and projects. The asset management business also has a sectoral policy and an exit trajectory.

Crédit Mutuel Arkéa has also set carbon intensity targets for 2030 for the power generation sector within the scope of its treasury investments. The target for 2030 is 186 gCO2/kWh.

We believe that the energy transition must be addressed from a value chain perspective. This is why we have also defined climate policies and/or targets for downstream sectors that consume a lot of energy:

→ Air transport, with in particular a halt to new financing for the acquisition of business and private aircraft that are not zero-emission.

→ Maritime transport, with criteria covering investments in freight transport companies (treasury investment portfolio) and the financing of international freight transport vessels.

→ 2030 climate targets for the steel and cement portfolios, with respective targets of 1,024 gCO2/t and 463 gCO2/t.

In addition, in 2020 the Group created an Environmental Transition Division, located within Arkéa Banque Entreprises et Institutionnels, which specifically supports the financing of local renewable energy projects (mainly wind power, photovoltaics, methanisation and biomass) and energy infrastructure (heating networks, waste sorting centres and energy recovery units).

Between 2020 and 2023, it financed 136 projects with a total installed capacity of 1,462 Megawatts and an annual electricity output of 1,261 Gigawatts/hour. Its outstanding loans exceeded €1 billion in June 2024.

33. ENGAGEMENT STRATEGY

As a bank, Crédit Mutuel Arkéa has not yet adopted a shareholder engagement strategy. It has occasionally taken part in collective engagement campaigns on climate change in connection with its cash investments. Engagement strategies are also implemented by its asset management subsidiaries.

34. EXCLUSION STRATEGY

Crédit Mutuel Arkéa includes exclusion criteria in some of its sector policies. Details of these criteria are given in the public policies.

Coal policy :

→ exclusion of new investments / financing to companies: which generate more than 10% of their turnover from thermal coal; which produce more than 10% of their energy from coal; which extract more than 10 million tonnes of coal per year; which have a coal-fired power generation capacity of more than 5 GW; which have capital expenditure in coal mining and development projects related to mining and infrastructure; which have plans to expand their coal-fired power generation capacity.

→ direct financing/investment in coal mining and power plant projects.

Oil and gas policy:

→ prohibition of financing/investments to players: whose Unconventional Fossil Energy (UFE) represents more than 5% of annual fossil energy production; who are expanding their existing production capacity (conventional or unconventional); who have exploration activity linked to new fossil energy projects (conventional or unconventional); from MIDSTREAM who are developing pipelines or expanding LNG terminal capacity; involved in controversies.

→ prohibition of any financing and/or investment in a project dedicated to fossil fuels (detailed in public policy).

Crédit Mutuel Arkéa wishes to support the energy transition of players in these sectors, and does not apply these exclusion criteria to subsidiaries, projects and vehicles dedicated to the energy transition of these players.

35. METHODOLOGICAL TOOLS

To ensure compliance with these coal and oil/gas phase-out trajectories, the group relies on external lists (GOGEL and GCEL) and databases to identify the players concerned.

To calculate the emissions financed by its portfolios, Crédit Mutuel Arkéa uses the PCAF methodology. To establish its carbon intensity targets by sector, it has used the International Energy Agency's 'Net Zero Emissions 2050' scenario, which is compatible with limiting global warming to 1.5°.

These objectives imply selectivity in the granting of credit/investment, both in terms of the current carbon intensity of the player/project concerned and the trajectory to 2030. These criteria are incorporated into lending and investment policies.

36. ALLIANCES AND PARTNERSHIPS

Crédit Mutuel Arkéa has been a member of the Net Zero Banking Alliance since 2021 and of the Finance for Biodiversity Pledge. It is also a signatory of the UNEP-FI Principles for Responsible Banking (PRB).

Its asset management subsidiaries are all signatories to the Principles for Responsible Investment. Federal Finance Gestion and Schelcher Prince Gestion are also signatories of the Finance for Biodiversity Pledge.

At local level, Crédit Mutuel Arkéa is a partner in a number of Sociétés d'Economie Mixte d'Energie.

B. ASSET MANAGEMENT COMPANIES

Asset managers have a significant impact on the real economy through their portfolio allocations, which have direct implications for capital flows. They therefore play a key role in the commitment with respect to companies with a major climate impact.

AMUNDI

1. GENERAL POLICY

The Crédit Agricole group's climate transition plan is based on three complementary areas: accelerating the development of renewable energies, supporting the transition to a low-carbon economy and accelerating the withdrawal from fossil fuels. Drawing on its work on the decarbonisation trajectories of the customer portfolios of each of its major business lines (financing, investment, asset management and insurance) and on its operating footprint, it **has been working for more than twenty years** to contribute to achieving carbon neutrality in 2050.

Amundi, which manages more than €800 billion of assets with an ESG approach, is committed to staying at the forefront of ESG financial innovation to support all its clients in their own ESG approach.

As part of its commitment to the Net Zero Asset Managers (NZAM) initiative, Amundi has set a target of **18% of assets under management in managed funds and mandates with Net Zero Alignment 2050 targets by 2025.** Amundi has also set out its **climate commitments in its ESG Plan 2025,** which aims to:

→ Integrate an energy transition score into open-ended active management funds.

→ Offer open-ended funds with a net zero objective for all asset classes.

→ Reach €20 billion in assets under management in impact funds.

→ Have 40% of the ETF range made up of ESG funds.

→ Extend the scope of companies with which it engages in ongoing dialogue on climate to 1,000 additional companies.

2. COMMODITIES CONCERNED AND SCOPE

Amundi's thermal coal sector exclusion policies apply to the utilities, transportation and mining sectors. Amundi's Oil & Gas sector exclusion policies apply to the energy sector. Both policies apply to all actively managed strategies and passively managed ESG strategies, over which Amundi has full discretion.

3. ENGAGEMENT STRATEGY

Amundi has a proactive engagement policy with the companies in which it invests, or potentially plans to invest, regardless of the type of holdings, so it can support them in their sustainability efforts. Amundi engages issuers on five themes[132] through the E, S and G pillars with a dual materiality perspective:

On climate change, Amundi had engaged with 966 additional issuers at the end of 2023, compared with the target of 1,000 additional issuers by the end of 2025. Amundi has launched an engagement campaign on the net zero transition, mainly focused on sectors with high emissions, aimed at improving the transparency, comparability and accountability of the information disclosed by companies while bolstering their ambitions on climate-related objectives.

When engagement fails, or if the issuer's remediation plan appears weak, Amundi applies an escalation process that may lead to exclusion (see Responsible Engagement Policy).

Amundi also engages with its clients by setting up events and promotional actions for institutional clients, distributors and individuals to showcase its responsible investment practices and present ESG and climate issues. In line with the ESG Plan 2025 and its commitments to the Net Zero Asset Managers initiative, Amundi is guiding the net zero transformation of its institutional clients.

4. EXCLUSION STRATEGY

Thermal coal: Amundi is committed to eliminating thermal coal from its investments by 2030 in OECD and EU countries, and by 2040 in non-OECD countries. In line with the United Nations Sustainable Development Goals (SDGs) and the 2015 Paris Agreement, this strategy is based on the research and recommendations of Crédit Agricole's Scientific Committee, which takes into account the scenarios developed by the International Energy Agency's (IEA) sustainable development scenario, the Climate Analytics report and science-based objectives. Where applicable, Amundi excludes:

→ Mining companies, utilities and transport infrastructure that are developing thermal coal projects with authorised status or in the construction phase.

→ Companies with thermal coal projects at earlier stages of development, including those announced, proposed or pre-authorised, are monitored annually.

132 The transition to a low-carbon economy, the preservation of natural capital, human capital and human rights, customer protection and social guarantees, and governance.

With respect to mining, Amundi excludes:

→ Companies generating more than 20% of their revenue from thermal coal mining;

→ Companies extracting 70 MT or more of thermal coal annually with no intention of reducing this volume.

For companies considered too exposed to be able to phase out thermal coal at the right pace, Amundi excludes:

→ All companies with more than 50% of revenue derived from thermal coal mining and electricity generation from thermal coal;

→ All companies with between 20% and 50% of revenue coming from thermal coal power generation and thermal coal mining that have weak transition path.

Unconventional oil and gas: Amundi excludes companies that derive more than 30% of their revenue from the exploration and production of unconventional oil and gas (including shale oil and gas and oil sands). This policy applies to all active management strategies and passively managed ESG strategies, over which Amundi has full discretion.

5. METHODOLOGICAL TOOLS

At the portfolio level, Amundi has developed tools and methodologies for managing net zero funds, which provide portfolio managers, risk managers and certain clients with real-time data on a set of ESG indicators.

At the issuer level, the assessment of transition risk requires the use of a new set of metrics and tools to adopt a forward-looking approach. To overcome the issues of consistency and comparability between different data providers (for example temperature data), Amundi is currently developing its own transition score based on a combination of external data and internal analyses. Amundi also conducts quantitative research on key topics such as Scope 3 emissions, climate stress tests and the assessment of climate risks.

Regarding the data sources used:

→ **Companies' exposure to thermal coal**: Trucost and MSCI.

→ **Development of new thermal coal capacity**: Amundi uses various sources, including Crédit Agricole group's official exclusion list based on Trucost information.

→ **Companies' exposure to unconventional fossil fuels**: MSCI and Sustainalytics.

This provides broad coverage of data from different sources embedded in the ESG analysis and rating methodology, and ensures a more comprehensive understanding of companies' exposure to be provided to the investment teams.

6. ALLIANCES AND PARTNERSHIPS

Amundi is an active participant and leader in the following initiatives:

→ Climate Action 100+

→ Institutional Investors Group on Climate Change

→ Transition Plan Taskforce (joined 2023)

→ EU PAB Developer Community (joined 2024)

→ Task Force on Climate-related Financial Disclosures

→ CDP Non-Disclosure Campaign (Climate Change, Water, Forest)

→ The CDP Science Based Targets (SBTs) Campaign

→ China-Singapore Green Finance Taskforce

→ International Climate Initiative - Private Equity Action on Climate Change

→ Investors for a Just Transition

→ Powering Past Coal Alliance

→ Asia Investor Group On Climate Change

→ Principles for Responsible Investment

→ Science-Based Targets initiative

→ United Nations Global Compact

LA BANQUE POSTALE AM

7. GENERAL POLICY

The LBP AM group has applied regularly-updated policies for managing its exposure to coal since 2019 and oil and gas since 2022. These policies describe the objectives and criteria applied to the management of these exposures through selection, engagement and exclusion, for all its assets under management. In 2024, it reviewed and strengthened its fossil fuel investment policies. For the coal policy applicable since April 2024 and the oil and gas policy that applies from 1 January 2025, it significantly tightened its selection criteria to support the achievement of its 2030 ambition, which aims for a sector allocation fully aligned with a 1.5°C scenario.

8. COMMODITIES CONCERNED AND SCOPE

- **Coal** (thermal)
- Conventional/non-conventional **oil**
- Conventional/non-conventional **gas**

9. ENGAGEMENT STRATEGY

Oil and gas:

The LBP AM group has a strict shareholder engagement and voting strategy with companies in the oil and gas sector to support them in their energy transition, requiring them to adopt a transition strategy aligned with a transparent and credible 1.5°C scenario.

The group expects companies and project companies operating in this sector (exploration, operation, processing, transport, refining, or products or services associated with these activities) directly or as a partner or shareholder to establish and publish an energy transition strategy to achieve clear, credible neutrality aligned with climate and energy scenarios making it possible to limit warming to 1.5°C, prioritising the fastest available and the least expensive permanent resources.

This strategy must in particular adapt the management of investments to the challenge of concentrating investments in existing fields. The objective is to avoid lock-up effects on regional economies and companies invested in fossil fuels, and if necessary, depending on the operating cost of the assets and the positioning in the value chain, to avoid increasing the risk of stranded assets or declining commercial activities. It must also make it possible to control the related physical risks resulting from climate change, the risks to biodiversity resulting from their operations and the social risks of their strategy.

Fully aware that the transition must not be made to the detriment of human rights, the LBP AM group has also set out its expectations (including a segmentation of specific expectations between "expectations" and "best practices") in terms of integrating these issues into company strategies. These expectations are based on four key themes: adoption of a human rights policy, just transition, fair consultation and negotiation, and decent working conditions.

Coal:

The LBP AM group engages companies that have drawn up a formal plan to exit thermal coal not aligned with scientific recommendations. The aim is to encourage them to review the schedule of their plan. The decision to keep the asset in the portfolio is made at the end of the calendar year.

The LBP AM group has a specific engagement strategy for issuers whose plans to exit coal are deemed credible. This strategy is based on an analysis of the quality and credibility of these companies' coal exit plans, including the quality of governance, the robustness of the company's exit trajectory and climate commitments, the absence of lobbying in favour of thermal coal and the presence of minimum safeguards regarding the just transition. At the end of the analysis, three options are possible:

1. Favourable opinion: If the plan is deemed credible, the company is exempted from exclusion for the current year and is subject to annual monitoring to ensure the proper execution of the strategy with the possibility of revising the opinion.

2. Neutral opinion: If the plan does not make it possible to make a factual decision as to its credibility, the company **is the subject of engagement** to clarify the situation and decide on the exemption or exclusion by 31 December of the current year.

3. Unfavourable opinion: If the plan includes poor practices or if **engagement did not make it possible to decide** on its credibility factually and within the allotted time, then the company is excluded.

Say on Climate

In general, LBP AM's support for climate plans submitted to shareholders is conditional on the following elements: the plan contains specific targets for reducing GHG emissions in the short and long term; the plan is aligned with the trajectory set out in the Paris Agreement; the variable remuneration of executives incorporates non-financial criteria aligned with the announced targets; the Board of Directors undertakes to consult shareholders on a regular basis (at least every three years).

10. EXCLUSION STRATEGY

The **oil and gas** policy excludes companies that generate 20% or more of their revenue from unconventional energies[133]. Companies that are unable to complete their energy transition by 2030 are also excluded if they currently have no Scope 1 and 2 carbon neutrality target or no Scope 3 GHG emission reduction target.

In addition to this exclusion policy, the LBP AM group is also strengthening its selection policy by:

→ Integrating a qualitative analysis: GHG reduction targets, the transparency of the transition plan, the climate impact of the levers (dependence of the strategy on carbon offsetting, stopping the development of new fossil production capacities, and the share and trend in investments in low-carbon resources), the governance of the transition plan, as well as consistency and feasibility.

→ Introducing selection levels according to products:

- SRI products: Integration of specific provisions related to national SRI labels (broad exclusions);
- Open-ended credit funds: exclusion of traditional debt issued by companies developing "new capacity" from 2025;
- Due diligence on portfolio managers' fossil policies for fund selection and use in SRI funds of funds.

The **thermal coal** exclusion policy implemented by LBP AM aims to completely end investments in mining or electricity generation companies that have not committed to eliminating thermal coal from their operations by 2030 (for companies whose registered office is located in an OECD country) and by 2040 (rest of the world).

Issuers engaged in thermal coal-related development projects or the extension of existing projects are systematically excluded.

Other exclusion criteria vary according to the scopes/sectors concerned and may be waived if the company has put in place a credible exit plan:

→ All sectors: companies that generate more than 5% of their revenue from the mining and sale of thermal coal or from services linked to thermal coal either directly (exploration and transport) or indirectly (logistics, engineering, operations, etc.).

→ Mining sector: companies whose thermal coal production exceeds 10 million tonnes per year.

→ Energy sector: companies for which the installed capacity of thermal coal-fired power plants exceeds 5 GW. Companies whose electricity production from thermal coal, or failing that, the installed capacity, exceeds 10% of their energy mix.

11. METHODOLOGICAL TOOLS

→ Baseline scenarios: IPCC P1 and P2 and IEA Net Zero by 2050

→ Specific external databases (S&P Trucost Urgewald (GCEL and GOCEL databases); data published by companies):

- Coal: Companies exposed to thermal coal are identified using an S&P Trucost database to identify companies generating revenue from this resource, followed by the Global Coal Exit List from the German NGO Urgewald, which lists mining or power companies involved in new expansion projects, and service companies generating more than 5% of their revenue from thermal coal.
- Oil and Gas: Companies are identified using data provided by S&P Trucost to identify companies based on the percentage of revenue generated from the extraction and/or production of unconventional fossil fuels. The Global Oil & Gas Exit List of the German NGO Urgewald is used to identify companies developing "new capacity".

→ Creation of specific exclusion lists managed via internal information systems.

→ The LBP AM group's sector policies are part of a global transition framework aimed at achieving 100% sector allocation aligned with an energy transition trajectory by 2030 that will enable it to achieve the Net Zero target by 2050.

12. ALLIANCES AND PARTNERSHIPS

→ GFANZ
→ IIGCC
→ NAZMi
→ CDP
→ CA 100+

133 Unconventional energy: according to the detailed definition of these resources proposed by the scientific committee of the Sustainable Finance Observatory (shale oil and gas, from oil sands, extra-heavy oil, from resources located in the Arctic according to the zone of the Arctic Monitoring and Assessment Program, oil and gas from very deep offshore resources), which is more extensive than the definition usually adopted by the sector.

GROUPAMA AM

13. GENERAL POLICY

Groupama AM's strategy to align with the objectives of the Paris Agreement covers the insurance investments carried out for the Groupama group, which have a long-term horizon and a consistent approach, with an alignment objective set for 2030. In concrete terms, this implies that Groupama AM will reduce the Scope 1 and Scope 2 carbon intensity of its insurance portfolios by 50% by 2030, compared with 2021.

14. COMMODITIES CONCERNED AND SCOPE

Since 2019, Groupama AM has applied a tough coal policy to all its investments, with a strategy to exit companies exposed to thermal coal whose registered office is located in a country of the European Union and the OECD by 2030 and by 2040 for the rest of the world.

In addition, in 2023, Groupama AM implemented a general policy of non-reinvestment in unconventional fossil fuels.

These policies apply to all individual financial instruments issued by the companies concerned or those that provide exposure to them. Groupama AM will therefore not invest in a sustainable bond issued by a company covered by this policy unless otherwise instructed by a client for its dedicated funds and mandates.

It regularly lowers its thresholds to aim for zero exposure to thermal coal by 2030 in OECD and EU countries and by 2040 for the rest of the world.

15. ENGAGEMENT STRATEGY

Groupama AM implements three types of initiatives under its engagement policy:

1. Dialogue with companies, including regular meetings with the management of companies whether or not they are in the portfolio, individual engagement with targeted companies and discussions on draft resolutions presented at General Meetings;

2. Participation in collaborative initiatives of European and international scope;

3. A rigorous voting policy in place since 2001.

Engagement topics and specific objectives are set out in advance, as soon as the dialogue begins. This is a long-term approach (three years minimum) that must lead to real progress on the part of the companies contacted, measured through regular monitoring and an impact assessment using selected indicators.

In 2023, Groupama AM discussed with each of the companies subject to individual engagement to take stock of the progress made and the achievement of the objectives set out and to share the difficulties faced by companies and the best practices observed by Groupama AM at other companies.

When discussions with the company have not enabled the objectives to be achieved, Groupama AM may decide to completely or partially divest itself of the company. This was the case with the Swedish company Fortnox AB in 2023. This company had undertaken to define and disclose precise ESG indicators to Groupama AM within three years, on topics including the workforce (working hours, accidents) and the integration of ESG criteria in executive compensation. Given the lack of concrete progress, Groupama AM decided to partially divest from the company for all open portfolios of the strategy in question (around 7% of assets under management). The objectives to be achieved were renewed with the company's new Head of ESG in early 2024.

16. EXCLUSION STRATEGY

Groupama AM implements an exclusion policy for thermal coal and a non-reinvestment policy for unconventional fossil fuels.

These policies apply to all individual financial instruments issued by the companies concerned or those that provide exposure to them. Groupama AM will therefore not invest in a sustainable bond issued by a company covered by this policy unless otherwise instructed by a client for its dedicated funds and mandates.

17. METHODOLOGICAL TOOLS

Its internal environmental methodology covers four areas, with a pillar dedicated to climate issues assessed using several indicators including carbon intensity, the implied temperature rise, the integration of internal carbon pricing, the use of renewable energies and energy intensity. This methodology applies to all sectors.

GAM sets environmental performance targets (linked to carbon intensity) for the majority of the SRI-labelled funds in its range.

With regard to its insurance management, Groupama AM has developed categories of natural capital, which classify issuers that are at risk in terms of the ecological transition at the level of its insurance asset management based on three indicators: carbon intensity, temperature and the net environmental contribution (NEC).

In the qualitative environmental analysis, under the "Management of environmental issues" pillar, it identifies whether the company has had its emissions reduction targets certified by the SBTi. Groupama AM values this approach in order to demonstrate the commitment and credibility of the company's strategy.

In addition, the implied temperature rise methodology (integrated into Groupama AM's environmental scoring) takes into account methodological references such as the SBTi and ACT.

GAM's climate strategy is based on the IEA's Net Zero Emissions scenario.

For its fossil fuel policies, it relies on lists published by Urgewald. For carbon data, it uses Iceberg DataLab data.

Fossil fuel policies are monitored and validated by the Sustainability Risk Committee, which meets on a quarterly basis.

18. ALLIANCES AND PARTNERSHIPS

The Groupama group is a member of the NZAOA.

BNP PARIBAS AM

19. GENERAL POLICY

In 2019, BNP Paribas Asset Management (BNPP AM) committed to gradually aligning its investments with the objective of the Paris Agreement. In 2021, the company strengthened its commitment by signing the Net Zero Asset Manager initiative. In this context, it has committed to working in partnership with its customers to encourage them to:

→ Set decarbonisation targets;

→ Set an intermediate target for the proportion of assets under management, included in the scope of climate commitments to achieve carbon neutrality by 2050;

→ Review the provisional target at least every five years, with a view to increasing the proportion of assets covered to 100%.

→ BNPP AM's "Net Zero" roadmap, published in 2022, is based on 10 commitments, including:

→ Reducing the carbon footprint of its investments by 30% by 2025 and 50% by 2030 compared to the 2019 baseline;

→ Aligning investments with the carbon neutrality target, targeting 60% of the investment scope in companies that have already achieved carbon neutrality, are aligned with this target or are in the process of being aligned by 2030;

→ Completing the exit from coal by 2030 within the European Union and OECD countries and by 2040 for the rest of the world, in line with the BNP Paribas group's commitment (see details here);

→ Increasing thematic investments in environmental and climate solutions.

These commitments build on the work done by BNPP AM over the past few years. BNPP AM's "Net Zero" roadmap covers an initial scope of 50% of its assets under management. BNPP AM plans both to increase the proportion of its assets covered by its commitments and to strengthen its targets to achieve carbon neutrality by 2050 at the latest.

20. COMMODITIES CONCERNED AND SCOPE

In fossil fuels, the exclusion policy covers thermal coal (mining and power generation), oil and gas companies involved in unconventional oil and gas, trading companies involved in unconventional oil and gas, and companies related to oil and gas resources located in the Arctic and Amazon regions.

The issue of energy demand is addressed through various policies without targeting a particular sector. This is the case for commitments relating to the carbon footprint of issuers where energy consumption and the type of energy consumed are taken into account in the Scope 2 emissions of the companies financed. It is also the case in the ESG rating model, where issues related to the energy consumption of the companies financed are given a higher weighting, particularly for the most carbon-intensive sectors. This results in the most efficient and low-carbon companies being favoured. The model for assessing companies' alignment with climate objectives also takes into account energy consumption by requiring reductions in direct emissions as well as those related to energy purchases.

In its 2023 Sustainability Report, BNPP AM published information on the progress made since the publication of its roadmap at the end of 2022. Thus, in 2023, 4% of assets under management in the scope in question had reached carbon neutrality, 28% (+7 points since 2019) were aligned and 15% were in the process of being aligned with a net zero trajectory. The proportion of its investments in non-aligned companies fell to 45% of assets under management (-15 points since 2019), approaching the intermediate target of 40% by 2030.

In addition, to increase solutions for clients, BNPP AM has continued to bolster its offer of environmental and climate themed funds in recent years. It now offers 22 funds, representing €22 billion in assets under management at the end of 2023.

21. ENGAGEMENT STRATEGY

The voting and engagement policy is an integral part of the responsible investor approach developed by BNPP AM.

In particular, in the voting policy, the escalation procedure includes a penalty for companies that do not meet expectations of transparency and commitment in terms of climate change set by BNPP AM, by systematically voting against certain categories of resolutions at shareholder meetings. Details are available in the voting policy. There is also an escalation strategy involving the filing of shareholder resolutions (for example on the subject of climate lobbying) and the exclusion strategies.

Under its engagement policy, BNPP AM conducts individual engagement on these issues with companies and actively participates in collaborative initiatives such as Climate Action 100+. In 2023, the company engaged with 185 companies on environmental issues.

22. EXCLUSION STRATEGY

The Global Sustainability Strategy covers all asset classes and sustainability pillars, including ESG integration, sector and normative exclusions, as well as voting and engagement. A company may be automatically excluded as soon as a threshold is breached or at the end of an unsuccessful engagement process. The rules apply to European open-ended funds and to discretionary mandates and dedicated funds on a voluntary basis.

23. METHODOLOGICAL TOOLS

BNPP AM has developed a proprietary framework for measuring the alignment of investments in companies, which is available to its asset managers. This proprietary framework, named "triple A (NZ:AAA)" (net zero achieving, aligned or aligning), classifies companies according to their level of alignment with the net zero objective. For climate scenarios, the company refers to the CDP WWF methodology. The main data providers are CDP, SBTi, SDG Fundamentals developed in collaboration with Matter (a fintech specialising in ESG data and analysis) for the SDGs and Bloomberg for the taxonomy.

BNPP AM publishes the various investment ratios between fossil fuels and low-carbon energies in the Principal Adverse Impacts (PAI) statement, the Article 29 report of the French Energy-Climate Law and the Climate Report.

In the portfolios monitored, the portfolio's average ESG rating must be higher than that of its benchmark index or universe, and its carbon footprint must be lower than that of its benchmark index or universe. The management company also uses the Paris Aligned Benchmark approach in several investment strategies.

At this stage, the Global Sustainability strategy is sufficient to steer the asset manager's commitment. The key components of the strategy include the exclusion policy, ESG scores, carbon footprint monitoring and engagement. More specific rules for individual strategies in the future have not been ruled out.

The approach to managing ESG risks is part of a company-wide governance framework. Several committees, from the Executive Committee to the Global Products Committee and the Sustainability Committee, are in place to oversee the integration of ESG risks into the investment process.

24. ALLIANCES AND PARTNERSHIPS

Association Française de la Gestion financière (AFG)

Climate Action 100+

Coalition for Environmentally Responsible Economies (CERES) – 2005

Institutional Investors Group on Climate Change (IIGCC) – 2002

Net Zero Asset Managers Initiatives (NZAM) – 2021

Task Force on Climate-related Financial Disclosures (TCFD) – 2017

Climate Bonds Initiative (CBI) - 2019

See the full list of all BNPP AM's partnerships and alliances here: Partnerships and alliances

OFI INVEST AM

25. GENERAL POLICY

Ofi Invest Asset Management has committed to align its investments with the climate objectives of the Paris Agreement and support the energy transition:

1. Exclusion policy:
   - End of debt financing: end of financing for companies involved in unconventional oil and gas and/or expansion and exploration projects.
   - No equity investments in companies where more than 5% of their revenue comes from the production or extraction of unconventional oil and gas.
   - For coal, exclusion threshold aligned with the French ISR V3 label.
2. Monitoring of CO_2 emission reductions of funds: Reduction of GHG emissions for its open-ended funds, with targets aligned with the Paris Agreement, by 2030.
3. Monitoring of the credibility of the climate plan using a proprietary methodology.
4. Climate Engagement Strategy.

26. COMMODITIES CONCERNED AND SCOPE

Ofi Invest AM has set intermediate targets to reduce its exposure to the fossil fuel sector:

1. **2025:** Exclusion of companies refusing to cooperate.
2. **2027:** Continued investment if two of the following three criteria are met:
   - Cessation of oil exploration/extraction projects.
   - Reduction of GHG emissions in line with carbon neutrality by 2050.
   - At least 30% of CAPEX aligned with the taxonomy.
3. **2040:** Full exit from unconventional oil and gas.

For **thermal coal**, Ofi Invest AM undertakes to no longer finance these activities by 2030, including:

→ Companies with thermal coal mines.

→ New coal mining and energy generation projects.

→ Companies whose revenue related to thermal coal is ≥ 5%.

→ Companies with more than 10% thermal coal in their energy mix.

For more information:

https://www.ofi-invest-am.com/pdf/principes-et-politiques/sectorial-policy_oil-and-gas.pdf

https://www.ofi-invest-am.com/pdf/principes-et-politiques/sectorial-policy_coal.pdf

27. ENGAGEMENT STRATEGY

Ofi Invest Asset Management implements an engagement strategy to achieve its climate objectives. Here are the key points:

1. **Forms of engagement**:
   - **Dialogue with companies**: Active participation in working groups to support the energy transition.
   - **Participation in annual general meetings**: Influence decisions through votes and resolutions.
   - **Specific engagement**: Individual engagement with 35 companies between 2023 and 2024, particularly in the oil and gas sector.
2. **Escalation process:**
   - **First level measures:** Intensify efforts if initial responses are unsatisfactory or measures will be publicly visible.
   - **Second level measures:** Action at shareholder meetings or sale of positions if no improvement is observed.
3. **Impact monitoring indicators:** the objective is to assess factual improvements in companies' practices. An interview guide and specific indicators are used to track progress. Indicators include: - the fact of having objectives certified by SBTi - the presence of short, medium, long and term objectives in the company's climate strategy - the % of Scope 3 emissions covered by these objectives - the % of capex aligned with the taxonomy - the % of revenue devoted to renewable energies.

For more information:

https://www.ofi-invest-am.com/pdf/principes-et-politiques/shareholder-engagement-and-voting-policy.pdf

https://www.ofi-invest-am.com/pdf/documents/engagement-report_ofi-asset-management.pdf

28. EXCLUSION STRATEGY

1. **Thermal coal**:
   - Exclusion of companies with thermal coal mines.
   - Exclusion of new mining and coal-fired power generation projects.
   - Exclusion of companies where ≥ 5% of revenue comes from thermal coal.
   - Exclusion of companies with > 10% thermal coal in their energy mix.
   - Exclusion of companies with coal-fired power plants > 5 GW.
2. **Oil & Gas**:
   - End of debt financing for unconventional oil and gas.
   - No equity investments in companies where more than 5% of their revenue comes from the production or extraction of unconventional oil and gas.
3. **Methodologies:** Use of sources such as Urgewald and MSCI to identify companies to exclude. Policy reviewed annually.
4. **Scope of application**: Applies to open-ended funds managed by Ofi Invest AM or OFI Invest Lux, unless otherwise advised by investors or partners.
5. **Exceptions**: Possibility of exceptions to encourage the transition to low-carbon energies, such as green bonds with a positive opinion.

For more information:

https://www.ofi-invest-am.com/pdf/principes-et-politiques/sectorial-policy_oil-and-gas.pdf

https://www.ofi-invest-am.com/pdf/principes-et-politiques/sectorial-policy_coal.pdf

29. METHODOLOGICAL TOOLS

Ofi Invest AM's alignment monitoring methodology: Ofi Invest AM draws on the best practices identified within the Net Zero Alliance coalitions, in particular the reduction targets for equity and corporate bonds asset classes.

→ Reduction from 22% to 32% by 2025;

→ Reduction from 49% to 65% by 2030.

Target of -50% on Scopes 1, 2 and 3.

Indicators used: Emission reduction rate per million euros invested.

Scenario chosen: IPCC 1.5° pathway P2 to assess the risks and opportunities associated with the transition to a low-carbon economy.

Databases: Sources including Urgewald, MSCI, and CDP.

Methodology for the credibility of climate plans: In 2023, Ofi Invest AM implemented a methodology to assess the credibility of companies' climate plans. It developed a metric covering 8,000 issuers, based on a qualitative sector approach and three main pillars.

Climate indicators and investment strategy: Monitoring these climate indicators is crucial for Ofi Invest AM's investment strategy. Companies that do not meet the energy transition criteria may be excluded from the investment universe. Investment decisions are strongly influenced by companies' ability to align their practices with climate goals.

Governance: Ofi Invest AM has put in place a structured governance system to monitor its responsible investment policies, particularly with regard to climate issues, with various committees:

→ Responsible Finance Committee

→ Exclusion Committees

→ Portfolio monitoring meetings

Certification: Ofi Invest AM participated in the working groups on the adaptation of the ACT approach to the financial sector during the test phase. This led to an assessment and presentation of its climate approach by the institution's experts.

30. ALLIANCES AND PARTNERSHIPS

Ofi Invest Asset Management participates in the following alliances, coalitions and initiatives specifically related to the climate:

→ PRI (Principles for Responsible Investment)

→ TCFD (Task Force on Climate-related Financial Disclosures)

→ Observatoire de la finance durable

→ CDP (Carbon Disclosure Project)

→ IIGCC (Institutional Investors Group on Climate Change)

→ Climate Action 100+

→ ACT4Finance

→ TNFD (Taskforce on Nature-related Finance Disclosures)

→ Sustainable Blue Finance Initiative (UNEP FI)

C. INSURERS

Insurance companies have a specific positioning, as they provide long-term financial products that make it possible to consider time horizons more directly aligned with those of environmental issues. As a result, they have significant potential to contribute to the deployment of a financial system that incorporates these issues.

CRÉDIT AGRICOLE ASSURANCES

1. GENERAL POLICY

The Crédit Agricole group's climate transition plan is based on three complementary areas: accelerating the development of renewable energies, supporting the transition to a low-carbon economy and accelerating the withdrawal from fossil fuels. Drawing on its work on the decarbonisation trajectories of the customer portfolios of each of its major business lines (financing, investment, asset management and insurance) and on its operating footprint, it ***has been working for more than twenty years*** *to contribute to achieving carbon neutrality in 2050.*

As a member of the Net-Zero Asset Owner Alliance since 2021, Crédit Agricole Assurances - committed to the transition of its investment portfolios - has made a new commitment by 2030: to reduce by 50% the carbon footprint (in tonnes of CO_2 equivalent per million euros invested) of its listed investment portfolios directly investing in equities and corporate and real estate bonds by the end of 2029 compared with the end of 2019.

This new commitment is part of the continued decarbonisation trajectory of Crédit Agricole Assurances' investment portfolios and the objectives set previously for 2025, namely to:

→ *Reduce the carbon footprint of its listed equity and corporate bond investment portfolio by 25% compared to 2019.*

→ *Increase investments in renewable energies to contribute to the installation of 14 GW in generation capacity (on a 100% ownership basis), representing the average energy consumption of five million French households per year.*

→ *Engage in shareholder dialogue with at least 20 of the most carbon-intensive companies in the portfolio.*

Fossil fuel policy

With regard to fossil fuels, Crédit Agricole Assurances has implemented a policy of phasing out thermal coal. It has committed to no longer investing in the development of new coal capacities and to completely divest from coal by 2030.

In addition, in line with the NZAOA's position note on the oil and gas sector, Crédit Agricole Assurances is committed to no longer investing in new oil and gas infrastructure and to encourage players in the sector to set decarbonisation targets compatible with the 1.5°C scenarios.

2. COMMODITIES CONCERNED AND SCOPE

The Crédit Agricole group has sector policies. In terms of investment, Crédit Agricole Assurances has set strategic guidelines for coal, oil and gas and all forms of renewable energy.

3. ENGAGEMENT STRATEGY

Crédit Agricole Assurances implements its climate strategy through a policy of active engagement with the companies in its portfolio. Crédit Agricole Assurances has a formal voting and engagement policy.

This results in regular dialogue with management, the exercise of voting rights at general meetings, and the setting of progress targets to be achieved by companies.

In the event of non-response or insufficient progress, Crédit Agricole Assurances may implement an escalation process, up to and including exclusion of the investee.

Crédit Agricole Assurances monitors the impact of its engagement through key indicators, such as the rate of votes against resolutions, the number of companies involved, or changes in the ESG performance of the portfolio companies.

4. EXCLUSION STRATEGY

Exclusions put in place

In addition to the gradual exclusion of coal, Crédit Agricole Assurances has also implemented exclusions for companies most exposed to unconventional oil and gas, as well as those involved in major ESG controversies.

Criteria and methodologies

These exclusions are based on revenue thresholds related to these activities and an in-depth analysis of companies' ESG practices.

Scope of exclusions

These exclusion rules apply to all financial assets held by Crédit Agricole Assurances, whether under direct management or delegated management.

Exceptions

Exceptions may be considered in some cases, where the investee demonstrates significant progress in its transition.

5. TOOLS

Climate monitoring methodologies

Crédit Agricole Assurances uses several methodologies to monitor the climate alignment of its portfolios:

- The carbon intensity of portfolios (upstream Scopes 1, 2 and 3),

- Temperature rise indicator (alignment with the Paris Agreement)

- Analysis of the energy mix: share of renewable energies, exposure to fossil fuels.

Scenarios and data providers

The group uses the scenarios of the International Energy Agency, as well as on data provided by its main asset management company Amundi, Iceberg Data Lab and other specialised data providers.

These climate indicators are fully integrated into Crédit Agricole Assurances' investment decision-making process through a dedicated governance framework.

6. ALLIANCES AND PARTNERSHIPS

Crédit Agricole Assurances is part of several leading climate initiatives and alliances, such as:

- *Net-Zero Asset Owner Alliance (NZAOA)*
- *Principles for Responsible Investment (PRI)*
- *Principles for Sustainable Insurance (PSI)*
- *Task Force on Climate-related Financial Disclosures (TCFD) at Crédit Agricole group level*
- *PCAF at Crédit Agricole group level*
- *FIT*
- *TNFD at Crédit Agricole group level (early adopter)*

Crédit Agricole Assurances also works closely with organisations such as the ACPR, France Assureurs and the Paris Financial Centre on these issues.

MAIF

7. GENERAL POLICY

Contributing to the objectives of the Paris Agreement on climate is the starting point of the proactive climate strategy deployed since 2020, when MAIF committed to aligning its investment portfolio with a trajectory as close as possible to +1.5°C by 2030.

MAIF did not wait for regulations to set out its climate ambition. This ambition is based mainly on the international framework of the Paris Climate Agreement and on the recommendations of scientific experts. The climate strategy is also an important area of deployment of the company's purpose, in particular with regard to the objective of contributing to the ecological transition. For MAIF, regulations are a means to speed up the consideration of climate issues and an accelerator in terms of transparency in its approach.

8. COMMODITIES CONCERNED AND SCOPE

Fossil fuel policy

→ *Exclusion policy applied to direct investments, financial flows and outstanding investments, as well as dedicated funds:*

- Thermal coal (including electricity production from coal);
- Upstream oil and gas (unconventional) (shale oil and gas, oil from oil sands, very deep water drilling, Arctic drilling);
- Oil (conventional) upstream + midstream (including electricity production from oil);
- Depending on the fuel, the exclusion thresholds applied are between 0% and 10%.

→ *Policy for open-ended funds:*

- Systematic analysis of the fossil fuel policies of asset management companies and investment funds (pre-investment and annual questionnaire);
- Analysis of funds' exposure to fossil fuel activities.

→ *For all delegated management:*

- Since 1 January 2024, no new investments in investment management companies that have not set an exit horizon for thermal coal.

→ *For the entire portfolio (direct and delegated management):*

- Stopping the financing of new oil and gas projects by 2030;
- Exit from thermal coal and unconventional fossil fuels by 2030;
- Exit from the oil industry by 2040.

Financing the energy transition

Eco-responsible investments and projects contributing to the energy and ecological transition constitute the "green share" of financial assets according to the MAIF group's internal definition, based on the French label Greenfin.

MAIF considers that only projects exclusively dedicated to activities contributing to the energy and ecological transition, buildings certified within the past five years or companies generating more than 50% of their revenue from these activities can be included in the green share of its financial investments.

N.B. The scope of the Greenfin framework is broader than the financing of renewable energies alone. It includes: the production and distribution of renewable energy (solar, wind, hydro, bioenergy), green buildings, the circular economy, energy efficiency, low-carbon transport, agriculture and sustainable forests.

9. ENGAGEMENT STRATEGY

MAIF applies a pragmatic engagement approach by establishing targeted dialogue with its partner management companies and the companies in which it invests.

Engagement with companies

With regard to the companies engaged, those whose long-term decarbonisation trajectories are not aligned with the MAIF group's commitments are targeted. These exchanges are an opportunity to raise companies' awareness of the challenges of a just and sustainable transition, which is necessary to limit the rise in global temperature to as close as possible to +1.5°C. Engagement is carried out both bilaterally between MAIF and the target company and through investor coalitions of which MAIF is a member (CA100+, FIR).

Companies with residual exposure to thermal coal are subject to specific engagement to ensure that they implement their plan to exit coal by 2030 at the latest. Since 1 January 2024, companies that have maintained exposure to thermal coal (in compliance with the exclusion thresholds set out above) and have not adopted a plan to fully exit thermal coal by 2030 are no longer eligible for new investments.

Engagement with asset management companies

In 2023, MAIF continued its commitment to the climate by launching a dialogue with its asset management company partners on ending financing for players in the coal sector. Since 1 January 2024, asset management companies that have not set out an exit strategy from thermal coal are no longer eligible for new investments. However, this did not mark the end of the dialogue, which continued in 2024 with management companies that have not yet made any commitment to exit thermal coal.

10. EXCLUSION STRATEGY

Direct management and dedicated funds:

MAIF excludes activities that have a significantly negative impact on human life or the environment from direct investments of its financial assets.

Sector exclusions applied to companies, for directly managed and dedicated funds:

→ Mining companies that produce coal;

→ Companies developing new projects for mining, power plants and thermal coal infrastructure;

→ Companies generating more than 10% of their electricity from coal;

→ Companies with more than 5 GW of coal-fired power generation capacity;

→ Companies that generate more than 10% of their revenue from thermal coal.

→ Companies developing new oil or natural gas exploration or production projects;

→ Companies producing unconventional fossil fuels above a threshold of 5% of their production (this concerns the production of shale oil and gas, oil from tar sands, drilling in the Arctic, drilling in very deep waters, extraction of extra-heavy oil or mining of coal gas);

→ Companies in the oil industry above a threshold of 5% of revenue (this concerns oil production and associated facilities, refining, oil transport and oil-based electricity production).

This exclusion policy resulted in the divestment of all directly held issuers that did not comply with the policy thresholds between 2019 and 2022.

Exceptions

MAIF does not deviate from these exclusion rules, which apply to both new and existing investments. It does not invest in the subsidiaries of excluded companies or the sustainable issues (green bonds, sustainability-linked bonds, etc.) of excluded companies.

Open-ended funds

To apply the climate strategy during the review of an open-ended fund, a pre-investment analysis of the fund's exclusion policy and its exposure to fossil fuels may lead to the abandonment of the investment if excessive deviations from MAIF's exclusion policy are identified.

11. METHODOLOGICAL TOOLS

The deployment of the climate strategy applied to investments is monitored using various indicators: **measurement of warming caused by investments**, **carbon footprint**, **green share of investments**. These complementary indicators allow an assessment of different aspects of the portfolio's climate performance.

The **measurement of investment-induced global warming** as calculated by **S&P Trucost** is based on the following methodology: comparison of the trajectory for reducing past CO_2 emissions as well as the trajectories for reducing greenhouse gas emissions (Scopes 1 and 2) announced by each portfolio company with the reductions expected by 2030 by the scenarios for limiting global warming below 1.75°C, 2°C and 3°C presented by the IPCC and the IEA. The results of each company are then aggregated at the level of MAIF's investment portfolio.

This forward-looking indicator, taking into account counterparties' announced trajectories, is complementary to the **carbon footprint** indicator (Scopes 1 + 2 + 3 upstream), which measures the greenhouse gas emissions to which MAIF VIE's investments contributed. The **green share** is an indicator specific to the MAIF group (the calculation of which is based on the Greenfin label benchmark) making it possible to add the contribution to the energy and ecological transition to the measurement of climate change mitigation.

The opposite of the green share is the **fossil share** assessed by **Carbon4 Finance**. This corresponds to MAIF's exposure to companies active in the fossil fuel sector (considering MAIF's entire investment in the companies concerned). A more precise indicator taking into account only the share of these companies' revenue actually linked to extraction, the production of fossil fuels or of energy from fossil fuels is also calculated: the **brown share**.

These climate indicators are part of a wider range of indicators that enable sustainable finance analysts to integrate sustainability risks into MAIF's responsible investment approach. This is implemented through three sustainability strategies: the climate strategy, the biodiversity strategy and the social strategy. This approach is part of the investment policies and is validated each year by General Management and the Boards of Directors of the companies of the MAIF group, after presentation to the Audit, Risk and Accounts Committee.

12. ALLIANCES AND PARTNERSHIPS

This voluntary climate strategy was reinforced by the MAIF group's membership of the Net-Zero Asset Owner Alliance in October 2021. MAIF feeds its climate strategy through dialogue and exchanges with its peers within the PRI and the FIR. Finally, its involvement in CA100+ allows MAIF to join a coalition of investors aimed at encouraging the companies that emit the most greenhouse gases to take actions that are better for the planet.

AEMA GROUP (ABEILLE ASSURANCES AND MACIF)

13. GENERAL POLICY

A member of the NZAOA since 2022, Aéma group and its insurance brands Macif, Abeille Assurances and Aésio have set a target for reducing the carbon intensity of their investments, with a first milestone in 2030:

→ **Reduce the carbon footprint of its portfolios** of directly held corporate bonds and listed equities by 50% by 2030. This objective applies to Scope 1, 2 and 3 emissions of companies in the portfolios of the group's insurers (possibly modelled for Scope 3).

The reference period starts on 31 December 2019 (adjusted in case of data difficulties).

This objective covers more than 95% of assets held directly or in dedicated funds by the group's insurers.

→ **Engage the 20 largest GHG emitters** in their investment portfolios to encourage them to reduce their carbon footprint.

→ **For real estate assets** held directly by the group's insurers: achieve a net zero 1.5°C decarbonisation target by 2030 based on the CRREM (Carbon Risk Real Estate Monitor) methodology.

Abeille Assurances has made additional commitments:

→ For investments: make gross sustainable investments of at least €750 million per year, with a significant portion dedicated to energy transition and renewable energy financing;

→ For management companies managing unit-linked funds or funds on behalf of the general fund: Abeille Assurances has set up a climate engagement programme with almost all management companies managing open-ended funds or unit-linked funds on its behalf;

Consideration, during investment due diligence, of climate factors and investments in fossil fuels of funds and unit-linked funds.

Ofi Invest AM, the management company of the AEMA group, has set a target compatible with the reduction of CO_2 emissions across the three scopes for its direct funds (see details in the French Energy-Climate Act Article 29 document).

Fossil fuel policies and targets:

→ **Coal** Aéma group and its brands Abeille Assurances, Aésio, Macif and Ofi Invest AM have implemented a policy to exit coal by 2030 for all regions, thus positioning itself as a leader on the subject according to Reclaim Finance (Coal policy tracker). Abeille Assurances, Macif and Aésio no longer finance thermal coal and they lowered their exclusion thresholds in 2022 (>2 GW of installed capacity, >10% of revenue for Abeille Assurances[134], (>5 GW of installed capacity, >20% of revenue for Macif[135] and Aésio). Ofi Invest AM has aligned its coal policy with the recommendations of the French ISR V3 label, namely a threshold of 5% of revenue.

→ **Oil and gas**: Aéma group and its insurance entities have a policy to stop new investments in unconventional oil and gas (threshold of 5% of revenue), and in developers of new projects for the exploitation or production of conventional oil and gas, in accordance with the recommendations of the IEA to follow a +1.5°C trajectory[136].

Within the scope of asset management:

→ In its open-ended funds, Ofi Invest AM has stopped financing (by holding or purchasing bond debt) companies involved in the production and extraction of unconventional oil and gas and/or in exploration expansion projects;

→ For equity holdings, Ofi Invest targets companies that are subject to engagement to assess, accelerate and support their transition approach. These equity holdings are the best means to support issuers in this process, along with voting and the filing of shareholder resolutions.

→ Ofi Invest AM has committed to exit unconventional oil and gas by 2040.

134 https://www.abeille-assurances.fr/documents/abeille/pdf/entreprise/engagements/strategie-investissement-charbon-Abeille-Assurances.pdf

135 https://www.macif.fr/files/live/sites/maciffr/files/maciffr/LeGroupe/Panoramadugroupe/Publications/2020/Strategie_de_sortie_et_d_exclusion_totale_du_charbon.pdf

136 https://www.abeille-assurances.fr/documents/abeille/pdf/entreprise/engagements/strategie-hydrocarbures-abeille-assurances-2022.pdf

14. COMMODITIES CONCERNED AND SCOPE

In terms of fossil fuels, Aéma group and its brands rely on the definitions used by Urgewald for the GCEL (Global Coal Exit List) and GOGEL (Global Oil & Gas Exit List). The definition of unconventional oil and gas is provided in the oil and gas strategy of the Abeille Assurances, Macif and Aésio brands. It includes oil and gas from hydraulic fracturing, shale gas, extra heavy oil, layer methane, oil and gas from ultra-deep drilling and oil and gas from drilling located in the Arctic zone (GOGEL definition).

Aéma group and its insurance brands have not, to date, established a precise classification of low-carbon solutions, but draw on recognised international standards in this area such as the European Union Taxonomy and the ICMA principles and guidelines on projects eligible for financing in the form of green bonds. The group's insurance brands have set an intermediate target for producers of conventional fossil fuels.

Aéma and its insurance brands have implemented a strategy of gradually excluding issuers developing new exploration or exploitation projects for oil and gas fields. Since July 2022, oil and gas sector issuers have been classified according to the share of their capital investment (CAPEX) considered to exceed the IEA's Net Zero scenario.

→ Issuers belonging to the first two terciles in this ranking were excluded from the investment universe as of 1 July 2022;

→ Issuers belonging to the last tercile in this ranking are subject to an engagement approach At the end of this engagement, and at the latest in 2025, issuers that have not demonstrated the materiality of their energy transition approach will be excluded from the investment universe.

15. ENGAGEMENT STRATEGY[137]

In partnership with Ofi Invest AM, the group implements an engagement strategy with the 20 companies in the portfolio that emit the most greenhouse gases. This policy is structured around several pillars: written exchanges, dialogue and escalation measures.

Companies active in the oil and gas sector on an individual basis or with other investor insurers are also engaged.

The priority targets of the engagement are issuers with CAPEX exceeding the IEA's Net Zero scenario, and belonging to the last tercile in the ranking. This engagement applies to assets held directly by the group's insurance brands. To remain within the entities' investment universe, engaged issuers must implement an energy transition approach. This is assessed by Ofi Invest AM. An assessment of the results of the engagement approach will be carried out in 2025. On this date, issuers that have refused to cooperate with Ofi Invest AM or that have not been able to demonstrate the effectiveness of their transition approach will be excluded from the investment universe.

16. EXCLUSION STRATEGY

Coal exclusion strategy:

The entities exclude any new investment in the following companies:

Coal developers: Companies developing new projects for thermal coal extraction, energy generation involving the use of thermal coal or developers of coal infrastructure of any size;

Abeille Assurances[138], Macif and Ofi Invest exclude any new investment in companies whose coal-fired power generation capacity exceeds 5 GW (2 GW for Abeille Assurances) and companies active in coal mines from the first euro of revenue;

Ofi Invest AM, Abeille Assurances and Macif exclude any new investment in companies exceeding a threshold of revenue derived from the production/operation of coal mines or the production of coal-fired electricity for energy companies (5% for OFI Invest AM, 10% for Abeille Assurances, 20% for Macif), or relating to the percentage of installed capacity.

137 https://www.macif.fr/files/live/sites/maciffr/files/maciffr/LeGroupe/Panoramadugroupe/Publications/2020/Strategie_de_sortie_et_d_exclusion_totale_du_charbon.pdf

138 https://www.abeille-assurances.fr/documents/abeille/pdf/entreprise/engagements/strategie-hydrocarbures-abeille-assurances-2022.pdf

Macif and Abeille Assurances exclude any new investment in companies for which 20% or more of their revenue (10% or more for Abeille Assurance) comes from the production/operation of coal mines or the production of electricity from coal for energy companies, or the percentage of installed capacity.

Aéma group and its brands Abeille Assurances, Macif, Aésio and Ofi Invest AM undertake to exit all thermal coal-related positions by 2030, regardless of the geographical region and asset class. The exit and exclusion strategy for thermal coal in 2030 is implemented through the investment management delegation to Ofi Invest AM.

Oil and gas exclusion strategy:

Since 1 July 2022, the entities have excluded any new investment in companies:

→ For which the production of unconventional oil and gas represents more than 25% of

→ total fossil energy production;

→ For which more than 5% of revenue is related to unconventional oil and gas;

→ Having made public a decision to invest in new oil or gas exploitation projects in the Arctic, after 1 July 2024.

Any issuer meeting one of these criteria will be excluded.

As of 1 January 2030, the entities undertake to exclude any new investment in companies involved in the exploration and/or production of unconventional oil and gas. However, to encourage mitigation efforts by these issuers, the entities reserve the right to invest:

→ In any green bonds issued by companies excluded from their investment universe, provided that they have been the subject of a Second Party Opinion certifying that they are sustainable as well as a positive opinion from the asset management company (Ofi Invest Asset Management);

→ In any debt issues of subsidiaries or joint ventures of these issuers, provided that they are entirely dedicated to the production of renewable energies.

The engagement strategy applies to assets held directly by the group's insurance entities concerned by this strategy.

For the management company Ofi Invest AM, a distinction is made between equities and bonds, as follows:

→ In its bond management, Ofi Invest AM excludes investments in issuers in the sector involved in the production and extraction of unconventional oil and gas and/or in expansion (brownfield) or exploration (greenfield) projects[139].

→ In its equity management, Ofi Invest AM excludes all new investments in private issuers of which more than 5% of revenue is linked to the production and extraction of unconventional oil and gas[140]. This exclusion applies to any purchase of equity securities in portfolios managed by Ofi Invest AM.

17. METHODOLOGICAL TOOLS

For its methodologies, the group uses the recommendations of the NZAOA Target Setting Protocol (I TSP 4).

For the climate alignment of portfolios, it monitors their carbon footprint. Key indicators include the aggregate of investees' absolute carbon footprints, their footprint per million euros in enterprise value (Footprint/EVIC) and the alignment of the real estate portfolio in line with the CRREM methodology.

Other indicators monitored include the portfolios' residual exposure to fossil fuels, the volume of "green" and "sustainable" financing and the share of capital investment (CAPEX of oil and gas sector issuers).

For funds and AIFs, the indicators monitored include the presence of an objective to reduce the carbon footprint or carbon intensity, energy exposure, or alignment with the taxonomy. The ESG indicators monitored are the subject of specific reports sent periodically to the principals and examined by the investment committees.

18. ALLIANCES AND PARTNERSHIPS

Aéma group and its brands Macif, Abeille Assurances and Aésio are members of the NZAOA.

139 This exclusion is based on the Global Oil and Gas Exit List (GOGEL) of the NGO Urgewald.

140 This exclusion is made based on MSCI data.

BPCE ASSURANCES

19. GENERAL POLICY

As an insurer, BPCE Assurances has been committed to sustainability issues for several years and is committed to integrating environmental, social and governance criteria into the management of its investments.

In accordance with the objectives of the Paris Agreement, BPCE Assurances committed to aligning its asset portfolio with a temperature rise trajectory of 2°C at the end of 2024 and, on this basis, has put in place sector policies relating to fossil fuels, the combustion of which is responsible for the majority of greenhouse gas emissions.

At the same time, BPCE Assurances is increasingly financing low-carbon solutions that meet the needs of current and future generations, in a world that is constantly changing in response to climate challenges. In particular, it has set itself a target of aligning its asset portfolio with a +2°C trajectory by 2024 and to allocate at least 15% of its annual investments to green assets, promoting the ecological transition.

20. COMMODITIES CONCERNED AND SCOPE

Commodities concerned

→ Conventional and non-conventional oil and gas or techniques with a high environmental impact,

→ Thermal coal.

Scope of application

Since 2024, the oil, gas and coal exclusion policies have applied to all asset classes of the general fund, whether they are managed directly, through mandates or dedicated funds, or via open-ended funds as well as to the unit-linked (UL) scope.

21. ENGAGEMENT STRATEGY

BPCE Assurances structures its engagement approach according to three different types of action:

1. Direct engagement with companies or asset managers;

2. Engagement through asset managers responsible for managing mandates and dedicated funds;

3. Collective commitment via marketplace initiatives (Climate Action 100+ in particular).

22. EXCLUSION STRATEGY

BPCE Assurances' ESG strategy regarding fossil fuels is based on a global approach, with exclusion being a specific angle. These exclusions aim to reduce the economy's dependence on these resources while actively supporting the transition to more sustainable energy. This includes the integration of environmental, social and governance criteria into all investment decisions, thus promoting greener technologies and practices. Through this balanced approach, BPCE Assurances aims not only to mitigate the impacts of climate change, but also to generate sustainable value for its policyholders and society as a whole.

Oil and gas

For new investments, BPCE Assurances' strategy has two complementary components:

1. **Unconventional production or techniques with a high environmental impact**: Exclusion of any new investment in companies that generate more than 10% of their production using unconventional techniques and/or techniques with a high environmental impact. This concerns those that rely on fracturing (shale oil and gas, liquid and watertight gas) or on ultra-deep offshore drilling, drilling in the Arctic, as well as on the extraction of tar sands, coal methane and extra-heavy oil.

2. **Exploration and development of new projects (upstream)**: BPCE Assurances has undertaken to cease all new investments in companies in the sector that develop new exploration or production projects for new conventional or non-conventional oil and/or gas fields.

With regard to existing exposures, an exit plan for companies that do not comply with this policy by 2030 supplements this policy.

Thermal coal

BPCE Assurances has implemented a sector-based policy on the production and use of thermal coal and excludes companies that do not meet the following three cumulative criteria:

1. Revenue from thermal coal less than 25% of the company's revenue;

2. No development of new capacities linked to thermal coal generation (>300 MW of power);

3. Existence of a transition plan aligned with the exit timetable for the geographical area (OECD 2030 / non-OECD 2040) with quantified reduction targets.

In the absence of a transition plan, the exclusion criteria are significantly strengthened.

23. METHODOLOGICAL TOOLS

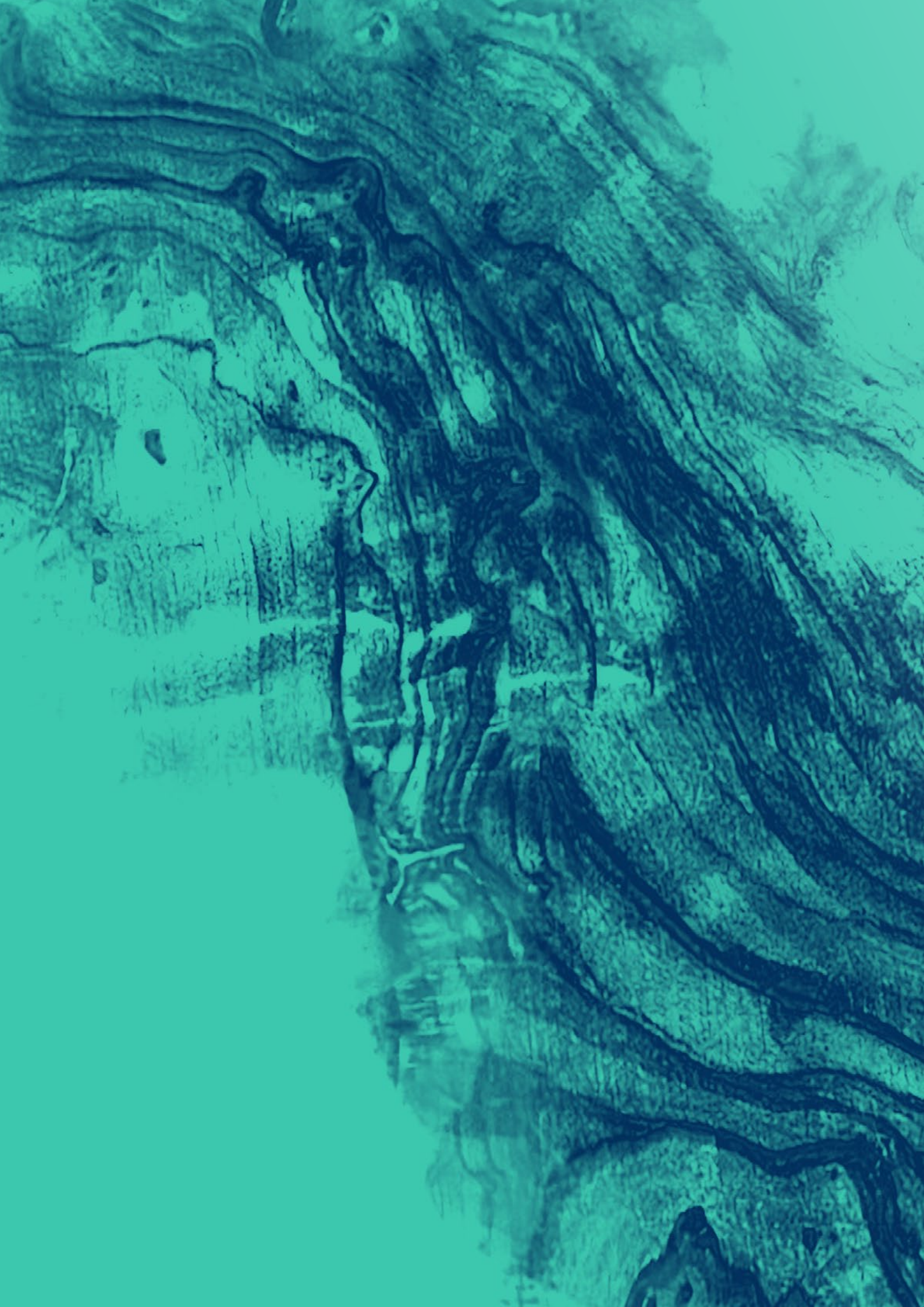
BPCE Assurances draws on various tools and datasets from several external suppliers, recognised on the market.

24. ALLIANCES AND PARTNERSHIPS

→ Member of the Principles for Responsible Investment (PRI)

→ Member of the Net-Zero Asset Owner Alliance (NZAOA)

→ Membership of the Climate Action 100+ initiative



CONCLUSION

In a scenario in which there is no progress in action taken by governments and the private sector, the spontaneous global warming trajectory would lead us far beyond the objectives set in the framework of the Paris Agreement and would have dramatic consequences for the stability of society as a whole.

The climate scenarios studied highlight that the path is narrow for a transition to a sustainable energy model that limits global warming to 1.5°C. The data presented highlight the need to significantly increase investments in low-carbon energy and drastically reduce investments in fossil fuels over the next five years.

The overview of climate strategies and actions drawn up in this study shows that the Paris Financial Centre is a pioneer in the climate transition. This overview shows that members of the Paris Financial Centre are actively working to implement their commitments with robust methodologies and strategies. Accelerating this momentum will allow these best practices to be disseminated more quickly to all market players and around the world.

In this context, the IFD and all its members will continue to support all international initiatives that will enable us to move away from dependence on fossil fuels and finance the transition. The Paris Financial Centre is actively working on the practical implementation of financial solutions aimed at supporting the decarbonisation of the economic system.

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