

Responsible Investment Report 2022 (Article 29)

CARDIF ASSURANCE VIE



REPORT ON ARTICLE 29 OF LAW NO. 2019-1147 ON ENERGY
AND CLIMATE - CARDIF ASSURANCE VIE



BNP PARIBAS
CARDIF

L'assureur
d'un monde
qui change

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Introduction

The drafting of this report falls within the framework of Article 29 of the Energy and Climate Act no. 2019-1147. It presents the methods for managing criteria relating to compliance with environmental, social and governance objectives in the investment policy, as well as the means implemented to contribute to the energy and ecological transition.

This report presents the approach of Cardif Assurance Vie, a subsidiary of BNP Paribas Cardif, for the financial and calendar year 2022.

The methodologies described in this report are common to the two BNP Paribas Cardif legal entities covered by the Article 29 Decree: Cardif Assurance Vie and Cardif Retraite.

Cardif Retraite is a Supplementary Professional Pension Fund (*Fonds de Retraite Professionnel Supplémentaire* – FRPS) dedicated to individual and group pension policies that was created at the end of 2022. (A separate 29LEC report for Cardif Retraite is available on the [BNP Paribas Cardif website](#)).

Insurer BNP Paribas Cardif

BNP Paribas Cardif is the BNP Paribas Group insurer. Operating in 30 countries, BNP Paribas Cardif designs, develops and markets savings and protection offers to insure people, their projects and their assets. As at 31 December 2022, €247 billion in assets are under management worldwide. These assets are funded by general funds and unit-linked funds offered to policyholders. Unit-linked products total €89 billion. Italy and Luxembourg¹ are BNP Paribas Cardif's two main markets in Europe after France, and their general funds represent around €21 billion and €9 billion in market value, respectively. Responsible investment approaches are used for general funds in these countries.

Cardif Assurance Vie “Article 29” report (scope, changes)

Cardif Assurance Vie operates both in France and abroad through eleven branches. Cardif Assurance Vie is present in France, Germany, Austria, Belgium, Bulgaria, Spain, Italy, the Netherlands, Portugal, Romania, Switzerland and Taiwan. For operational and materiality reasons, the data from four of these countries (Bulgaria, Romania, Switzerland and Taiwan) is not covered by the quantitative analyses presented..²

Thus, Cardif Assurance Vie's assets totalled €144 billion (market value.³) at 31 December 2022.

It should be noted that ESG commitments and initiatives have been undertaken by the BNP Paribas Cardif Group. It will be referred to as “BNP Paribas Cardif”. As a result, these broader commitments or initiatives automatically apply to Cardif Assurance Vie.

Unless otherwise stated, for the eight countries covered by the analysis, figures relate to corporate equities and bonds held directly in the general funds and equity of Cardif Assurance Vie.

¹ CSR pages for BNP Paribas Cardif in Luxembourg and Italy, respectively: <https://cardifluxvie.com/notre-responsabilite>; <https://bnpparibascardif.it/responsabilita-sociale-d-impresa>

² Subsidiaries in the four countries not covered in this report (Bulgaria, Romania, Switzerland and Taiwan) represent €8.7 billion in assets (market value) at 31/12/2022

³ Accrued coupons included

This document is the second edition of an “Article 29” report for BNP Paribas Cardif. The plan complies with regulatory requirements. The scope of the report has been reviewed for this publication with a specific report for each legal entity. The report for Cardif Assurance Vie is presented here.

It includes new components compared to the previous publication for the year 2021:

- section E on the European taxonomy and fossil fuels;
- section H on the ESG approach to risk management has been enhanced;
- the geographical scope has been extended compared to the previous edition (France only for the 2021 report, while this report covers eight countries).

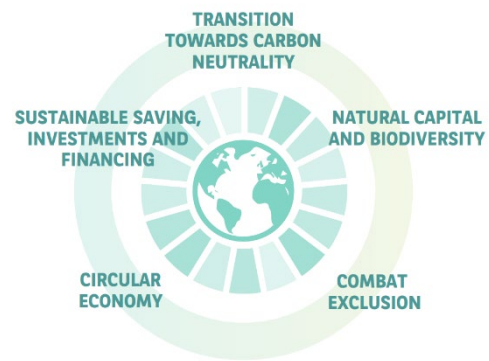
Components that could not fully meet the requirements of the decree are explained and proposals are put forward for continuous improvement.

✦ For this year, the fund’s euro-denominated unit-linked funds (UCIs) are not included in the calculation of the indicators presented. From 2024, BNP Paribas Cardif will work to gradually expand the scope of calculation to other types of assets.

A. Cardif Assurance Vie's general approach to managing environmental, social and governance criteria

As a committed and responsible player, BNP Paribas Cardif endeavours to have a positive impact on society and the environment.

This ambition is at the heart of its 2022 strategic plan, in line with that of the BNP Paribas Group and is structured around three pillars: Growth, Technology and Sustainability (GTS). The sustainability pillar addresses five priority areas, as shown in the chart.



The 5 priority areas⁴ of the "Sustainability" pillar of the BNP Paribas Group's strategic plan

Historically, BNP Paribas' social and environmental responsibility policy has been structured around 4 pillars and 12 commitments in line with the United Nations Sustainable Development Goals.

This CSR strategy aims to help build a more sustainable world while ensuring the Group's stability and performance. All of the voluntary CSR commitments made by BNP Paribas are detailed in its [universal registration document](#)⁵.

BNP Paribas Cardif's corporate social responsibility covers insurance and investment activities as well as the organisation as a whole.

BNP Paribas Cardif's **mission** is to **make insurance products and services more accessible**. The organisation and its governance have been adjusted to implement a sustainable transformation. Operational changes to the Company functions, key players in this transformation, have also been made (see Section *B- Internal resources*).

As an investor, BNP Paribas Cardif is convinced that it is essential to take a long-term perspective when managing policyholders' savings, by combining financial performance and a positive impact on society. The insurer is pursuing a responsible investment policy initiated in 2008 that takes into account environmental, social and governance criteria.

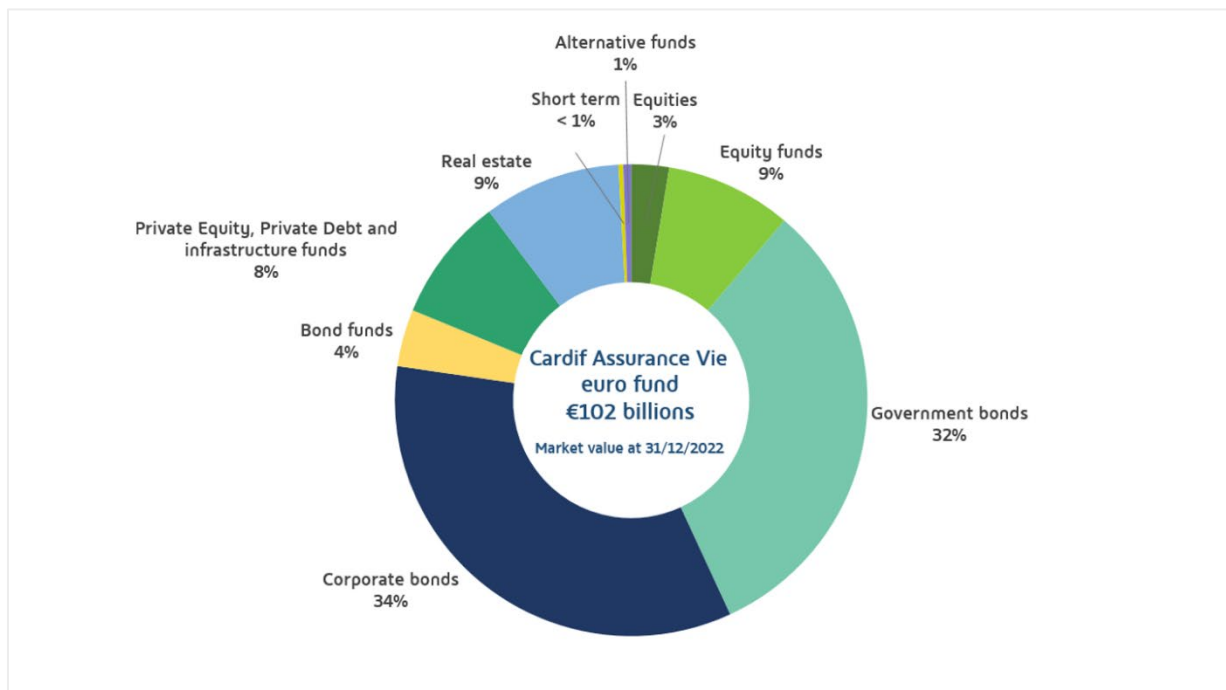
⁴ <https://group.bnpparibas/en/our-commitments/transitions/circular-economy>; <https://group.bnpparibas/en/our-commitments/transitions/natural-capital-and-biodiversity>; <https://group.bnpparibas/en/our-commitments/transitions/responsible-savings-and-investments>; <https://group.bnpparibas/en/our-commitments/inclusion/financial-and-social-inclusion>; <https://group.bnpparibas/en/our-commitments/inclusion/diversity-equality-and-inclusion>; <https://group.bnpparibas/en/our-commitments/transitions/energy-transition-and-climate-action>

⁵ <https://invest.bnpparibas/document/universal-registration-document-2022> p.632

1. Incorporating ESG criteria into the investment strategy

Asset allocation for Cardif Assurance Vie

As of 31 December 2022, Cardif Assurance Vie had €144 billion in assets, broken down between €102 billion in euro funds and €42 billion in unit-linked funds. The euro fund breaks down as follows:



ESG approach (all fund assets in euros)

Cardif Assurance Vie's ESG approach is defined by BNP Paribas Cardif. Some aspects of this ESG policy are generic for all of the fund's assets in euros (sector policies, integration of ESG criteria, commitment to positive impact investments). ESG analysis methodologies are adapted to the specificities of each asset class.

Incorporating ESG into the investment strategy

When making investments, Cardif Assurance Vie examines Environmental (E), Social (S) and Governance (G) issues. This analysis can be qualitative and/or quantitative. To do this, the insurer collects ESG data specific to each asset class, which are then analysed and integrated into the investment process. The investment universe is thus reduced and compatible with its responsible investor approach.

In 2022, the non-financial analysis covered 95% of Cardif Assurance Vie assets.

Sector-specific policies governing investments in sensitive sectors

These exclusions are based on the BNP Paribas Group's⁶ sector policies and cover investments in sectors with environmental or social issues. They cover the fields of agriculture, palm oil, defence, nuclear energy, paper pulp, energy produced from coal, mining, oil and gas. These policies are regularly extended or revised and reflect a specific duty of vigilance in these sensitive sectors.

BNP Paribas Cardif applies the exclusions defined by the BNP Paribas Group based on these sector-specific policies. In addition, the insurer has made specific commitments for the tobacco and coal sectors.

The insurer applies these exclusions to corporate equities and bonds held directly in general funds in France, Italy and Luxembourg, in dedicated funds and mandates and to all majority-owned subsidiaries⁷ internationally. This approach therefore applies to Cardif Assurance Vie, for both existing outstandings and new investments.

Tobacco exclusions: Since 2017, BNP Paribas Cardif has applied a "tobacco-free" investment policy in its portfolios. The insurer has also been a signatory of the Tobacco Free Finance Pledge since 2018. BNP Paribas Cardif excludes manufacturers, wholesalers and distributors whose revenue is more than 10% derived from tobacco.

Thermal coal exclusions: In 2020, the insurer published a timetable for phasing out thermal coal. It applies to investments for electricity production and provides for a definitive exit from the sector by 2030 for the countries in the European Union and the OECD and by 2040 for the rest of the world. (These components will be included in the section *F- Alignment strategy with the Paris Agreement*.)

Positive impact investment commitment

Regarding its investments, **BNP Paribas Cardif has set itself the target of channelling an average of €1 billion per year by the end of 2025 into positive impact investments** (compared to the end of 2019).

Positive impact investments must meet specific criteria (intentionality, measurability), encompass different asset classes and can be broken down into social or environmental themes. They include sustainable bonds, renewable energy infrastructure and additional intermediate-rent housing. **In 2022, BNP Paribas Cardif⁸ achieved €2.7 billion of positive impact investments⁹**, which corresponds to an average of €1.8 billion per year since 2019.

⁶ <https://group.bnpparibas/en/our-commitments/transitions/financing-and-investment-policies>

⁷ Subsidiaries in which BNP Paribas Cardif holds more than 50% of the voting rights +1 vote

⁸ Including the euro funds of Cardif Assurance Vie, Cardif Retraite, Cardif Risques Divers

⁹ Balance sheet figures

ESG approach within Cardif Assurance Vie's euro fund

a. ESG approach to direct securities

Securities held directly include government and corporate securities such as equities or bonds.

Countries

As part of its financial security system¹⁰, BNP Paribas Group has established a country-based policy that applies to all Cardif Assurance Vie investments.

BNP Paribas Cardif analyses the ESG performance¹¹ of countries in order to exclude the lowest performing countries on these issues. This ESG filter is applied to securities issued directly by the countries (government bonds) and securities issued by companies (corporate equities and bonds) whose registered office is in the excluded countries. Only countries with a satisfactory ESG score are retained in the investment universe:

- The Environment pillar takes into account the country's energy mix, the national carbon footprint as well as the ratification of treaties, in particular the Paris Agreement. The analysis also reflects indicators on greenhouse gas emissions, such as CO₂ emissions compared to gross domestic product.
- The Social pillar measures the policies implemented by the countries with regard to poverty, access to employment, access to electricity and the ratification of treaties on labour rights and children's rights.
- The Governance pillar includes respect for human rights and respect for labour rights.

Corporate equities and bonds

For any investment project, the ESG analysis includes three main steps: exclusions and treatment of sensitive sectors, ESG analysis and integration and the application of a carbon transition filter.

1. Exclusions and treatment of sensitive sectors

The activity of the company or the country in which it operates must not be subject to an embargo or financial sanctions.

A specific filter based on external ratings assesses the proper integration of the four pillars of the United Nations Global Compact (compliance with international labour standards, human rights, environment and anti-corruption measures). Companies excluded by this filter are excluded from the investment universe.

The BNP Paribas Group's sector-specific exclusions and BNP Paribas Cardif's specific exclusions (thermal coal and tobacco commitments) are also applied.

¹⁰ https://cdn-group.bnpparibas.com/uploads/file/engagement_letter_bnpp_group_financial_security_and_anti_bribery_corruption_program_oct_2021.pdf

¹¹ ESG rating provided by Moody's ESG: <https://esg.moody's.io/solutions>

2. ESG analysis and integration

The ESG analysis applies to directly-held corporate equities and bonds and is based on the Moody's ESG Solutions rating methodology. This method uses 38 criteria to assess non-financial opportunities and risks. The criteria are grouped into six categories: environment, human resources, respect for human rights at work, market behaviour, civic engagement and corporate governance.

Cardif Assurance Vie uses a best-in-class sectoral approach. Each company is given a score according to its level of performance in each of the six categories, thus obtaining an overall ESG performance (ESG score). Companies are classified by decile according to an overall score. Within each sector, Cardif Assurance Vie excludes any new investment in companies with an ESG score in the bottom three deciles.

3. Carbon transition filter

The carbon transition filter is also based on Moody's ESG Solutions rating methodology and reinforces the sector exclusion policies and ESG analysis. This filter identifies companies engaged in the transition to a low-carbon economy.

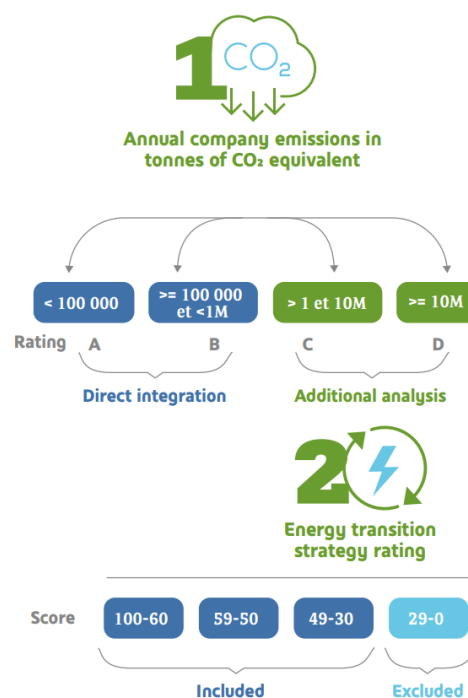
This carbon transition analysis examines:

Carbon emissions of companies: A carbon rating ranks companies according to their greenhouse gas emissions in tonnes of CO₂ equivalent (scopes 1 and 2.¹²). Companies are rated from A to D, in ascending order of carbon emissions.

Energy transition strategy: Companies rated C and D are subject to an additional analysis that assesses:

- energy transition policies relevance;
- policies implementation consistency;
- results effectiveness.

Companies that emit more than 1 million tonnes of CO₂ equivalent and whose energy transition strategy is considered low (score less than 30) are excluded from the investment universe.



¹² The definition of the various scopes according to the GHG protocol can be found in Appendix

b. ESG approach for fund investments

Across all funds,¹³ in which the Cardif Assurance Vie euro fund invests, 43% are classified as “Article 8” within the meaning of the SFDR regulations and 6% as “Article 9”.

The ESG approach used is different for listed and unlisted funds. The main components are presented below.

Listed funds

Cardif Assurance Vie analyses the non-financial process of the management companies and the funds in which it invests.

At the level of the management company, Cardif Assurance Vie analyses the shareholder engagement policy through PRI questionnaires completed by the signatory companies. At the same time, a due diligence questionnaire, designed by Cardif Assurance Vie, is sent to measure the integration of ESG criteria at the fund level. For example, the fund's exclusions to several identified sensitive sectors are checked. The SRI team establishes an internal ESG rating for each fund.

This analysis makes it possible to identify for each fund its level of ESG integration, any environmental or social theme, and to validate whether it is a positive impact fund.

Unlisted funds

Unlisted funds include private debt, private equity and infrastructure funds. The ESG approach for unlisted funds is specific because the nature of the investment is different. Investors are involved upstream and commit over a long period of time.

Before investment: The process of integrating ESG criteria is first analysed at the level of the management company and its governance, then at the level of the projects financed by the fund. This due diligence makes it possible to establish an ESG score that will be taken into account by the Asset Management Department when validating the investment.

In addition to the subscription form, a binding side letter negotiated between the parties ensures that sector-specific restrictions can be implemented.

During the investment period: An ESG questionnaire collects data that is regularly updated.

Mandates

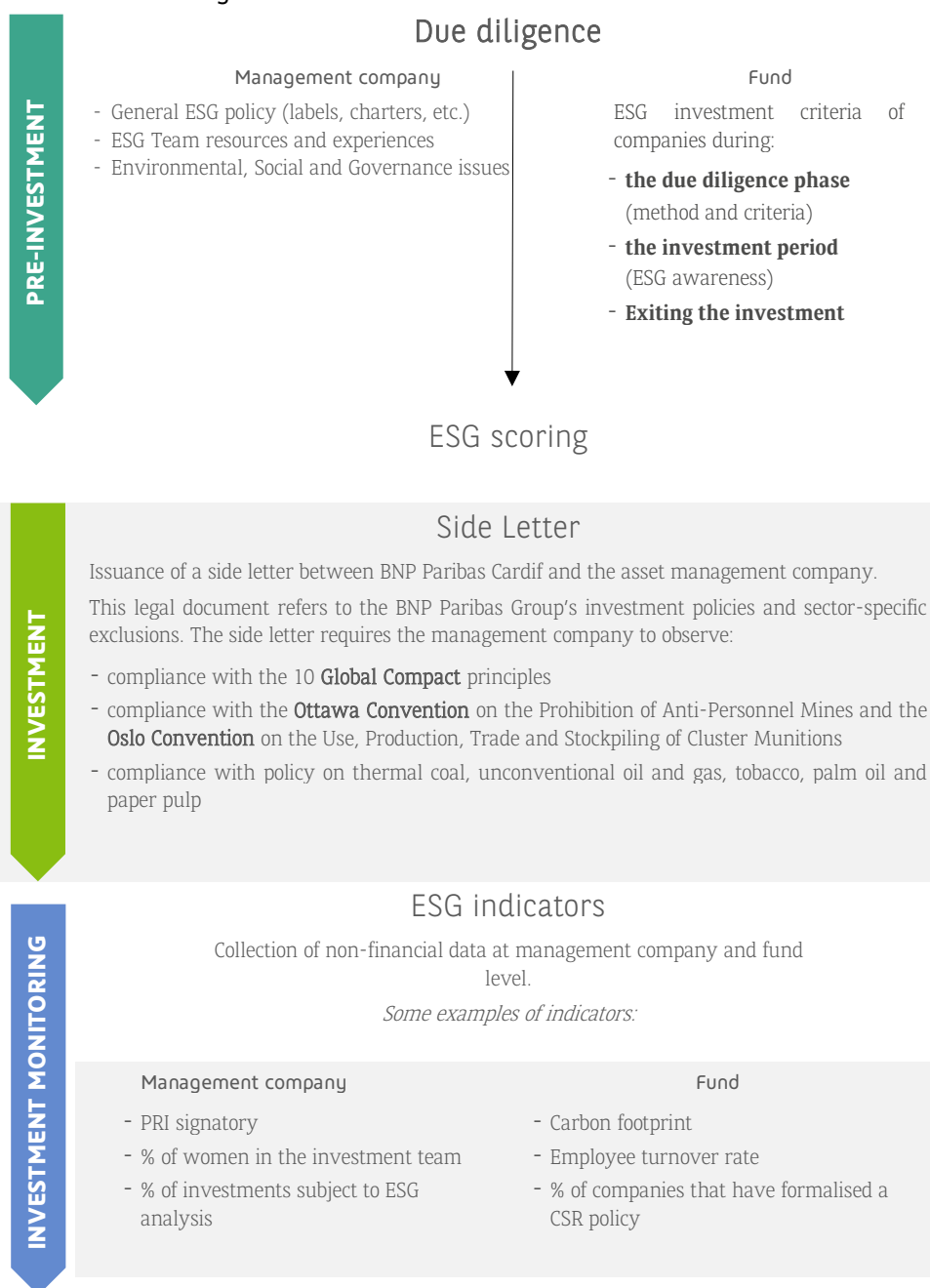
For its proprietary management, Cardif Assurance Vie may delegate pockets of investment via a mandate or via dedicated funds to partner management companies.

As part of the **mandate** signing process, asset management companies are subject to a due diligence analysis, in particular on how they manage ESG criteria. As part of the execution of the mandate, asset management companies are also required to comply with the **exclusion lists prepared by BNP Paribas Group** (based on sectoral policies) and BNP Paribas Cardif's **specific exclusions**.¹⁴

¹³ Equity funds, money market funds, bond funds, real estate funds, private equity funds, private debt funds, infrastructure funds

¹⁴ Based on regulatory and legal filters, ESG and carbon filters, carbon and tobacco exclusions, cf. section A1a

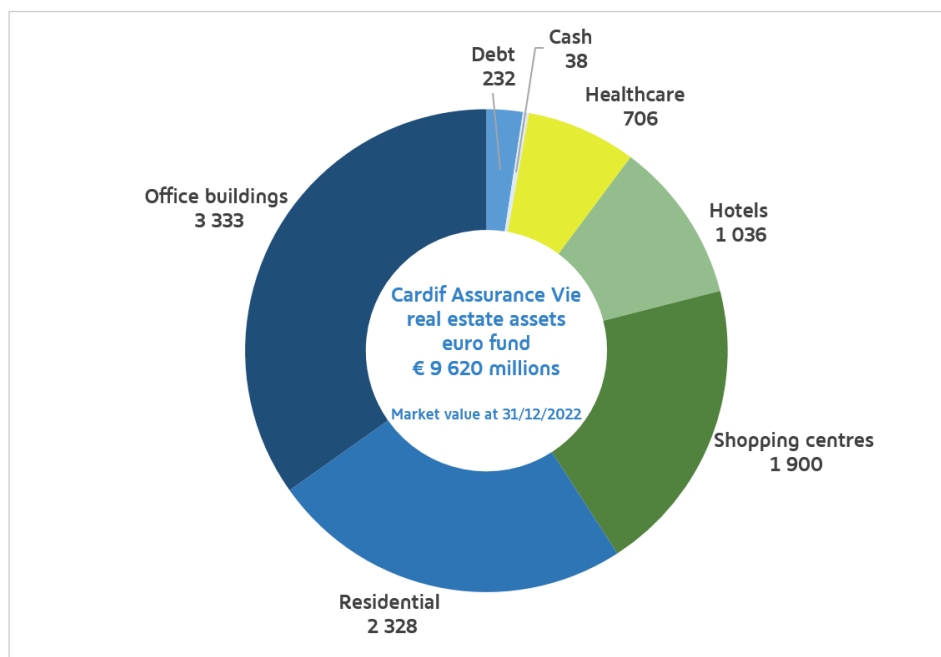
Non-financial analysis of unlisted funds



c. ESG approach for real estate assets

Allocation of Cardif Assurance Vie real estate assets (euro fund) by type

Within the Cardif Assurance Vie euro fund, the real estate portfolio includes the following categories:



The real estate assets of Cardif Assurance Vie's euro-denominated fund are composed of buildings held directly (49%), and indirect investments in real estate company funds (listed or unlisted) (51%).

Real estate assets incorporate an ESG approach based around two main themes: an Environmental theme and a Social and Societal theme.

At 31 December 2022, **35% of Cardif Assurance Vie real estate assets incorporated an ESG approach**, by meeting one of the criteria mentioned below. The remaining buildings, representing 65%, do not yet meet these criteria.

On the Environmental theme, the assets or funds must meet at least one of the following criteria:

- be aligned with European Taxonomy criteria;
- have an environmental label or certification.¹⁵;
- have obtained the French SRI label;
- be classified as Article 8 or 9 according to the SFDR regulation;
- have already achieved the next targets for reducing energy consumption provided for in the Tertiary Decree of 23 July 2019;
- comply with a greenhouse gas emissions reduction approach according to a defined trajectory;

¹⁵ BBCA label, BREEAM certification (minimum level "very good"), HQE certification (minimum level "very good")

- Provide proof of energy consumption at least 10% lower than that set by the Nearly Zero Energy Buildings.¹⁶ (NZEB) European standards.

The Social and Societal theme examines access to housing:

- Developing affordable housing, particularly with capped-rent apartments;
- Contributing to providing housing for vulnerable people.

ESG integration in the directly managed real estate portfolio

Direct management consists of the acquisition, management, marketing and sale of real estate assets held by Cardif Assurance Vie, usually through vehicles such as *Sociétés Civiles Immobilières* (SCIs). 49% of the euro fund's real estate assets are managed directly.

Cardif Assurance Vie manages its real estate portfolio with a view to improving its social and environmental performance.

On environmental aspects, the following practices are deployed:

- buildings under construction are systematically certified;
- buildings undergoing renovation are certified if the technical and financial feasibility is sustainable;
- for the operational phase, some buildings are certified;
- for property management and works, an improvement in environmental performance is always sought. In the residential portfolio, actions are implemented to improve energy performance labels (DPE).

Certification of Cardif Assurance Vie's directly managed real estate assets

Shopping centres represent 20% of Cardif Assurance Vie's real estate assets. 100% of shopping centre.¹⁷ surface areas were certified at the end of 2022.

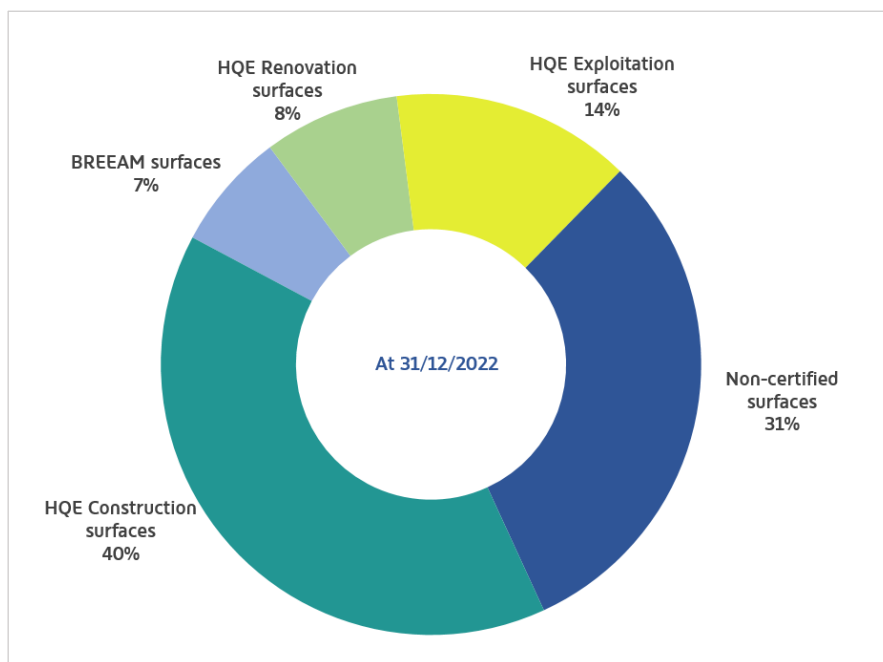
The following chart shows HQE or BREEAM certifications.¹⁸ for Cardif Assurance Vie's office assets (35% of real estate assets) at the end of December 2022.

¹⁶ https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/nearly-zero-energy-buildings_en

¹⁷ Shopping centres are shopping malls with a variety of shops. (Paris Turenne, Castorama and Monoprix are not Shopping Centres)

¹⁸ The HQE Construction and HQE Operation buildings are considered in the graph as HQE Construction only; HQE Renovation and Operation buildings are considered as HQE Renovation only HQE Construction and BREEAM buildings as well as HQE Construction; HQE Renovation and BREEAM buildings are considered as HQE Renovation only.

Monitoring of the HQE and BREEAM procedures on the surface area of Cardif Assurance Vie's directly managed office assets (euro fund)



Other components which contribute to the ESG approach of the directly managed real estate portfolio

In addition to monitoring certifications and labels, the environmental strategy for directly-held real estate assets analyses the buildings' energy consumption and carbon footprint. To this end, Cardif Assurance Vie encourages construction methods that emit less CO₂ (wooden buildings) and energy-efficient designs (buildings without air conditioning).

In order to improve the environmental impact of its real estate portfolio, additional action drivers are implemented, including:

- assessing the physical risk of each directly managed building in the face of various climate-related hazards (heat waves, rainfall and flooding, extreme cold snaps, etc) ;
- reinforcing indicators on water management and waste management;
- increasing the number of electric charging terminals in office building car parks, in order to reduce the use of petrol and diesel vehicles and encourage the use of soft mobility solutions;
- setting up "green energy" contracts. This is where an energy supplier undertakes to produce or purchase as much electricity or gas from renewable sources as the contract holder uses in the building;
- finally, encouraging the use of less carbon-intensive green materials, promoting circular economy materials and better management of site waste during major restructuring work. A specific clause incorporates these criteria into the work specifications.

BNP Paribas Cardif also pays particular attention to the possible social use of housing. In this respect:

- a partnership was established with the *Habitat et Humanisme* association to rent out 32 homes in Paris to vulnerable people;
- 43 new capped-rent housing units were delivered in Ile-de-France (Rueil Malmaison) in Q2 2022.

ESG integration in the indirectly managed real estate portfolio

Indirect management in real estate corresponds to shares in listed or unlisted companies. 51% of the euro fund's real estate assets are managed indirectly.

A questionnaire was introduced in 2021 on the ESG integration process of funds and sent to management companies. This questionnaire will be sent on a recurrent basis and aims to establish a consolidated reporting.

In addition, BNP Paribas Cardif is continuing its **social investments** to promote affordable rental housing.

Cardif Assurance Vie also supports the re-solvency of retired people by participating in a fund dedicated to life annuity housing, Certivia 2, managed by La Française AM. The goal is to enable retirees who own their primary residence to improve their current income.

ESG approach for Cardif Assurance Vie's unit-linked vehicles

In France, Cardif Assurance Vie's unit-linked products represented €42 billion at the end of 2022.

Among all unit-linked vehicles, **the assets will be qualified as "responsible"** if they meet at least one of the following criteria:

- be certified by an independent body;¹⁹
- be declared Article 9 within the meaning of the SFDR regulation..²⁰

At the end of 2022, Cardif Assurance Vie recognised 43% of its investments under responsible unit-linked vehicles (approximately €18 billion).

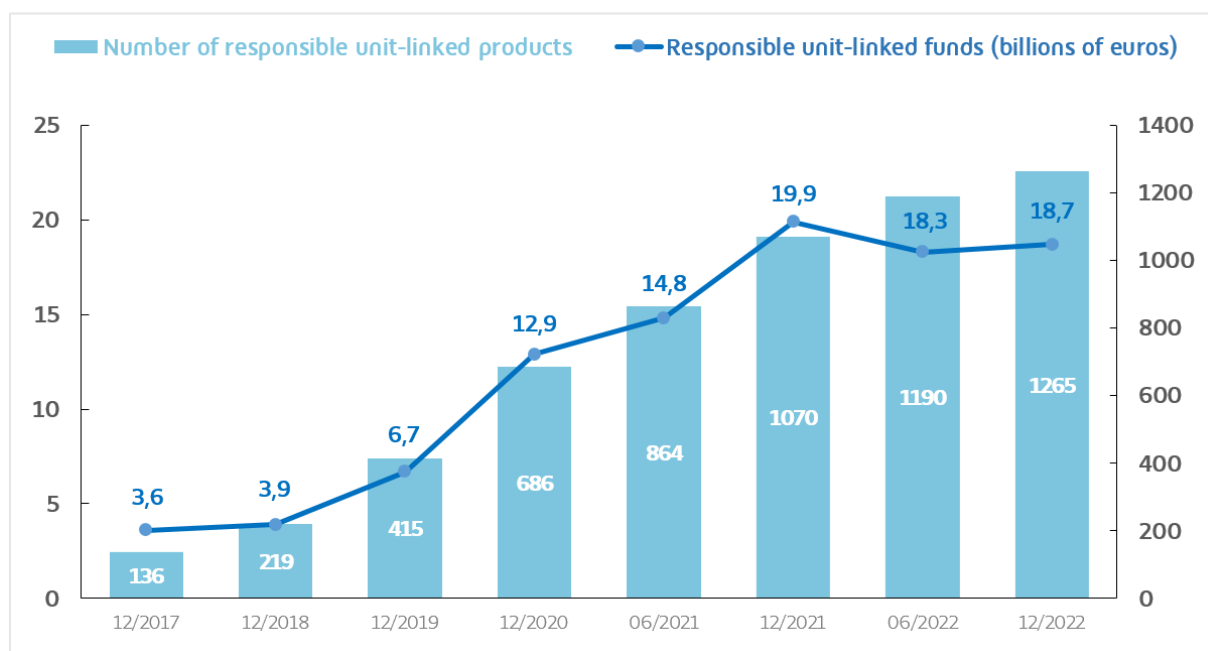
Of the total unit-linked funds at the end of 2022 (€42 billion), 50% of the funds are classified under Article 8, and 17% classified under Article 9 under the SFDR regulation (more details in section *I- List of financial products Articles 8-9*).

The following graph shows the consolidated changes for BNP Paribas Cardif in France.

¹⁹ Labels selected: SRI, Greenfin, FNG, Finansol, LuxFlag ESG or Towards Sustainability

²⁰ European Regulation (EU) 2019/2088 "Sustainable Finance Disclosure Regulation" (SFDR) concerning sustainability transparency obligations

Change in responsible unit-linked products distributed in France by BNP Paribas Cardif.²¹



The number of responsible unit-linked funds continues to grow. Outstandings are down slightly in 2022, due to a market effect (decrease in valuations).

2. ESG information on subscribers, affiliates and contributors

BNP Paribas Cardif publishes several publications on sustainable finance and ESG issues (press releases, social network publications, annual report, client and partner publications). Some documents are more in line with regulatory requirements, others reflect a wish for transparency and to explain the approaches and commitments made. These publications are aimed at all its stakeholders: financial market players, regulators, non-governmental organisations, partners, customers and civil society as a whole.

BNP Paribas Cardif markets its life insurance products in France through **distribution partners**:

- BNP Paribas' France Commercial Banking (*Banque Commerciale en France* – BCEF): BCEF Retail, BNP Paribas Banque Privée and Hello Bank⁽²²⁾;
- BNP Paribas Cardif distributes life insurance, capitalisation and individual pension products through a network of brokers and partner wealth management advisors;
- the Epargne & Retraite Entreprises (Corporate Savings & Retirement) activity offers savings and retirement solutions to companies. It has been part of BNP Paribas Cardif since 2021.

Distribution partners and networks regularly communicate with policyholders to inform them about ESG criteria and the sustainable investment vehicles available.

²¹ Due to the creation of Cardif Retraite in 2022, the historical development is presented for the two legal entities Cardif Assurance Vie and Cardif Retraite. The figures are based on France.

a. Regulatory communications on sustainability

In compliance with the SFDR regulation, the CSR page of the BNP Paribas Cardif institutional website.²² lists Cardif Assurance Vie and Cardif Retraite's sustainability transparency commitments, as well as information relating to their respective financial products that promote environmental or social characteristics, or have a sustainable investment objective.

The website also contains information on shareholder commitment (voting policy and results), see section *D- Commitment strategy* of this report.

Cardif Assurance Vie entity

In 2022, the insurer published the following for Cardif Assurance Vie:

- Cardif Assurance Vie's transparency commitments in terms of sustainability (Article 3 of the SFDR Regulation);
- Statement on the main negative impacts of investment decisions on sustainability factors (Article 4 of the SFDR Regulation).

Products offered by Cardif Assurance Vie

Information on life insurance or capitalisation contracts is available on the BNP Paribas Cardif institutional website (Article 10 of the SFDR Regulation) and includes:

Information relating to Cardif Assurance Vie's financial products classified as Article 8 or 9 as defined by SFDR:

- SFDR documentation for the products offered by Cardif Assurance Vie is available on the insurer's institutional website and accessible for each policy..²³ For Article 8 or Article 9 products/media as defined by the SFDR regulation, a link refers to the managers' websites on which this information is available: see section *I- List of financial products Articles 8-9* of this report.
- **For the Cardif Assurance Vie euro fund**, classified as Article 8 (see Section *I- List of financial products Articles 8-9*), the information complying with the SFDR regulations has been published on the insurer's institutional website in order to make it easily accessible to all. It is also available to partners and customers within the various distribution networks, accessible from the BNP Paribas Cardif sales website in France..²⁴

Information on Cardif Assurance Vie's euro fund, which promotes environmental or social characteristics (Article 10 of the SFDR Regulation):

- the SFDR pre-contractual documentation, which explains the commitments provided by the vehicle in terms of sustainability;
- the periodic report, which describes how the vehicle's sustainability commitments have been achieved (Article 11 of the SFDR Regulation).

²² <https://www.bnpparibascardif.com/en/corporate-social-responsability>

²³ <https://www.bnpparibascardif.com/documents/348001/348117/Com+art+10+site+pdf2+Last+Version+vie.pdf/dc4d0abe-d210-3eae-efc7-de2608c1713b?t=1679676841754>

²⁴ <https://www.cardif.fr/priips-documents-informations-cles-dic>

b. Other communications from the insurer on ESG and responsible investment approaches

At institutional level (BNP Paribas Cardif)

Press releases, social media, investor presentations²⁵ and the activity report²⁶ are important communication channels for BNP Paribas Cardif's CSR and ESG commitments.

In 2022, press releases or news directly related to the CSR or ESG approach were published on the institutional website.

<i>Date</i>	Press releases or news published on www.bnpparibascardif.com
03/02/2022	Cover Stories: the podcasts making insurance more accessible! - BNP Paribas Cardif
11/05/2022	Where does the positive impact investments go? -BNP Paribas Cardif
25/05/2022	BNP Paribas Cardif launches ambitious 2025 Strategic Plan led by new Executive Committee - BNP Paribas Cardif
27/05/2022	ChangeNOW 2022: BNP Paribas Cardif mobilizes around the theme "Health & Unemployment" - BNP Paribas Cardif
07/06/2022	Combining financial performance and positive impact - BNP Paribas Cardif
05/09/2022	Alliance Net-Zero Asset Owner: BNP Paribas Cardif announces new commitments - BNP Paribas Cardif
13/09/2022	Loan insurance: towards more inclusive solutions - BNP Paribas Cardif
09/11/2022	Solidarity Week: our employees committed to help local charities - BNP Paribas Cardif
12/12/2022	BNP Paribas CIB and BNP Paribas Cardif finalise inaugural structured social index-linked bond - BNP Paribas Cardif
14/12/2022	#CoverStoriesITW: What if we also insured renewed smartphones? - BNP Paribas Cardif

On social media, BNP Paribas Cardif shared CSR and ESG content on its institutional LinkedIn, Twitter and Instagram accounts (around 50 "impressions"), on subjects including the responsible investment approach of its Italian subsidiary²⁷, a partnership to insure reconditioned mobile phones²⁸ and the commitment of employees to a week of volunteering²⁹.

²⁵ <https://www.bnpparibascardif.com/en/financial-informations>, Investor presentation, pages 11 and 18.

²⁶ <https://bnpparibascardif-businessreport2022.com/en/article/1/>, Pages 22-29 are dedicated to the Sustainability pillar

²⁷ <https://www.linkedin.com/feed/update/urn:li:activity:6939926816929292288>

²⁸ www.linkedin.com/feed/update/urn:li:activity:7008827083258773504

²⁹ https://www.linkedin.com/posts/bnp-paribas-cardif_solidaire-engagements-piricardif-activity-6996111308077047808-RYwG?utm_source=share&utm_medium=member_desktop

Communications *via* distribution networks

- The **French Commercial Banking network (BCEF)** communicates on responsible savings and investments, primarily through the Annual Information Letter (LIA) and on its website “Ma banque Epargner Responsable”.³⁰
- **Brokers and wealth management advisors (CGP)** have access to the list of unit-linked products with a French sustainable label⁽²³⁾ and/or classified as Article 8 or 9 according to the SFDR regulation on an extranet page (Finagora).

In 2022, several sustainable finance training modules available as podcasts.³¹ on the YouTube channel were produced in partnership with the BNP Paribas Asset Management Sustainability Centre. Several topics were addressed, including the challenges of sustainable investment, asset manager approaches, labels, the regulatory environment for sustainable finance, biodiversity and climate change.

- At the end of 2021, BNP Paribas Cardif launched “**MonDemain**”³² a digital platform dedicated to **preparing for retirement**. In addition to the “**La retraite en clair**”³³ website, which was already a leader in pensions information, MonDemain offers a simulation path that allows customers to assess their situation and create a personalised savings offer. In 2022, the site attracted 1 million visitors.
- Also on the subject of pensions information, “**Eclairons la retraite**” (**Enlightening retirement**) **podcasts**³⁴ are available on various channels (websites, social media and podcast listening platforms such as Spotify and Deezer).

Communications via its parent group BNP Paribas

The insurer also contributes to **BNP Paribas Group publications**. The most recent examples include the 2022 Integrated Report, the 2022 Universal Registration Document, the 2022 Climate Report.³⁵ and the “Sustainable Finance and CSR” section of the Growth Technology Sustainability (GTS) strategic plan 2025.

3. Entity or product adherence to a charter, code or initiatives

BNP Paribas Cardif is involved in some key interest groups and initiatives around better adoption of ESG considerations in investment decisions.

³⁰ <https://mabanque.bnpparibas/fr/epargner/epargner-responsable>; <https://mabanqueprivee.bnpparibas/fr/investissement/coeur-de-portefeuille/investissement-socialement-responsable>

³¹ https://www.youtube.com/playlist?list=PLR7U6ioAJzceB-2lV5XddvQ2_UyrIDZ8p






³² <https://home.mondemain.bnpparibas/>; <https://home.mondemain.bnpparibas/epargner/epargner-responsable>

³³ <https://www.la-retraite-en-clair.fr/>

³⁴ <https://podcast.ausha.co/eclairons-la-retraite/per-plan-epargne-retraite-devient-perp>

³⁵ https://group.bnpparibas/uploads/file/bnp_paribas_2022_climate_report.pdf

History of BNP Paribas Cardif's affiliations

Date	Charter or initiative	Description
2021	 Net-Zero Asset Owner Alliance. ³⁶	In order to help limit global warming to 1.5°C above pre-industrial temperatures, in accordance with the Paris Agreement, signatories commit to aligning their investment portfolios with a net zero carbon trajectory by 2050. BNP Paribas Cardif joined the alliance in 2021. ³⁷ The commitments made are detailed in Section F - Paris Agreement alignment strategy.
2021	 Climate Action 100+ initiative. ³⁸	Signatories are working collectively to encourage the world's largest greenhouse gases emitters to take the necessary measures to combat climate change.
2020	 CDP (formerly Carbon Disclosure Pledge). ³⁹	CDP encourages investors, companies and cities to measure and understand their impacts on the environment. The organisation holds the largest environmental performance database. It collects information on greenhouse gas emissions, water management and the impact on forests.
2018	 Tobacco-Free Finance Pledge. ⁴⁰	In 2017, BNP Paribas Cardif ceased its investment activities in the tobacco sector and joined the Tobacco-Free Finance Pledge in 2018.
2017	 Green Building Observatory (OID). ⁴¹	The OID brings together private and public professionals from the French real estate sector to promote sustainable development and innovation.
2016	 Principles for Responsible Investment. ⁴²	Initiated by the United Nations, the aim of the PRI is to develop a common framework for integrating ESG issues into the financial sector. BNP Paribas Cardif monitors the work of the association and draws up an annual public report using the "Transparency Report" available on the PRI website.
2016	 Montreal Carbon Pledge. ⁴³	This PRI initiative aims to raise awareness of climate issues in the financial marketplace, primarily by making the carbon footprint of the portfolios public. BNP Paribas Cardif has published this footprint since 2017 in its responsible investment reports.
2013	 Sustainable Building Plan (<i>Plan Bâtiment Durable</i>). ⁴⁴	Charter for the energy efficiency of public and private tertiary buildings, initiated by the Sustainable Building Plan.

³⁶ <https://www.unepfi.org/net-zero-alliance/>

³⁷ <https://www.bnpparibascardif.com/en/article/-/article/press/commitments-climate-change-net-zero-asset-owner-alliance>

³⁸ <https://www.climateaction100.org/>

³⁹ <https://www.cdp.net/en>

⁴⁰ <https://www.unepfi.org/insurance/insurance/projects/the-tobacco-free-finance-pledge/>

⁴¹ <https://o-immobilierdurable.fr>

⁴² <https://www.unpri.org/>

⁴³ <https://www.unpri.org/montreal-pledge>

⁴⁴ <https://www.planbatimentdurable.fr/>

B. Internal resources deployed by Cardif Assurance Vie

1. Description of the financial, human and technical resources dedicated to an ESG approach

a. Dedicated ESG teams

Cardif Assurance Vie does not employ any employees other than those of foreign branches. In France, the GIE BNP Paribas Cardif (Economic Interest Group) is the employer of all of the employees, i.e. 2,847 employees (full-time equivalent at the end of 2022).

The ESG and sustainability management of BNP Paribas Cardif's investments is carried out by the central teams. Human resources (full-time employees) and financial resources are those recorded for BNP Paribas Cardif in France. For the purposes of this reporting, an allocation key defined on the basis of assets under management has been applied to establish equivalent resources for each legal entity.

For Cardif Assurance Vie, **12.8 full-time equivalent positions** are dedicated to ESG issues in the investment strategy. Employees from other functions are also involved in sustainable finance.

Departments	Full-time equivalent employees
Asset Management Department	6.4
IMPACT, RISK, Marketing	6.4
Total FTE ESG investment	12.8
Legal, Compliance, Institutional Affairs, Finance	3.7
Total FTE Sustainable finance	16.5

BNP Paribas Cardif's investor activity is mainly managed by the Asset Management Department in conjunction with the Company's other functions, mainly Impact, Risk Management, Legal and Compliance.

Organisation of the ESG teams within the Asset Management Department

The Asset Management teams are actively involved in taking non-financial issues into account throughout the investment process.

The managers monitor the evolution of ESG indicators in their position-keeping tools and through dedicated reporting. Periodic meetings organised by the SRI team with the management teams of the three main general funds (France, Italy, Luxembourg) enable the system to evolve and to make the managers aware of the new non-financial and regulatory issues.

The SRI team is responsible for integrating non-financial criteria into investment processes (data, indicators, exclusion lists, etc.) in collaboration with the management teams. It integrates regulatory developments in the field of sustainable finance into asset management and monitors BNP Paribas Cardif's commitments to responsible investment. Other employees in the Department are involved in the ESG management of real estate assets and the monitoring of unit-linked products.

Asset management control teams check the application and compliance with sector policies and exclusions on investments (inventories and flows).

A responsible investment **coordinator** monitors changes in the non-financial environment and Sustainable Finance regulations. The latter ensures that they are taken into account within the Asset Management department.

Organisation of teams within the Impact Department

A BNP Paribas Cardif Impact and Innovation Department, which reports to the Executive Management, coordinates and monitors the CSR policy, in line with the guidelines defined at BNP Paribas Group level. It leads cross-functional strategic initiatives, monitors and coordinates internal and regulatory reporting on sustainability.

The IMPACT team relies on a network of ambassadors within each function, and in the regions and countries where the insurer is present:

- 15 IMPACT ambassadors in the functions;
- 5 IMPACT ambassadors in the regions;
- 50 local CSR correspondents (in the countries in which the insurer operates).
-

Organisation of the ESG teams within the Risk Department

The Risk Department (RISK) has adapted its organisation and has appointed a RISK CSR Officer in charge of implementing the Department's roadmap. This is based on five main areas: the adaptation of the risk management framework, the mapping and assessment of risks, the organisation of regulatory reporting and finally the implementation of regulatory requirements in the ORSA. The RISK CSR Officer's expertise and cross-functional role help to ensure that sustainability issues are integrated into the Company's risk management framework.

Support for cross-functional teams within the BNP Paribas Group

Lastly, the BNP Paribas Cardif teams also draw on the resources and expertise of the BNP Paribas Group (see section *B2- Strengthening internal resources*). Thus, the teams mentioned above have regular discussions with IPS (Investment and Protection Services) division teams, from the CSR and Commitment Departments responsible for sustainability issues.⁴⁵ In addition, there are inter-entity coordination points within each department. These cross-functional resources are not quantified.

b. ESG budgets

In 2022, Cardif Assurance Vie allocated the equivalent⁴⁶ of €757,000 for expenses related to ESG and sustainable finance (purchase of ESG data, memberships of international ESG-related organisations or alliances, consulting fees).

⁴⁵ <https://invest.bnpparibas/document/universal-registration-document-2022> p631

⁴⁶ Uses an allocation key in relation to the expenses actually covered by BNP Paribas Cardif

2. Actions carried out to strengthen internal capacity

BNP Paribas Cardif uses various levers to deploy its ESG strategy. To this end, in 2021, the insurer has strengthened a number of mechanisms and actions to support internal capabilities and further deploy its ESG strategy.

The CSR teams of the head office (corporate) and from Cardif France have merged within the **Impact and Innovation Department**, set up in February 2022, to capitalise on better knowledge sharing and coordination of actions. The IMPACT teams' mission is to define and implement BNP Paribas Cardif's CSR strategy, as part of the BNP Paribas Group's Growth Technology Sustainability plan for 2025. This department interacts with various internal stakeholders, BNP Paribas Cardif functions, the BNP Paribas Group and external stakeholders. It relies on a network of ambassadors within each function, and in the regions and countries in which the insurer is present. It leads cross-functional strategic initiatives, monitors and coordinates internal and regulatory reporting on sustainability.

The Risk Department (RISK) has strengthened the expertise of all employees in the Risk Management Department so that they can integrate ESG risk factors into their scope of responsibility.

Employees of the **Asset Management Department in France and internationally** as well as the IMPACT ambassadors in the countries received training on sectoral policies. This training course, consisting of seven modules, provides information on the policies and position of the BNP Paribas Group, an understanding of the associated CSR issues and the involvement of the various business lines and functions. Each new employee in one of these functions must take this dedicated course.

Dedicated ESG training for sales representatives and distribution networks

In 2022, the IMPACT Department set up an internal collaborative digital space dedicated to CSR and ESG in order to share key information and resources with sales teams and employees.

An internal communication kit specifying all the information made available under the pre-contractual SFDR regulation was distributed to the sales departments.

Some sales and marketing teams attended a training day delivered by the BNP Paribas Asset Management Sustainability Centre. These ESG Investment Academy sessions set out the main ESG issues, ESG and MIFID2 regulations, an overview of labels, policies and thematic approaches (climate, biodiversity, human development) as well as manager methodologies.

CSR and ESG training for all employees

BNP Paribas Cardif, with the support of the BNP Paribas Group, has set up a training programme to raise awareness of the major ESG issues for all its employees.

In 2022, **employee training in sustainable development issues** focused on:

- "WeEngage": a BNP Paribas Group awareness-raising programme for all employees around the world, dedicated to sustainable finance and current environmental and social issues. The programme, which is divided into short online modules, aims to develop employees' skills in guiding customers towards a low-carbon economy and greater social justice;

- "Bivwak! Upskill": a programme to develop the skills of BNP Paribas Group employees in the field of sustainability. This programme is broken down into modules based on different themes, including sustainable finance;
- External expert training courses leading to a certification, such as those offered by the Cambridge Institute for Sustainability Leadership (CISL)⁽³⁶⁾. Employees from different functions participated in these training courses.
- Fresques du Climat⁽³⁷⁾, collaborative workshops to acquire a systemic vision of the challenges of climate change and their consequences.

In autumn 2022, the BNP Paribas Group launched a training space dedicated to sustainability challenges in order to raise awareness and strengthen the skills of its employees on these challenges. This space, named **"Sustainability Academy"**, is housed within the internal training platform and accessible to all employees regardless of their country, entity or business line. Various content has been selected based on the Group's business lines, and covers the themes of sustainable development and sustainable finance (training courses, articles, videos, interviews, worksheets, news, manager support modules and more).

The Sustainability Academy provides the following content:

- a "common foundation" for all employees: basics, definitions and strategy of the Group's Commitment on the five priority areas of action (circular economy, transition to net zero, natural capital and biodiversity, combating exclusion and savings, sustainable financing and investments);
- specific content for the Group's business lines and functions with specialised training;
- a toolkit in the "Motivate your team" module;
- a dedicated space to prepare for the future, targeting specific "Talent" groups and members of the business lines and function Executive Committees.

In this context, BNP Paribas Cardif is developing in 2023 a dedicated **"Insurance" program** for its employees in order to share a common understanding and culture of the insurer's ambitions.

Finally, BNP Paribas Cardif also contributes to the **NEST** network (Network of Experts in Sustainability Transitions), a **network of internal experts** launched by the BNP Paribas Group at the end of 2021 to accelerate the ecological and social transition. This network is composed of more than 500 experts in fields such as the energy transition, the circular economy, biodiversity, agriculture, human rights, diversity and social inclusion. 22 BNP Paribas Cardif employees are experts in the NEST network.

Experts in this international network pool their knowledge to support the transition of the Group's customers and to share expertise with employees. Since its launch, the NEST network has organised 27 internal webinars attended by more than 3,000 participants, and has supported the various BNP Paribas entities in communications with their external stakeholders. It publishes internal and external newsletters on LinkedIn⁴⁷ on a page launched in 2022, dedicated to the challenges of sustainable finance: "Sustainable Finance at Scale" (300,000 subscribers).

⁴⁷ <https://www.linkedin.com/newsletters/sustainable-finance-at-scale-6980896876048850944/>

C. ESG approach to the governance of Cardif Assurance Vie

Cardif Assurance Vie relies on its Board of Directors and uses BNP Paribas Cardif's governance committees (specialised Executive Management committees). This governance involves the operational departments and teams (Asset Management Department, Impact and Innovation Department, RISK, Compliance, Finance Actuarial and Capital).

BNP Paribas Cardif's management bodies define the responsible investment strategy. They also ensure the application of BNP Paribas Group policies.

1. Knowledge and skills of governance bodies in ESG decision-making

a. Structure and governance of Cardif Assurance Vie

The **Board of Directors** plays a major role in controlling and supervising the management of the Company. In accordance with its internal rules, the Board of Directors determines the direction of the Company's activities and ensures that they are implemented by the Executive Management, taking into account the social and environmental challenges of the Company's activities..⁴⁸

The **Board of Directors of Cardif Assurance Vie** is supported by BNP Paribas Cardif's three specialised committees: the ALM and Insurance Risk Management Committee, the Appointment and Compensation Committee and the Financial Statements and Audit Committee.

BNP Paribas Cardif Executive Committees

Among the specialised committees responsible for assisting the Board of Directors, two are particularly involved in ESG matters:

The **ALM and Insurance Risk Management Committee** ("Comité ALM et Gestion des Risques Assurance") ensures the effectiveness of the risk management system, including social and environmental risks, and reviews the asset allocation strategy.

The **Appointment and Compensation Committee** ("Comité de Nomination et de Rémunération" - CNR) is responsible for monitoring issues relating to the appointment of directors and corporate officers and heads of key functions. It ensures the integrity and skills of prospective candidates and ensures that the directors have the necessary skills to understand the risks, challenges and strategy of the Company. It reviews the directors' annual declarations with regard to conflicts of interest.

In terms of compensation, the CNR gives an opinion on the compensation policy and verifies that its application is in line with the BNP Paribas Cardif compensation policy. In 2022, the Committee took note of progress on the "All equal" action plan, which aims to reduce the pay gap between women and men and increase the proportion of women in top management.

⁴⁸ Internal rules of the Board of Directors, Article 1

Other committees, under the authority of Executive Management, are involved in the ESG approach, including the **Risk Committee** - in charge of identifying, monitoring and following up sustainability risks - and the **Finance Committee**.

The other management bodies described below operate at the level of the BNP Paribas Cardif Group, and cover the legal entities Cardif Assurance Vie and Cardif Retraite.

Executive level

The **Executive Committee** communicated in 2022 on its 2025 strategic plan, which includes sustainability at the heart of its strategy.⁴⁹ In this plan, BNP Paribas Cardif affirms its ambition to have a positive impact on the environment, society and its employees. These new guidelines, in line with those of the BNP Paribas Group, are structured around three pillars: Growth, Technology and Sustainability (GTS). Led by a diversified Executive Committee, BNP Paribas Cardif continues to accelerate its transformation, in the interests of its main mission: to make insurance even more accessible.

The **Asset Management Department ("Direction des Gestions d'Actifs" - DGA)** runs three committees in which ESG issues are discussed:

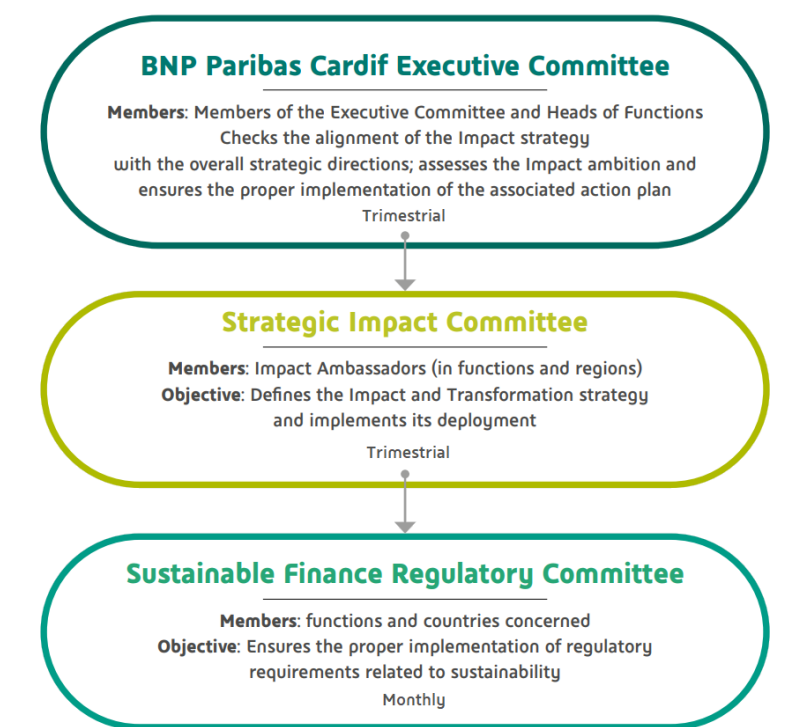
- the **Asset Management Committee** meets every month and brings together several managers and members of the Executive Committee. It regularly discusses ESG issues and those related to responsible investment;
- the **SRI List Validation Committee** whose mission is to validate BNP Paribas Cardif's SRI exclusion lists and to validate the actions taken or to be taken in the event of the occurrence of significant ESG controversies;
- the **SRI Strategic Committee**, involving the heads of the RISK, IMPACT and DGA departments and meeting quarterly. Various topics are reviewed, including responsible investment, sustainable finance regulations, and the BNP Paribas Group's ESG guidelines.

The **Impact and Innovation Department** places impact at the heart of BNP Paribas Cardif's activities and operations. Its mission is to define the impact strategy, in line with the BNP Paribas Group's CSR and commitment guidelines.

This strategy aims to make insurance products and services more accessible and pursues a responsible investment policy based on environmental, social and governance criteria. The head of this new Department is a member of BNP Paribas Cardif's Executive Committee.

⁴⁹ <https://www.bnpparibascardif.com/en/article/-/article/bnp-paribas-cardif-launches-ambitious-2025-strategic-plan-led-by-new-executive-committee>

The Impact and Innovation Department has also established a dedicated ESG governance with two committees (illustrated below). The action plans are defined with the internal functions responsible for their implementation, then rolled out in the regions in which the insurer is present.



BNP Paribas Group ESG governance

Governance of the BNP Paribas Group sets out the consideration of ESG issues and the strategic guidelines related to the climate taken by Executive Management.

Several committees, such as the Governance, Ethics, Nominations and CSR Committee and the Internal Control, Risk and Compliance Committee monitor the bank's progress in implementing its CSR strategy and ESG risk management. Since 2021, three high-level Sustainable Finance Committees⁵⁰ have been working to strengthen the integration of these issues into the Group's and each entity's strategy. They focus on deploying processes and reporting related to sustainable finance, regulatory compliance and analysis of the impacts of new regulations.

b. ESG skills and knowledge of BNP Paribas Cardif management bodies

The directors of Cardif Assurance Vie all have a variety of skills and experience gained throughout their professional and personal careers.

⁵⁰ The Strategic Committee, under the direction of the Chief Executive Officer, validates the subjects of alignment, net zero coalitions, the Infrastructure Committee, under the direction of the Chief Operating Officer on the subjects of process and reporting, the Regulatory Committee, chaired by the Group General Counsel and the Corporate Engagement Director on normative matters

The regulations applicable to Cardif Assurance Vie require that the members of the Board of Directors and the executive officers have at all times the good reputation, knowledge, skills, experience and time required to perform their duties. The ACPR is notified of the appointment of the executive officers.

ESG themes were the subject of specific points at the BNP Paribas Cardif Board meetings in 2022 and at its annual strategic seminar. Thus, the Board of Directors of Cardif Assurance Vie took note of the report on Article 29 of the Energy and Climate Act, drawn up for the first time in 2022, as well as the achievements of the year, namely:

- the actions taken by BNP Paribas Cardif Group to strengthen their commitment to the energy transition over the past year;
- approving the investment policy update to take into account the potential long-term impacts of the strategy and investment decisions on sustainability factors, as well as sustainability risks in risk management;
- approving the compensation policy update to include a link between CSR and compensation following the update of the Solvency II regulation.

The Asset Management Department has reported to members at each Board meeting on the environmental and social contributions of asset management and on developments in ESG investment strategy.

At the end of 2022, **the Cardif Assurance Vie Board of Directors received training on CSR and Impact-related topics**. There was a particular focus on stakeholder expectations (partners, customers, regulators, employees and civil society) in terms of ESG. The BNP Paribas Cardif Group's ambition and roadmap were reiterated. There was also a focus on the risk of greenwashing and on the latest changes in sustainability regulations.

2. Integration of sustainability risks in compensation policies

Since 2021, Cardif Assurance Vie's compensation policy has included provisions relating to Article 5 of the SFDR Regulation. Cardif Assurance Vie's compensation policies and practices do not encourage financial market participants - through variable compensation - to take excessive risk in terms of the sustainability of investments and financial products governed by the SFDR regulation. The compensation policy was completed in 2022 following the update of the Solvency II regulations:

- a CSR criterion is included when calculating **collective variable compensation**, which means that efficient management can be combined with a positive impact on society and the environment;
- the compensation policy specifies that compliance with the code of conduct⁵¹ used as a basis for individual variable compensation includes CSR criteria.

Since 2022, one quarter of the asset management workforce has been set a specific target for consideration of sustainability risks.

⁵¹ https://group.bnpparibas/uploads/file/220204_bnpp_compliance_codeofconduct_2022_eng.pdf

In addition, BNP Paribas Cardif's key employees.⁵² benefit from a three-year loyalty plan in which 10 of the indicators from the BNP Paribas Group's CSR scorecard.⁵³ are included and account for 20% of the payment conditions. Two of these criteria are directly related to energy and climate change issues..⁵⁴

3. Incorporating ESG criteria into internal regulations

The purpose of the **internal rules** is to specify the rules of operation of the Board of Directors. They aim to balance the composition and functioning of the Board in order to act in the best interests of the Company and to exercise genuine control over management..⁵⁵

The **Directors' Charter** defines the principles and rules applicable to the directors of Cardif Assurance Vie (loyalty, honesty and integrity, compliance, obligation of discretion, competence and good reputation, protection of the Company's interests, prevention of conflicts of interest, transparency). It complements the **BNP Paribas Group Code of Conduct** which incorporates economic, societal and environmental criteria.

Cardif Assurance Vie's Board of Directors is composed of eight directors. When the Appointment and Compensation Committee examines the skills and experience of potential directors, it ensures that the diversity and collective competence of the Board of Directors is maintained in consideration of the strategy of Cardif Assurance Vie and the BNP Paribas Cardif insurance group.

The roles of Chairman and Chief Executive Officer are separated, in accordance with the highest governance standards.

⁵² Key employees: senior managers, high-potential employees or key local resources

⁵³ The ten indicators are presented on p626 of the Universal Registration Document (URD).
<https://invest.bnpparibas/document/universal-registration-document-2022>

⁵⁴ Amount of financing dedicated to renewable energies and assessment of greenhouse gas emissions related to the energy consumption of buildings and business travel, in tCO2eq/FTE

⁵⁵ Article 1 of the internal rules of the Board of Directors

D. Information on the engagement strategy

In accordance with the provisions of the PACTE law⁵⁶ and the European directive on shareholders' rights⁵⁷, Cardif Assurance Vie publishes details of its shareholder engagement policy [on its corporate website](#), as well as an annual report on the implementation of this policy.

1. Companies affected by the Company engagement strategy scope

The engagement strategy is relevant for the companies' shares held directly by Cardif Assurance Vie, which represented 3% (i.e. €2.6 billion) of its euro-denominated fund at the end of 2022.

2. Overview of the voting policy

As an institutional investor for BNP Paribas Cardif, Cardif Assurance Vie pursues a long-term investment strategy. In order to achieve the desired performance, the investment strategy takes into account financial and non-financial criteria, which are closely linked.

Cardif Assurance Vie's responsible investment strategy takes into account requirements in terms of exclusion of countries and activities as well as minimum standards in terms of ESG risk management. Applying these rules helps to protect the value of investments made and to promote best ESG practices:

- upstream of the investment, these requirements restrict Cardif Assurance Vie's investment universe;
- throughout the asset holding period, Cardif Assurance Vie votes at Annual General Meetings and engages a dialogue with selected issuers on specific issues.

Cardif Assurance Vie's responsible investment strategy policy, is structured around four principles:

- contributing to the development of the real economy: the financial sector is a key player in the transformation of the economy towards a more sustainable model. Insurers play an important role in financing the economy and participate in investment plans to support companies and individuals in the economic and energy transition. In this respect, Cardif Assurance Vie directs part of its investments⁵⁸ towards activities that contribute to the energy and environmental transition and the protection of ecosystems, and also to social and societal causes;
- being an economic player with a long-term investment horizon, limiting the impact of short-term financial market fluctuations, as Cardif Assurance Vie's investments are backed by long-term commitments;
- being a responsible investor: thanks to the integration of ESG criteria from the selection of vehicles and throughout the whole investment process;
- being an "active" investor: Cardif Assurance Vie votes at the Annual General Meetings of listed companies in which it is a shareholder and engages on specific issues with certain issuers.

⁵⁶ Law no. 2019-486 of 22 May 2019 on the growth and transformation of businesses:
<https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000038496102/>

⁵⁷ Shareholder Rights Directive

⁵⁸ These are investments identified as having a positive impact. See Section A1 - Integration of ESG criteria in the investment strategy

Good corporate governance (the quality of its management, the independence of the supervisory bodies, the protection of its shareholders, aligning the interests of the various stakeholders) is a key criterion for Cardif Assurance Vie's investments. The implementation of this dynamic involves exercising voting rights at Annual General Meetings. The main types of resolutions submitted to a vote can be grouped into five themes, most of which have a proven link with ESG:

1. Approval of the financial statements and corporate management
2. Appointment of directors
3. Compensation policies
4. Financial transactions and shareholder rights
5. Other resolutions (e.g. related-party agreements, proposed shareholders).

More details on these voting themes are available in the "Shareholder commitment policy" (*"Politique d'engagement actionnarial"*, *part 4 Voting rights*).⁵⁹

3. Review of the 2022 engagement strategy

In 2021, BNP Paribas Cardif joined the signatories of Climate Action 100+. Signatories aim to collectively call on the world's largest greenhouse gases emitters to take the necessary measures to combat climate change. This initiative is part of the BNP Paribas Group's climate strategy and the responsible approach of Cardif Assurance Vie.

The objective of this initiative is threefold: encouraging companies to set up governance on climate change risks; ask them to set greenhouse gas emissions reduction targets consistent with the Paris Agreement; and lastly, promoting transparency in climate-related financial information.

In 2022, Cardif Assurance Vie through BNP Paribas Cardif was a co-leader in climate commitment with three major European companies.

More details on shareholder commitment relating to these three companies are available in the "Report on the implementation of the shareholder commitment policy" (*"Compte-rendu de la mise en oeuvre de la politique d'engagement actionnarial"*), *part 3 Dialogue with companies*.

4. Review of the 2022 voting policy

In 2022, Cardif Assurance Vie voted on 2,976 of the 3,009 resolutions put to the vote (98.90%), i.e. 149 of 150 "ballot papers" (99.33%) relating to the 59 Annual General Meetings (AGMs) held in 2022 (100%) for listed companies in the scope of application. In terms of market capitalisation, Cardif Assurance Vie exercised its voting rights on 99.82% of the companies held.

In 49 of the 59 Annual General Meetings in which Cardif Assurance Vie participated, the insurer voted against management or abstained from supporting it for at least one resolution, i.e. 83% of Shareholders' Meetings.

⁵⁹The shareholder engagement policy is available at <https://www.bnpparibascardif.com/en/corporate-social-responsability>

Of the 2,976 resolutions recorded, 439 votes were not in favour of the management position (i.e. 15% of the resolutions recorded).

These 439 votes mainly concern the compensation policy, capital structure and shareholder rights, and the composition of the Boards of Directors. 7% of resolutions relate to environmental or social issues.

More details on the votes are available in the annual voting report⁶⁰ "Report on the implementation of the shareholder commitment policy", *section 2.3 Summary of votes cast*.

The **"Say on Climate" climate resolutions** have a key role in the companies' Annual General Meetings. They aim to give shareholders the opportunity to vote on climate policies. To vote on these resolutions, Cardif Assurance Vie takes the following factors into consideration:

- Publication of greenhouse gas emissions (scope 1, scope 2 and scope 3 where applicable);
- Setting a "net zero" emissions target no later than 2050, as well as the implementation of intermediate targets to achieve this goal;
- Reporting on climate-related objectives, measures and risk management, in line with the standards of the Task Force on Climate-related Financial Disclosures (TCFD).

In 2022, three companies in which Cardif Assurance Vie has invested submitted their climate strategy to the vote. In two cases, Cardif Assurance Vie opposed the approval of the plans proposed by management, which were deemed insufficient.

More details on the votes are available in the annual voting report "Report on the implementation of the shareholder commitment policy", *section 2.4 "Say on Climate focus"*.

5. Decisions taken and sector divestments

In 2022, Cardif Assurance Vie did not carry out any sectoral divestments for ESG reasons. The insurer applies the exclusions resulting from the sectoral policies and continues to comply with the timetable for the phase-out of thermal coal and the trajectory for reducing the carbon footprint of the portfolios as defined *via* the NZAOA alliance (see Section *F- Alignment strategy with the Paris Agreement*).

⁶⁰ <https://www.bnpparibascardif.com/en/corporate-social-responsability>

E. European taxonomy and fossil fuels

1. Outstanding amounts in activities eligible for the taxonomy

The European regulation on the taxonomy (2020/852 of 18 June 2020) has defined harmonised criteria to determine whether an economic activity is environmentally sustainable. For an activity to be sustainable within the meaning of the taxonomy, it must contribute substantially to at least one of the following six objectives, without causing significant harm to the other five, while respecting minimum guarantees in terms of human rights and labour law. The six environmental objectives are:

- climate change mitigation,
- climate change adaptation,
- the sustainable use and protection of water and marine resources,
- the transition to a circular economy,
- pollution prevention and control,
- the protection and restoration of biodiversity and ecosystems.

Only the first two environmental objectives are applicable to 2022. As of 2023, this information on activities eligible for the taxonomy will be supplemented by information on activities aligned with the taxonomy.

BNP Paribas Cardif analysed the share of investments identified as eligible for the two environmental objectives of climate change adaptation and mitigation, according to the criteria of the European Taxonomy Regulation.

At 31 December 2022, the analysis relates to Cardif Assurance Vie's portfolios in euros and does not cover unit-linked products. It is based on the following principles:

- assets taken into account correspond to the investments of the insurance businesses (equities, corporate bonds, real estate investments, derivatives, mutual funds, cash and cash equivalents);
- information relating to the taxonomy is that published by the companies, without the use of estimates. It was considered that unlisted European companies and non-European companies do not need to publish non-financial information⁶¹;
- green or sustainable bonds are not treated differently from other bonds;
- **the following assets are considered eligible (or not):** shares and bonds of companies that are required to publish non-financial information, up to the percentage of their revenue corresponding to economic activities eligible (or not) for the taxonomy. These percentages are provided by the external data provider Bloomberg;
- exposures not analysed are mainly mutual funds ("UCITS").

⁶¹ Article 19a or 29a of Directive 2013/34/EU

Share of outstandings relating to activities eligible for the technical criteria of the "Taxonomy" Regulation (EU) 2020/852

Calculation basis: Total fund outstandings in euros, excluding unit-linked products, at coupon market value including accrued interest, at 31 December 2022, i.e. €€110.4 billion.

31/12/2022	In billions of euros	As %
Exposures on economic activities eligible for the taxonomy	6.3	5.7%
Exposures on economic activities not eligible for the taxonomy	20.2	18.3%
Exposures on central governments, central banks or supranational issuers	32.6	29.5%
Derivatives	0.1	0.1%
Exposures on companies not required to disclose non-financial information ⁶²	31.7	28.7%
Exposures not <i>analysed</i> (UCITS and others)	19.5	17.7%
Total	110.4	100%

As securities of central governments and supranational issuers as well as those of derivatives and companies not required to publish represent a significant portion of outstandings, a limited portion of assets may be subject to an eligibility classification. At the end of 2022, in the Euro fund of Cardif Assurance Vie (excluding unit-linked products), the share of assets corresponding to exposure to eligible economic activities was 5.7%.

Figures relating to **share of investments** identified as **aligned** European green taxonomy according to the criteria of the European Taxonomy Regulation will be presented in the next LEC29 report for the year 2023, in accordance with regulatory expectations.

2. Outstanding amounts in the fossil fuel sector

Cardif Assurance Vie discloses its exposure to fossil fuels.

Thermal coal sector

Since 2018, BNP Paribas Cardif has implemented a policy of reducing exposure to thermal coal in its investment portfolios.

In 2020, the insurer published a timetable for phasing out thermal coal. It applies to investments for electricity production and provides for a definitive exit from the sector, by 2030 for the countries in the European Union and the OECD and by 2040 for the rest of the world (see Section *F- Alignment strategy with the Paris Agreement*).

⁶² Pursuant to Article 19a or Article 29a of Directive 2013/34/EU

Cardif Assurance Vie calculates its exposure⁶³ on the thermal coal value chain according to two approaches:

Binary approach: exposure takes into account **100% of market value** companies that generate part of their revenue from the thermal coal value chain present in the portfolio.

In relative terms: the exposure considers the companies' actual share of revenue in the thermal coal value chain, i.e. **100% of the company's market value x percentage of revenue from thermal coal**.

Cardif Assurance Vie's exposure to the thermal coal sector		
	2021	2022
<i>Binary approach</i>	Not calculated	€416.5 million (i.e. 1.11%)
<i>Relative approach</i>	€210 million (i.e. 0.4%)	€13.3 million (i.e. 0.04%)

* Percentages express the share of the exposure in relation to the total investments in directly held shares and bonds

Note: The decrease in exposure (in relative terms) over the year 2022 is linked to the change in the data in the reference list: removal of certain companies from the list and change in the values of revenue related to thermal coal.

Oil and gas sector

Cardif Assurance Vie calculates its exposure⁶⁴ to companies active in the oil and gas sector according to two approaches:

Binary approach: exposure takes into account **100% of market value** companies in the portfolio.

In relative terms: the exposure considers the share of the companies' revenue related to fossil fuels, i.e. **100% of the company's market value x percentage of revenue related to fossil fuels**.

Amounts reflect total exposures to the oil and gas sector, whether "conventional" or "unconventional" in nature.

⁶³ Proportion of shares and bonds held directly by the entity; The calculation of exposures is based on the Global Coal Exit List of the NGO Urgewald. <https://www.coalexit.org/>

⁶⁴ Proportion of shares and bonds held directly by the entity; The calculation of exposures is based on the Global Oil & Gas Exit List of the NGO Urgewald <https://gogel.org/>

Unconventional Oil & Gas

This section presents exposures to a specific type of oil and gas, known as “unconventional” type. It refers to forms of extraction and exploitation that are different from conventional drilling, allowing access to less dense deposits. These techniques are considered harmful to the environment.⁶⁵

Cardif Assurance Vie discloses here its **relative exposure** to companies active in the unconventional oil and gas sector.⁶⁶ It should be noted that the exposure amounts to this sub-category are included in the total oil & gas exposures above.

The exposure considers the share of the companies’ revenue related to fossil fuels and the share of its production from non-conventional fossil fuels, i.e. **100% of the company’s market value x percentage of revenue from fossil fuels x percentage of production from unconventional hydrocarbons**.

Cardif Assurance Vie’s exposure to the oil and gas sector		
	2021	2022
<i>Binary approach</i>	Not calculated	€1,578 million (i.e. 4.2%)
<i>Relative approach</i>	€2,011 million (i.e. 3.7%)	€1,467 million (i.e. 3.9%)
	Of which unconventional oil and gas:	
	€411 million (i.e. 0.8%)	€290 million (i.e. 0.8%)

* Percentages express the share of the exposure in relation to the total investments in directly held shares and bonds

The change in exposure (in absolute value) is mainly due to market effects (valuation). The relative share in unconventional oil and gas was low and stable over the period.

⁶⁵ <http://geoconfluences.ens-lyon.fr/glossaire/conventionnels-non-conventionnels-hydrocarbures>

⁶⁶ The calculation of exposures is based on the Global Oil & Gas Exit List of the NGO Urgewald <https://gogel.org/>. Are considered: oil and gas extracted *via* hydraulic fracturing, bituminous sands, coal bed methane, extra-heavy oil with an API density <15 ° (scale expressing the density of crude oil in degrees API), oil and gas extracted in deep water, petroleum. and gases extracted in the Arctic region. The API density is a scale expressing the density of crude oil in degrees API.

F. Alignment strategy with the Paris Agreement

The objectives of the Paris Agreement are to limit the increase to 2°C or even 1.5°C. The publication of the final part of the 6th Intergovernmental Panel on Climate Change (IPCC) report in April 2022 is a reminder of the scientific consensus on climate change. The unprecedented acceleration of greenhouse gas emissions would result in a global warming trajectory of +4°C by 2100 compared to the pre-industrial era.

For these global challenges, BNP Paribas Cardif is committed to its activity as an investor and contributes to the fight against global warming.

This contribution requires the assessment of the carbon footprint of the investment portfolios and their alignment with the Paris Agreement. The indicators for measuring the climate impact remain perfectible but nevertheless make it possible to guide the investment strategy.

The resulting actions include: the application of sectoral exclusions, investment restrictions in high-carbon sectors such as fossil fuels, participation in market initiatives working for carbon neutrality, engagement practices and shareholder dialogue with companies, in particular those with significant greenhouse gas emissions, and the selection of positive investments for the energy and ecological transition.

1. Investment restrictions in the fossil fuel sector

Thermal coal

BNP Paribas Cardif applies the sector exclusions defined by the BNP Paribas Group. For thermal coal, financing and investment activities are governed by two policies: "Production of electricity from coal".⁶⁷ and "Mining".⁶⁸

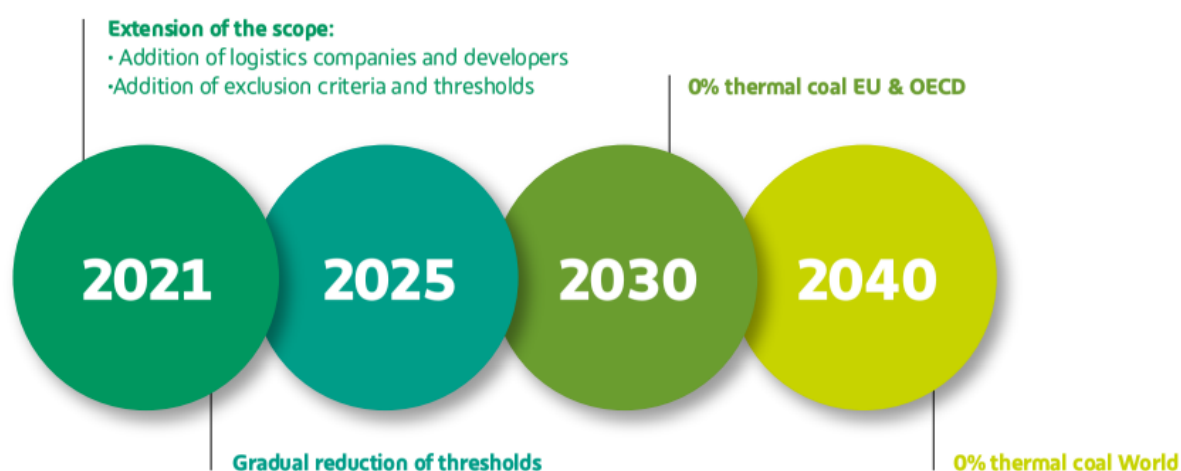
The insurer has defined its own thermal coal phase-out schedule, which was published for the first time in 2020. The exclusion criteria were then reviewed and strengthened with the exclusion of developers and logistics companies, the addition of new criteria and thresholds (absolute and relative), and the evolution of the geographical area. The timeframe has not changed since its publication in the BNP Paribas Cardif's *Responsible Investment Strategy 2020*.⁶⁹ report.

It applies to investments for electricity production and provides for a definitive exit from the sector by 2030 for the countries in the European Union and the OECD and by 2040 for the rest of the world.

⁶⁷ https://group.bnpparibas/uploads/file/bnpp_climateanalytics_alignmentreport_final.pdf

⁶⁸ https://group.bnpparibas/uploads/file/bnpp_climateanalytics_alignmentreport_final.pdf

⁶⁹ https://www.bnpparibascardif.com/documents/348001/348117/Booket_LTE_EN_2020.pdf/b84eb408-39a5-03cd-a478-bf2c3b041903?t=1634657946705



DEVELOPERS		2021	2025	2030	2040
New projects (coal mining, coal-related infrastructure, thermal coal-based power plants, transport capacities)		0 thermal coal			
MINING COMPANIES (exploration and extraction of thermal coal)		2021	2025	2030	2040
Percentage of thermal coal in revenue	As % of revenue	10%	0% (stock : 10%)	0%	0%
Thermal coal mining (millions of tonnes extracted)	In M Tonnes	10	0 (stock : 5 M)	0	0
LOGISTICS (transport and storage of thermal coal)		2021	2025	2030	2040
Share in revenue	As %	20%	15%	10%	0%
				0%*	
ELECTRICITY GENERATION FROM COAL		2021	2025	2030	2040
Share in revenue	As %	20%	15%	10%	0%
				0%*	
	As % of the mix	20%	20%	10%	0%
				0%*	
Electricity generation from coal (real generation)	In Giga W	10	8	5	0
				0*	

* UE / OECD

Oil & Gas

BNP Paribas Cardif applies the exclusions resulting from the BNP Paribas Group's sector policy on oil and gas.⁷⁰ This was implemented in 2017 and updated in 2022 and 2023. This policy covers in particular the unconventional oil and gas sectors: players whose main activity is exploration, production, pipeline transportation, the operation of LNG export terminals or the trading of shale gas and oil and/or oil from tar sands.

- Specialised unconventional oil and gas players have been excluded since 2017.

⁷⁰ https://group.bnpparibas/uploads/file/bnpparibas_csr_sector_policy_oil_gas.pdf

The investment management criteria of the policy published in 2023 are based on the following points:

- Lowering the exclusion threshold for companies whose share of activity⁷¹ related to unconventional oil and gas.⁷² (oil sands and shale oil and gas) is greater than or equal to 10% (compared to 30% previously);
- The definition used to define the Arctic zone has been extended to the AMAP (Arctic Monitoring & Assessment Program⁷³), with the exception of Norwegian territories (environmental and operational laws and regulations as well as monitoring processes adopted by Norway are among the most rigorous in the world). BNP Paribas will no longer finance projects in the Arctic or companies where more than 10% of the activity⁷⁴ is derived from activities in the Arctic;
- No investment in energy companies with oil and gas reserves in the Amazon region⁷⁵ or actively developing infrastructure related to oil activities in this region.

In addition, investments are excluded:

- Trading companies for which unconventional oil and gas resources represent a significant portion of their business portfolio;
- Companies in the energy sector that directly own or operate pipelines or export terminals of Liquefied Natural Gas (LNG) supplied by a significant volume of unconventional oil and gas.

✦ BNP Paribas Cardif applies the exclusions resulting from the sectoral policies defined by the BNP Paribas Group. Specialised unconventional oil and gas players have been excluded since 2017. The oil and gas policy was reviewed and its scope of application was strengthened in 2022, and in 2023. Cardif Assurance Vie's exposure to the unconventional oil and gas sector represented 0.8% of its outstandings at the end of 2022 (see Section *E2- Outstanding amounts in the fossil fuel sector*).

BNP Paribas Cardif contributes to the financing of the economy and invests in the energy sector. The portfolio management balance is based on a diversified investment universe. The insurer supports the energy transition while remaining vigilant with regard to the fossil fuel sector. However, the main oil and gas players use unconventional energies. In order to limit investments in unconventional hydrocarbons, BNP

⁷¹ The percentage of "non-conventional" activities is determined as follows: For companies specialising in upstream exploration production ("pure players"), the calculation is based on unconventional reserves expressed as a percentage of total reserves. For companies diversified in other energy sectors, the calculation is made on the basis of the "non-conventional ratio" defined as the share of revenue from upstream activities multiplied by the share of non-conventional reserves. BNP Paribas only finances diversified companies with a "non-contractual ratio" of less than 10%.

⁷² See Appendix 2 of the policy: "Companies involved in unconventional oil and gas: companies in the energy sector that directly own or operate unconventional oil and gas exploration and production assets, unconventional oil and gas pipelines and/or LNG export terminals fuelled by unconventional gas; trading companies involved in unconventional oil and gas".

⁷³ The Arctic Monitoring and Assessment Program ("AMAP") is the largest to date. It designates the working group of the Arctic Council (intergovernmental forum bringing together 8 Arctic States and 6 indigenous peoples' organisations).

⁷⁴ This is the upstream production activity.

⁷⁵ The Amazon region extends over territories belonging to Brazil, Ecuador, Bolivia, Colombia, Guyana, Venezuela and Peru. The Sacred Basins of the Amazon correspond to the sub-territory divided between Ecuador and Peru, formed by the courses of the Napo, Pastaza and Marañón. Within the framework of this policy, restrictions will be applied to all protected regions of categories I to IV of the classification established by the IUCN (International Union for the Conservation of Nature), to the sites registered on the list maintained by the RAMSAR Convention (Convention on Wetlands), World Heritage sites in the Amazon region, sites linked to the Zero Extinction Alliance and the Sacred Basins of the Amazon.

Paribas excludes companies whose share of activity related to unconventional oil and gas (bituminous sands, shale oil and gas) is greater than or equal to 10% (according to the application criteria mentioned above).

2. Climate indicators

In order to monitor its climate alignment strategy, Cardif Assurance Vie uses several climate indicators such as the footprint and implicit temperature of its directly held corporate equity and bond portfolios, and the intensity carbon for its real estate assets.

Portfolio carbon footprint

The carbon footprint (for financial products) represents the amount of emissions financed by the portfolio. This indicator makes it possible to identify the amount of greenhouse gas emissions that can be attributed to an investment. For investments in companies, greenhouse gas (GHG) emissions are weighted according to the share of the investment in the enterprise value..⁷⁶ This indicator is used by the insurer to estimate the carbon footprint of corporate equities and bonds held directly.

The carbon footprint measures the emissions generated for each euro invested. Thus, if the investor owns 1% of the value of a company then the investor will be allocated 1% of the greenhouse gas emissions of that company..⁷⁷

Implied portfolio temperature

A company's carbon assessments are made at a given point in time. The "temperature" indicator enables a dynamic analysis.

This indicator takes into account the company's past carbon trajectory as well as a projection of its performance in the future. The alignment of a portfolio can be described as its contribution to the transition to a certain economy, defined by a specific climate scenario, and leading to an implied temperature increase by the end of the century.

The companies in Cardif Assurance Vie's corporate equity and bond portfolios have been analysed by Carbon4 Finance using the Carbon Impact Analytics methodology) (CIA).⁷⁸

This temperature alignment is based on the overall average scores of the companies in the portfolio weighted by assets. In order to rate companies, Carbon4 Finance carries out a quantitative analysis (evolution of the carbon footprint and avoided emissions..⁷⁹) and qualitative analysis (analysis of the climate strategy, investments in low-carbon projects, greenhouse gas emission reduction targets, etc.).

⁷⁶ The enterprise value is the market value of the market capitalisation and financial debt (in the SFDR formula, cash is not deducted).

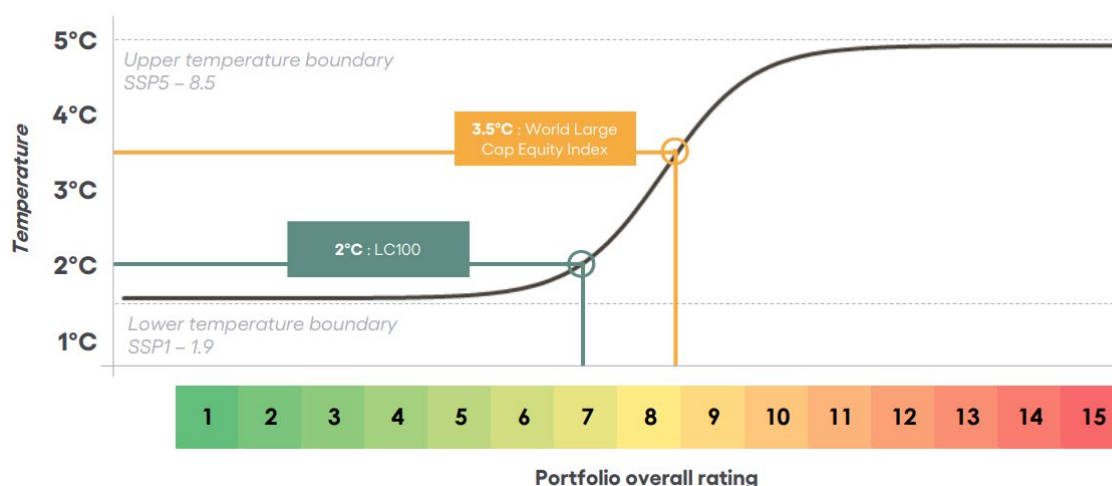
⁷⁷
$$\sum_i \frac{\left(\frac{\text{Market value of investment}_i (\text{€m})}{\text{Valued Company}_i (\text{€m})} \times \text{Carbon emissions of company}_i (\text{teq CO}_2) \right)}{\text{Market value of investments (€m)}}$$

⁷⁸ Carbon4 Finance's Carbon Impact Analytics methodology is available online: <https://www.carbon4finance.com/our-latest-carbon-impact-analytics-methodological-guide2>

⁷⁹ Avoided emissions are the difference between the greenhouse gas emissions induced (by a project, product or service) and the greenhouse gas emissions of a baseline scenario.

In order to establish the alignment of a portfolio of companies with a climate trajectory, Carbon4 Finance bases its analysis on two scenarios of temperature increase by 2100 from the latest IPCC report, namely⁸⁰ a 1.5°C scenario and a 5°C scenario.

In addition, two indices were studied by Carbon4 Finance to identify reference points: a reference point at 2°C, through the Low Carbon 100 index representing a low-carbon economy; a benchmark of 3.5°C, through the World Large Cap Equity Index representing a "business-as-usual" scenario of the global economy.



Source: Carbon4 Finance

This modelling makes it possible to identify whether the portfolios analysed fall more in line with one or other of these indices, and therefore whether the companies in the portfolio contribute more (on average) to a low-carbon economy or, on the contrary, to a business as usual economy.

Carbon intensity (of real estate assets)

The carbon intensity is calculated based on the greenhouse gas (GHG) emissions of each building, divided by the corresponding gross leasable area, taking into account the occupancy rate as well as climate variations. It is used as a climate indicator for the portfolio of directly managed office buildings.

Greenhouse gas (GHG) emissions come from energy consumption (final energy⁸¹) using conversion factors specific to each type of energy.

⁸⁰ <https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/>

⁸¹ Final energy is the energy actually delivered, consumed and billed to the user.

3. Climate initiative at BNP Paribas Cardif level with the “Net Zero Asset Owner Alliance”

Net Zero Asset Owner Alliance

As part of its membership of the “Net Zero Asset Owner Alliance” (NZAOA⁸²), BNP Paribas Cardif has made commitments that meet the four pillars identified by the Alliance:

- Measuring the alignment of investment portfolios with the Paris Agreement and reducing their carbon footprint;
- Defining decarbonisation targets for the sectors that emit the most greenhouse gases;
- Developing investments related to the climate transition;
- Engaging in shareholder dialogue with companies and asset managers to steer them towards carbon neutrality.

Climate alignment strategy: objectives and monitoring of results

BNP Paribas Cardif has set targets for reducing the carbon impact of its investment portfolios, which were published in September 2022⁸³. These targets are set by the BNP Paribas Cardif Group and apply to the Cardif Assurance Vie and Cardif Retraite entities.

Sector targets

- Final exit from thermal coal by 2030 at the latest for European Union and OECD countries, and by 2040 at the latest for the rest of the world (see thermal coal exit calendar provided above).
- Reduce the carbon intensity of the portfolio for companies in the electricity production sector (commitment made in 2023).

Monitoring greenhouse gas reduction targets

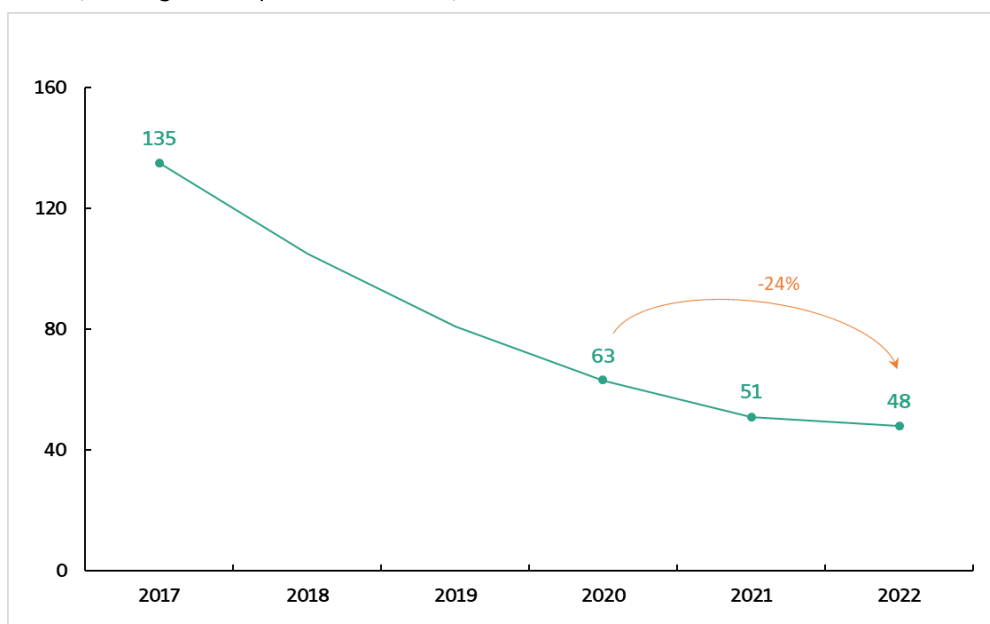
- Reduce the carbon footprint of the **directly held corporate equity and bond portfolios** by no less than 23% between the end of 2020 and the end of 2024 (scopes 1 and 2⁸⁴). At the end of 2022, the target had been achieved with a 24% reduction in the footprint.

⁸² Presented in the section *A4- Entity memberships* ; <https://www.bnpparibascardif.com/en/article/-/article/press/commitments-climate-change-net-zero-asset-owner-alliance>

⁸³ <https://www.bnpparibascardif.com/en/article/-/article/home-page/net-zero-asset-owner-alliance-bnp-paribas-cardif-announces-new-commitments>

⁸⁴ Although the scope 3 measurement is not standardised, BNP Paribas Cardif is focusing on setting targets for scopes 1 and 2 (the definition of the scopes according to the GHG protocol is presented in Appendix 2), in order to be in line with the Alliance, while continuing to calculate and analyse the impact of its portfolios in all three scopes

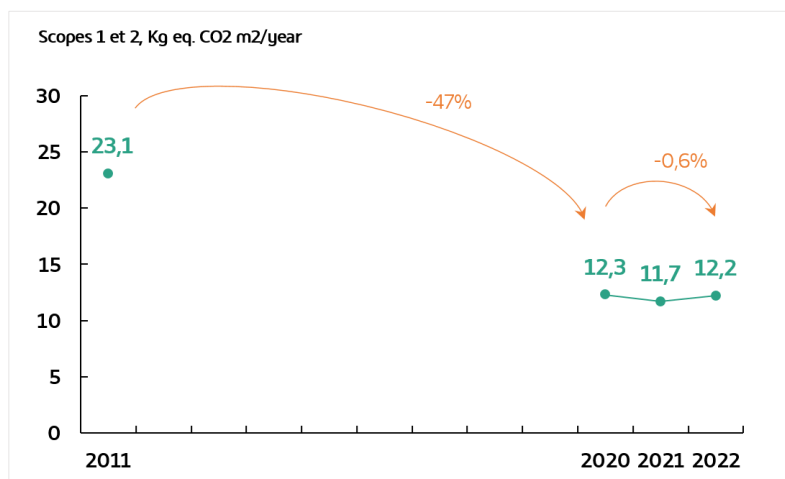
Change in BNP Paribas Cardif's carbon footprint in tonnes of CO₂ equivalent (scopes 1 and 2) per million euros invested (directly held equities and bonds)



The carbon transition filter and the sectoral exclusions applied to the entire thermal coal sector partly explain this carbon footprint decrease.

- Reduce the **carbon intensity (scopes 1 and 2.⁸⁵) of directly owned office buildings** by at least 12% between 2020 and 2030 (0.6% reduction achieved by the end of 2022, and 47% reduction between 2011 and 2020).

Change in BNP Paribas Cardif's carbon intensity in kg of CO₂ equivalent (scopes 1 and 2) per m² of surface area (office buildings)⁸⁶



⁸⁵ Reducing the carbon intensity of buildings also includes the consumption of electricity, heat and cooling by tenants.

⁸⁶ For 2011, the CO₂ equivalent emissions factor used for electricity is that of the Order of 8 February 2012, amending the Order of 15 September 2006 relating to the energy performance assessment for existing buildings offered for sale in mainland France. From 2020, the CO₂ equivalent emissions factor is taken from the ADEME database to reflect changes in the electricity energy mix

The slight reduction between 2020 and 2022 is explained by the under-use of tertiary buildings due to Covid-19 and a huge shift towards remote working.

- Achieve a **carbon intensity** below 125g of CO₂/kWh by the end of 2024 for **electricity producers** in directly held corporate equity and bond portfolios. This target is aligned with the International Energy Agency's (IEA) Net Zero Emissions scenario for power generation. At the end of 2022, the carbon intensity was 133g of CO₂/kWh.

These objectives, taken as part of the NZAOA alliance, will be reviewed every five years between now and 2050.

Investment targets for the energy transition

- Invest at least €800 million in environmental-themed investments.

Commitment target

- Dialogue with companies (via the Climate Action 100+ initiative) and asset managers to encourage them to implement a climate strategy consistent with the Paris Agreement.

4. Monitoring of climate indicators at Cardif Assurance Vie

a. Measuring the portfolio's carbon footprint

Cardif Assurance Vie's carbon footprint at 31 December 2022 was estimated at 39t CO₂ eq/€M invested⁸⁷ (compared to 102t CO₂ eq/€M invested for its benchmark composite index). The coverage ratio for the temperature analysis of the portfolio is 97%.

The assets included in this carbon footprint calculation (scopes 1 and 2) are those of the corporate equity and bond portfolio held directly by Cardif Assurance Vie and representing €€38 billion at 31 December 2022. The calculation is based on data from S&P Trucost Ltd.

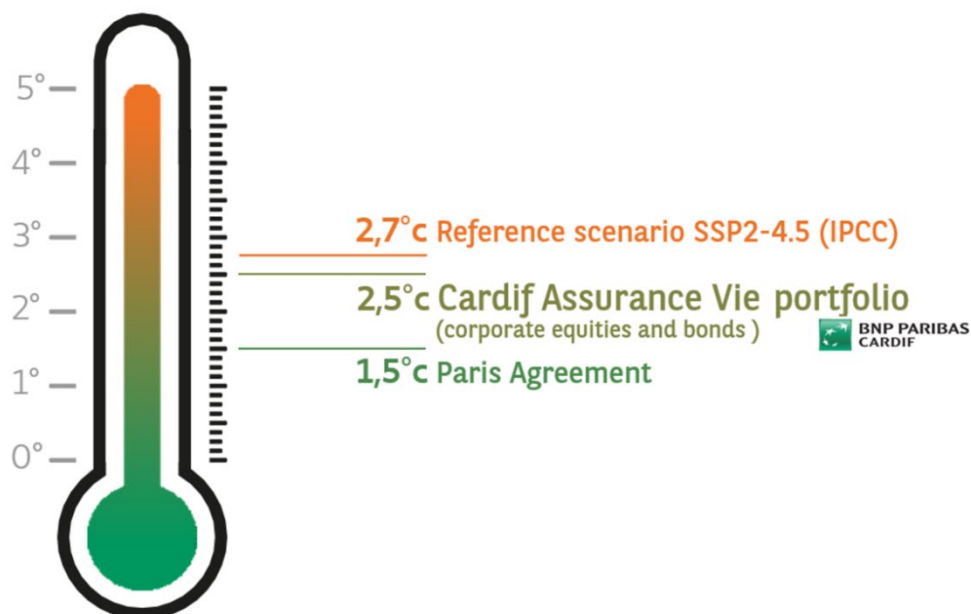
b. Measuring the implied portfolio temperature

Cardif Assurance Vie is continuing its efforts and is committed to contributing to the achievement of the Paris Agreement targets.

At the end of 2022, the temperature of Cardif Assurance Vie's corporate equity and bond portfolio was estimated at +2.5°C.

⁸⁷ It is not possible to present a history of changes in this carbon footprint, because the calculation scope is not comparable: it was previously presented for BNP Paribas Cardif, for a France scope. It is presented here for the legal entity Cardif Assurance Vie

Portfolio temperature corporate equities and bonds held directly by Cardif Assurance Vie at 31 December 2022 (in market value), scopes 1, 2 and 3



The temperature of the corporate equity and bond portfolio is similar to that of its benchmark composite index⁸⁸.

The coverage ratio for the temperature analysis of the portfolio is 93%, broken down as follows:

- 76% of the portfolio is covered by an in-depth analysis methodology for each company that takes into account "scopes 1, 2 & 3" emissions, the evolution of metrics specific to the sector of the analysed company (tCO₂/kWh, tCO₂ eq/barrel of oil) and assesses its future strategy. This analysis methodology is applied to the sectors with the strongest impacts on the climate;
- 24% by a simplified methodology (mainly using scopes "1, 2 & 3").

The current calculation methodology has several biases and limitations:

- The use of different geographical perimeters between the two baselines:
 - The Low Carbon 100 index is composed of European companies representing a low-carbon economy;
 - The World Large Cap Equity index is composed of global companies, representing a business as usual scenario.

⁸⁸ The benchmark is a composite of BB euro AG for corporate bonds and Stoxx 600 for equities

As the European economy is not representative of the world economy, the calibration of the formula is not homogeneous. Carbon4 Finance is considering the construction of a low-carbon index on a global scope.

- The model focuses on developed countries and listed assets: the Carbon4 Finance (CIA) database currently mainly covers companies in developed countries and applies only to the listed universe. This scope may bias the representation of a real economy made up of other types of assets, such as unlisted assets.

There are different methodologies for measuring the implied temperature of the portfolios that give different results. This is partly due to the forward-looking nature of this indicator (unlike the carbon footprint, which is a static indicator).

This indicator must therefore be approached with caution, and should not be seen as a solid measurement of the portfolio's alignment with the Paris Agreement. In addition, the temperature is calculated based on a constant portfolio. The projections do not take into account possible arbitrage transactions in the coming years.

c. Measuring climate alignment for real estate assets

The building sector accounts for a significant share of total energy consumption in France. Limiting energy expenditure and carbon footprint in the real estate portfolio is, therefore, a major challenge in the fight against global warming.

Tertiary buildings

This approach, measured annually, is in line with the objectives defined by the 2019 tertiary decree. This decree sets a reduction in energy consumption of 40% in 2030, 50% in 2040 and 60% in 2050 compared to a baseline year after 2010 or the achievement of a consumption threshold defined by a ministerial order.

Cardif Assurance Vie has been carrying out energy mapping of the real estate portfolio since 2011 for office buildings, and since 2013 for shopping centres.

Office buildings have seen a greater reduction in greenhouse gas emissions than in their energy consumption. This is due to the improvement in the energy mix (reduction in CO₂ emission factors) in France.

In 2020 and 2021, tertiary buildings were under-used due to Covid-19 and the huge shift towards remote working. This has impacted office building energy consumption and greenhouse gas emissions. In fact, the reductions at the end of 2022 may seem small when 2020 is used as the baseline.

Observed trajectories of the reduction in energy consumption and carbon intensity of Cardif Assurance Vie's directly managed real estate portfolio

	Energy consumption	Greenhouse gas emissions		Scope	Corrections applied
<i>Office buildings</i> ⁸⁹	-28% between 2011 and 2022	-47% between 2011 and 2022. ⁹⁰		Common areas and private areas	Area occupancy. ⁹¹ Climate variations
		-47% between 2011 and 2020	-0% between 2020 and 2022	Common areas and private areas	Area occupancy Climate variations
<i>Shopping centres</i>	-47% between 2013 and 2022	-15% between 2019 and 2022. ⁹²		Common areas and private areas with common facilities	

Residential buildings

The law of 22 August 2021 on combating climate change and strengthening resilience to its effects provides for rental bans and rent freezes according to the following schedule:

- 2023: Ban on renting homes which consume more than 450 kWhEF/m².⁹³
- 2023: Rent freezes for F and G-rated housing
- 2025: Ban on renting for G-rated housing
- 2028: Ban on renting for F and G-rated housing
- 2034: Ban on renting for E, F and G-rated housing

⁸⁹ It was not possible to obtain a consumption equivalent restricted to Cardif Assurance Vie for office building energy consumption. It was replaced by the energy consumption for BNP Paribas Cardif's real estate assets. As a reminder, the Cardif Assurance Vie entity was isolated at the end of 2022

⁹⁰ For office buildings, until 2019, the CO₂ equivalent emissions factor used for electricity was that of the Order of 8 February 2012, amending the Order of 15 September 2006 relating to the energy performance assessment for existing buildings offered for sale in mainland France. The ADEME database was used as a source from 2020, in order to reflect changes to the electricity energy mix.

⁹¹ When a site is vacant, the surface area ratio of energy consumption takes into account the occupied area rather than the total surface area of the building

⁹² Before 2019, the breakdown of energy consumption by energy source was not available. It was therefore not possible to convert into CO₂ equivalent.

⁹³ Measured in final energy, i.e. the energy actually used by the user

Breakdown of Cardif Assurance Vie housing, by surface area, according to the Energy Performance Assessment (EPA) energy consumption rating at the end of 2022

	In % of surface area
A	3%
B	3%
C	33%
D	48%
E	11%
F	0%
G	0%
Pending EPA label	2%

CARDIF ASSURANCE VIE does not own any residential buildings with F or G EPAs.

39% of surface areas are rated between A and C and 59% of surface areas are rated D or E.

Breakdown of Cardif Assurance Vie housing, by surface area, according to the Energy Performance Assessment (EPA) rating for greenhouse gas emissions at the end of 2022

	In % of surface area
A	36%
B	21%
C	4%
D	33%
E	5%
F	0%
G	0%
Pending EPA label	2%

The main source of energy used is electricity, which, in France, emits few greenhouse gases, resulting in a significant proportion of low EPA labels for greenhouse gas emissions (57% of surface areas are rated A and B)

5. Changes in the investment strategy in line with the alignment strategy implemented

Several changes have been made to the investment strategy to align the portfolios with a 1.5°C trajectory.

BNP Paribas Cardif plans a definitive exit from **thermal coal** no later than 2030 for European Union and OECD countries, and no later than 2040 for the rest of the world (see section *F- Alignment with the Paris Agreement*). Cardif Assurance Vie's (relative) exposure to this sector represented 0.04% of its outstandings (corporate equities and bonds) at the end of 2022.

In the **oil and gas** sector, BNP Paribas Cardif applies the BNP Paribas Group exclusions. Cardif Assurance Vie's (relative) exposure to the unconventional oil and gas sector represented 0.8% of its outstandings (corporate equities and bonds) at the end of 2022.

In connection with the NZAOA alliance, BNP Paribas Cardif has set sectoral targets (coal, electricity production) and greenhouse gas reduction targets for its directly held corporate equity and bond portfolios and office buildings.

The insurer is continuing its investments in the environment and energy transition, and its commitment to the Climate Action 100+ coalition to encourage companies with the largest carbon emissions to reduce their footprint.

The indicators currently cover corporate equities and bonds, i.e. approximately 37% of the euro-denominated fund managed by Cardif Assurance Vie (as of 31/12/22). Asset coverage will be gradually extended in the coming years. Some data is not available, and the methodologies for calculating certain indicators are still under construction or being improved. BNP Paribas Cardif teams participate in various working groups within the BNP Paribas Group and externally (NZAOA, France Assureurs, OID, etc.) which look at non-financial issues in investments.

BNP Paribas Cardif will communicate annually, in future Article 29 reports, on the progress made in achieving these targets and any difficulties encountered in implementing them.

G. Biodiversity alignment strategy

Definition and context

Biodiversity is the network of all living, terrestrial, marine and aquatic organisms, and the ecological complexes to which they belong. This network produces oxygen, regulates the planet's water, temperature and air quality, as well as natural hazards. These are the ecosystem services that biodiversity provides.

In 1992, at the Earth Summit held in Rio de Janeiro, the international community adopted the Convention on Biological Diversity (CBD), which set three objectives:

1. Biodiversity conservation;
2. Sustainable use of its components;
3. The fair and equitable sharing of benefits arising from the exploitation of genetic resources and associated traditional knowledge.

In 2010, States agree on "Aichi Targets" for the period 2011-2021. In 2020, the CBD Secretariat's fifth Global Biodiversity Outlook report found that none of the Aichi targets had been met.

In 2022, 196 countries at the 15th Conference of the Parties to the Convention on Biological Diversity (COP15) adopted a new strategic plan to guide international action, known as the "Kunming-Montreal Global Biodiversity Framework". Its objective is to halt and reverse the decline in biodiversity in order to contribute to "vision of living in harmony with nature by 2050".

The framework sets out four major long-term objectives (2050):

1. End the extinction of species threatened by humans and divide by ten the rate of extinction of all species by 2050;
2. Use and manage biodiversity sustainably;
3. Fairly share the benefits arising from the use of genetic resources;
4. Ensure that the technical and financial resources for the implementation of the Global Biodiversity Framework are accessible to all parties, in particular the least developed countries and small developing island States.

The framework sets out 23 2030 action targets, broken down into three areas:

1. Reducing threats to biodiversity;
2. Meeting people's needs through sustainable use and benefit-sharing;
3. Tools and solutions for implementation and mainstreaming.

1. Meeting the objectives of the Convention on Biological Diversity

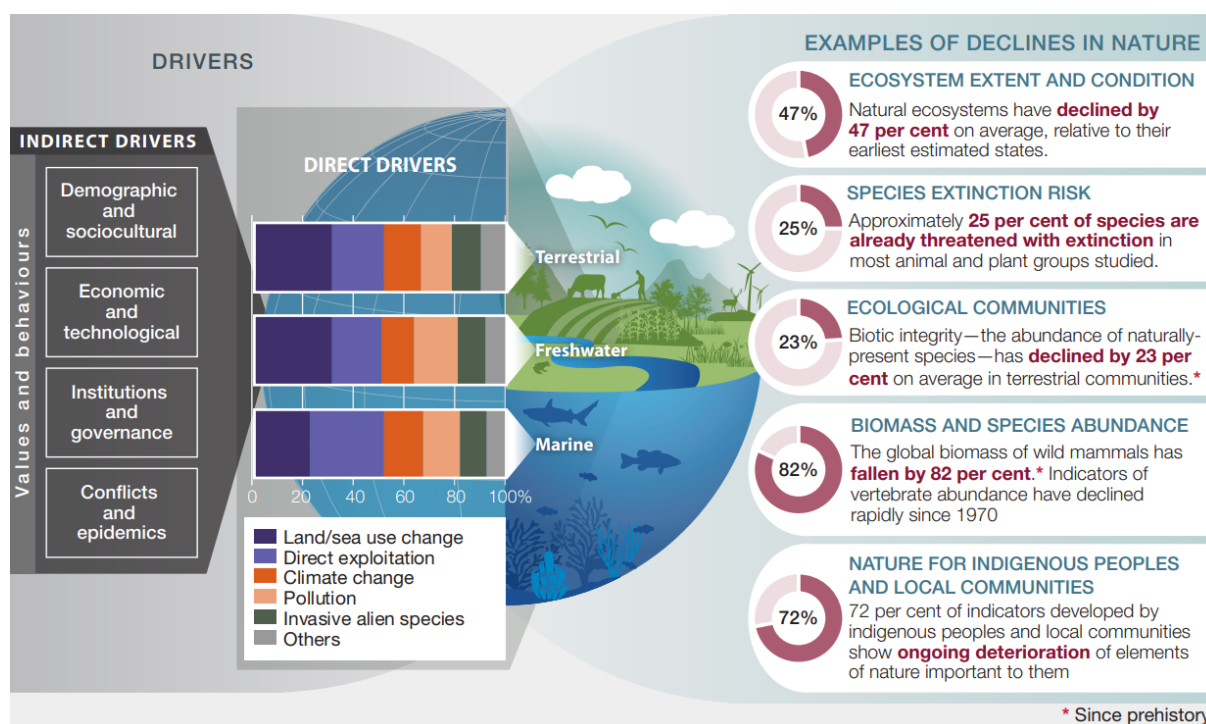
✦ From 2024, BNP Paribas Cardif will work on an alignment strategy with long-term biodiversity-related objectives, which will include the 2030 objectives. The insurer will be able to refine its analyses and its control of the biodiversity footprint metric in order to measure compliance with its objectives and analyse its

contribution to reducing the main pressures and impacts on biodiversity as defined by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).⁹⁴

This strategy will be defined in line with the actions carried out by the BNP Paribas Group, for which biodiversity is a priority area of action, aligned with the objectives of customers and the United Nations Sustainable Development Goals. It will include sectoral policies addressing deforestation in South East Asia and more broadly issues related to the agriculture sector, publishing a public position on biodiversity,⁹⁵ dialogue with customers in the most sensitive sectors and contributing to the pilot project of the Taskforce on Nature-related Financial Disclosures (TNFD) framework on the agri-food sector with a sample of 123 companies operating worldwide.⁹⁶

2. Analysing the contribution to alleviating the main pressures and impacts on biodiversity (IPBES)

Main pressures observed on biodiversity (direct and indirect drivers of change):



Source: IPBES.⁹⁷

For several years, scientific reports, in particular IPBES reports, have warned of the collapse of global biodiversity and raised awareness of the significant threat to the stability of societies. The work of the

⁹⁴ IPBES - French Foundation for Biodiversity Research (Fondationbiodiversite.fr)

⁹⁵ https://cdn-group.bnpparibas.com/uploads/file/position_biodiversite_2021.pdf

⁹⁶ <https://www.i-care-consult.com/2023/03/tbfd-pilot-on-the-agri-food-sector/>

⁹⁷ <https://www.ipbes.net/global-assessment>

Taskforce on Nature-related Financial Disclosures (TNFD) is essential to creating a harmonised global reporting framework on biodiversity impacts.

In 2022, BNP Paribas Cardif published the results of the measurement of a biodiversity footprint indicator, the MSA.m²/€k for its portfolio of directly held corporate equities and bonds, according to the model proposed by the French Deposits and Consignments Fund (*Caisse des Dépôts et Consignations* – CDC). BNP Paribas Cardif is publishing this measurement again in 2023, further assessed using the Iceberg Data Lab (IDL) methodology. For the first time, BNP Paribas Cardif is also publishing the matrix of ecosystem dependencies of its portfolio based on the model put forward by CDC Biodiversité.

BNP Paribas Cardif takes account of biodiversity issues in its real estate assets. Several actions are planned to reduce the impact of real estate activities on biodiversity:

- promoting an increase in green spaces on existing sites;
- stopping the use of plant protection products by introducing a clause in maintenance contracts;
- developing links with ecologists in order to optimise actions to preserve and promote biodiversity for major renovation work.

3. Biodiversity footprint measurement indicators and meeting objectives

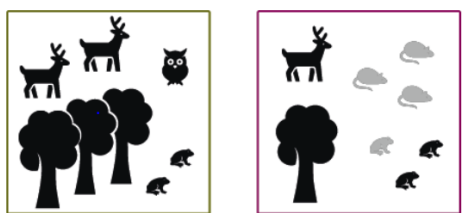
The models for assessing metrics related to biodiversity, the quality and level of detail of the data used by these models, are still being developed. They are partly based on a set of estimates, which change and are refined from one year to the next.

BNP Paribas Cardif has therefore chosen to assess the biodiversity footprint of its portfolio at the end of 2022 with a second data supplier. This involves putting into perspective two different approaches, one providing an aggregated view of the biodiversity footprint, and the other a view based on pressure over time. Understanding these results for BNP Paris Cardif's investment portfolios will allow the Group to determine the valuation model on which to define and monitor its alignment strategy with long-term biodiversity objectives. This work will be continued in 2024, when a sole method will be retained for monitoring the objectives that will have been set as part of the biodiversity strategy.

BNP Paribas Cardif uses the **MSA (Mean Species Abundance) metric** to assess its biodiversity footprint. This indicator measures the extent to which local biodiversity has been preserved. It compares the average abundance of native species in an environment with their abundance in an undisturbed ecosystem. Its calculation is based on the comparison, for each individual species, between its abundance under the influence of a given pressure and its abundance in the absence of this pressure.

Only species native to an environment are considered, as the presence of other species may result from environmental disturbances. The MSA metric is based on a scale from 0% (total extinction of native species) to 100% (complete preservation of the biodiversity of native species). The MSA is recognised by IPBES as a means of assessing ecosystem integrity.

The diagram below illustrates the principles for calculating the MSA. Pressure on biodiversity will reduce an undisturbed population of native tree and animal species (left-hand diagram) in proportions which result in a population disturbed by this pressure (right-hand diagram).



In this example, populations of native species evolved as follows:

- the deer population decreased from 2 to 1 individual(s) once disturbed;
- the owl population decreased from 1 to 0 individual(s);
- the tree population decreased from 3 to 1 specimen(s);
- the frog population is maintained at 2 individuals (after an intermediate growth of 3 individuals).

This change is reflected in the following calculation of the MSA:

$$MSA = \frac{1/2 + 0/1 + 1/3 + 2/2}{4} = 0.46$$

Source: GLOBIO

The MSA.m²/€k metric relates this metric to an area of one square metre and the value of the corporate clients in an investment portfolio expressed in thousands of euros. This metric may, alternatively, be expressed in MSA.km²/ €M to relate the MSA to an area of one square kilometre, with the value of corporate clients expressed in millions of euros. The models calculate the MSA.km² for each pressure on biodiversity, and then aggregate them by company. This metric is then compared to the value of the company to determine the MSA.m²/€k or the MSA.km²/€M. The portfolio footprint is obtained by cumulating these footprints by company, weighted by the weight of investments in the portfolio.

As indicated previously, in 2023, BNP Paribas Cardif is using two models to assess this metric:

- **the Global Biodiversity Score (GBS)** carried out by Carbon4 Finance and developed by CDC Biodiversité, already used in 2022;
- **the Corporate Biodiversity Footprint (CBF)** developed by Iceberg Data Lab and I Care & Consult, added in 2023.

These two models are used by a range of market players including insurers, reinsurers and asset managers. Banque de France also uses the GBS as part of its analysis of the exposure of the French financial system to biodiversity-related risks..⁹⁸

These two suppliers use similar modelling steps:

1. collecting corporate clients' economic data (revenue and sales volumes) from their financial reports;
2. estimating their ecological inventories (consumption of commodities, greenhouse gas emissions and polluting substances) from this data, or collating them from corporate clients' financial reports if they include these inventories (EXIOBASE or WUNDERPUS);
3. converting the ecological inventory data into pressures on biodiversity (CDC or IDL proprietary models);
4. assessing the impacts associated with these pressures (GLOBIO);

⁹⁸ Banque de France, working paper #826, "A "Silent Spring" for the Financial System? Exploring Biodiversity-Related Financial Risks in France" published on 27/08/2021

5. aggregating these impacts by company and then at the investment portfolio level.

The modelling states that a company's impacts on biodiversity are based on its activity: to generate revenue (step 1), a company must consume commodities and is responsible for greenhouse gas emissions or pollution (step 2). These emissions generate pressure on biodiversity (step 3) which translates into impacts on ecosystems (step 4). The impact on biodiversity of an investment portfolio is the cumulative impact of the corporate clients in which the portfolio has invested (step 5).

The estimating ecological inventories (step 2) is based on trade models (purchases and sales) between the various business sectors, taking into account the region as well as the consumption of commodities by sector and greenhouse gas emissions volumes.

The **conversion of ecological inventory data into biodiversity pressures** is based on CDC and IDL proprietary models, modelling the life cycle of products, which convert ecological inventories into pressure data. For example, the consumption of a given volume of wheat can be translated into land occupancy pressure by modelling the transformed surface area necessary for its production, and into nitrogen pollution pressure by modelling the nitrogen emissions associated with its production.

For both suppliers, the assessment of the impacts related to pressures is based on GLOBIO, a modelling tool developed by the PBL Netherlands Environmental Assessment Agency. This tool is based on a set of research articles and academic studies on the impacts of various biodiversity pressures.

To calculate these impacts, CDC uses a static-dynamic approach:

- static impacts, which include all cumulative impacts prior to the assessment period;
- dynamic impacts, which include the impacts that occurred during the period assessed.

CDC - Global Biodiversity Score (GBS) - also distinguishes footprints related to land pressures from those related to aquatic pressures.

IDL - **Corporate Biodiversity Footprint (CBF)** - uses a time-based integration approach that assesses the biodiversity impacts of corporate clients' activities over a 100-year period.

The following table summarises the main differences between the GBS and the CBF approaches, as well as the main advantages and disadvantages associated with the two methods of calculating the MSA.km² metric:

	CDC - Global Biodiversity Score (GBS)	IDL - Corporate Biodiversity Footprint (CBF)
Approach to calculating the MSA metric	Static/Dynamic	Time-based integration
Main advantages of the calculation method	<ul style="list-style-type: none"> - Creates an inventory of the remaining biodiversity (static) and quantifies the extent of additional damage generated during the period being examined (dynamic) - Potential for use in prospective studies (for example, to restore biodiversity by 20% by a given date or minimise biodiversity loss) - Less complex to interpret compared to a metric using time-based integration, which adds an extra layer of modelling 	<ul style="list-style-type: none"> - Measures the impacts of the pressures generated over the period being examined, taking into account their entire "lifetime" - Can be used to monitor biodiversity loss minimisation targets - Takes into account pressures that will be applied in the future. For example, the greenhouse gases that will be emitted in 10 years' time are taken into account due to the time-based integration
Main drawbacks of the calculation method	<ul style="list-style-type: none"> - Does not take into account the pressures that will be incurred beyond the assessment period 	<ul style="list-style-type: none"> - Difficult to use for target-based biodiversity level trajectory studies, unless these targets themselves incorporate time-based integration (e.g. reduce biodiversity loss by 30% each year on a global scale by 2030) - Metric is complex due to the need to explain the time integration component and its effects on the measured values
Input-output model	<p>EXIOBASE</p> <p>Trade-based model developed and managed by a consortium of European, Dutch and Austrian universities and research institutes</p>	<p>Wunderpus</p> <p>Proprietary model based on EXIOBASE</p>
Model for converting pressures into impacts	<p>GLOBIO</p> <p>Both approaches are based on the GLOBIO model to convert pressures into biodiversity impacts</p>	
Metrics	<p>MSA.km²</p> <p>Four separate MSA.km² metrics for static and dynamic land footprint and static and dynamic aquatic footprint.</p> <p>They are transposed into MSA.km²/€M for comparison with the amounts invested.</p>	<p>MSA.km²</p> <p>A single MSA.km² metric combining land and aquatic footprints, calculated using time-based integration.</p> <p>It is transposed into MSA.km²/€M for comparison with the amounts invested.</p>

Pressures covered	<p>Land pressures:</p> <ul style="list-style-type: none"> - Changing land use: soil use, fragmentation of ecosystems, human activities (infrastructure) - Climate change due to greenhouse gas (GHG) emissions - Pollution: nitrogen emissions, land eco-toxicity <p>Aquatic pressures:</p> <ul style="list-style-type: none"> - Change in water use: conversion of wetlands - Climate change: hydrological disturbance - Pollution: Catchment pollution, eutrophication, freshwater eco-toxicity 	
Pressures not covered	<ul style="list-style-type: none"> - Marine biodiversity - Invasive species - Overexploitation of soil - Climate change: static footprint 	<ul style="list-style-type: none"> - Marine biodiversity - Invasive species - Overexploitation of soil
Scopes covered	<ul style="list-style-type: none"> - Scopes 1, 2 and 3 upstream covered for all pressures - Scope 3 downstream covered only for the climate change pressure dynamic footprint 	<ul style="list-style-type: none"> - Scope 1, 2 and 3 upstream covered for all pressures

Methodological limitations and biases

Ecosystems behave in a non-linear and complex way. This behaviour is characterised by numerous interactions with other ecosystems and with natural processes and living organisms, including humans. As a result, a metric such as the MSA.km² represents a simplified view of the impacts of human activities on biodiversity. The analyses based on this metric will therefore need to be supplemented by other metrics or indicators as and when required.

In addition, the metric itself remains complex to assess, as the different scopes and different pressures contribute in various ways to its final calculation.

The CDC model does not currently cover the static footprint of climate change pressure due to the difficulty in determining and allocating greenhouse gas emissions prior to the observation period by sector and region. As a result, the impact of corporate clients' activities on biodiversity may be underestimated.

Each step of the approaches used by CDC and IDL has limitations and biases, with the main ones being set out below.

The collection of corporate economic data (step 1) and ecological inventory data (step 2) is based on the financial and non-financial publications of the corporate clients that are counterparties of BNP Paribas Cardif.

Economic data is not necessarily published at a sufficient level of detail, or may be published based on segmentation that does not align with the models. For example, revenue is often published by type of business activity and by region in different sections of the annual reports where reconciliation is not possible,

whereas the model requires the cross-referencing of these two visions. Similarly, ecological inventory data is currently only partially published, and is based on estimates.

The use of EXIOBASE or Wunderpus to assess corporate clients' ecological inventories (step 2) also has its limitations. Putting these databases together involves the use of methodological choices, assumptions and approximations that add complexity to the interpretation of the results.

CDC and IDL's proprietary models (step 3) which convert ecological inventory data into pressures are based on lifecycle models by commodity type. These models are themselves based on methodological choices, assumptions and approximations that add to the complexity of the overall model.

The GLOBIO model for assessing the impacts associated with pressures (step 4) uses scenarios and assumptions based on local studies or limited to certain types of species, which are then generalised.

In addition, the transition from the MSA.km² metric to the MSA.m²/€k (or MSA.km²/€M) metric is based on the CDC and IDL models on the division of the MSA.km² metric by the value of company. This value may not be available or easily estimable for certain corporate clients, particularly those that are not listed, which therefore limits the portfolio coverage ratio for the metric in question.

In conclusion, the sheer number of models, their level of development and the detail and quality of the data published by corporate clients means that it is not easy to identify in the metric analysis what is based on the specific activities of the corporate client in question, and what is based on approximations and estimates made on the data or by the model.

Cardif Assurance Vie's corporate equity and bond portfolio biodiversity footprint

The CDC model covers 92% of the outstandings of the corporate equity and bond portfolio held directly by the Cardif Assurance Vie euro fund.

Biodiversity footprint in MSA.m ² /€k invested, as at 31/12/2022	
<i>Dynamic aquatic</i>	0.04
<i>Static aquatic</i>	2.6
<i>Dynamic land</i>	2.4
<i>Static land</i>	32.4

Source: Carbon4Finance

As of 31 December 2022, for every 1 thousand euros invested, the impact of the corporate equity and bond portfolio is equivalent to:

- the artificialisation of 2.6 m² of aquatic biodiversity and 32.4 m² of land biodiversity based on a static impact;
- the artificialisation of 0.04 m² of additional aquatic biodiversity and 2.4 m² of additional land biodiversity based on a dynamic impact.

Approximately 70% of the static footprint, whether land or aquatic, is generated by five industries: beverage production, oil and gas extraction, food manufacturing, chemical manufacturing and transport and pipeline infrastructure. Approximately 80% of the dynamic land footprint and approximately 75% of the dynamic aquatic footprint are driven by four business sectors: financial services, oil and gas extraction, activities ancillary to financial services and insurance and the supply of electricity, gas, steam and air conditioning. The contribution of the first two sectors is particularly significant: financial services account for around 45%

and 30% of the dynamic land and water footprints, while oil and gas extraction accounts for 25% and 35% of these footprints, respectively.

✦ CDC does not provide a breakdown of the impact by geographical area, considering that this would require information on the location of all company assets, which is not currently available.

The IDL model covers a proportion of the corporate equity and bond portfolio held directly by Cardif Assurance Vie, equivalent to that of the CDC model for the calculation of the MSA.km² metric. This level of coverage is reduced to 55% for the calculation of the MSA.km²/€M metric due to IDL having less access to counterparty corporate value data, which is necessary in order to calculate this metric. **The footprint assessed by IDL for the portfolio is -0.1036 MSA.km²/€M.**

Both the CDC and IDL models identify land use and aquatic pollution as the most significant pressures in the portfolio. The CDC model also highlights the pressure related to climate change, which contributes significantly to the dynamic land footprint by considering downstream Scope 3 emissions from counterparties.

Risk of dependency on ecosystem services

This year, for the first time, Cardif Assurance Vie has published an assessment of the directly held corporate equity and bond portfolio's dependency on ecosystem services.

The dependency on ecosystem services represents the portfolio's exposure to biodiversity loss. This dependency is assessed by CDC *via* a dependency score taking into account Scopes 1 and 3 upstream. It is established on the basis of the business sectors of the companies involved, as well as the business sectors of their upstream value chains (to include the upstream Scope 3 dependency). The industrial processes used in these sectors are associated with a dependency on the 21 ecosystem services derived from the "ENCORE" model, a database developed by the Natural Capital Financial Alliance, an alliance of financial institutions, in partnership with UNEP-WCMC (UN Environment Programme World Conservation Monitoring Centre). The database assigns levels of dependency on 21 ecosystem services (classified according to the Common International Classification of Ecosystem Services) to 86 production processes.

The dependency score quantifies the dependency of portfolio companies on ecosystem services, i.e. services offered by nature (pollination, water purification, etc.). This score is based on the materiality tables from the ENCORE model.

The average dependency score expresses the portfolio's average dependency on all ecosystem services.

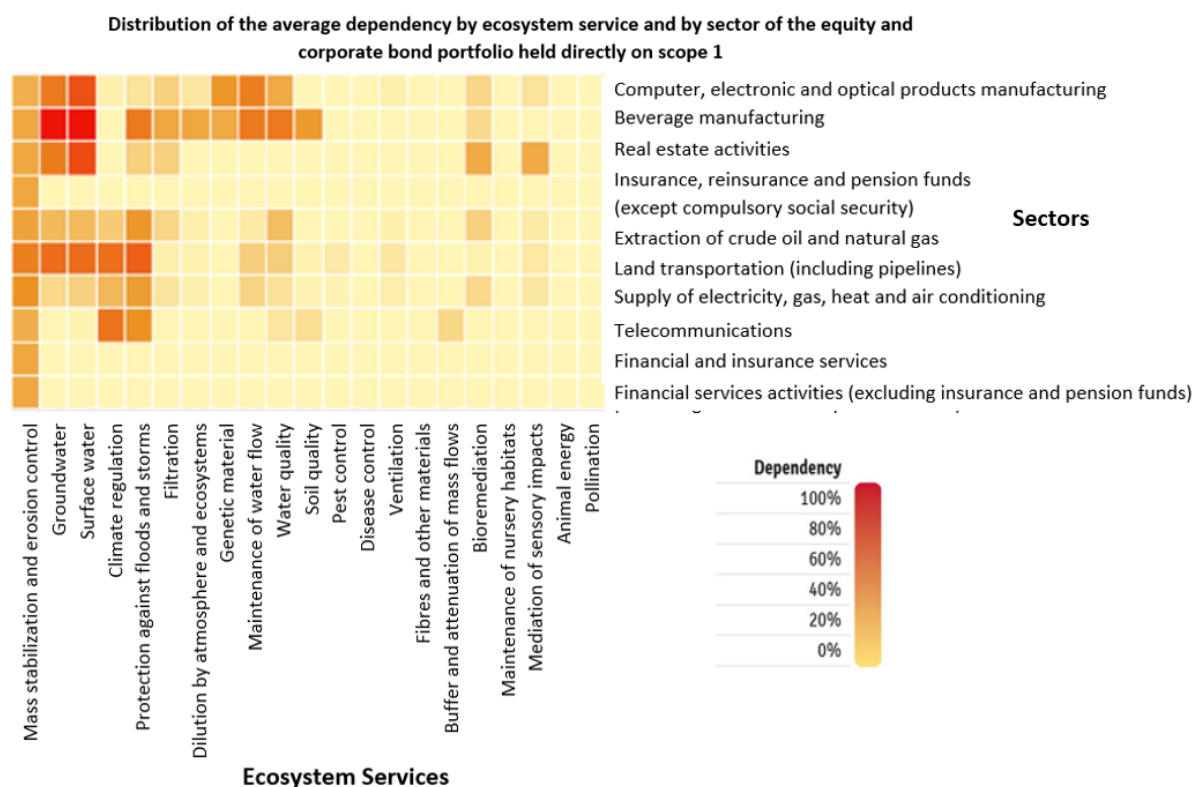
Cardif Assurance Vie's average dependency score

Scope 1	7%
Scope 3 Upstream	9%

Source: Carbon4Finance

Therefore, the average dependency of the Cardif Assurance Vie portfolio (directly held corporate equities and bonds) for all ecosystem services can be considered very low, both for Scope 1 and upstream Scope 3.

This average vision covers disparities that can be illustrated by the following Scope 1 dependency matrix:



Source: Carbon4 Finance

This matrix shows that for the 10 most represented sectors⁹⁹ in the portfolio in terms of outstandings, the companies have a dependency score of around 40% linked to the ecosystem service “mass stabilisation and erosion control” and are therefore sensitive to erosion and landslides.

The companies in the Cardif Assurance Vie portfolio with a high average dependency score (greater than 80% on the matrix) on at least one ecosystem service carry out activities related to the manufacture of computers, electronic components and optical products, manufacturing of beverages or real estate-related activities. These companies are highly dependent on “groundwater” and “surface water” ecosystem services.

The average dependency score can be supplemented, for Scope 1, by a **critical dependency score** which quantifies the share of the portfolio that is critically dependent (i.e. with a high or very high dependency score) on at least one ecosystem service.

Cardif Assurance Vie critical dependency score

Scope 1	28%
Scope 3 Upstream	40%

Source: Carbon4 Finance

The critical dependency of Cardif Assurance Vie’s portfolio of directly held corporate equities and bonds on at least one ecosystem service is 28% for Scope 1. The main critical exposures are related to ecosystem services

⁹⁹ Sectors identified on the basis of NACE codes

provided by surface water. The sectors most critically exposed to at least one ecosystem service are telecommunications and transport infrastructure.¹⁰⁰

These initial findings must be refined by an analysis of dependencies related to upstream Scope 3, and take into account the fact that the ENCORE database – on which these matrices are based – models potential dependencies rather than actual dependencies. Finally, consideration should also be given to the possible transmission effects of damage to an ecosystem service on other services. BNP Paribas Cardif will continue its analyses in 2024 based on these guidelines.

H. Process for addressing ESG criteria in risk management

BNP Paribas has implemented a comprehensive approach to ESG risk management that reflects the Group's commitment at the highest level to combining performance, responsibility, ethics and transparency. BNP Paribas' approach to corporate social responsibility incorporates short-, medium- and long-term environmental and social risks.

The risk management framework enforced by BNP Paribas Cardif is derived from that of BNP Paribas, adapted to take into account insurance specificities.

1. Process for identifying, assessing, prioritising and managing risks related to the consideration of environmental, social and governance quality criteria

a. Overall risk management framework

BNP Paribas Cardif performs a risk inventory that consists of a set of "severe yet plausible" basic scenarios (called "risk events") that could affect the activities, operations and environments of Cardif Assurance Vie.

For each risk event, the methodology used requires an identification of the risk drivers underlying its occurrence, i.e. the drivers that promote, trigger or aggravate the event. Risk drivers that need to be considered include ESG-related risk drivers, including the sub-set of climate and environmental risk factors.

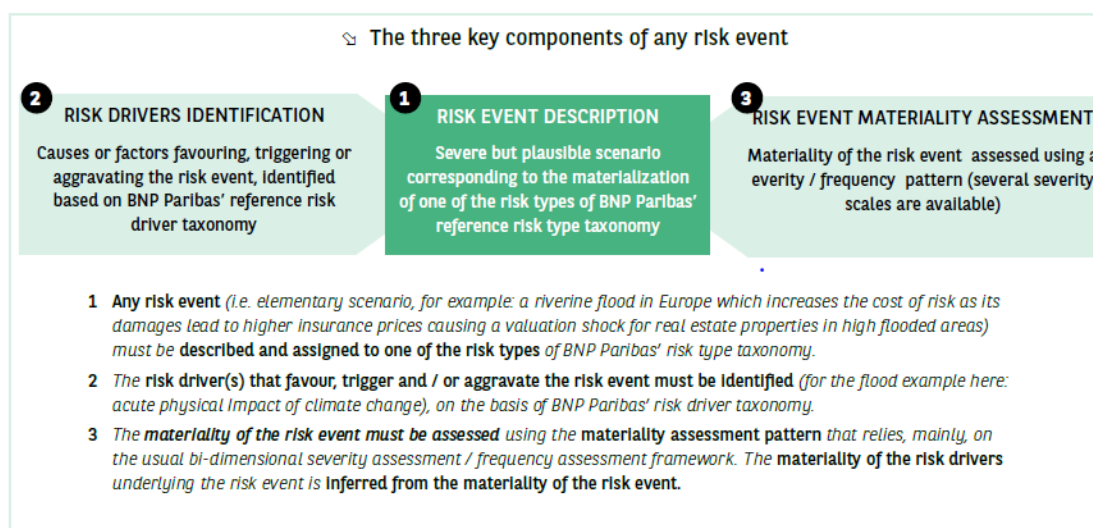
The materiality of these risk events is assessed according to their probability of occurrence and their severity over three years. The time-based target is aligned with financial planning target. This year, their probability is supplemented by the notion of imminent risk, which can be qualified as "low", "medium", "high" or "very high". It is then possible to prioritise the most likely and most severe events.

BNP Paribas Cardif's framework for climate risk management is consistent with the principles of the EIOPA application guide on conducting a materiality assessment of climate change risks and on the use of climate change scenarios in the ORSA.¹⁰¹ ESG risks are incorporated as risk drivers in the identifying process, likely to affect a wide range of risk events. Those risk events can be financial (market risk, credit risk, etc.) or non-

¹⁰⁰ Ibid




¹⁰¹ EIOPA, Application guidance on running climate change materiality assessment and using climate change scenarios in the ORSA, EIOPA-BoS-22/329, 02 August 2022

financial (operational risk). The possible links between ESG risk drivers and the occurrence of traditional risk types (transmission channels) are varied, as presented in the tables below:



Transmission channels extracted from the 2022 risk inventory

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

 CLIMATE-RELATED RISK DRIVERS	 TRANSMISSION CHANNELS (illustrations)	 SCENARIOS / RISK EVENTS (Materialization of traditional risk types)
<p>Climate change-related physical risk drivers</p> <ul style="list-style-type: none"> ▪ Acute ▪ Chronic <p>Transition to low carbon Economy risk drivers</p> <ul style="list-style-type: none"> ▪ Policy changes ▪ Technological changes ▪ Behavioural / consumer preferences changes <p>Climate-related governance risk driver</p> <p>Climate-related liability risk driver</p>	<ul style="list-style-type: none"> ▪ Carbon price / tax ▪ New climate-related laws / regulations ▪ Stranded assets and workers ▪ Property damages ▪ Asset destruction ▪ Shifts in prices and asset values ▪ Increased volatility of asset prices ▪ Lower asset performance ▪ Operational disruption ▪ Supply chain disruption ▪ Lack of production input ▪ Lower production ▪ Productivity changes ▪ Lower profitability ▪ Losses of business opportunity ▪ Impact on wealth and / or solvency ▪ Technological change, developments or disruptions ▪ New capital expenditure ▪ Increased costs 	<p>Financial risks</p> <ul style="list-style-type: none"> ▪ Business & strategic risk (sector exit etc.) ▪ Credit risk (default, collateral depreciation, country risk etc.) ▪ Market risk (repricing etc.) ▪ Liquidity risk (increased demand, risk of climate related outflows / default of inflows etc.) ▪ Insurance underwriting risk (claims increase etc.) <p>Non-financial risks</p> <ul style="list-style-type: none"> ▪ Execution risk ▪ ICT (obsolescence, disruptions etc.) ▪ Damage to physical assets ▪ Third-party risk (failure, non-compliance etc.) ▪ Legal risk ▪ Health issue and human resources safety risks

Environmental and social risk drivers are gradually integrated into the standard reporting processes, taking into account the progress of internal analyses relating to non-financial issues as well as any regulatory developments.

b. Monitoring and assessment of ESG risks in the investment process

Since 2008, BNP Paribas Cardif has gradually enhanced and widened its framework to manage ESG risks notably through:

- business activity restriction lists grouping together companies that do not comply with the Group's CSR requirements;
- setting a timeframe for a thermal coal exit;
- setting targets in line with the energy transition towards a neutral carbon economy, reinforced by joining the NZAOA;
- the engagement policy, reinforced by joining the Climate Action 100+.

Roles and responsibilities

The operational entities and the RISK Function (RISK) are responsible for managing risks, including ESG-related risks.

In line with the internal organisation of the permanent control framework, **the operational entities are the first line of defence**. They regroup the front-line in permanent control and are responsible for managing their risks including those linked to environmental and social factors.

RISK, an independent control function, is in charge of organising and supervising the overall risk management system covering the BNP Paribas Cardif's risk exposures within its remit, including ESG risks. To that end, RISK is tasked with defining, developing, implementing and maintaining the ESG risk management framework, in close collaboration with the IMPACT Department and the Asset Management Department.

RISK is a member of the **SRI Cross-functional Committee** and the **BNP Paribas Cardif Strategic Impact Committee** (see Section *B1- Internal resources*).

The framework is strengthened by periodic reviews conducted by the third line of defence (audit of the Banking Group or BNP Paribas Cardif).

Risk management tools

The monitoring of ESG risks linked to investments is framed by dedicated risk management tools.

BNP Paribas Cardif defines and applies its investment policies while managing **the restriction lists according to the observed level of ESG risks**. BNP Paribas Cardif can thus ban any investment relationship, or apply a dedicated monitoring process. Controls are put in place during the pre-investment and post-investment phases.

Controls

The ESG risk management framework also relies on dedicated controls.

In order to ensure that the ESG risk management tools are applied, BNP Paribas Cardif implements the CSR operational control plan from the BNP Paribas Group. **This control plan drives towards the continuous improvement that is necessary for an adequate management of ESG risks**. It incorporates the ESG risk management systems defined by the Group, and has been adjusted to take into account the specific nature of BNP Paribas Cardif's activities.

Stress tests

Climate stress tests complete the ESG risk management framework.

The traditional regulatory and internal stress testing implemented by insurers give them the tools and the expertise necessary to measure the consequences of a crisis scenario on their solvency situation. Gradually, this scenario analysis system is enriched for use in analysing the consequences of global warming and the energy transition on asset portfolios. They will make it possible to deal with longer horizons, differentiated scenarios according to a detailed sectoral segmentation and to take into account specific factors such as the cost of carbon emissions, technological innovation and physical risks in the long term.

2. Description of the main environmental, social and governance risks

a. Explaining and categorising risks

Sustainability risks are events or conditions whose occurrence could have an actual or potential negative impact on the value of an investment or the liability of an insurance contract. BNP Paribas Cardif is more specifically exposed to risks related to climate change, both directly as regards its own operations and indirectly through its investment and insurance activities.

There are two main types of climate change-related risks:

- **transition risk drivers** that result from a change in the behaviour of economic and financial agents in response to the implementation of energy policies or technological changes;
- **physical risk drivers** resulting from the direct impact of climate change on people and property via extreme weather events, or long-term risks such as rising sea levels or rising temperatures.

In addition, **consequences in terms of liability** may arise from these two risk factors. They correspond to claims for compensation, a legal entity could be held liable if it was held responsible for global warming.

BNP Paribas Cardif monitors the potential impact of the sustainability risk factors in the conduct of its business, in that of its counterparties or in its own investments. It gradually strengthens their assessment, as the methodologies for measuring and analysing these factors and their impact on traditional risks.

✦ The 2023 work of the risk inventory process, which also assesses risk intensity, will be completed at a date after this report is published. For 2024, BNP Paribas Cardif will review this process in order to carry out its work according to a schedule that allows it to publish its conclusions in this report.

ESG risk drivers

ESG risk drivers are presented in the table below:

Level 1 Type of risk driver	Level 2 Type of risk driver	Level 3 Type of risk driver
Environmental, social and governance	Physical risk drivers related to climate change	1 Acute physical impact of climate change
		2 Chronic physical impact of climate change
	Transition risk drivers related to climate change	3 Transition to a low-carbon economy to mitigate climate change - policy changes
		4 Transition to a low-carbon economy to mitigate climate change - technological changes
		5 Transition to a low-carbon economy to mitigate climate change - behavioural changes

Other environmental risk drivers	6	Loss of biodiversity, soil degradation and other nature-related risk drivers
	7	Pollution and other environmental risk drivers
Social risk drivers	8	Human Rights (local communities and consumers)
	9	Human Rights (labour)
	10	Other social risk drivers
Governance risk drivers	11	Governance risk drivers related to inadequate management of Environmental and Social risks
	12	Non-compliance with corporate governance frameworks or codes
Consequences of ESG liability	13	Consequences of ESG liability

The risk inventory carried out in 2022 identifies six risks impacted by climate change-related risk drivers. This analysis is carried out comprehensively for the BNP Paribas Cardif scope. It applies in particular to Cardif Assurance Vie. The following table shows the results of this inventory by combining target time periods: short-term (ST), i.e. within two years, medium-term (MT), between three and ten years, and long-term (LT), beyond ten years.

	Risk	Description	Associated risk drivers	Target time period	Risk type
<i>Transition risk</i>	Market risk	Weaker performance of the general fund (reduction of the investment scope)	Transition to a low-carbon intensity economy to mitigate climate change – political, technological and behavioural changes	MT/LT	External
	Operational risk	Risk of regulatory and legal non-compliance	Transition to a low-carbon economy to mitigate climate change – policy changes	ST/MT	External
	Strategic risk	Reputational risk	Governance risk drivers related to inadequate management of Environmental and Social risks	ST/MT	Internal
			Non-compliance with corporate governance frameworks or codes		Internal
			Transition to a low-carbon economy to mitigate climate change – policy changes		External
		Intensification of regulatory changes	Transition to a low-carbon economy to mitigate climate change – policy changes	ST	External
<i>Physical risk</i>	Strategic risk	Geopolitical uncertainties	Human Rights (local communities and consumers)	MT/LT	External
		Major economic and social crisis	Human Rights (local communities and consumers)	MT/LT	External

Among these risks, BNP Paribas Cardif identifies operational and strategic risks as current risks, based on a short-term timescale, while the other risks are considered as emerging given their medium or long-term timescale.

In 2022, BNP Paribas Cardif did not recognise any of these risks.

b. Indication of economic sectors and geographical areas concerned

Despite developments in recent years in terms of standardising methodologies for quantitative analysis of ESG factors and their impact on traditional financial risks, they must be interpreted with caution, taking into account their limitations. As a result, the tables presented in this section can only be assessed on the date of publication of this document, and must be interpreted taking into account the uncertainties related to the methodologies, projections and data used.

BNP Paribas Cardif segments its directly held corporate equity and bond portfolio by sector in order to analyse its main exposures to physical and transition risks.

The following table presents this segmentation by sector based on outstandings:

Sector	Weight in the portfolio at 31/12/22
Financial services	60.99%
Services to local authorities (energy, water, etc.)	5.38%
Communications services	5.10%
Energy	3.88%
Supranational	3.18%
Consumer staples	3.10%
Other sovereigns	3.04%
Real estate	3.03%
Industry	2.53%
Information technology	2.44%
Healthcare	2.26%
Discretionary consumption	2.24%
Agencies	1.55%
Construction and materials	1.28%

✦ The precise location of the companies' assets is required for a segmentation of the portfolio's exposure by geographical area, which is relevant for the analysis of the exposure to physical risks. BNP Paribas Cardif is studying the methods and solutions offered by its data suppliers in order to establish this mapping.

BNP Paribas Cardif will then refine the analyses of these segmentations by assessing the risks associated with its exposures, using a scenario approach based on methodologies provided and implemented by the data provider.

3. Review frequency of the risk management framework

BNP Paribas Cardif is gradually integrating ESG risk drivers into its management framework as drivers that may have a potential impact on existing financial risk categories. Given the ever-evolving nature of ESG methodologies, data and regulations, the system put in place is likely to be adapted accordingly.

The tools being rolled out within the BNP Paribas Group cover the risk factors relating to all three pillars ("E", "S" and "G"). However, those related to environmental risk drivers, and climate in particular, are the most developed. This reflects, among other things, the expectations of supervisors who focus on identifying and managing climate and environmental risks, due to their significant potential impacts on the financial sector.

4. Action plan to reduce the entity's exposure to the main environmental, social and governance quality managed risks

BNP Paribas Cardif is implementing an action plan to reduce its exposure to the ESG managed risks. The first step, carried out between 2023 and 2025, aims to develop its ESG risk management system, to finalise the choice of its risk measurement metrics, to refine its understanding of the associated methodologies, to continue its analysis of the information provided by these metrics, and to define its biodiversity strategy and objectives.

In 2024 and 2025, BNP Paribas Cardif will define the next steps of its action plan to use the metrics selected and the associated analyses and to use them to monitor the achievement of its strategy and objectives.

5. Quantitative estimate of the financial impact of the main environmental, social and governance quality identified risks

To analyse the exposure of its portfolios to climate risks, Cardif Assurance Vie relies on the analyses of S&P Trucost Ltd for its portfolio of directly held corporate equities and bonds and on the analyses of the "R4RE" (Resilience for Real Estate) tool, which is a platform developed by the Green Building Observatory (OID) to carry out building resilience analyses for the directly held real estate portfolio.

a. Physical risks

Directly held corporate equity and bond portfolio

The coverage ratio of Cardif Assurance Vie's corporate equity and bond portfolio is 77%, measured as a proportion of outstandings.

For physical risks, the analysis covers seven major physical risks related to climate change: **coastal flooding, river flooding, extreme heat, tropical cyclones, forest fires, water stress and drought.**

S&P Trucost Ltd measures the financial impact of physical risks on the value of corporate client assets. This indicator describes **the financial consequences of changing the exposure to climate risks compared to a baseline** for more than 250 unique asset types. "Assets" represent any structure or real property owned or leased by a corporate client. S&P Trucost Ltd takes the location of physical assets into account in its analysis.

Three factors determine the measurement of financial impact at the company level:

- **exposure** to physical risks depending on the location of the Company's assets;
- **sensitivity** of each asset type to climatic hazards;
- **asset values** for each company.

The assessment of the financial impacts of physical risks uses impact functions that depend on the type of asset (among the 250 possible assets) and the climate risk in question. The impact assessments by asset and by risk are then aggregated at the level of a company by weighting its assets on its balance sheet, then at the portfolio level by weighting the portfolio investments in the company relative to the overall size of the portfolio.

The assessment of impacts also involves choosing a climate change scenario. BNP Paribas Cardif chooses to analyse the Cardif Assurance Vie portfolio using a **high climate change scenario** (SSP5-8.5) with a **timescale to 2050**. The **high climate change scenario** corresponds to a scenario in which total greenhouse gas emissions triple by 2075 and global average temperatures increase by 3.3 °C to 5.7 °C by 2100. This **scenario therefore makes it possible to identify the companies within the portfolio most exposed to physical risks** by choosing a warming scenario significant enough to highlight the highest risk exposures and by choosing a sufficiently long timescale to allow the increase in risks to occur.

Bias and limits

The physical risk impact model used has several biases and limits:

- the quality of the estimate depends on the quality of the database showing the physical location of the assets of companies in the portfolio: the asset data must be available and the number of assets identified must be sufficient. In addition, the connection of each asset to one of the 250 types of assets modelled must be as faithful as possible to its function, as otherwise the model will not work properly. In the absence of detailed data, the model provides for an approach based solely on the location of the company's head office (this approach is far less precise). Approximately 97% of the companies covered are processed using the detailed approach;
- whether the data is up to date is also an important factor, although for a large company, assets tend to be stable from one year to the next. 20% of the corporate clients covered have asset data updated before 2021, dating from 2019 or 2020;
- the accuracy of the geographic risk modelling grid also affects the model results, particularly for very localised risks such as river flooding. Some risks affecting larger regions, such as extreme heat, may accept larger grids. The application of the model to the portfolio shows a significant exposure to the risk of river flooding, regardless of the business sector. It is likely that this result is partly due to a physical modelling grid that is too broad.

✦ Furthermore, the physical risk impact model used assesses the impact of physical risks on the value of corporate clients' assets, but does not estimate the impact of these risks on the valuation of securities in the portfolio. Starting in 2024, BNP Paribas Cardif will study the modelling solutions available and adapted to its portfolio in order to implement them and publish an estimate of the impact of physical risks on the valuation of its portfolio.

Measuring the financial impact of Cardif Assurance Vie's physical risks

Corporate equity and bond portfolio (Coverage ratio: 77%)

Potential impact expressed as a percentage of company value	4.5%
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Source: S&P Trucost Ltd - *As a percentage of the value of corporate assets at 31/12/2022, timescale 2050, IPCC avoid at all costs climate change scenario: SSP5-8.5*

On average, the corporate clients in the portfolio would suffer financial losses (additional CapEx or OpEx cost, interruption of business activities) of **4.5% of the value of their assets**. These losses are linked to the exposure of their assets to physical risks in this scenario.

Measuring the financial impact of Cardif Assurance Vie's physical risks by main business sector for directly owned corporate clients

Sector	Cardif Assurance Vie Corporate equities and bonds portfolio
Communications services	8.26%
Services to local authorities (production and distribution of electricity, water, gas etc.)	6.16%
Financial services	4.32%
Information technology	4.24%
Consumer staples	4.12%
Industry	3.81%
Healthcare	3.46%
Discretionary consumption	3.28%
Real estate	2.86%
Energy	2.74%
Construction and materials	2.56%

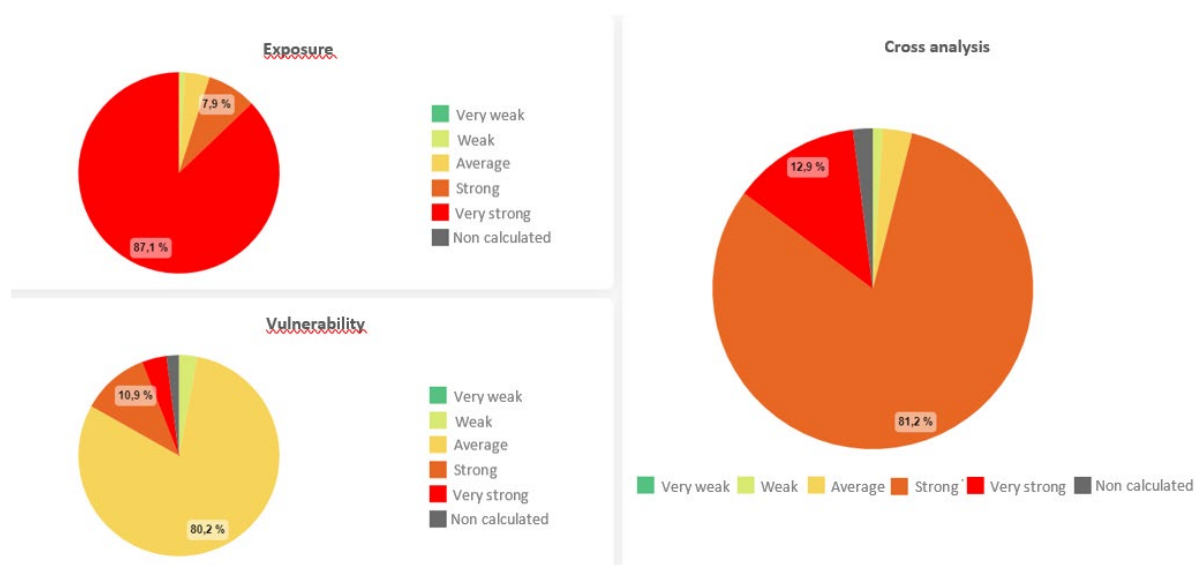
Source: S&P Trucost Ltd - *As a percentage of market value at 31/12/2022, timescale 2050, IPCC high climate change scenario: SSP 5-8.5*

This analysis shows that corporate clients offering **services to local authorities** (production and distribution of electricity, water, gas etc.) and **communications services** are the most financially exposed to physical risks, mainly due to water stress for local authority services, and heatwaves for communications services. Within the services to local authorities sector, **power plants are high-value assets and would therefore significantly influence the average financial impact of corporate clients in this sector.**

Directly held real estate portfolio

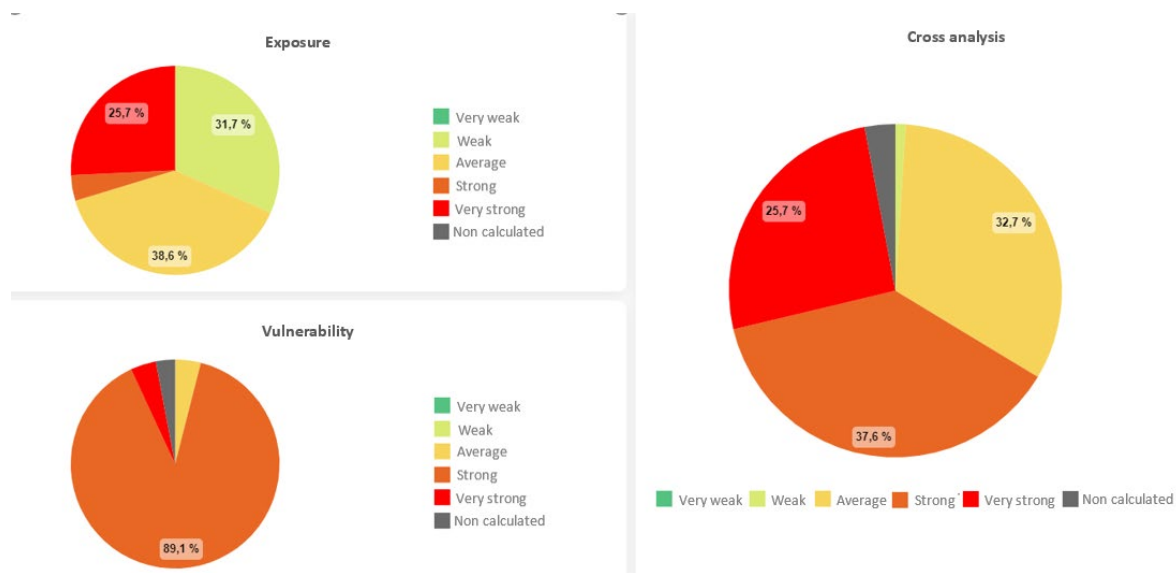
The analysis of the real estate portfolio is carried out on all buildings directly owned by both Cardif Assurance Vie and Cardif Retraite. Cardif Assurance Vie includes all the buildings covered by the analysis. This analysis covers the exposure and vulnerability of buildings to the following climatic hazards: heatwaves, intense rainfall and flooding and extreme cold. It is based on the same scenario and the same timescale as the analysis of the directly held corporate equity and bond portfolio, i.e. of a high climate change scenario (SSP5-8.5) by 2050.

The following graphs show the results of the analysis for the “heatwave” hazard:



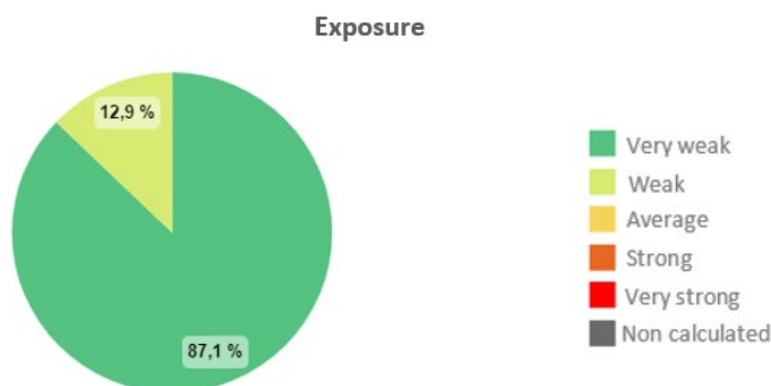
The directly managed real estate portfolio is mainly located in the Paris region. In fact, it is exposed to heat islands with a “high” level of vulnerability, which could cause significant levels of discomfort for the occupants during periods of extreme heat, and lead to overconsumption of energy related to air conditioning equipment, which is contrary to BNP Paribas Cardif’s climate change mitigation approach.

The following graphs show the results of the analysis for the “precipitation and flooding” hazard:



The level of exposure to the “precipitation and flooding” hazard is assessed mainly from low to medium, with a high sensitivity in the event of high vulnerability.

The following graph shows the results of the exposure analysis for the “extreme cold” hazard.



The real estate portfolio is not exposed to the “extreme cold” hazard.

On the basis of this assessment, BNP Paribas Cardif will continue its analysis of the climate change adaptation of its portfolio in 2024. This approach will be based on setting out an adaptation plan to reduce the risks and implementing this plan. It also provides for a periodic reassessment of risks.

b. Transition risks

Directly held corporate equity and bond portfolio

Cardif Assurance Vie focuses its transition risk analysis on: **the portfolio’s exposure to the “unpriced carbon cost” via a future carbon price** provided by S&P Trucost Ltd.

Unpriced Carbon Cost (UCC) is the additional financial cost generated per tonne of greenhouse gas emissions in a given future year. Specifically, it is the difference between potential future and current carbon prices for a given sector, geographic region and year.

The increase in the price of carbon could have **direct financial consequences for corporate clients when regulations impose a higher price on greenhouse gas emissions from their direct activities**. Corporate clients also face indirect financial risks related to the impact of higher carbon prices on the emissions of suppliers who, in turn, seek to absorb these additional costs, in part or in full, through an increase in their own prices. Factors have therefore been developed to estimate the proportion of additional costs that would be passed on from suppliers to corporate clients.

The risk premium linked to the carbon price varies according to three factors:

- **geographies** due to differences in government policies;
- **sectors** due to the different treatment of economic sectors in many climate change policies;
- chosen **scenarii**.

The S&P Trucost Ltd model converts this risk premium into the at-risk EBITDA of the corporate clients in the portfolio. This metric describes the share of portfolio corporate client profits exposed to an increase in the carbon price; it is expressed as a percentage of the EBITDA of the company in question. By assessing the share of corporate clients in the portfolio whose at-risk EBITDA is greater than 10%, it is possible to identify the share of the portfolio most exposed to transition risks.

Bias and limits

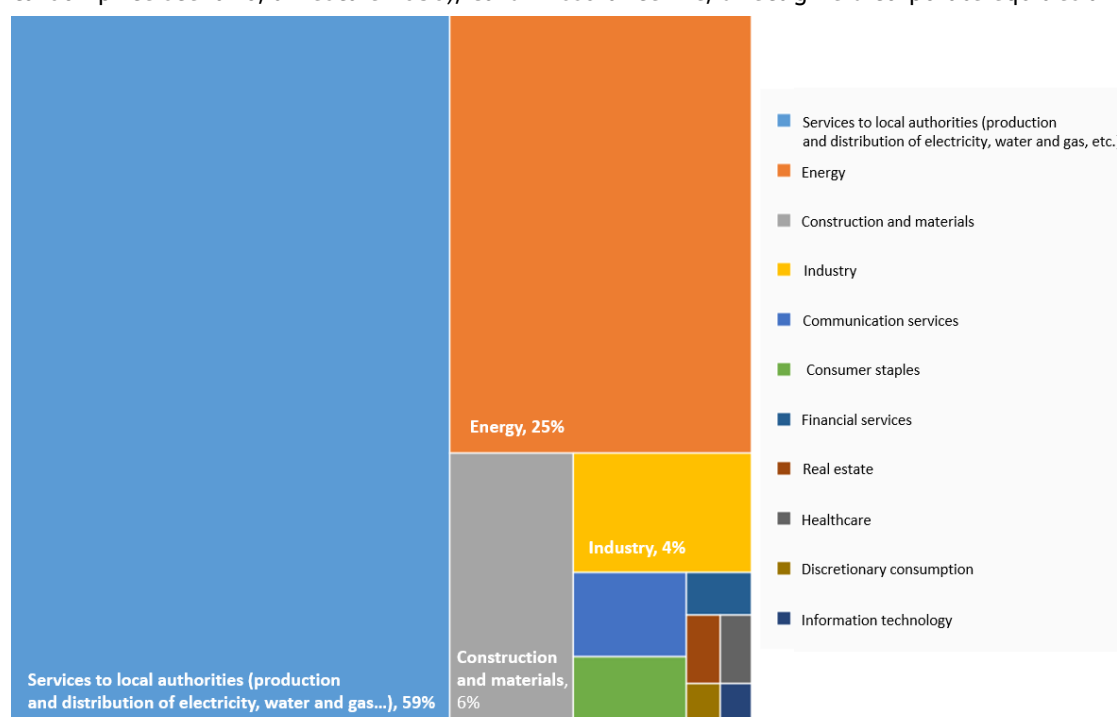
The model used for the impact of transition risks has a number of biases and limits:

- future carbon prices are estimated using projection models starting in 2020. Projected prices do not necessarily reflect current or future prices. For example, the carbon price projected for 2030 in the OECD, under the high carbon price increase scenario, is close to the prices observed at the end of 2022 in this same region;
- whether the financial data is up to date is also an important factor, although for a large company, the assets may be fairly stable from one year to the next. 20% of the corporate clients in the covered portion of the portfolio have data from 2019 or 2020;
- corporate clients are classified by primary business sector for the model's projections and, if the regional breakdown of their emissions is not available, it is replaced by the regional breakdown of their revenue. These components can generate bias if a significant part of a company's business activities are not linked to its primary sector, or if a company generates a significant portion of its revenue in a region other than the one in which the majority of its emissions are concentrated.

The analysis of the Cardif Assurance Vie portfolio was carried out using a **scenario with a high increase in the carbon price** for a timescale set at 2030, with the starting year of the S&P Trucost Ltd model projections being in 2020. One **scenario with a high increase in the carbon price** assumes the implementation of policies considered sufficient to reduce greenhouse gas emissions in line with the Paris Agreement target of limiting climate change to below 2 °C by 2100 (Paris Agreement) (RCP 2.6). This scenario is based on research by the OECD and the International Energy Agency (IEA).

✦ Furthermore, the transition risk impact model used assesses the impact of transition risks on corporate clients' EBITDA, but does not estimate the impact of transition risks on the valuation of the securities in the portfolio. Starting in 2024, BNP Paribas Cardif will study the modelling solutions available and adapted to its portfolio in order to implement them and publish an estimate of the impact of transition risks on the valuation of its portfolio.

Sectoral breakdown of the cost in millions of euros of the “allocated” future carbon as at 31/12/2022 (high carbon price scenario, timescale 2030), Cardif Assurance Vie, directly held corporate equities and bonds



Source: S&P Trucost Ltd

The coverage ratio of Cardif Assurance Vie's corporate equity and bond portfolio is 87%, measured as a proportion of outstandings.

The graph above shows that the sectors most exposed to an increase in the price of carbon, and therefore to transition risks, are the sectors emitting the most greenhouse gases:

- **services to local authorities** and more specifically electricity producers within the sector;
- **energy**, i.e. oil and gas corporate clients.

At-risk EBITDA

Cardif Assurance Vie's at-risk EBITDA (corporate equity and bond portfolio) at 31/12/22

<i>Medium-risk Ebitda (%)</i>	4.91%
<i>Share of corporate clients (% of market value) whose at-risk EBITDA is > 10%</i>	12.12%

Source: S&P Trucost Ltd

On average, 4.91% of the EBITDA of the companies in Cardif Assurance Vie's equity and bond portfolio is exposed to the increase in the carbon price. The most exposed sectors are services to local authorities, energy and construction and materials.

The share of companies whose at-risk EBITDA is greater than 10% represents 12.12% of Cardif Assurance Vie's corporate equity and bond portfolio.

Directly held real estate portfolio

✦ A directly held real estate portfolio is primarily exposed to the physical risks of climate change. Starting in 2024, BNP Paribas Cardif will study an approach to assess the exposure of its portfolio to transition risk, in order to implement the associated valuation.

6. Changes in methodological choices and results

BNP Paribas Cardif does not have a measurement of the impact on the valuation of its physical and transition risk portfolios, because such a measurement is not provided by S&P Trucost Ltd.

In 2023, BNP Paribas Cardif is once again publishing the at-risk EBITDA metric, which can be used as a first step towards an assessment model to measure the impact of transition risk on the valuation of portfolios. The insurer also publishes a new measure of the impact of physical risk on the valuation of the assets of companies issuing directly held equity securities or bonds in the portfolios.

In addition, the methodologies of BNP Paribas Cardif's data suppliers for physical and transition risks did not change significantly between 2022 and 2023.

I. List of financial products mentioned under Articles 8 and 9 of the Disclosure Regulation (SFDR)

Cardif Assurance Vie's euro fund meets the definition of Article 8 of the European SFDR regulation: it promotes a combination of environmental and social characteristics and verifies that the companies in which the investments are made apply good governance practices.

Breakdown of Cardif Assurance Vie unit-linked vehicles according to the SFDR classification

At 31 December 2022, of the Cardif Assurance Vie unit-linked vehicles distributed in France, 50% promote environmental or social characteristics (Article 8) and 17% of the unit-linked vehicles have a sustainable investment target (Article 9).

<i>31/12/2022</i>	Outstandings* in €M	As a % of outstandings
<i>Article 8 Fund</i>	21,040	50%
<i>Article 9 Fund</i>	7,179	17%
<i>Total Art. 8-9</i>	28,219	67%
<i>Total unit-linked products</i>	42,185	

**Excluding equity.*

The SFDR documentation for the vehicles offered in Cardif Assurance Vie's life insurance contracts is available on the insurer's institutional website and can be accessed by contract type..¹⁰²

For Article 8 or Article 9 vehicles within the meaning of the SFDR regulation, there is a link to the websites of the managers and issuers. These sites contain:

- a description of the environmental or social characteristics or the sustainable investment target;
- information on the methods used to assess, measure and monitor the environmental or social characteristics or impact of the sustainable investments selected for the financial product, including the data sources used, the criteria for valuing the underlying assets and relevant sustainability indicators used to measure the environmental or social characteristics or the overall impact of the financial product on sustainability;
- information to be communicated during the pre-contractual phase;
- information provided in the periodic reports on these same products.

BNP Paribas Cardif will strengthen its fund authorisation policy to gradually reduce the proportion of Article 6 funds (under SFDR) amongst the vehicles on offer.

¹⁰² <https://www.bnpparibascardif.com/documents/348001/348117/Com+art+10+site+pdf2+Last+Version+vie.pdf/dc4d0abe-d210-3eae-efc7-de2608c1713b?t=1679676841754>

Appendices

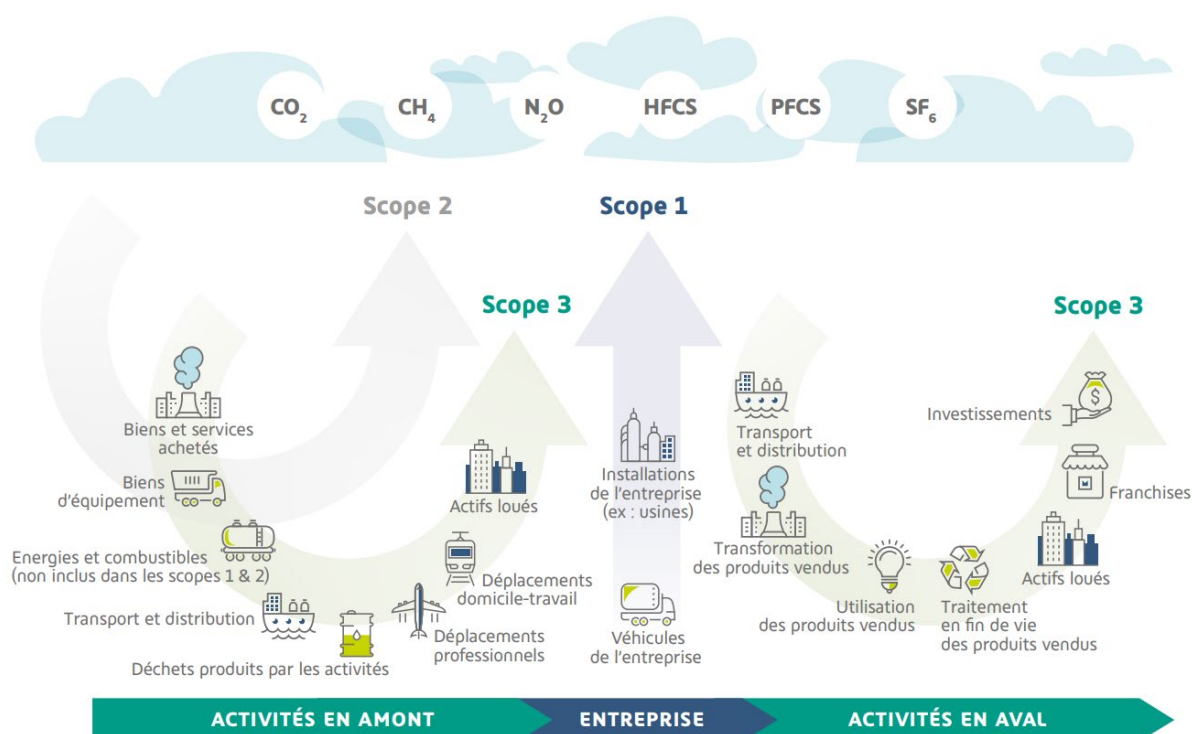
The three carbon emission scopes

The three scopes 1, 2, 3 (GHG Protocol, <https://ghgprotocol.org>):

Scope 1: direct greenhouse gas emissions (from fixed or mobile company installations);

Scope 2: associated indirect emissions (consumption of electricity, cooling and heat);

Scope 3: all other indirect emissions. Scope 3 offers a more comprehensive analysis but is more difficult to estimate according to available data.



Glossary

ARTICLE 8: Designates, according to the SFDR regulation, products that promote sustainable characteristics, integrating environmental and/or social criteria.

ARTICLE 9: Designates, according to the SFDR regulation, products with a sustainable investment objective, contributing to an economic activity with an environmental and/or social objective.

BEST-IN-CLASS: The Best-in-Class approach aims to select companies with the best ESG practices, within the same business sector. Thus, the best-in-class principle does not exclude any sector or industry.

BREEAM (BUILDING RESEARCH ESTABLISHMENT ENVIRONMENTAL ASSESSMENT METHOD) AND HQE (HIGH ENVIRONMENTAL QUALITY): These two environmental assessment methods cover the construction, renovation and operation of buildings. The first is British and the second French.

CARBON FOOTPRINT: This is the measurement at a given moment of “the quantity of greenhouse gases (expressed in terms of CO2 equivalent), released into the atmosphere by an individual, process, organisation, event, or product from within a specified boundary”. (Authors: Pandey, Agrawal and Pandey, 2011; Source: ScienceDirect).

CSR: Corporate Social Responsibility.

DEDICATED FUNDS: Funds reserved for a maximum of 20 holders enabling customised management to be set up.

DIRECTLY HELD SECURITIES: These securities are held directly by BNP Paribas Cardif. They may be equities or bonds.

DUE DILIGENCE: This is the procedure whereby an investor reviews the documents of a target company before investing.

GENERAL FUNDS: Also known as “euro funds”, these funds are life insurance vehicles, traditionally comprising bonds, equities, and real estate assets. For general funds, the amount of the insurer’s commitment is expressed in euros.

GREEN BOND: A green bond is issued to finance a specific project with high environmental added value. They may be issued by companies, entities or governments.

MARKET VALUE: This metric is representative of the total capital employed. It includes stock market capitalisation, net financial debt, and minority interests, plus other assets and minus other liabilities.

NZAOA: The Net-Zero Asset Owner Alliance.

POSITIVE IMPACT INVESTMENTS: These are investments made with the intention of generating a positive and measurable social, societal and/or environmental impact, while generating a return on investment. Intentionality is the desire to achieve one or more sustainable development goals (for example, contributing to the energy transition through the installation of renewable energy infrastructure). Measurability

corresponds to the evaluation of the implementation of this intention through environmental and/or social indicators (e.g. GWh produced by these renewable energies).

PRI: Principles for Responsible Investment. More information can be found at www.unpri.org.

RESPONSIBLE INVESTMENT: This is a generic term which refers to the various approaches considering Environmental, Social and Governance aspects in financial management. Responsible investment can take a structured and systematic approach in terms of stock-picking for a given fund and, moreover, support the players in an inclusive, low-carbon economy. This is known as Socially Responsible Investment (SRI) fund. (Source: Novethic).

SFDR: Sustainable Finance Disclosure Regulation.

THERMAL COAL: This is the coal used to generate electricity.

UN CONVENTION OF BIODIVERSITY (UNCBD): Multilateral treaty ratified by 196 nations at the 1992 Earth Summit in Rio de Janeiro. Its objective was to develop national strategies for the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing resulting from resource use.

UNIT-LINKED FUNDS: Like general funds, unit-linked funds are life insurance investment vehicles. For unit-linked contracts, the insurer's commitment is expressed in units, the value of which varies according to market fluctuations.



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