

Climate-related Disclosures

for Non-monetary Policy Portfolios

March 2024



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Introduction

Sustainable and responsible investment (SRI) principles are increasingly shaping the activities of the National Bank of Belgium (the “Bank”). More specifically, the Bank formally recognises sustainability as the fourth objective of its strategic asset allocation policy, alongside safety (capital preservation), liquidity and return.

Against this backdrop, the Bank published in 2023 a Sustainable and Responsible Investment Charter (the “Charter”), describing its general approach to sustainable and responsible investment. It also released for the first time last year climate-related financial disclosures (the “TCFD report”) for its non-monetary policy portfolios (NMPP).

By publishing these disclosures for the second time, the Bank aims to continue to ensure transparency regarding the **greenhouse gas (GHG) emissions associated with the NMPP it manages and to address the risks and opportunities associated with climate change**. These disclosures complement the Bank’s corporate report chapter on social responsibility.

This report is based on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). The TCFD, which was established by the Financial Stability Board, is considered the global standard-bearer for climate-related financial disclosures. It released its first set of recommendations in 2017. These have since been improved and are comparable to certain requirements of the Corporate Sustainability Reporting Directive (CSRD). The Bank has been a formal supporter of the TCFD since 2018.

In addition to the TCFD recommendations, this report has been prepared in accordance with other international standards for climate-related reporting, including the Global GHG Accounting and Reporting Standard for the Financial Industry developed by the Partnership for Carbon Accounting Financials (PCAF) and the thematic bond principles developed by the Climate Bonds Initiative and the International Capital Markets Association (ICMA).

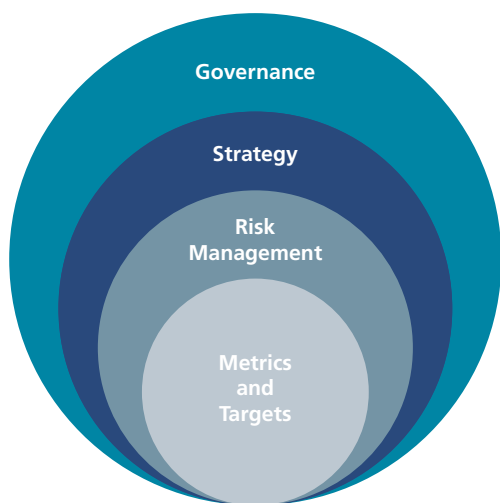
The disclosure of information on **GHG emissions is key to the transition to a net-zero economy**. As is the case with financial information, transparency on climate-related risks helps investors and other stakeholders take informed decisions. By following the TCFD recommendations, the Bank is applying industry standards established by leaders in the field of sustainable finance. Transparency on Scope 1, Scope 2 and Scope 3 emissions heightens awareness of the climate-related impact of financial investments.

Together with the SRI Charter, these detailed climate-related financial disclosures reinforce the Bank’s commitment to sustainable finance, a path down which it first started years ago. Indeed, several concepts underpinning the SRI Charter and the TCFD disclosures have been used by the Bank for some time, such as ESG (environmental, social and governance) scores, norm-based screening and the purchase of thematic bonds. The waiver of issuance fees for green bonds in the Bank’s securities settlement system and its annual CSR report are yet more evidence of its long-standing focus on sustainability.

As mentioned, this report is based on the TCFD recommendations, which are structured around four thematic areas that are fundamental to how organizations operate: governance, strategy, risk management and, finally, metrics and targets.

Figure 1

Overview of the four thematic areas of the TCFD recommendations



Governance

The organization's governance around climate-related risks and opportunities

Strategy

The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

Risk Management

The processes used by the organization to identify, assess and manage climate-related risks

Metrics and Targets

The metrics and targets used to assess and manage relevant climate-related risks and opportunities

Source: TCFD, October 2021, "Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures".

The Bank has also adopted the recommendations of the Network for Greening the Financial System (NGFS). The information presented in this report is largely dependent on the data sources used and will be refined as the availability and relevance of climate-related data and expertise in climate-related risk management increase.

Finally, in 2023, the Bank took several further steps to move closer to the decarbonisation of its non-monetary policy portfolios. In addition to publishing the SRI Charter, the Bank decided to change the benchmark index for its equity portfolio to an EU climate transition benchmark (EU CTB). Lastly, the Bank made progress towards its objective of updating the screening of new purchases. These two points are discussed in more detail in the Metrics and Targets section of this report.

1. Governance

This section presents the Bank's governance framework for climate-related risks and opportunities.

This framework forms the basis for all major decisions concerning the Bank's non-monetary policy portfolios, including aspects relating to climate change and sustainable investment.

With respect to investments, the Bank's Financial Markets Department acts as the gatekeeper for purposes of implementing the Charter and monitoring key indicators.

- The Front Office, which is responsible for the day-to-day management of the Bank's investment portfolios, initiated the development of the SRI Charter and guides the TCFD disclosure process. An expert in sustainable and responsible investment has been specifically appointed to oversee implementation of the Charter.
- The Middle Office is tasked with identifying, measuring, monitoring and reporting on the risks inherent in the Bank's portfolios, including those related to climate change. To this end, it helped to draw up the Charter. The Middle Office is also responsible for preparing the TCFD report. The Middle Office carries out preliminary analyses of climate-related risks, the results of which are transmitted to key managers and the Board of Directors, along with an overview of other financial risks relevant to the Bank.
- The Investment Committee (ICO), which is composed of members of senior management from the relevant services and two members of the Board of Directors, discusses strategic aspects of the Bank's investment portfolios. It oversees implementation of the Charter and takes decisions on proposals relating to the Charter and the TCFD disclosures. If approved, the proposals are submitted to the Board of Directors.
- The Board of Directors has the final say on investment strategy.

The Bank is committed to being a socially responsible organisation. This responsibility forms an integral part of its investment strategy. Ultimately, the Bank aims to further develop and streamline its climate-related risk analysis.

The SRI Charter guides the Bank's investment strategy:

- The SRI Charter serves as a benchmark for targets and informs strategic portfolio decisions, which are discussed within the Investment Committee and approved by the Board of Directors.
- The portfolio management framework is adapted when implementation of the SRI Charter changes the investable universe or the portfolio composition limits. Changes to the portfolio management rules must be approved by the Investment Committee.



Other bodies at the Bank also focus on climate-related risks and opportunities.

- A Climate Hub has been set up within the Bank, bringing together climate specialists from various departments. This body studies climate-related issues that have an impact on the Bank's own investments, monetary policy, the financial system, the economy and society as a whole. It acts as a platform for the exchange of knowledge and information. Its members have contributed to major developments, such as the drafting of the SRI Charter and the development of climate-related risk analyses. The Climate Hub also serves as a conduit to inform senior management and the Board of Directors on climate-related issues that fall outside the communication structure for own portfolio management. Finally, it publishes a [climate dashboard](#) which contains information and indicators aimed at a wide audience.
- The Corporate Social Responsibility Board has defined eight themes to guide the Bank's CSR commitments ("A [sustainable and inclusive organisation](#)"). The CSR Board is made up of four members of senior management along with the Bank's diversity and inclusion officer.

2. Strategy

This section describes the actual and potential impact of climate-related risks and opportunities on the Bank's business, strategy and financial planning.

Identified climate-related risks and opportunities

Climate-related risks are viewed primarily as factors that amplify existing financial risks, such as market and credit risks. In addition, given the importance of portfolio emissions targets, the Bank considers it essential to monitor the risks associated with meeting these targets. The ability to meet climate-related targets is indeed strongly correlated with the climate performance of large firms and governments in developed economies.

In line with the TCFD recommendations, the Bank has defined three relevant time horizons for the identification of climate-related risks and opportunities. It should be noted, however, that the mapping of risks and opportunities on these horizons is not always easy, given the uncertainty inherent in this exercise.



SHORT TERM 12 months

The short-term time horizon is limited to the next twelve months. This is one of the main horizons used by the Bank to measure financial risks, insofar as it facilitates the integration of climate-related risks for the future. Over this horizon, climate-related risks are assumed to materialise through changes in the market valuation of assets resulting from evolving market beliefs about climate-related risks, corporate defaults, credit-rating downgrades or changes in yield spreads due to physical risk events.

In terms of **risks**, shocks to asset prices affect the valuation of the Bank's bond and equity portfolios. Moreover, the Bank could be exposed to reputational risks should it fail to align its investment framework to international standards and new societal expectations.

As far as **opportunities** are concerned, shocks to asset prices can give rise to a so-called climate spread. When not associated with an increase in credit risk, this can increase the yield on future bond purchases. Although this is an opportunity that could arise in the short term, it is not one the Bank is actively pursuing. The inclusion of characteristics such as the climate resilience and GHG emissions trajectory of bond issuers constitutes another



short-term opportunity for portfolio management. Finally, the adoption of an EU climate transition benchmark (EU CTB) index for management of the Bank's equity portfolio also constitutes a short-term opportunity. Adjusting the portfolio composition to this new index will immediately lead to a reduction in the climate footprint. The equities will be selected, weighted or excluded to ensure that the portfolio is on a decarbonisation trajectory that reflects the benchmark. This change should also help to reduce fluctuations in portfolio value arising from events associated with medium-term climate risks.

**MEDIUM
TERM
1-10 years**

The medium-term time horizon refers to the period between the next one to 10 years. This is the other key time horizon used by the Bank for financial risk measurement. Over this horizon, it is possible to use existing risk management tools such as balance sheet projections to analyse climate-related risks. It is expected that transition risks will increase significantly over this horizon and that physical risks will increase in materiality towards the end of the horizon, depending on the emissions path taken by the global economy.

With regard to the **risks** associated with this horizon, shocks to asset price will continue to impact the market valuation of the Bank's bond and equity portfolios. For corporate bond exposures, the cumulative impact of transition risk costs and physical risk events will accentuate the differences between climate change winners and losers. This effect will be felt more acutely in held-to-maturity (HTM) portfolios and could lead to defaults and credit-rating and valuation downgrades. The Bank also takes into consideration the risk of being exposed to companies that are not aligned with the Paris Agreement, which, given growing disclosure on climate metrics, will be much more visible at the end of the horizon. This risk includes, but is not limited to, the consequences of greenwashing. Finally, given the scale of the Bank's exposure to sovereign risk in its own portfolios, financial risks could arise if the total cost associated with transition risks and the occurrence of physical risks results in an increase in credit spreads, default by an issuer or the downgrading of its credit rating, which could lead the Bank to sell the assets concerned.

On the other hand, contributing to the transition to a net-zero economy, such as by investing in green bonds, also creates certain **opportunities**, including the opportunity to guide investment towards assets that present lower physical and transition risks. Indeed, the purchase of green bonds directly supports corporate and sovereign issuers on their journey towards the creation of a more sustainable (business) environment.



**LONG
TERM
10-30 years**

The long-term time horizon is the next 10 to 30 years. This horizon is the relevant time period for climate stress tests. Over this period, all bets are still off on how climate change mitigation efforts will play out: all relevant scenarios, such as those defined by the NGFS, are possible. In any case, while it is clear that transition risks will continue to play a role, the impact of physical risks will largely depend on the scenario that ultimately materialises. This horizon is longer than most maturities in the Bank's portfolios, meaning climate-related risks are assessed with reference to hypothetical balance sheets as current individual corporate exposures obviously do not reflect the balance sheet composition and related risks 10 to 30 years from now.

In terms of **risks**, the Bank's current portfolio management framework ensures that the credit quality of a portfolio remains in line with the risk appetite set by the Board of Directors. However, the composition of the Bank's portfolios is expected to change. Increased volatility, for example due to fluctuations in exchange or interest rates or other factors, will influence portfolio risk exposure and affect strategic asset allocation decisions. Furthermore, the transition to a low carbon economy is constantly progressing, meaning regular review of portfolios will be required. The Bank expects to have to update its investment framework regularly in order to remain in line with the applicable targets. Finally, for sovereign exposures, which represent the lion's share of the Bank's own investments, the number of issuers in the eligible universe is small. Certain currencies and treasuries cannot be exchanged for other similar exposures. Changes in sovereign portfolio composition will occur due to changes in portfolio strategy, which makes it reasonable to examine the long-term climate-related risks of issuers on a case-by-case basis. The total cost of transition risks and the occurrence of physical risks could increase credit spreads or lead to downgrades.

With regard to **opportunities**, the introduction of emissions targets for the Bank's portfolios is expected to steer portfolio composition towards firms that present lower-than-average transition risks. In addition, the adoption of the **SRI Charter** constitutes an essential part of the Bank's broader CSR strategy for its portfolios. The Charter sets high-level climate-related principles which allow appropriate targets to be set for each of the Bank's own (sub)portfolios.

Impact of climate-related risks and opportunities

The need to identify climate-related risks and opportunities and the process of doing so have already had an impact on the Bank, including the following:

- the recruitment of experts in sustainable investment and the assignment of climate-related responsibilities to Front Office and Middle Office staff;
- considerable improvements to climate-related data collection capabilities;
- the inclusion of SRI and climate targets in the strategic asset allocation review process;
- active contribution to the **Eurosystem climate action plan** and to international fora such as the NGFS and industry conferences, which are also opportunities to gain knowledge;
- the inclusion of additional risk factors (including non-financial) in investment and risk decision-making.



Resilience of strategy

The SRI Charter and the abovementioned climate-related risks, opportunities and targets have been reviewed internally against multiple criteria, including feasibility. The Bank's strategy builds on existing approaches and knowledge, applies international standards at different levels and takes into consideration the time horizons and scope of its investment portfolios. The diversified structure of the Bank's investment portfolios allows climate-related opportunities to be implemented and climate-related risks to be addressed. This strategy is deemed resilient. Nonetheless, the following weaknesses should be noted:

- Although data availability has improved and is expected to improve further in the coming years, there are still considerable data gaps, which creates challenges.
- The climate-related targets for sovereign exposures are strongly dependent on the ability of countries to meet their climate goals. The bulk of the Bank's portfolio is currently invested in government bonds due to the nature of central banking activities. Thus, should too many countries stray from the goals they have publicly declared, it will become difficult for the Bank to maintain a portfolio composition that respects the targets which have been set.
- Financial risk limits, together with SRI Charter-related exclusions and climate-related targets, constrain the eligible universe. If the number of firms with an acceptable credit rating that meet their climate goals becomes too small, the current framework of constraints will not allow the creation of a sufficiently diversified portfolio that complies with all the rules. Such a scenario is currently not expected to materialise, however.

To sum up, the world economy depends, to a large extent, on the ability of countries and firms to meet their climate goals. Similarly, the achievement of the Bank's own climate goals is inextricably linked to the fulfilment of broader climate objectives by society as a whole. The slogan "there is no planet B" also applies to our investible universe: the Bank can only buy assets from countries and companies established on this planet.

3. Risk management

This section outlines how the Bank identifies, assesses, and manages the climate-related risks to which its investment portfolios are exposed.

Risk identification and assessment

The Bank continuously identifies, assesses and manages the exposure of its non-monetary policy portfolios to various types of risk, including long-term climate-related risks.

Initially, the members of the Eurosystem jointly identified variables to assess the risks associated with climate change. The Bank is gradually integrating climate-related risks into its own risk management process, not as a separate category but as a factor amplifying existing categories, such as market and credit risks.

In terms of climate-related risks, the Bank distinguishes between transition risks and physical risks. Transition risks relate to the likelihood and economic impact of the transition to a net-zero economy. Physical risks concern the likelihood of occurrence and impact of extreme weather events or natural disasters.

According to both qualitative and quantitative assessments, the climate-related risks to which the Bank's NMPP investments are exposed are considered to have only a minor, short-term impact on existing financial risks. The magnitude of these risks increases significantly as the time horizon evolves towards the medium and long term. For example, the exposure of the Bank's NMPP investments to climate-related risks could lead to unfavourable results in the event of a gradual or sudden change in the risk factors.

As mentioned above, relevant climate-related parameters have been identified and quantified. Climate-related risks are being progressively integrated into risk identification and assessment exercises, by extending risk factors and sensitivities to include physical and transition risks. This ensures that the assessment of risks is prudent, forward-looking and based on quantifiable data. In addition, the Bank intends to contribute to the development of climate-related risk management within the Eurosystem. New developments such as stress testing for climate-related risks will be examined and applied to the Bank's risk management framework as soon as possible.





Risk mitigation

With a view to risk mitigation, the Bank adopts a global approach to managing the potential exposure of its NMPP investments to climate-related risks.

The Bank aims to detect excessive concentrations of factors generating physical or transition risks in its portfolios, by analysing each portfolio and asset class. This exercise concerns sovereign, supranational, sub-sovereign/agency and corporate bonds, as well as equities.

4. Metrics and targets

This section sets out the metrics and targets used to assess and manage relevant climate-related risks and opportunities.

For purposes of this publication, the **Bank's non-monetary policy assets** are assigned to one of the following three portfolios:

Statutory portfolio	This is a euro-denominated portfolio the size of which is determined by the sum of the capital, reserves and amortisation accounts for the Bank's tangible and intangible assets. This portfolio is subject to strict investment rules and consists primarily of sovereign, supranational and sub-sovereign/agency bonds, as well as holdings in certain international organisations.
Euro portfolio	This portfolio consists of all euro-denominated assets that do not form part of the statutory portfolio.
Foreign currency portfolio	This portfolio consists of all foreign currency-denominated assets.

Cash, derivatives, gold and special drawing rights are not included in any of these portfolios, given the absence of a standard against which to account for climate-related metrics for these assets.¹

These three portfolios collectively represent all NMPP financial assets under the Bank's direct management. Other financial assets on the Bank's balance sheet (see the annual accounts) are typically either monetary policy assets or assets not fully subject to management control by the Bank.

Methodology

Key emission metrics

The methodology used to measure GHG emissions is based on the recommendations of the TCFD and the PCAF. As these recommendations do not address all the methodological choices that need to be made, a detailed methodological approach has been developed by the Eurosystem.

For each individual issuer in the Bank's investment portfolios, the main source of data is the volume of its respective GHG emissions, expressed in CO₂ equivalent. A distinction is made between the GHG emissions of sovereign issuers and of other issuers.

¹ The portfolio values match as closely as possible the official accounting values, but small differences exist due to differences in methodologies, such as the abovementioned exclusions.

For sovereign issuers, GHG emissions are measured separately for production and consumption:

- Production (or territory-based) emissions cover those produced within the borders of a sovereign state, expressed in CO₂ equivalent. A distinction should be made between production exclusive and inclusive of the land use, land-use change, and forestry (LULUCF) sector.
- Consumption emissions are equal to emissions from production less emissions from exports plus emissions from imports.

GHG emissions of companies, supranational bodies and sub-sovereigns/agencies are categorised according to their type: Scope 1, Scope 2, or Scope 3.

What are the three types (scopes) of greenhouse gas emissions?

- **Scope 1** refers to direct GHG emissions from sources owned or controlled by the company. Examples include emissions produced by company vehicles and from fuel burned in company-owned heating systems.
- **Scope 2** concerns indirect GHG emissions from the generation of energy purchased by the company.
- **Scope 3** covers all indirect GHG emissions (not included in Scope 2) arising in the company's value chain, including upstream emissions (e.g. linked to employee commuting or business travel) and downstream emissions (e.g. the use of products sold by the company as well as investments).

The three main metrics used in this report are **weighted average carbon intensity (WACI)**, **total greenhouse gas emissions (TCE)** and **carbon footprint (CF)**. The formulas used to calculate these metrics are set out in Annex 2. The metrics do not differ based on asset type.

- **WACI** measures a portfolio's exposure to carbon-intensive issuers, expressed in tonnes of CO₂ equivalent per million euros. The carbon intensity of each corporate issuer is determined by normalising the sum of its Scope 1 and Scope 2 GHG emissions by revenue. The WACI of the portfolio is then calculated by weighting the carbon intensity of each issuer by their respective share of holdings in the portfolio. Fluctuations in the portfolio's WACI are driven by variations in the revenue, emissions and relative portfolio weight of each issuer. It should be noted that changes in revenue and relative portfolio weight may be caused by inflation or foreign exchange effects.

The same approach is used to allocate emissions for sovereign issuers, however Scope 1 and Scope 2 emissions are replaced by production, consumption and government emissions. As a result, the WACI for sovereign issuers is expressed using three different values, allowing this specific asset class to be comprehensively assessed. Production emissions for sovereign issuers are normalised to take into account the purchasing power parity (PPP) adjusted gross domestic product (GDP). Consumption emissions for sovereign issuers are normalised by population.

- **TCE** quantify the total GHG emissions associated with a portfolio in tonnes of CO₂ equivalent. The GHG emissions of each corporate issuer are determined by taking the sum of its Scope 1 and Scope 2 GHG emissions. The GHG emissions of each sovereign issuer are the emissions generated by production or consumption. GHG emissions are weighted by the investor's contribution to the issuer's total capital structure (PPP-adjusted GDP for sovereign issuers) and added together to determine the portfolio's emissions in absolute terms. Fluctuations in a portfolio's TCE can be explained by variations

in emissions, the absolute exposure amount or the capital structure of issuers. An increase in the overall size of the portfolio increases TCE by the same factor.

- The **CF** standardises the TCE of a portfolio by dividing them by the value of the portfolio, expressed in tonnes of CO₂ equivalent per million euros invested, which allows comparisons to be made over time and between portfolios of different sizes. Fluctuations in a portfolio's CF can be explained by variations in emissions, relative portfolio weights or the capital structure of issuers. It should be noted that changes in capital structure and relative portfolio weight are driven, in part, by inflation and foreign exchange effects.

Supporting metrics

Additional climate-related metrics, such as **total emissions, including Scope 3 emissions**, the share of thematic bonds, the **share of green bonds** and the **carbon footprint ratio**, complete the overview provided by the WACI, TCE and CF.

- **Total GHG emissions, including Scope 3 emissions**, are determined based on the method used to calculate absolute (total) emissions, with the addition of Scope 3 emissions. This metric is expressed in tonnes of CO₂ equivalent and is only calculated for non-sovereign emissions.
- The **thematic bond share** is the proportion of a portfolio's exposure to green, social and sustainability bonds relative to its total size. Thematic bonds are expected to comply with the International Capital Market Association's (ICMA) Green Bond Principles, Social Bond Principles or Sustainability Bond Guidelines or be certified by an external verification body as compliant with the Climate Bond Standard of the Climate Bonds Initiative (CBI).
- Similarly, the **green bond share** corresponds to a portfolio's exposure to green bonds (defined according to ICMA or CBI standards) relative to its total size. By definition, this is a subset of the thematic bond share.
- The **carbon impact ratio** is equal to the sum of avoided and reduced emissions (or emissions savings) divided by induced emissions. The portfolio's carbon impact ratio is the exposure-weighted average of the carbon impact ratios of the various green bonds in the portfolio. Avoided and reduced emissions are calculated by the data provider Carbon4Finance and are defined as follows:
 - **Avoided emissions** are emissions not generated by a company's products and services. They are calculated by comparing actual emissions with a sector-level reference scenario (i.e. the International Energy Agency's 2°C temperature rise scenario) or with those generated by low-carbon alternatives. A company is considered to have avoided emissions if the difference between the reference scenario and its actual emissions is positive.
 - **Reduced emissions** correspond to the volume by which emissions are reduced by efficiency gains over time. A company is considered to have reduced emissions when there is a real decrease in its carbon intensity over a five-year period.

Strengths and weaknesses of the selected metrics

Firstly, all metrics need to be based either on reported emissions (by the company itself) or, where reporting is not available or is incomplete, on estimated emissions. In both cases, the required emissions data may be insufficient for some issuers. The tables below show the percentage of investments in each portfolio for which these data were available.

Secondly, the variation in climate metrics over time can be explained by multiple factors. For example, for a static portfolio with stable emissions, WACI, TCE and CF will decrease year-on-year due to inflation. Conversely, the increasing availability of data will cause TCE to rise, even if the actual emissions financed by the portfolio do not change.

It should also be noted that comparing different types of assets against a given metric is subject to certain limitations. For example, the emissions of a sovereign issuer include all emissions linked to production carried out on its territory, whereas the emissions of a company, as measured by the three selected metrics, include only direct emissions (Scope 1) and indirect energy-related emissions (Scope 2). Moreover, corporate emissions are also included in the emissions of sovereign issuers.

Furthermore, supranational bodies, sub-sovereign bodies/agencies and financial institutions generally generate fewer Scope 1 and Scope 2 emissions, as most of their activities consist of financing the activities of other economic agents and are thus categorised as Scope 3 emissions. The GHG efficiency of bonds issued by supranational bodies, sub-sovereign bodies/agencies and financial institutions thus cannot be demonstrated by simply comparing their WACI or CF with those of private non-financial borrowers; it is also necessary to consider Scope 3 emissions.

Consequently, any change in the relative contribution of each asset will influence the portfolio metrics as a whole. In this respect, looking only at the totals may give a false impression of the evolution of a portfolio's climate metrics. With this in mind, the current publication provides detailed information on each asset type and its relative size.

Metrics

The 2023 results of the climate-related metrics used for the statutory portfolio, the euro portfolio and the foreign currency (FX) portfolio are detailed in Tables 1, 2 and 3, respectively. Figures for previous years are set out in Annex 1. It should be noted that at the time of writing year-end climate data for 2023 were not yet available. Therefore, year-end climate data for 2022 have been used.

Table 1

Climate-related metrics for the statutory portfolio at year-end 2023

Statutory Portfolio 2023	Sovereign and sub-sovereign bonds			Non-Sovereign			
	Production		Consumption	TOTAL	Supra and agency bonds	Corporate bonds	Equities
	Excluding LULUCF	Including LULUCF					
Portfolio size (€M)	5 078			1 694	1 362	0	332
WACI (tCO ₂ e/€M) data coverage (%)	147 (100%)	145 (100%)	16 (100%)	7 (71%)	7 (88%)	–	– (0%)
Total carbon emissions (tCO ₂ e) data coverage (%)	744 715 (100%)	734 534 (100%)	1 313 779 (100%)	5 415 (69%)	5 415 (86%)	–	– (0%)
Carbon footprint (tCO ₂ e/€M) data coverage (%)	147 (100%)	145 (100%)	259 (100%)	5 (69%)	4,6 (86%)	–	– (0%)
Total carbon emissions (including Scope 3) (tCO ₂ e) data coverage (%)				200 445 (69%)	200 445 (86%)		– (0%)
Thematic bond share (%)	5.9%			50.6%	50.6%		
Green bond share (%)	4.8%			23.5%	23.5%		
Carbon impact Ratio of Green bonds data coverage (%)	0.33 (80%)			0.6 (75%)	0.6 (75%)		

Sources: ISS, C4F, World Bank, Bloomberg and NBB calculations.

Note: The figures in brackets below the results of the metrics indicate data coverage, expressed as a percentage of the investments (i.e. the market value of the investments/the market value of the portfolio) for which all required data (i.e. emissions and financial data) were available.

The statutory portfolio consists primarily of bonds issued by sovereign issuers in the euro area. This portfolio also includes, albeit to a lesser extent, bonds issued by supranational bodies, and agencies as well as shares in international institutions. Over the years, supranational bodies and agencies have improved their climate-related disclosures, with almost 90% of these issuers now releasing data. A significant proportion of the statutory portfolio (51%) is invested in thematic securities (green, social and sustainability bonds), mainly those of supranational and agencies. Over the years, the share of thematic bonds in total investments in sovereign and non-sovereign securities has risen.

Table 2

Climate-related metrics for the EUR portfolio at year-end 2023

EUR Portfolio 2023	Sovereign and sub-sovereign bonds			Non-Sovereign			
	Production		Consumption	TOTAL	Supra and agency bonds	Covered bonds	Equities
	Excluding LULUCF	Including LULUCF					
Portfolio size (€M)	1 161			1 209	0	35	1 175
WACI (tCO ₂ e/€M) data coverage (%)	140 (100 %)	138 (100 %)	13 (100 %)	76 (100 %)		1 (100 %)	79 (100 %)
Total carbon emissions (tCO ₂ e) data coverage (%)	162 604 (100 %)	159 666 (100 %)	254 873 (100 %)	65 946 (100 %)		9 (100 %)	65 937 (100 %)
Carbon footprint (tCO ₂ e/€M) data coverage (%)	140 (100 %)	138 (100 %)	220 (100 %)	55 (100 %)		0 (100 %)	56 (100 %)
Total carbon emissions (including Scope 3) (tCO ₂ e) data coverage (%)				809 398 (100 %)		8 434 (100 %)	800 965 (100 %)
Thematic bond share (%)	0.0 %			0.0 %		0.0 %	
Green bond share (%)	0.0 %			0.0 %		0.0 %	
Carbon impact Ratio of Green bonds data coverage (%)							

Sources: ISS, C4F, World Bank, Bloomberg and NBB calculations.

Note: The figures in brackets below the results of the metrics indicate data coverage, expressed as a percentage of the investments (i.e. the market value of the investments/the market value of the portfolio) for which all required data (i.e. emissions and financial data) were available.

The euro portfolio comprises sovereign bonds, a limited number of covered bonds, and the Bank's investments in an equity fund. Over the last two years, the distribution of the different asset classes within the euro portfolio has changed.

For sovereign issuers, the reduction in total GHG emissions (Scope 1 and 2) is attributable to two factors: firstly, a gradual reduction in the exposure to this class of bonds in the portfolio (€2 464 million in 2021 compared with €1 161 million in 2023) and, secondly, a reduction in the GHG emissions of sovereign issuers still held in the portfolio. The latter reduction also explains the fall in WACI over the years (-19 % compared with 2021 for production including LULUCF).

As for the equity fund, which tracks an ESG index, total GHG emissions (Scope 1, 2 and 3) rose between 2021 and 2023 (+17 %), although by less than the size of the fund over the same period (+30 %). Following the decision taken by the Board of Directors in 2023 (to be implemented in 2024) to change the benchmark index for this fund to a climate transition index (EU CTB), changes could be visible in the metrics as from 2024.

Figure 2

Change in WACI between 2021 and 2023 for sovereign issuers in the euro portfolio

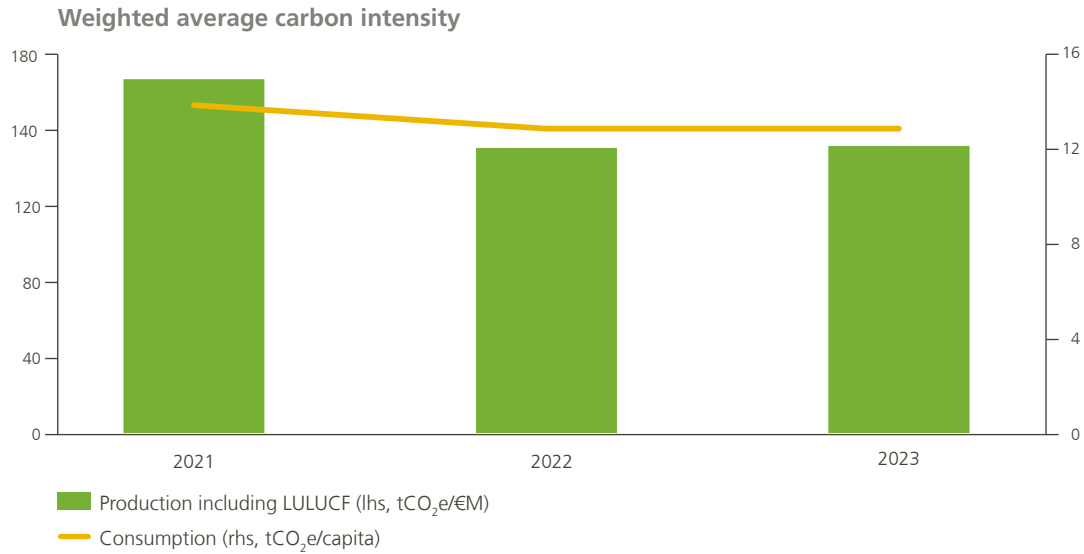


Table 3

Climate-related metrics for the FX portfolio at year-end 2023

FX Portfolio 2023	Sovereign and sub-sovereign bonds			Non-Sovereign			
	Production		Consumption	TOTAL	Supra and agency bonds	Corporate bonds	Equities
	Excluding LULUCF	Including LULUCF					
Portfolio size (€M)	6 001			2 265	747	1 518	0
WACI (tCO ₂ e/€M)	263	232	21	64	1	87	
data coverage (%)	(100 %)	(100 %)	(100 %)	(91 %)	(73 %)	(99 %)	
Total carbon emissions (tCO ₂ e)	1 576 241	1 389 391	1 743 630	97 705	265	97 441	
data coverage (%)	(100 %)	(100 %)	(100 %)	(91 %)	(73 %)	(99 %)	
Carbon footprint (tCO ₂ e/€M)	263	232	291	48	0.5	65	
data coverage (%)	(100 %)	(100 %)	(100 %)	(91 %)	(73 %)	(99 %)	
Total carbon emissions (including Scope 3) (tCO ₂ e)				1 416 424	53 155	1 363 269	
data coverage (%)				(91 %)	(73 %)	(99 %)	
Thematic bond share	0.1 %			42.6 %	73.9 %	27.1 %	
Green bond share	0.0 %			25.2 %	36.6 %	19.7 %	
Carbon impact Ratio of Green bonds				0.8	1.0	0.7	
data coverage (%)				(59.5 %)	(43.1 %)	(74.4 %)	

Sources: ISS, C4F, World Bank, Bloomberg and NBB calculations.

Note: The figures in brackets below the results of the metrics indicate data coverage, expressed as a percentage of the investments (i.e. the market value of the investments/the market value of the portfolio) for which all required data (i.e. emissions and financial data) were available.

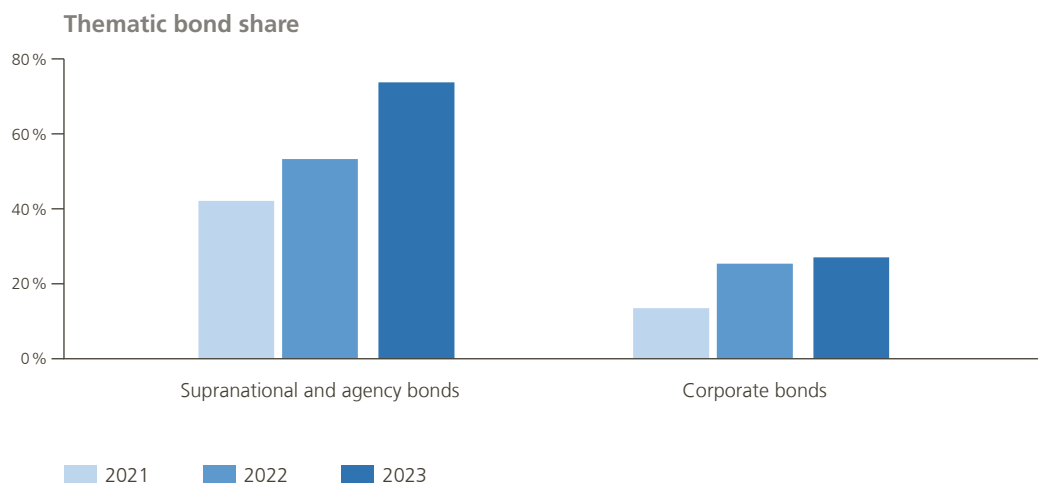
The foreign currency portfolio comprises sovereign, supranational and corporate exposures.

For (sub-)sovereign securities, total GHG emissions (Scope 1, 2 and 3) from production (including LULUCF) decreased between 2021 and 2023. This was due to two factors. Firstly, the reduction in the GHG emissions of (sub-)sovereigns and the increase in their GDP led to an improvement in the figures, which can be seen by comparing the results for 2021 and 2022 (-16%). On the other hand, the size of the portfolio decreased (-28%) between 2022 and 2023, whereas it was stable between 2021 and 2022.

Among the most significant changes, the share of non-sovereign thematic bonds increased materially, particularly with respect to supranational and sub-sovereign bodies, rising from 42% to 74% (see Figure 2). Investment possibilities in sovereign (and sub-sovereign) thematic bonds denominated in US dollars remain limited, which is why they account for only a small share of the portfolio.

Figure 3

Change in the share of thematic bonds (green, social and sustainability bonds as per ICMA principles/guidelines) in the foreign currency portfolio between 2021 and 2023



Targets

The Bank's [SRI Charter](#) defines its long-term climate objectives, which are listed here for reference, together with the relevant metrics. The metric used for the "net zero" target for sovereign exposures is "total greenhouse gas emissions" (production including LULUCF). The metric used for the "net zero" target for non-sovereign exposures is "total greenhouse gas emissions including Scope 3 emissions". The reference level is the values at 31 December 2021. No conclusion can be drawn at this stage as to whether the Bank will achieve these targets; annual monitoring will thus be required.

This past year, with a view to implementing the Charter, the Bank made concrete progress on the targets listed in Table 4. The main achievements are the change of the benchmark index and the introduction of an intermediate climate-related target for the equity portfolio, an update of the screening rules, and the increase in the thematic bond share.

In 2023, the Bank decided to change the benchmark for its equity portfolio to an EU climate transition benchmark index. In order to meet the European Union's climate transition requirements, the carbon footprint of the portfolio must be 30% lower than the parent benchmark index. Self-decarbonisation at an annual rate of 7% must be added to this, while respecting the criteria of diversification. This change of benchmark should enable the Bank to meet its targets.

Following this decision, the Bank set an intermediate climate target for its externally managed equity portfolio. It aims to reduce the carbon footprint of this portfolio by 50% by the end of 2030, compared to the 2021 reference level. In accordance with the regulations governing the European Union's Climate Transition Index, Scope 1, 2 and 3 emissions are included to calculate the carbon footprint of this benchmark index, as shown in Table 4 ("Intermediate climate target for the equity portfolio").

Screening rules have been updated and introduced for new purchases. In addition, formal exclusion rules have been put in place for bonds that fail to meet certain criteria, such as the non-violation of international treaties (the Anti-Personnel Landmines Convention, the Convention on Cluster Munitions, etc.), national legislation (on the use of depleted uranium) and global frameworks (e.g. the UN Global Compact and the OECD Guidelines for Multinational Enterprises). The exclusion criteria also cover thresholds for maximum revenues generated by specific types of economic activity (tobacco and gambling).

Lastly, the share of thematic bonds in the portfolio continues to rise, from 6.6% in 2021 to 12.3% in 2023.

With regard to the Bank's other targets, sovereign financed emissions decreased significantly (-39%), as a result of reduced exposure to sovereigns, on the one hand, and a reduction in the carbon footprint of the remaining sovereign exposure, on the other.

In contrast, emissions financed by non-sovereign assets rose from 2.1 to 2.4 million tonnes of CO₂ equivalent (+15%) between 2021 and 2023. This is due to greater climate data coverage and an increase in the size of certain portfolios.

Going forward, the Bank aims to make further progress towards achieving these objectives and implementing the Charter. In this context, it is focusing its efforts on, for example, the development of intermediate targets for specific portfolios, aside from the equity portfolio.

Table 4

Climate and other SRI-related targets

Target	Metric	Scope of application	Reference level 2021	Previous year's level 2022	Current level 2023	Target level
Net-zero financed emissions	Total GHG emissions (production including LULUCF, tCO ₂ e)	Sovereign assets	3 763 838	3 022 553	2 283 590	0
						End of 2050
Net-zero financed emissions	Total GHG emissions (Scope 1, 2 and 3, tCO ₂ e)	Non-sovereign assets	2 105 339	2 182 688	2 426 268	0
						End of 2050
Thematic bond share	Annual change in the thematic bond (%)	Bonds	6.6%	10.0%	12.3%	Trendwise increase
Intermediate climate target for the equity portfolio ²	Carbon footprint of the benchmark index (tCO ₂ e/M\$ invested)	Equity portfolio in euros	383	362	455	Reduction by 50% (192)
						End of 2030
Publication of intermediate climate-related targets	N/A	N/A	N/A	Not published	Published for the equity portfolio	Gradual ongoing publication for selected portfolios
Introduction of updated screening rules	Operational implementation	New purchases	N/A	In progress	Implemented	Implemented

Source: NBB calculations.

² There are differences between the "Metrics" section (Table 2), Annex 1 (Tables 7 and 8) and the "Targets" section (Table 4) for the denominated equity portfolio in euro, as this portfolio is managed externally using a benchmark index. The external manager uses a different data source to the Bank, and a calculation methodology that includes Scope 1, 2 and 3 emissions, whereas the Bank includes only Scope 1 and 2 emissions, and its reference currency is the US dollar.

Annexes

Annex 1: Historical data on metrics and targets

This annex contains the 2021 (base year) and 2022 data on the metrics and targets presented in this report.

The data presented in the tables below may differ from those published in last year's report due to the following factors which pertain to both 2021 and 2022 data: the receipt of updated data from issuers and companies in which the Bank invests, greater data coverage by data providers, and changes to the calculation methodologies used by these providers.

For the first time, this report uses 2022 year-end data for the tables relating to 2022. At the time of preparing the previous disclosures (March 2023), 2022 year-end data were not yet available. The data used for 2022 were therefore from year-end 2021.

Statutory portfolio

Table 5

Climate-related metrics for the statutory portfolio at year-end 2021

Statutory Portfolio 2021	Sovereign and sub-sovereign bonds			Non-Sovereign			
	Production		Consumption	TOTAL	Supra and agency bonds	Corporate bonds	Equities
	Excluding LULUCF	Including LULUCF					
Portfolio size (€M)	5 713			1 482	1 150	0	332
WACI (tCO ₂ e/€M) data coverage (%)	183 (99 %)	180 (99 %)	16 (99 %)	9 (62 %)	9 (79 %)	–	– (0 %)
Total carbon emissions (tCO ₂ e) data coverage (%)	1 027 893 (99 %)	1 012 761 (99 %)	1 858 741 (99 %)	771 (37 %)	771 (47 %)	–	– (0 %)
Carbon footprint (tCO ₂ e/€M) data coverage (%)	183 (99 %)	180 (99 %)	330 (99 %)	1 (37 %)	1.4 (47 %)	–	– (0 %)
Total carbon emissions (including Scope 3) (tCO ₂ e) data coverage (%)				43 720 (37 %)	43 720 (47 %)	–	– (0 %)
Thematic bond share (%)	4.4 %			44.9 %	44.9 %		
Green bond share (%)	3.5 %			22.9 %	22.9 %		
Carbon impact Ratio of Green bonds data coverage (%)	0.33 (100 %)			0.7 (84 %)	0.7 (84 %)		

Sources: ISS, C4F, World Bank, Bloomberg and NBB calculations.

Note: The figures in brackets below the results of the metrics indicate data coverage, expressed as a percentage of the investments (i.e. the market value of the investments/the market value of the portfolio) for which all required data (i.e. emissions and financial data) were available.

Table 6

Climate-related metrics for the statutory portfolio at year-end 2022

Statutory Portfolio 2022	Sovereign and sub-sovereign bonds			Non-Sovereign			
	Production		Consumption	TOTAL	Supra and agency bonds	Corporate bonds	Equities
	Excluding LULUCF	Including LULUCF					
Portfolio size (€M)	5 592			1 730	1 398	0	332
WACI (tCO ₂ e/€M) data coverage (%)	146 (100%)	144 (100%)	15 (100%)	7 (71%)	7 (88%)		– (0%)
Total carbon emissions (tCO ₂ e) data coverage (%)	815 384 (100%)	802 564 (100%)	1 427 317 (100%)	578 (49%)	578 (61%)		– (0%)
Carbon footprint (tCO ₂ e/€M) data coverage (%)	146 (100%)	144 (100%)	255 (100%)	1 (49%)	0.7 (61%)		– (0%)
Total carbon emissions (including Scope 3) (tCO ₂ e) data coverage (%)				44 099 (49%)	44 099 (61%)		– (0%)
Thematic bond share (%)	5.4%			49.3%	49.3%		
Green bond share (%)	4.4%			23.0%	23.0%		
Carbon impact Ratio of Green bonds data coverage (%)	0.33 (80%)			0.6 (75%)	0.6 (75%)		

Sources: ISS, C4F, World Bank, Bloomberg and NBB calculations.

Note: The figures in brackets below the results of the metrics indicate data coverage, expressed as a percentage of the investments (i.e. the market value of the investments/the market value of the portfolio) for which all required data (i.e. emissions and financial data) were available.

Euro portfolio

Table 7

Climate-related metrics for the EUR portfolio at year-end 2021

EUR Portfolio 2021	Sovereign and sub-sovereign bonds			Non-Sovereign			
	Production		Consumption	TOTAL	Supra and agency bonds	Covered bonds	Equities
	Excluding LULUCF	Including LULUCF					
Portfolio size (€M)	2 464			946	0	40	906
WACI (tCO ₂ e/€M) data coverage (%)	174 (100%)	170 (100%)	14 (100%)	81 (100%)		1 (100%)	84 (100%)
Total carbon emissions (tCO ₂ e) data coverage (%)	428 396 (100%)	419 869 (100%)	695 333 (100%)	57 402 (100%)		10 (100%)	57 392 (100%)
Carbon footprint (tCO ₂ e/€M) data coverage (%)	174 (100%)	170 (100%)	282 (100%)	61 (100%)		0 (100%)	63 (100%)
Total carbon emissions (including Scope 3) (tCO ₂ e) data coverage (%)				694 103 (100%)		9 558 (100%)	684 546 (100%)
Thematic bond share (%)	0.0%			0.0%		0.0%	
Green bond share (%)	0.0%			0.0%		0.0%	
Carbon impact Ratio of Green bonds data coverage (%)							

Sources: ISS, C4F, World Bank, Bloomberg and NBB calculations.

Note: The figures in brackets below the results of the metrics indicate data coverage, expressed as a percentage of the investments (i.e. the market value of the investments/the market value of the portfolio) for which all required data (i.e. emissions and financial data) were available.

Table 8

Climate-related metrics for the EUR portfolio at year-end 2022

EUR Portfolio 2022	Sovereign and sub-sovereign bonds			Non-Sovereign			
	Production		Consumption	TOTAL	Supra and agency bonds	Covered bonds	Equities
	Excluding LULUCF	Including LULUCF					
Portfolio size (€M)	1 867			1 051	0	40	1 012
WACI (tCO ₂ e/€M) data coverage (%)	140 (100%)	137 (100%)	13 (100%)	81 (100%)		1 (100%)	84 (100%)
Total carbon emissions (tCO ₂ e) data coverage (%)	261 085 (100%)	256 388 (100%)	415 713 (100%)	61 893 (100%)		10 (100%)	61 883 (100%)
Carbon footprint (tCO ₂ e/€M) data coverage (%)	140 (100%)	137 (100%)	223 (100%)	59 (100%)		0 (100%)	61 (100%)
Total carbon emissions (including Scope 3) (tCO ₂ e) data coverage (%)				748 301 (100%)		9 244 (100%)	739 056 (100%)
Thematic bond share (%)	0.0%			0.0%		0.0%	
Green bond share (%)	0.0%			0.0%		0.0%	
Carbon impact Ratio of Green bonds data coverage (%)							

Sources: ISS, C4F, World Bank, Bloomberg and NBB calculations.

Note: The figures in brackets below the results of the metrics indicate data coverage, expressed as a percentage of the investments (i.e. the market value of the investments/the market value of the portfolio) for which all required data (i.e. emissions and financial data) were available.

Foreign currency portfolio

Table 9

Climate-related metrics for the FX portfolio at year-end 2021

FX Portfolio 2021	Sovereign and sub-sovereign bonds			Non-Sovereign			
	Production		Consumption	TOTAL	Supra and agency bonds	Corporate bonds	Equities
	Excluding LULUCF	Including LULUCF					
Portfolio size (€M)	8 159			1 925	828	1 098	0
WACI (tCO ₂ e/€M) data coverage (%)	321 (100 %)	286 (100 %)	19 (100 %)	54 (80 %)	6 (56 %)	75 (98 %)	
Total carbon emissions (tCO ₂ e) data coverage (%)	2 609 115 (100 %)	2 331 208 (100 %)	2 894 793 (100 %)	47 703 (73 %)	332 (41 %)	47 371 (96 %)	
Carbon footprint (tCO ₂ e/€M) data coverage (%)	321 (100 %)	286 (100 %)	356 (100 %)	34 (73 %)	1.0 (41 %)	45 (96 %)	
Total carbon emissions (including Scope 3) (tCO ₂ e) data coverage (%)				1 367 516 (73 %)	44 203 (41 %)	1 323 313 (96 %)	
Thematic bond share (%)	0.2 %			25.8 %	42.2 %	13.5 %	
Green bond share (%)	0.2 %			10.5 %	16.5 %	6.0 %	
Carbon impact Ratio of Green bonds data coverage (%)	0.4 (76.2 %)			0.7 (54.3 %)	0.05 (32.3 %)	1.2 (100.0 %)	

Sources: ISS, C4F, World Bank, Bloomberg and NBB calculations.

Note: The figures in brackets below the results of the metrics indicate data coverage, expressed as a percentage of the investments (i.e. the market value of the investments/the market value of the portfolio) for which all required data (i.e. emissions and financial data) were available.

Table 10

Climate-related metrics for the FX portfolio at year-end 2022

FX Portfolio 2022	Sovereign and sub-sovereign bonds			Non-Sovereign			
	Production		Consumption	TOTAL	Supra and agency bonds	Corporate bonds	Equities
	Excluding LULUCF	Including LULUCF					
Portfolio size (€M)	8 378			2 681	1 157	1 523	0
WACI (tCO ₂ e/€M) data coverage (%)	262 (100 %)	234 (100 %)	19 (100 %)	53 (89 %)	1 (75 %)	83 (100 %)	
Total carbon emissions (tCO ₂ e) data coverage (%)	2 196 626 (100 %)	1 963 600 (100 %)	2 437 372 (100 %)	91 664 (82 %)	268 (60 %)	91 396 (99 %)	
Carbon footprint (tCO ₂ e/€M) data coverage (%)	262 (100 %)	234 (100 %)	291 (100 %)	42 (82 %)	0.4 (60 %)	61 (99 %)	
Total carbon emissions (including Scope 3) (tCO ₂ e) data coverage (%)				1 390 288 (82 %)	60 920 (60 %)	1 329 368 (99 %)	
Thematic bond share (%)	0.1 %			37.5 %	53.4 %	25.4 %	
Green bond share (%)	0.0 %			20.2 %	24.1 %	17.2 %	
Carbon impact Ratio of Green bonds data coverage (%)				0.9 (60.1 %)	1.0 (43.6 %)	0.8 (77.6 %)	

Sources: ISS, C4F, World Bank, Bloomberg and NBB calculations.

Note: The figures in brackets below the results of the metrics indicate data coverage, expressed as a percentage of the investments (i.e. the market value of the investments/the market value of the portfolio) for which all required data (i.e. emissions and financial data) were available.

Annex 2: Formulas

Main formulas

Metric	Details
Weighted average carbon intensity (WACI) (tCO ₂ e/€M revenue or PPP-adjusted GDP)	$= \sum_n^i \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \right) \times \left(\frac{\text{issuer's carbon emissions}_i}{\text{issuer's revenue, PPP adj. GDP, population or final consumption expenditure}_i} \right)$
Total carbon emissions (tCO ₂ e)	$= \sum_n^i \left(\frac{\text{current value of investment}_i}{\text{EVIC or PPP adj. GDP}_i} \times \text{issuer's carbon emissions}_i \right)$
Carbon footprint (tCO ₂ e/€M invested)	$= \frac{\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{EVIC or PPP adj. GDP}_i} \times \text{issuer's carbon emissions}_i \right)}{\text{current portfolio value}}$

Additional formulas

Metric	Details
Thematic bond share (green, social and sustainability bonds)	$= \frac{\sum_{\text{thematic bonds}} \text{current value of investment}}{\sum_{\text{all bonds}} \text{current value of investment}}$
Green bond share	$= \frac{\sum_{\text{green bonds}} \text{current value of investment}}{\sum_{\text{all bonds}} \text{current value of investment}}$
Carbon Impact Ratio of Green bonds	$= \frac{\sum_{\text{green bonds}} \text{current value of investment} \times \text{carbon impact ratio}}{\sum_{\text{green bonds}} \text{current value of investment}}$

Treatment of missing values

For each metric, the analysis must account for missing values. The effect of excluding missing values from the calculation varies, depending on the metric.

For weighted average carbon intensity (WACI), excluding missing values increases the uncertainty of the result. Excluding a company with above (or below) average emissions relative to revenue will reduce (or increase) the portfolio's WACI. In the absence of an indication of bias in the missing emissions data (i.e. missing data for firms with particularly high or low emissions), there is no reason to consider that the weighted average carbon intensity has been under- or overestimated.

For total greenhouse gas emissions (TCE), excluded emissions can obviously not contribute to the metric. If emissions data were available for only 75 % of exposures, this would mean that only 75 % of total TCE could be calculated. In such a case, an unbiased estimate of total greenhouse gas emissions would be 4/3 of the TCE reported. Such an adjustment has not been made to the data presented in this report. In other words, an increase in data coverage is likely to lead to an increase, or a smaller decrease, in the measurement of total greenhouse gas emissions from one year to the next.

When assessing carbon footprint (CF), missing emissions are offset by excluding the portfolio value contribution. This means that if there is no bias in the missing emissions data, there is no reason to believe that the carbon footprint is biased upwards or downwards. Nevertheless, a margin of uncertainty remains in this respect.

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