Climate-related disclosures of Národná banka Slovenska's non-monetary policy portfolios

Prepared for the Eurosystem TCFD disclosures

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Summary

This climate-related disclosure report is part of a joint Eurosystem project that brings a single, harmonised and transparent approach to climate-related risks. It describes the climate risks to which the non-monetary policy portfolios of Národná banka Slovenska (hereinafter 'NBS' or 'the Bank') are exposed and is published annually on the NBS website.

A significant step on the sustainability front took place in 2024 with the establishment of the NBS Climate Committee, which addresses climate change issues as they concern various NBS activities. The committee is coordinated by the newly established Climate Sustainability Section.

In early 2025 the Bank approved a sustainable investment strategy consisting of four key pillars: the application of a negative list, support for decarbonisation, thematic investing, and ESG rating monitoring. All these activities strengthen the Bank's ability to better identify and understand the climate and ESG risks to which its investment reserves are exposed. The strategy combines the ambition for efficient and profitable investing with long-term sustainability and support for the transition to a low-carbon economy. Through targeted asset selection and risk management, the Bank ensures that its investment portfolios remain financially stable while also contributing to reducing its carbon footprint and to promoting sustainable solutions. This approach not only enables the fulfilment of Slovakia's climate commitments, but also supports long-term optimisation of returns in a changing economic and regulatory environment.

Most of the aggregate carbon metric results for NBS portfolios gradually improved over the reviewed period from 2021 to 2024. Last year there was a significant reduction in carbon metrics in the corporate issuer class, which had a positive impact on all reported carbon metrics for all non-sovereign issuers. The reason was primarily the decreasing exposure to carbon-intensive issuers. For the first time, the metric of total carbon emissions of non-sovereign issuers is reported not only for their own activities and energy consumption energy, but also for their entire value chain – i.e. suppliers and customers.

The Bank actively invests in green, social, and sustainable bonds, which are innovative financial instruments that finance investments in environmental projects, climate change-related projects, and social projects.

The rest of this report is structured according to the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) into the following four parts: Governance, Strategy, Risk management, and Metrics and targets.

1. Governance

The Bank manages foreign exchange reserves on the basis of the Act on Národná banka Slovenska (No 566/1992), as amended,[1] as well as the rules applicable to Eurosystem national central banks (NCBs).

All framework documents related to reserves management are approved by the **Bank Board of Národná banka Slovenska**. In 2023 the NBS Bank Board approved an Investment Policy Statement and a new strategic asset allocation. These documents also included proposals to actively address environmental, social and governance (ESG) aspects and climate-related risks in reserves management. In its investment process, the Bank adheres to the international obligations of the Slovak Republic and its own policies regarding these areas.

Key decisions in reserves management are made by the **NBS Risk Management Committee** and the **NBS Investment Committee**. The Risk Management Committee primarily defines the risk framework and tolerance levels, and sets investment rules and limits. The Investment Committee is mainly responsible for strategic asset allocation proposals, defining tactical benchmarks, and deciding on active or passive asset management. The committees usually meet every month and their expert discussions include, among other things, specific decisions related to climate risks and opportunities, as well as ESG aspects of investment reserves. The outcomes are then either submitted to the NBS Bank Board as separate documents or are incorporated into internal regulations.

In 2024 the **NBS Climate Committee** was established as an advisory, initiative-taking and coordinating body of the Bank Board in matters of climate change, climate risks, climate policies and climate-sustainable finance and economy. The Climate Committee focuses on how climate risks, climate policies and climate-sustainable finance can be taken into account within the Bank's activities. It defines the concept and direction of the Bank's climate-sustainability agenda and discusses selected expert issues related to climate change impacts, national and international mitigation measures, and their effects on the performance of NBS activities, reserves management, financial market supervision, financial markets, monetary policy, financial stability and the Slovak economy. The committee consists of a chair and 19 other members, mainly department directors.

The Climate Committee's coordination role is carried out by the newly established **Climate Sustainability Section**. This section also creates an analytical infrastructure focused on the challenges arising from climate change. Its work primarily involves analysing climate change impacts on the economy, assessing climate risks, and improving the availability of data in this area. The establishment of the Climate Committee and the Climate Sustainability Section supports the goal of making the Bank a sustainable institution while also strengthening its ability to contribute to national and international efforts in the field of climate change.

[1] Section 28(1): 'Národná banka Slovenska shall hold in custody and manage foreign reserve assets in gold and in foreign exchange assets, shall use these reserves, and shall conduct foreign exchange operations; when conducting operations within the Eurosystem, it shall proceed in accordance with the rules applicable to Eurosystem operations'.

2. Strategy

In November 2019 the Bank became a member of the international group known as the Network for Greening the Financial System (NGFS),[2] which is dedicated to addressing and analysing the financial risks and opportunities associated with climate change and the transition to a low-carbon economy.

During the 2021 United Nations Climate Change Conference (COP26) in Glasgow, the Bank reiterated its commitment to contributing, within its mandate, to the global response to climate change. The Bank has pledged to support the collective commitment made through the NGFS and the European Central Bank (ECB) declarations, and it is committed to gradually integrating sustainability into its core functions and internal operations.[3]

In February 2021 the Eurosystem central banks, including the Bank, defined a common stance[4] for applying sustainable and responsible investment principles in the euro-denominated non-monetary policy portfolios managed by national central banks (NCBs). The common stance aims to assist all Eurosystem members in advancing the transition to a low-carbon economy and achieving EU climate objectives. Consequently, these climate-related disclosures have been published annually since 2023 as part of this initiative.

In 2024 the Bank actively participated in climate change discussions, both within the framework of various initiatives and groups of which it is a member, and by organising several professional events related to climate change. Of particular note were the following conferences organised in cooperation with the International Sustainable Finance Centre:

- *Sustainability in practice: the road to Net Zero*, where experts in sustainable finance shared their insights;
- *Greening regulation – practical challenges ahead of us*, which aimed to bring together leaders involved in growing and monitoring green investments and key actors shaping the sustainable financial framework and disclosure regime.

During 2024 intensive discussions took place on the sustainable strategy within the framework of NBS reserves management. This strategy was formally approved by the NBS Risk Management Committee in March 2025 and consists of four key pillars:

1. Application of a negative list

The Bank has compiled a negative list that excludes from its eligible investment universe any issuers active in controversial industries or non-compliant with generally applicable environmental and ethical standards.

The negative list bolsters efforts to ensure that those NBS investment portfolios investing predominantly in corporate bonds adhere to principles of environmental and social sustainability, contribute to compliance with ethical principles, and reduce reputational risk.

2. Support for decarbonisation

Decarbonisation measures will be applied mainly in the equity portfolio through targeted investment in sustainable solutions. Part of the NBS equity portfolio will follow a strategy focused on firms that have adopted decarbonisation plans to achieve net zero, thereby supporting the reduction of greenhouse gas emissions within the portfolio. The firms' activities must also comply with selected ethical and environmental standards (e.g. the UN Global Compact, non-involvement in controversial weapons or tobacco sectors).

[2] The NGFS is a global network of central banks and banking supervisors that promotes a more sustainable financial system. Its aim is to analyse the consequences of climate change on the financial system and to redirect global financial flows to support economic growth with a low carbon footprint.

[3] NBS Climate Pledge, NBS press release, November 2021.

[4] Eurosystem agrees on common stance for climate change-related sustainable investments in non-monetary policy portfolios, ECB press release, February 2021.

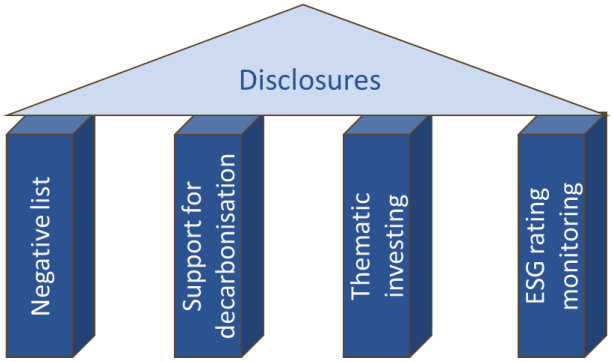
The aim of this sub-initiative within the entire portfolio is to ensure that selected equity investments contribute to carbon neutrality, while at the same time evaluating their long-term economic benefit.

3. Thematic investing

Thematic investing is integrated into bond portfolios, with the Bank actively supporting investments in green, social, and sustainable bonds – provided they have a positive return profile. These securities contribute to the financing of projects with positive environmental and social impacts.
Such an approach aligns the Bank's investment strategy with global trends in responsible investment and supports the shift to a lower-carbon economy.

4. ESG rating monitoring

Monitoring ESG ratings[5] is an integral part of the Bank's investment process. This principle is applied across all portfolios containing bonds and equities.
Regular ESG rating analysis enables the identification and management of environmental, social and governance risks associated with individual issuers. This enhances transparency and robustness in the investment process and helps ensure that the Bank's portfolios remain aligned with ESG principles and long-term strategic goals.



The Bank's sustainability strategy includes the **transparent disclosure of data** on the sustainability of investment reserves through the NBS Annual Report and this report (Climate-related disclosures of NBS's non-monetary policy portfolios). Both documents are published on an annual basis and are published on the NBS website.

Regular disclosure of information generally increases awareness and knowledge of climate risks, supports the harmonisation of data disclosure practices through the application of standard market norms, and contributes to achieving the EU's goals of climate neutrality and the transition to a low-carbon economy.

3. Risk management

In managing its reserves, the Bank has long been addressing market, credit, and liquidity risks. These risks are monitored, measured, and managed to ensure adherence to prudent investment principles. Climate risks impact all these areas as they can lead to increased costs and financial losses due to extreme weather events related to climate change (physical risk) or the transition towards a low-carbon economy (transition risk).

As part of the Eurosystem, the Bank assesses portfolio sensitivity to climate risks using several metrics jointly identified by the Eurosystem. The annual publication of these metrics is included in this report in Chapter 4.

[5] The ESG rating represents the issuer's evaluation based on the application of ESG principles in its activities.

Since December 2020 the Bank has been assessing the ESG score and rating of its non-monetary policy portfolios, which include bond portfolios in all eligible currencies and the equity portfolio. It also monitors exposure to controversial sectors such as alcohol, gambling, and weapons production, and measures carbon risk. These data are submitted annually to the NBS Bank Board for information purposes. Since 2021, some of these indicators have also been published in the NBS Annual Report.

4. Metrics and targets

Eurosystem NCBs' annual climate-related disclosures cover at a minimum the following climate metrics: weighted average carbon intensity (WACI); total carbon emissions (TCE); and carbon footprint (CF). These metrics must be reported for all non-monetary policy portfolios denominated in euro and foreign currencies. Additionally, the share of green, social, sustainable, and sustainability-linked bonds in the portfolio is also reported. Climate-related disclosures must also include at least one broadly defined long-term target that is aligned with the goals of the Paris Agreement and the EU's climate neutrality objectives. Setting additional climate targets based on the ECB's recommendations is encouraged.

BOX 1

Carbon definition

The term **'carbon'** in the names of the metrics refers to the definition of greenhouse gases under the Kyoto Protocol. The Kyoto Protocol specifies seven categories of GHG emissions: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).

For simplification in calculations, GHG emissions are expressed in **tonnes of carbon dioxide equivalent (CO_2e)**. CO_2e is therefore a metric used to compare emissions from different greenhouse gases based on their global warming potential (GWP).

Example: Methane has a GWP of 25, meaning it has 25 times the global warming potential of carbon dioxide. One tonne of methane emissions therefore equals 25 tonnes of CO_2e.

Sovereign issuers' GHG emissions can be reported using both a production approach and consumption approach, thereby enhancing transparency in carbon metric reporting. These approaches are complementary and based on the following types of emissions:

- **Production emissions** are all emissions produced domestically within a country's physical borders, including those from domestic consumption and exports. This definition follows the territorial emissions approach adopted by the UN Framework Convention on Climate Change (UNFCCC) for annual national inventories. Production emissions should be reported both including and excluding land use, land-use change and forestry (LULUCF). The LULUCF sector holds significant potential for mitigating climate change, not only through CO_2 reductions, but also by expanding CO_2 sinks.
- **Consumption emissions** encompass all emissions linked to domestic demand and account for trade effects. This metric offers a broader perspective on a sovereign's emissions, addressing the issue of carbon leakage caused by production shifts from countries where goods are consumed later.

For the purposes of this climate-related disclosure report, the main input in calculating carbon metrics for **non-sovereign issuers** is greenhouse gas emissions, which are measured as the sum of direct GHG emissions from sources the company owns or controls (**scope 1**) and indirect GHG emissions from purchased energy (**scope 2**). This year, for the first time, the report also includes indirect GHG emissions throughout the company's value chain (**scope 3**), both upstream (e.g. suppliers) and downstream (e.g. customers) of the company's operations.

BOX 2

Scope 3 GHG emissions

Scope 3 emissions include those indirect GHG emissions that are not included in scope 2 and that occur in a company's upstream (supplier) or downstream (consumer) activities. These emissions are divided into 15 categories:

1. purchased goods and services;
2. capital goods;
3. fuel- and energy-related activities;
4. upstream transportation and distribution;
5. waste generated in operations;
6. business travel;
7. employee commuting;
8. upstream leased assets;
9. downstream transportation and distribution;
10. processing of sold products;
11. use of sold products;
12. end-of-life treatment of sold products;
13. downstream leased assets;
14. franchises;
15. investments.

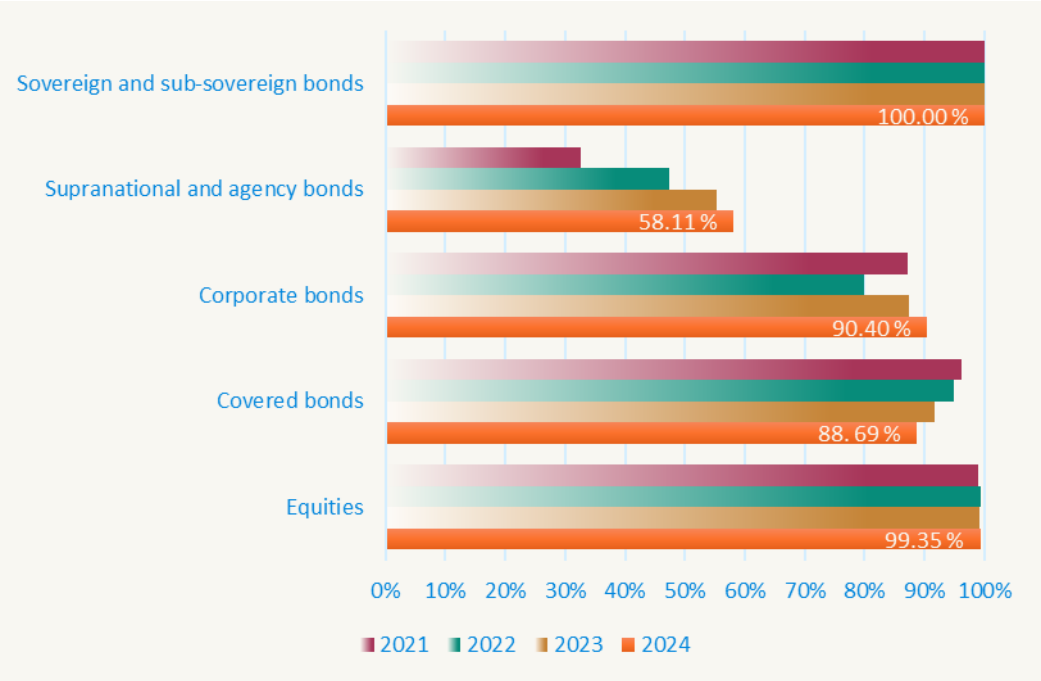
A company can manage both direct (scope 1) and indirect (scope 2) GHG emissions. However, its ability to control scope 3 GHG emissions is significantly limited.

The methodology of this climate-related disclosure report aims to minimise the double counting of emissions to the extent possible. However, double counting of emissions remains an unavoidable aspect of climate-related reporting.

Acquiring accurate GHG emission data is crucial for any climate-related disclosure. These data are available directly from issuers' reports or from third-party providers' databases. The Bank uses the services of two data providers, **Institutional Shareholder Services** (ISS) and **Carbon4 Finance** (C4F), which either gather reported data or model missing GHG emission data. The Bank is aware of the quality issues with scope 3 emissions data, which limit their reliability and comparability over time. These issues include significant uncertainty in estimates, differing estimates among different data providers, and methodological improvements. Despite these data deficiencies, the Bank has decided to start reporting scope 3 emissions in the main body of the report to encourage issuers and data providers to improve their reporting of scope 3 emissions. Given these deficiencies, scope 3 emissions are used only to calculate the total carbon emissions metric, and this is done separately from the calculation using scope 1 and 2 emissions.

In the carbon metric calculation process, the challenge lies in achieving comprehensive GHG emission data coverage for all portfolio holdings. Chart 1 shows the high data coverage from 2021 to 2023 for all asset classes other than supranational and agency bonds.

Chart 1
Data coverage in 2021–2024



Sources: ISS, C4F, and NBS calculations.

4.1. Metric definitions

The Eurosystem's joint disclosures include at least the following metrics, detailed in Tables 1, 2 and 3 in the Annex:

a) **Weighted average carbon intensity (WACI):** This metric assesses a portfolio's exposure to carbon-intensive issuers. The carbon intensity of each issuer is computed by standardising their GHG emissions relative to their economic output. The portfolio's WACI is determined by weighting each issuer's carbon intensity by their respective share of holdings in the portfolio. Data normalisation, extensive data coverage, and broad application across the financial industry ensure comparability across portfolios and time. WACI provides an 'outside-in perspective' (i.e. financial materiality), serving as a proxy for portfolio exposure to transition risks.

b) **Total carbon emissions (TCE):** This metric quantifies the carbon emissions attributed to a portfolio and is expressed in tonnes of CO_2e. The emissions of each issuer are weighted by their investment contribution to the corporate enterprise value including cash (EVIC), or by the sovereign issuer's gross domestic product adjusted by purchasing power parity (PPP adj. GDP). It offers an 'inside-out perspective' (i.e. environmental materiality), acting as a proxy for a portfolio's environmental footprint. Because it is non-normalised, its comparability across portfolios and over time is limited. Given its sensitivity to portfolio size, it should be complemented by the carbon footprint metric.

c) **Carbon footprint (CF):** This metric normalises the TCE metric value by portfolio size and is expressed in tonnes of CO_2e per EUR million invested. Unlike TCE, the carbon footprint metric enables comparability across portfolios and time.

All three TCFD-recommended metrics are enhanced by a standardised methodology and are widely used in climate-related reporting within the financial sector. Normalised metrics (such as WACI and CF) and absolute metrics (such as TCE) complement each other, providing a comprehensive view of portfolios' climate risk exposure and their overall climate impact.

In general, data on securities, GHG emissions, and financial data included in the calculation of these metrics should have identical reference years. While data on securities holdings are available on a timely basis, there is a natural lag in the disclosure of GHG emissions and financial data. Consequently, reference date mismatches occur in the most recent year, or the past two years in the case of sovereign bonds. This discrepancy will gradually be corrected in subsequent climate-related disclosure reports as the necessary data become available.

In addition to carbon metrics, the relative **share** of the following thematic bonds in the total volume of bonds purchased in the portfolio is also disclosed:

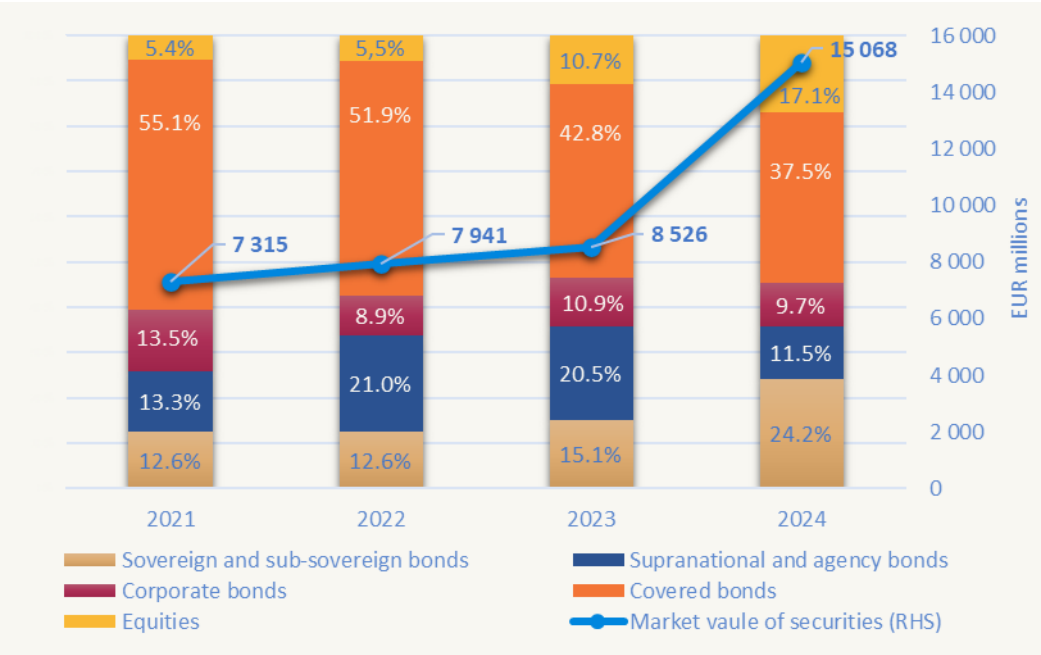
- **green bonds:**
  financial instruments with a positive environmental benefit, used to finance environmental or climate change mitigation projects;
- **social, sustainable, and sustainability-linked bonds:**
  - social bonds are used to raise funds for social projects aimed primarily at helping socially disadvantaged groups;
  - sustainable bonds are used to finance a combination of environmental and social projects;
  - unlike the above types of bonds – where the proceeds must be used for specific environmental or social projects – sustainability-linked bonds can be used to raise funds for general purposes, but the financial characteristics of the bond are tied to the issuer's performance against predefined sustainability goals.

These thematic bonds do not affect the results of carbon metrics, since GHG emissions are reported at the issuer level and are not differentiated by the type of security issued.

4.2. Metric results

The Bank discloses carbon metrics and thematic bond shares for its bond and equity portfolios. The total market value of these portfolios fluctuates over time depending on financial market conditions, investment opportunities and the strategic asset allocation, as illustrated in Chart 2. In 2023 the NBS Bank Board approved the Bank's Investment Policy Statement and its new strategic asset allocation. Implementation of the new strategic asset allocation – primarily involving expansion of the equity portfolio – began in late 2023 and continued in 2024. By the end of 2024 the market value of purchased bonds and equities exceeded €15 billion, representing a 106% increase compared with 2021. The largest increases were recorded in the asset classes of sovereign and sub-sovereign bonds (296%) and equities (547%). The covered bonds asset class nevertheless retained its dominant position, accounting for 37.5% of all the securities purchased in 2024.

Chart 2
Evolution of the total market value of securities (EUR millions) and asset composition (percentages) from 2021 to 2024



Source: NBS calculations.

4.2.1. Carbon metric results

All climate-related metrics for the non-monetary policy portfolios are calculated and reported:

- at the **asset class level**, which includes sovereign and sub-sovereign bonds, supranational and agency bonds, corporate bonds, covered bonds, and equities. For simplicity, all metrics are reported at the level of sovereign issuers (including sub-sovereign entities) and non-sovereign issuers;
- for the **most recent year (2024) and the preceding years from 2021 to 2023** (see Table 4 and Table 5 in the Annex).

Chart 3 depicts the historical evolution of climate metrics (WACI, TCE, CF). Each carbon metric is presented in a separate panel and with separate sub-panels for sovereign and non-sovereign issuers.

For **sovereign issuers**, in 2024 there was nearly complete data coverage using both production and consumption approaches, which enhances the informative value of the metrics.

- All metrics calculated using the production approach, including those incorporating the LULUCF sector, demonstrate lower values across the entire reporting period than they did when this sector was excluded. This trend indicates the net carbon absorption effect of the LULUCF sector for sovereigns whose bonds are held in the portfolios.
- Across all years, the calculated values of the TCE metric are lower under the production approach than under the consumption approach. This implies that governments are importing goods with higher GHG emissions from other countries.
- The volume of sovereign and sub-sovereign issues in the portfolios increased during the period under review, correlating with a rise in the TCE metric – particularly pronounced in 2024. The decrease in normalised metrics (WACI and CF) was primarily accounted for by countries' declining GHG emissions as well as by portfolio composition.

For **non-sovereign issuers**, all aggregate metrics gradually improved over the years 2022 to 2024, except for the new scope 3 TCE metric, which is discussed below.

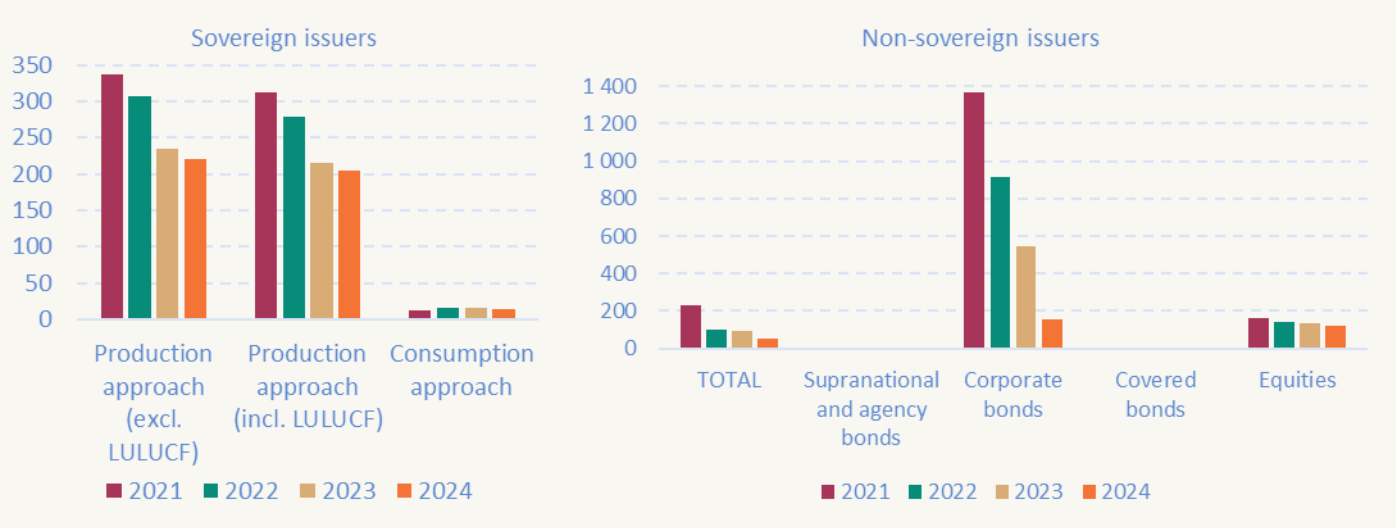
- In the past, the corporate bond class recorded extremely high values for all monitored metrics. This significant impact was due to exposure to a South Korean power company and its subsidiaries, which have relatively high GHG emissions, and lower revenues and EVIC than do firms with comparable GHG emissions. In 2021 this exposure represented 14% of the total exposure to all corporate issuers for which GHG data are available (16% in 2022 and 11% in 2023), yet that company accounted for 93% of the TCE of all corporate issuers (92% in 2022, 86% in 2023). In 2024 this exposure was reduced to 4% of all corporate issuers, having a positive impact on all reported metrics (for example, its share in the overall TCE of corporate issuers fell to 47%).
- Reducing exposure to carbon-intensive corporate bond issuers significantly improved the overall scope 1 + 2 TCE result for non-sovereign issuers, outweighing the impact of TCE increases in other asset classes.
- Declining exposure to carbon-intensive issuers, including the aforementioned South Korean power company, contributed to a sharp reduction in normalised metrics compared with 2023, with the WACI falling by 43% and the CF by 58%.

Chart 3

Evolution of minimum climate-related metrics from 2021 to 2024

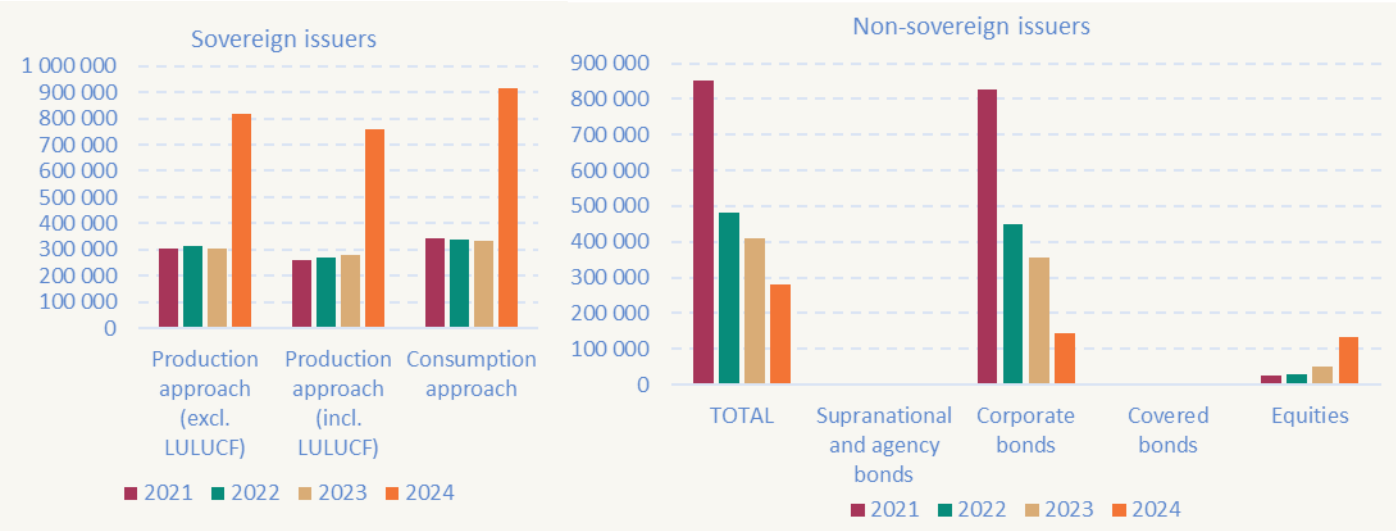
Panel 3.1

Weighted average carbon intensity (tCO_2e/revenue in EUR millions or PPP adj. GDP in EUR millions or per capita)



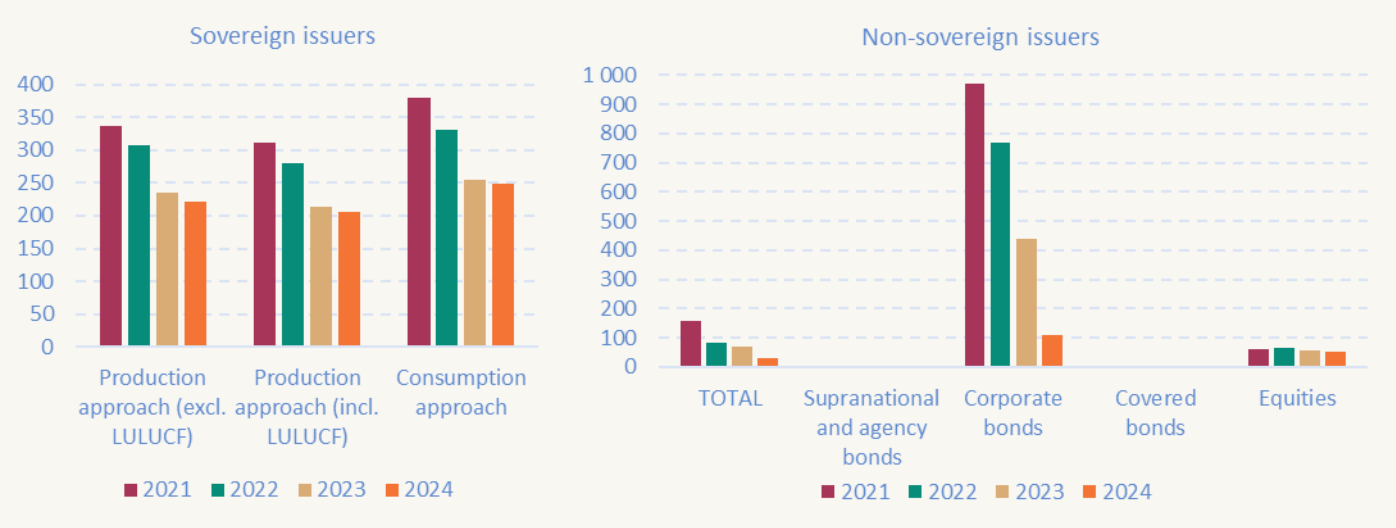
Panel 3.2

Total carbon emissions (scope 1 and scope 2 in tCO_2e)



Panel 3.3

Carbon footprint (tCO_2e per EUR million invested)

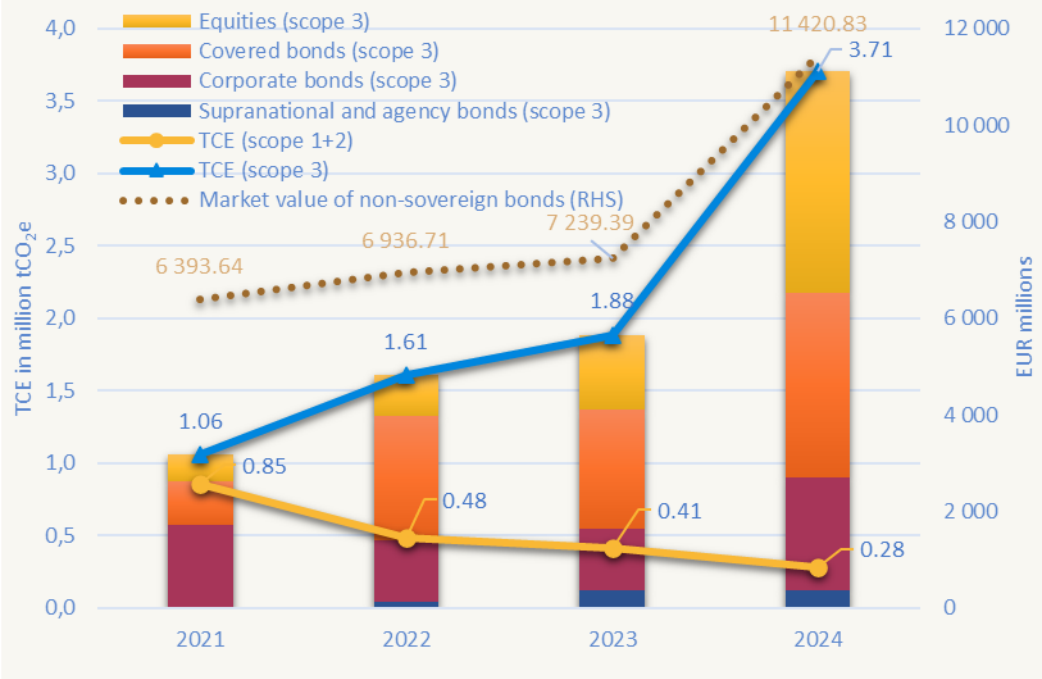


Sources: ISS, C4F, World Bank, Bloomberg, UNFCCC, and NBS calculations.

This year's climate-related disclosure report is the first to include the **TCE metric for scope 3** emissions, i.e. indirect GHG emissions throughout the company's value chain (Chart 4). During the period under review, the market value of non-sovereign emissions increased, as did the scope 3 TCE, which reached 3.71 million tCO_2e by the end of 2024. This was due to increased exposure to institutions with high scope 3 emissions, especially in the equities segment. Conversely, the TCE for scope 1 and scope 2 emissions saw an opposite trend, primarily due to the Bank's decreasing exposure to carbon-intensive issuers as well as the impact of issuers' decarbonisation efforts.

Chart 4

Comparison of the TCE metrics for scope 3 emissions (disaggregated by asset class) and scope 1 + 2 emissions of non-sovereign issuers



Sources: ISS, and NBS calculations.

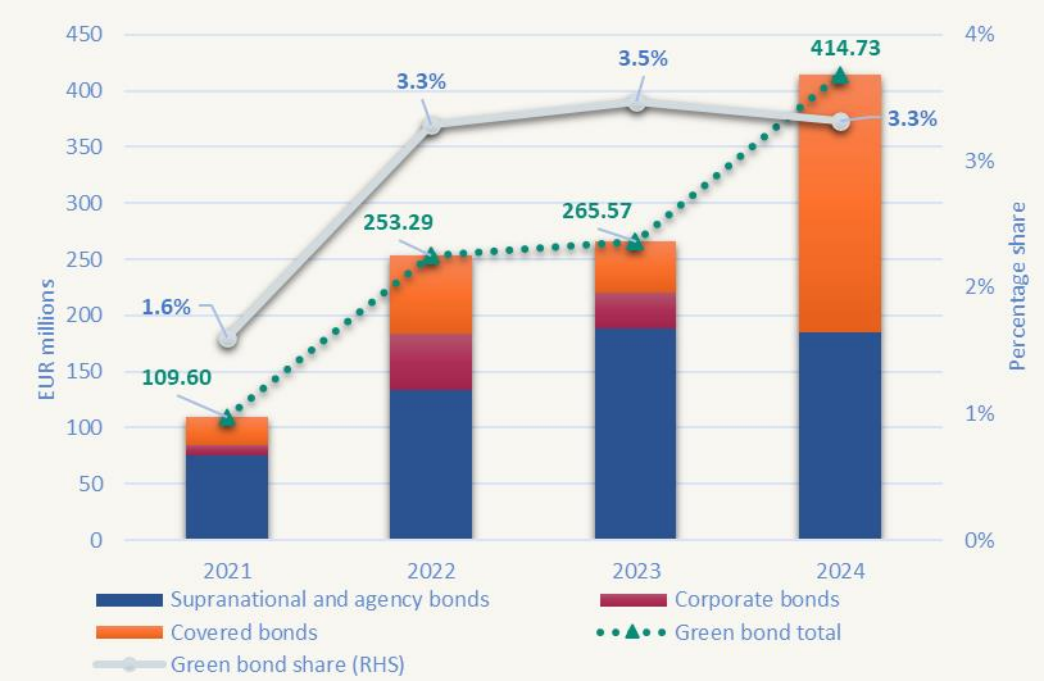
4.2.2. Green, social, sustainability, and sustainability-linked bonds

In the period under review from 2021 to 2024, the Bank actively invested in thematic bonds such as green, social, and sustainable bonds, which were issued exclusively by non-sovereign issuers (see Table 6 in the Annex). The Bank is not permitted to invest in sustainability-linked bonds due to technical limitations within its internal IT systems, so its exposure to these bonds was zero during this period.

The evolution of the **green bond share** in the NBS portfolios is shown in Chart 5. This metric increased until 2023, and then fell slightly in 2024, from 3.5% to 3.3%, due to an increase in the total nominal volume of bonds in the portfolios. The total nominal investment in green bonds in 2024 amounted to €414.7 million, representing an increase of 56% compared with 2023. In the breakdown by asset class, covered bonds accounted for the majority, 55%, of all the green bonds purchased in 2024.

Chart 5

Evolution of the portfolios' green bond share from 2021 to 2024 by asset class

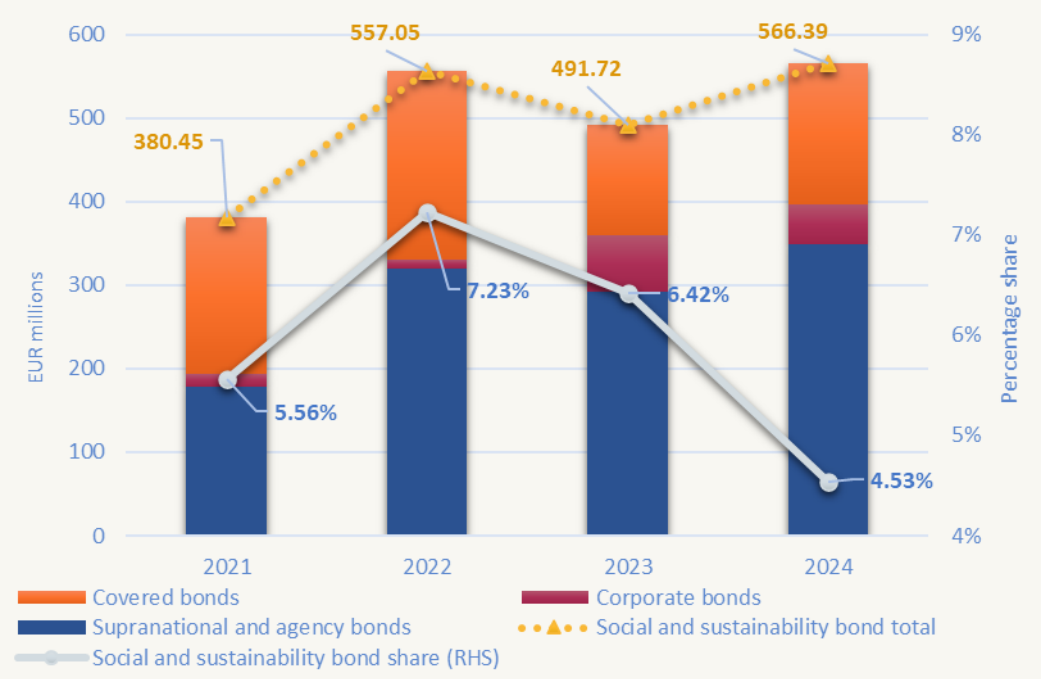


Sources: Bloomberg, and NBS calculations.

The share of **social and sustainable bonds** in the portfolios, shown in Chart 6, decreased to 4.53% in 2024 due to an increase in the portfolios' nominal value. In 2024 the nominal value of these bonds increased by 15% year-on-year, to €566.39 million. In the breakdown by asset class, supranational and agency bonds accounted for the majority, 61%, of all the social and sustainable bonds purchased in 2024.

Chart 6

Evolution of the portfolios' social and sustainability bond share from 2021 to 2024 by asset class



Sources: Bloomberg, and NBS calculations.

4.3. Targets

The Bank's long-term target for its non-monetary policy portfolios is aligned with the EU's decarbonisation and carbon neutrality objectives as set out in the Paris Agreement. This includes holding the global average temperature increase in this century to well below 2°C above pre-industrial levels, striving to limit the increase to 1.5°C above pre-industrial levels, and contributing to achieving carbon neutrality by 2050 at the latest.

Conclusion

Compared with last year's climate-related disclosure report, the Bank has added its newly formulated sustainable investment strategy to this year's disclosures. The set of reported metrics has been expanded to include the share of social and sustainable bonds in the portfolios as well as the TCE metric for scope 3 emissions. The results of the metrics published in this report may be revised retrospectively in the coming years, as calculations are updated to gradually eliminate mismatches in input data reference years.

Annexes

Table 1
Elements of the Eurosystem's common minimum disclosures

Element	Details
Weighted average carbon intensity (in tCO_2e/revenue in EUR millions, or PPP adj. GDP in EUR millions, or per capita)	$$WACI = \sum_n^i \left(\frac{current\ value\ of\ investment_i}{current\ portfolio\ value} \right) x \left(\frac{issuer's\ carbon\ emissions_i}{issuer's\ revenue, PPP\ adj. GDP, or\ population_i} \right)$$ Notes: For non-sovereign issuers, the calculation uses revenue; for sovereign issuers, PPP adj. GDP (production approach), or population (consumption approach). The current value of investment is calculated using the nominal value of bond holdings and market value of equities.
Total carbon emissions (scope 1 + 2 or scope 3 in tCO_2e)	$$TCE = \sum_n^i \left(\frac{current\ value\ of\ investment_i}{enterprise\ value\ including\ cash\ (EVIC)\ or\ PPP\ adj. GDP_i} x\ issuer's\ carbon\ emissions_i \right)$$ Notes: For non-sovereign issuers, the calculation uses EVIC; for sovereign issuers, PPP adj. GDP. The current value of investment is calculated using the nominal value of bond holdings and market value of equities.
Carbon footprint (tCO_2e per EUR million invested)	$$CF = \frac{\sum_n^i \left(\frac{current\ value\ of\ investment_i}{EVIC\ or\ PPP\ adj. GDP_i} \right) x\ issuer's\ carbon\ emissions_i}{current\ portfolio\ value\ (EUR\ millions)}$$ Notes: For non-sovereign issuers, the calculation uses EVIC; for sovereign issuers, PPP adj. GDP. The current value of investment is calculated using the nominal value of bond holdings and market value of equities.
Green bond share	The share of green bonds is expressed as the share of the nominal value of the purchased green bonds in the total nominal value of the bonds in the portfolios (excluding the volume of equities); the Bloomberg classification is used.
Aggregate share of social, sustainability, and sustainability-linked bonds	The share of social, sustainability, and sustainability-linked bonds is expressed as the share of the nominal value of the purchased green bonds in the total nominal value of the bonds in the portfolios (excluding the volume of equity); the Bloomberg classification is used.
Portfolio size	Portfolio size is expressed as the market value of the securities holdings in EUR millions as at 31 December of the respective year. Positions in other financial instruments (e.g. derivatives, repo trades, cash) are not included. Portfolio size may vary from year to year due to the Bank's investment strategy.
Asset classes	Sovereign and sub-sovereign bonds, supranational and agency bonds, corporate bonds, covered bonds, and equities.
Data availability	Data availability is indicated as a percentage below each metric and asset class.
Historical data	Metric disclosures for the most recent year and at least two previous years.

Table 2
Information on inputs for the metric calculations

Asset class	GHG emissions (tCO_2e)	Normalisation factor	Attribution factor
Sovereign and sub-sovereign bonds	Production emissions incl./excl. LULUCF	PPP adj. GDP (EUR millions)	PPP adj. GDP (EUR)
	Consumption emissions	Population	PPP adj. GDP (EUR)
Supranational and agency bonds	Scope 1 + 2 and scope 3 emissions	Revenue (EUR millions)	PPP adj. GDP (EUR)
Corporate bonds			
Covered bonds			
Equities			

Table 3

Data sources used in the metric calculations

Data	Source
GHG emissions	ISS, C4F, UNFCCC
PPP adj. GDP, population	The World Bank
Enterprise value including cash (EVIC)	ISS
Revenue	ISS
Green, social, sustainability, and sustainability-linked bond metrics	Bloomberg

Table 4

Carbon metrics of the non-monetary policy portfolios for 2024

2024	Sovereign			Non-sovereign				
	Sovereign and sub-sovereign bonds							
	Production approach		Consumption approach	TOTAL	Supranational and agency bonds	Corporate bonds	Covered bonds	Equities
	excl. LULUCF	incl. LULUCF						
Portfolio size (EUR millions)	3 646.93			11 420.83	1 728.22	1 467.38	5 655.56	2 569.67
WACI (tCO_2e/ revenue in EUR millions or PPP adj. GDP in EUR millions or per capita)	220.45	205.45	14.78	53.67	1.61	156.79	0.66	123.99
Coverage	*100.00%*	*100.00%*	*100.00%*	*86.64%*	*58.11%*	*90.40%*	*88.69%*	*99.35%*
Total carbon emissions (scope 1 + 2 in tCO_2e)	814 883.15	759 415.06	917 257.67	281 343.42	1 122.29	145 523.77	811.75	133 885.62
Coverage	*100.00%*	*100.00%*	*100.00%*	*86.64%*	*58.11%*	*90.40%*	*88.69%*	*99.35%*
Total carbon emissions (Scope 3 in tCO_2e)	-	-	-	3 709 165.14	121 127.44	777 076.64	1 277 674.25	1 533 286.81
Coverage				*86.64%*	*58.11%*	*90.40%*	*88.69%*	*99.35%*
Carbon footprint (tCO_2e per EUR million invested)	220.45	205.45	248.15	28.56	1.11	110.02	0.16	52.45
Coverage	*100.00%*	*100.00%*	*100.00%*	*86.64%*	*58.11%*	*90.40%*	*88.69%*	*99.35%*
Green bond share	0.00%			4.71%	10.62%	0.00%	4.11%	-
Social and sustainability bond share	0.00%			6.43%	20.01%	3.29%	3.04%	-

Sources: ISS, C4F, World Bank, Bloomberg, UNFCCC, and NBS calculations.

Table 5

Carbon metrics of the non-monetary policy portfolios from 2021 to 2024

	Sovereign issuers			Non-sovereign issuers				
	Sovereign and sub-sovereign bonds							
	Production approach		Consumption approach	TOTAL	Supranational and agency bonds	Corporate bonds	Covered bonds	Equities
	excl. LULUCF	incl. LULUCF						
Portfolio size (EUR millions)								
2024	3 646.93			11 420.83	1 728.22	1 467.38	5 655.56	2 569.67
2023	1 286.25			7 239.39	1 751.93	928.91	3 644.86	913.69
2022	1 004.02			6 936.71	1 669.88	704.56	4 124.23	438.04
2021	921.74			6 393.64	976.59	986.81	4 033.15	397.09
WACI (tCO_2e/ revenue in EUR millions or PPP adj. GDP in EUR millions or per capita)								
2024	220.45	205.45	14.78	53.67	1.61	156.79	0.66	123.99
Coverage	*100.00%*	*100.00%*	*100.00%*	*86.64%*	*58.11%*	*90.40%*	*88.69%*	*99.35%*
2023	235.11	214.50	16.16	93.90	1.62	544.10	0.75	132.15
Coverage	*100.00%*	*100.00%*	*100.00%*	*83.11%*	*55.35%*	*87.44%*	*91.63%*	*99.06%*
2022	307.18	279.50	16.26	103.33	1.66	915.83	1.32	141.39
Coverage	*100.00%*	*94.49%*	*100.00%*	*82.07%*	*47.27%*	*79.85%*	*94.98%*	*99.28%*
2021	336.66	311.77	12.27	229.72	2.95	1 369.15	2.07	160.13
Coverage	*100.00%*	*92.48%*	*100.00%*	*85.14%*	*32.60%*	*87.07%*	*96.10%*	*98.92%*
Total carbon emissions (Scope 1 + 2 in tCO_2e)								
2024	814 883.15	759 415.06	917 257.67	281 343.42	1 122.29	145 523.77	811.75	133 885.62
Coverage	*100.00%*	*100.00%*	*100.00%*	*86.64%*	*58.11%*	*90.40%*	*88.69%*	*99.35%*
2023	305 767.18	278 968.43	331 909.95	411 394.34	1 068.01	357 656.89	635.43	52 034.00
Coverage	*100.00%*	*100.00%*	*100.00%*	*83.11%*	*55.35%*	*87.44%*	*91.63%*	*99.06%*
2022	313 369.93	269 412.32	337 901.98	480 082.17	53.01	450 269.43	855.27	28 904.45
Coverage	*100.00%*	*94.49%*	*100.00%*	*82.07%*	*47.27%*	*79.85%*	*94.98%*	*99.28%*
2021	304 922.91	261 138.93	343 539.23	851 660.15	29.78	826 784.44	977.24	23 868.69
Coverage	*100.00%*	*92.48%*	*100.00%*	*85.14%*	*32.60%*	*87.07%*	*96.10%*	*98.92%*
Total carbon emissions (Scope 3 in tCO_2e)								
2024				3 709 165.14	121 127.44	777 076.64	1 277 674.25	1 533 286.81
Coverage				*86.64%*	*58.11%*	*90.40%*	*88.69%*	*99.35%*
2023				1 884 765.97	117 764.41	430 356.40	818 465.76	518 179.39
Coverage				*83.11%*	*55.35%*	*87.44%*	*91.63%*	*99.06%*
2022				1 605 386.56	38 281.71	430 266.38	854 582.73	282 255.74
Coverage				*82.08%*	*47.27%*	*79.85%*	*94.98%*	*99.31%*
2021				1 057 129.63	5 778.35	569 323.41	296 190.34	185 837.53
Coverage				*85.14%*	*32.60%*	*87.07%*	*96.10%*	*98.93%*
Carbon footprint (tCO_2e per EUR million invested)								
2024	220.45	205.45	248.15	28.56	1.11	110.02	0.16	52.45
Coverage	*100.00%*	*100.00%*	*100.00%*	*86.64%*	*58.11%*	*90.40%*	*88.69%*	*99.35%*
2023	235.11	214.50	255.21	68.08	1.08	437.96	0.19	57.79
Coverage	*100.00%*	*100.00%*	*100.00%*	*83.11%*	*55.35%*	*87.44%*	*91.63%*	*99.06%*
2022	307.18	279.50	331.23	82.11	0.06	769.09	0.21	66.66
Coverage	*100.00%*	*94.49%*	*100.00%*	*82.07%*	*47.27%*	*79.85%*	*94.98%*	*99.28%*
2021	336.66	311.77	379.30	158.03	0.09	970.54	0.26	60.87
Coverage	*100.00%*	*92.48%*	*100.00%*	*85.14%*	*32.60%*	*87.07%*	*96.10%*	*98.92%*

Sources: ISS, C4F, World Bank, Bloomberg, UNFCCC, and NBS calculations.

Table 6

Thematic bond share in the non-monetary policy portfolios from 2021 to 2024

Thematic bonds	Share of total bonds purchased	Sovereign and sub-sovereign bonds	Supranational and agency bonds	Corporate bonds	Covered bonds
Green bond share					
2024	3.32%	0.00%	10.62%	0.00%	4.11%
2023	3.47%	0.00%	10.58%	3.39%	1.24%
2022	3.29%	0.00%	7.71%	6.77%	1.66%
2021	1.60%	0.00%	7.80%	0.90%	0.63%
Social and sustainability bond share					
2024	4.53%	0.00%	20.01%	3.29%	3.04%
2023	6.42%	0.00%	16.36%	7.27%	3.61%
2022	7.23%	0.00%	18.43%	1.43%	5.38%
2021	5.56%	0.00%	18.39%	1.51%	4.70%

Sources: Bloomberg, and NBS calculations.

Abbreviations

C4F	Carbon4 Finance
CF	carbon footprint
CO_2e	carbon dioxide equivalent
COP	Conference of Parties
ECB	European Central Bank
ESG	environment, social and governance
EU	European Union
EVIC	enterprise value including cash
ISS	Institutional Shareholder Services
LULUCF	land use, land-use change and forestry
NBS	Národná banka Slovenska
NGFS	Network for Greening the Financial System
PPP adj. GDP	purchasing power parity–adjusted gross domestic product
TCE	total carbon emissions
TCFD	Task Force on Climate-related Financial Disclosures
tCO_2e	tonnes of carbon dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
WACI	weighted average carbon intensity