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

Prepared for the Eurosystem TCFD disclosures

March 2023

NÁRODNÁ BANKA SLOVENSKA
EUROSYSTÉM

www.nbs.sk

Published by Národná banka Slovenska, March 2023

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1 Introduction

This document is the first ever climate-related disclosure for the euro-denominated non-monetary policy portfolio of Národná banka Slovenska (NBS). This disclosure is part of Eurosystem disclosures.

Climate change is currently one of the most serious challenges to the economy. Climate risks could cause increased costs and financial losses due to either extreme climate change-related weather events (physical risk) or the process of adjustment towards a low-carbon economy (transition risk).

The economy can respond to climate change through adaptation or mitigation. Adaptation means adjusting to the current and future effects of climate change (e.g. cultivating new crops, building defences against sea level rise). Mitigation means reducing the sources of greenhouse gas (GHG) emissions and enlarging the sinks (e.g. using renewable energy sources, planting more forests).

To pursue these ambitious goals, in December 2015 the **Paris Agreement** was adopted at the UN Climate Change Conference (COP21) by 196 parties, including the European Union (EU) and its Member States. The Paris Agreement is the first universal and legally binding global climate change agreement, which sets out a global framework to tackle climate change and its adverse impacts by limiting the global average temperature increase in this century to well below 2°C above pre-industrial levels and pursuing efforts to limit it to 1.5°C above pre-industrial levels.[1]

In line with the Paris Agreement, the EU launched the **European Green Deal** in 2019. This is a package of actions aimed at transforming the EU into a climate-neutral and resource-efficient economy by 2050. As a part of the EU Green Deal, in July 2021 the EU introduced a roadmap of actions to radically cut GHG emissions by at least 55% by 2030 compared to 1990 levels.[2]

In response to the obligations in the fight against climate change arising from its membership of the EU and the United Nations, **Slovakia** approved a document entitled **'Low-Carbon Development Strategy of the Slovak Republic until 2030 with a View to 2050'**[3] in March 2020. The goal of the strategy is to identify existing and propose new additional measures to achieve climate neutrality in Slovakia by 2050, including but not limited to promoting public transport, limiting fossil fuels, using all waste heat, promoting bioeconomy, reforesting uncultivated agricultural land, and restoring peatlands and wetlands. One of the proposals of the strategy is the adoption of a law on climate change, which would address the issues of adaptation to climate change and the mitigation of its effects. This law has already been drafted and, once approved by the parliament, could be in effect as from September 2023.

[1] For more information, see: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

[2] For more information, see: 'Delivering the European Green Deal', European Commission, July 2021

[3] 'Low-Carbon Development Strategy of the Slovak Republic until 2030 with a View to 2050', Ministry of Environment of the Slovak Republic, March 2020

The primary role in tackling climate change and risks is played by governments. However, climate risks are also a concern for central banks and supervisory authorities, as they can affect these entities' ability to pursue institutional objectives relating to monetary and financial stability. From the perspective of foreign reserves management, central banks are usually conservative investors with low exposure to carbon-intensive corporate issuers, so their impact in addressing that challenge may be limited. Nevertheless, fiscal and monetary policy coordination is crucial in all matters, and central banks as monetary authorities should support governments' efforts in green activities.

In December 2017 central banks and supervisory authorities formed the **Network for Greening the Financial System** (NGFS),[4] which is committed to addressing and analysing the financial risks and opportunities associated with climate change and with the transition to a low-carbon economy. The coalition promotes investment in the low-carbon economy and the use of funding to mitigate the impact of climate change. NBS became a member of the NGFS in November 2019, and thereby gained a valuable communication channel for addressing one of the most pressing issues of our time.

Since December 2020, NBS has been measuring environmental, social and governance (ESG) factors in the form of the ESG score and ESG rating of its non-monetary policy portfolios (i.e. bond portfolios in all eligible currencies, and equity portfolio), monitoring its exposure to controversial industries (e.g. alcohol, gambling, weapons production), and measuring carbon risk. Moreover, NBS has also started monitoring the exposure to green, social and sustainability bonds in its portfolios. Since 2021 disclosures on some of these metrics have been published as a part of the NBS Annual Report.

On the occasion of the 2021 United Nations Climate Change Conference (COP26) in Glasgow, NBS reiterated its willingness to contribute, within its mandate, to the global response to climate change. NBS 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. In the coming years, NBS pledges[5] to:

- deepen the understanding of the effects of climate change on financial stability and the economy;
- engage with policymakers, the financial sector, academia, and other relevant stakeholders to promote discussion at a broad level and the emergence of best practices, and to identify challenges and solutions;
- raise awareness of and monitor climate change-related risks in banks, insurance undertakings and other financial service providers;
- set supervisory expectations;
- promote harmonised disclosures and reporting practices on climate-related and other sustainability-related factors;
- develop a risk assessment framework and a sustainability strategy for its own portfolios;
- reduce the carbon impact of its own business operations;

[4] For more information see: https://www.ngfs.net/en

[5] Climate Pledge of Národná banka Slovenska, NBS press release, November 2021

- communicate the importance of its engagement in this context.

In February 2021 the Eurosystem central banks, including NBS, defined a common stance[6] for applying sustainable and responsible investment principles in the euro-denominated non-monetary policy portfolios that national central banks (NCBs) are responsible for managing. The common stance will help all Eurosystem members to contribute to the transition to a low-carbon economy and to EU climate goals.

This report presents the first disclosures based on this common stance. The disclosures follow the ECB reporting guidelines based on recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), the Partnership for Carbon Accounting Financials (PCAF) and the NGFS. The disclosures presented in this report represent an important move towards enhanced transparency about the climate-related risks and the environmental footprint related to NBS's own financial assets.

NBS has started making **annual climate-related disclosures for its euro-denominated non-monetary policy portfolio** (EUR portfolio) **under the TCFD category 'Metrics and targets'**, which describes the carbon impact of the EUR portfolio.

In future years, the disclosures could be developed in line with new standards in climate-related reporting, improvements in the quality and availability of relevant data, and the practical experience gained.

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

2 Metrics and targets

Eurosystem NCBs' annual climate-related disclosures cover at a minimum the following climate metrics: weighted average carbon intensity; total carbon emissions; and carbon footprint. These must be reported at least for euro-denominated non-monetary policy portfolios. NCBs may themselves decide to extend this minimum framework, for example to include additional metrics or other portfolios. There must also be at least one broadly defined long-term target that is aligned with the objectives of the Paris Agreement and the EU's climate neutrality objectives. NCBs are encouraged to set additional climate-related targets.

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). GHG emissions are expressed in tonnes of carbon dioxide equivalent (tCO_2e). This measure compares the emissions of various greenhouse gases according to their global warming potential, by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.[7]

GHG emissions are the main input in the calculation of climate-related metrics, and they are measured as sum of direct GHG emissions (Scope 1) and indirect GHG emissions from the purchased energy (Scope 2) for the purpose of the climate-related disclosures. Sovereign issuers' GHG emissions may be reported in different ways, whether on the basis of a production-based, consumption-based or government-based approaches. These approaches are based on following types of emissions:

- **Production emissions** are all emissions produced domestically, within a country's physical borders, including 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.
- **Consumption emissions** are all emissions related to domestic demand and account for trade effects. This metric provides a broader view of a sovereign's emissions and tackles the issue of carbon leakage that arises due to production shifts from countries where goods are consumed later.
- **Government emissions** are the central government's direct emissions (e.g. from buildings, vehicles) and indirect emissions (e.g. emissions related to energy consumption, as well as expenditures, subsidies, and investments).

The methodology of the climate-related disclosures addresses the double counting of emissions to the extent possible. However, double counting of emissions remains an unavoidable element of climate-related reporting.

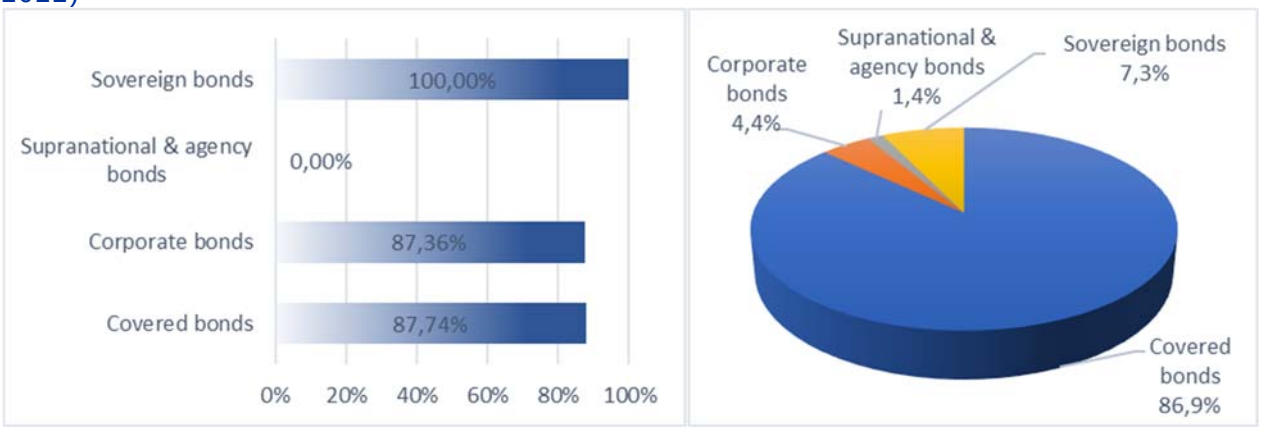
Obtaining relevant GHG emission data is a crucial aspect of any disclosure. These data are available directly from the issuers' reports or from third-party providers' databases. NBS uses the services of two data providers, **Institutional Shareholder**

[7] For more information, see: Eurostat – Statistics Explained.

Services (ISS) and **Carbon4 Finance** (C4F), which either gather reported data or model missing GHG emission data. The main challenge is to ensure that the GHG emission data coverage is as high as possible for all holdings in the portfolio. Chart 1 shows that data coverage in 2022 was very high for all asset classes other than supranational and agency (SA) bonds, the asset class with the lowest share of the portfolio (1.4%).

Chart 1

Data coverage (bar chart) and asset class composition (pie chart) of EUR portfolio holdings (2022)



Sources: ISS, C4F, and NBS calculations.

2.1 Metric definitions

The Eurosystem's common joint disclosures include at least the following metrics, whose technical details are summarised in Tables 1 – 3 in the Annex:

a) **The metric of weighted average carbon intensity** (WACI) measures a portfolio's exposure to carbon-intensive issuers. The carbon intensity of each issuer is computed by normalising their GHG emissions according to a measure of economic activity. The portfolio's WACI is then calculated by weighting the carbon intensity of each issuer by their respective share of holdings in the portfolio. Data normalisation, high data coverage and widespread application across the financial industry ensure comparability across portfolios and time. WACI delivers an 'outside-in-perspective' (i.e. financial materiality) and serves as a proxy for portfolio exposure to transition risks.

b) **The metric of total carbon emissions** (TCEs) measures the carbon emissions associated with a portfolio and it is expressed in tonnes of CO_2e. The issuer's emissions are weighted by the investment contribution to the corporate's enterprise value including cash (EVIC) or to the sovereign issuer's gross domestic product in terms of purchasing power parity (GDP at PPP). It provides an 'inside-out-perspective' (i.e. environmental materiality), which serves as proxy for a portfolio's environmental footprint. Due to its non-normalised nature, the metric's comparability across portfolios and time is limited. This metric is sensitive to portfolio size, hence should be supplemented by the carbon footprint metric.

c) **The metric of carbon footprint** (CF) normalises the TCE metric value by portfolio size and is expressed in tonnes of CO_2e per € millions invested. Unlike TCEs, the carbon footprint enables comparability across portfolios and time.

All three TCFD-recommended metrics benefit from a standardised methodology and are widely used in climate-related reporting across the financial sector. Normalised metrics (such as the weighted average carbon intensity and carbon footprint) and absolute metrics (such as total carbon emissions) complement each other and, in combination, provide a high degree of transparency regarding portfolios' exposure to climate risks and their climate impact.

In general, all data on securities holdings, GHG emissions and financial data included in the metrics' calculation 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. Due to these limitations, there is a mixing of reference dates in the most recent year or, in the case of sovereign bonds, in all years. This discrepancy will be corrected in the next climate-related disclosure reports once the data become available.

Going beyond the scope of minimum disclosures, NBS has decided to disclose its exposure to **green and sustainability bonds** – innovative financial instruments with positive environmental benefits. Green bonds fund climate-related projects, while the proceeds of sustainability bonds are used exclusively to finance a combination of environmental and social projects. It must be noted that these securities do not impact carbon metric results, as GHG emissions are reported at the issuer level and do not differ from the type of issued security.

2.2 Metric results

The above-described metrics are disclosed by NBS for its EUR portfolio, the size of which fluctuates over time depending on the investment opportunities in the financial market, as is shown by Chart 2. From 2020 the total value decreased by almost 40% due to an unfavourable situation in the financial market. A feature of all years is that covered bonds account for the largest share of the portfolio (86.9% in 2022). In 2021 the shares of sovereign bonds and supranational and agency bonds in the portfolio increased compared with the previous year, to 21.4% and 2.7% respectively; in 2022 their shares decreased to 7.3% and 1.4%.

Chart 2
Evolution of the EUR portfolio's total market value (€ millions) and asset composition (percentages) for the years 2020 to 2022

Source: NBS calculations.

All climate-related metrics of the EUR portfolio are calculated and reported:

- at the **asset class level** (sovereign and sub-sovereign bonds, supranational and agency bonds, corporate bonds, covered bonds). In addition, there are three separate approaches for addressing sovereign emissions: production-based, consumption-based, and government-based. Given this variability, all metrics are consolidated at the levels of sovereign issuers and non-sovereign issuers;
- for the **most recent year (2022) and two previous years (2021 and 2020)** (see Table 4 and Table 5 in the Annex).

Chart 3 shows the evolution of climate-related metrics (WACI, TCE, CF), with each shown in two separate panels for sovereign issuers and non-sovereign issuers, since sovereign issuers are more carbon intensive.

In the case of **sovereign issuers**, the most significant data gap is due to the different time of publication of individual data. During the entire monitored period, the most recent available GHG data were for 2019 or 2020, while, in accordance with the methodology, the normalisation data (GDP at PPP, population, total consumption expenditure) changed depending on the relevant year and data availability.

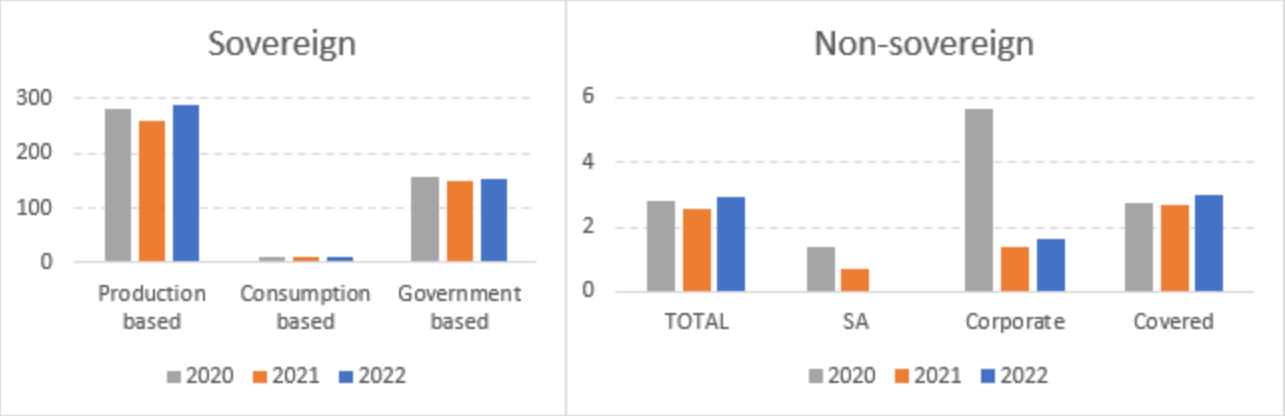
- In 2021, the volume of sovereign bonds increased by 34%, which was reflected in an increase in the TCE metric for all three approaches. On the other hand, the increase in the share of sovereign bonds with lower GHG emissions, together with a slight increase in the normalisation factors, had a downward impact on the WACI metric. The increase in the position of less carbon-intensive sovereign issuers also contributed to the CF decline, as the increase in the volume of all sovereign bonds was greater than the increase in TCEs.
- The year 2022 saw the maturing of three-quarters of sovereign bonds, issued by less-carbon intensive issuers. As a result, the WACI and CF metrics increased. The increase in CF was caused by a portfolio value decrease that was greater than the decrease in TCE.

In the case of **non-sovereign issuers**, covered bonds had a significant impact over the period under review. This asset class, with the highest exposure in the portfolio, is the main driver of all climate-related metrics for non-sovereign issuers.

- The volume of the portfolio was significantly lower in 2021 than in the previous year and, the presence of less carbon-intensive issuers in the portfolio had a downward impact on all climate indicators. This was most evident in the case of the portfolio-size-sensitive TCE metric, as its value decreased by 44%.
- The portfolio value's downtrend continued in 2022, but the presence in the portfolio of bonds issued by more carbon intensive issuers resulted in all metrics recording a year-on-year increase. But although the TCE metric was higher in 2022 than in 2021, the share of less carbon intensive issuers in the portfolio was higher than in the first year of the period under review (2020). This fact was also reflected in the CF metric, which was slightly lower in 2022 than in 2020, a result of the decrease in the TCE metric being greater than the decrease in the portfolio value during the reference period. The WACI metric rose sharply in 2022, to stand even higher than its 2020 level; the reason was that in 2022 the portfolio included bonds issued by lower-revenue issuers.

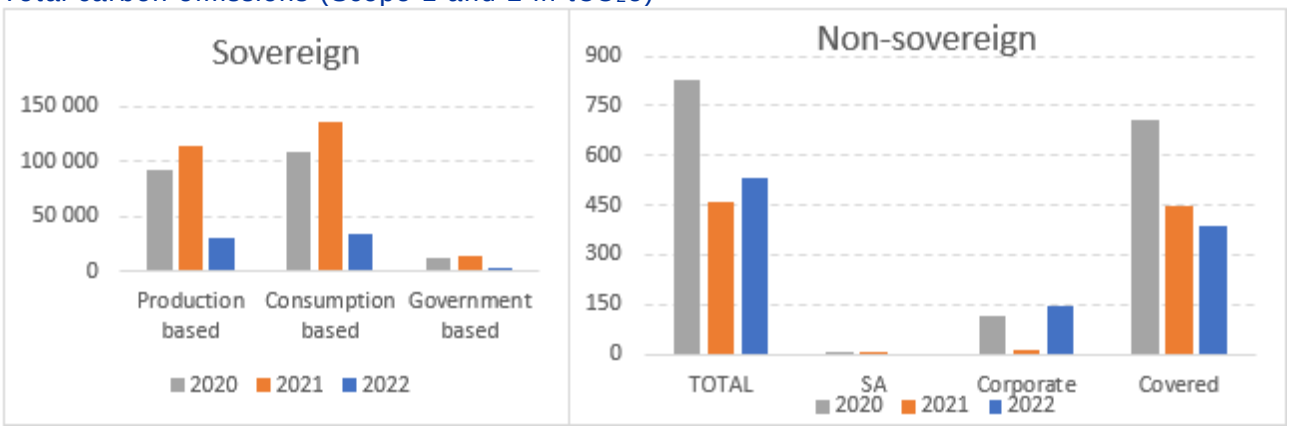
Chart 3
Evolution of minimum climate-related metrics in the EUR portfolio for the years 2020 to 2022

Chart 3.1
WACI (tCO_2e/revenues in € millions or GDP at PPP in € millions or per capita or total consumption expenditure in € millions)



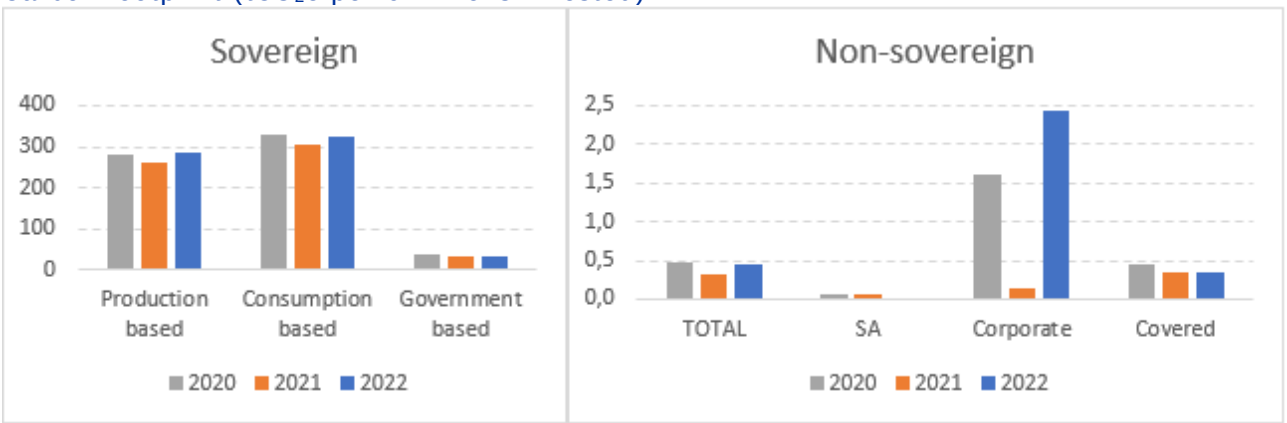
Sources: ISS, C4F, World Bank, Bloomberg, NBS calculations.

Chart 3.2
Total carbon emissions (Scope 1 and 2 in tCO_2e)



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

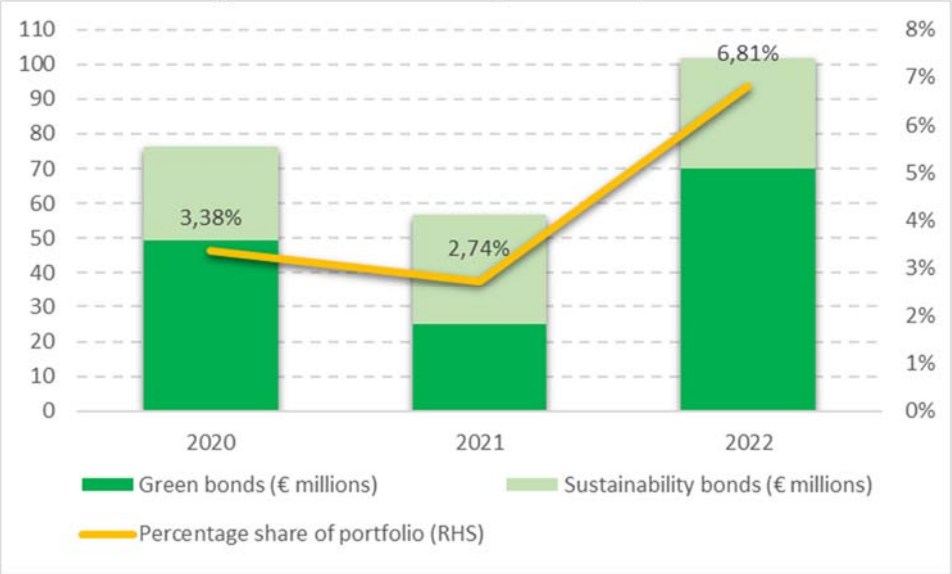
Chart 3.3
Carbon footprint (tCO_2e per € millions invested)



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

The trio of mandatory climate-related metrics is supplemented by exposure to green and sustainability bonds (Chart 4). The volume of green and sustainability bonds was 79.3% higher in 2022 (at €101.73 million) than in the previous year (€56.73 million). This significant increase was caused by investment in green bonds, whose proceeds financed mainly projects in renewable energy, green buildings and infrastructure.

Chart 4
Evolution of exposure to green and sustainability bonds in the EUR portfolio for the years 2020 to 2022 (€ millions)



Sources: Bloomberg, and NBS calculations.

2.3 Targets

NBS's **long-term target** for its euro-denominated non-monetary policy portfolio is linked to the EU's decarbonisation and carbon neutrality objectives as set out in the Paris Agreement: to hold the global average temperature increase in this century to well below 2°C above pre-industrial levels, to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, and to contribute to achieving carbon neutrality by 2050 at the latest.

3 Annexes

Table 1
Elements of the Eurosystem's common minimum disclosures and voluntarily disclosed metrics

Element	Details
Weighted average carbon intensity (in tCO_2e/revenue in € millions, or GDP at PPP in € millions, or total consumption expenditure in € millions, or per capita)	$$WACI = \sum_{n}^{i}\left(\frac{current\ value\ of\ investment_i}{current\ portfolio\ value}\right) x \left(\frac{issuer's\ GHG\ emissions_i}{\begin{array}{c}issuer's\ revenues\ in\ €\ millions, or\\ GDP\ at\ PPP\ in\ €\ millions, or\\ population, or\\ total\ consumption\ expenditure\ in\ €\ millions\end{array}_i}\right)$$ Notes: For non-sovereign issuers, the calculation uses revenue; for sovereign issuers, GDP at PPP (production approach), or population (consumption approach) or total consumption expenditure (government approach). The current value of investment is calculated using the nominal value of securities holdings.
Total carbon emissions (Scope 1 and 2 in tCO_2e)	$$TCE = \sum_{n}^{i}\left(\frac{current\ value\ of\ investment_i}{enterprise\ value\ including\ cash\ (EVIC)\ or\ GDP\ at\ PPP_i} x\ issuer's\ GHG\ emissions_i\right)$$ Notes: For non-sovereign issuers, the calculation uses EVIC; for sovereign issuers, GDP at PPP. The current value of investment is calculated using the nominal value of bond holdings.
Carbon footprint (tCO_2e per € millions invested)	$$CF = \frac{\sum_{n}^{i}\left(\frac{current\ value\ of\ investment_i}{EVIC\ or\ GDP\ at\ PPP_i}\right) x\ issuer's\ GHG\ emissions_i}{current\ portfolio\ value\ (€\ millions)}$$ Notes: For non-sovereign issuers, the calculation uses EVIC; for sovereigns, GDP at PPP. The current value of investment is calculated using the nominal value of bond holdings.
Green and sustainability bonds	Exposure to these types of bonds is expressed as nominal value according to Bloomberg classification.
Portfolio size	Portfolio size is expressed as the market value of the securities holdings in € 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 NBS's investment strategy.
Asset classes of the portfolio	Sovereign bonds, supranational and agency bonds, corporate bonds, covered bonds.
Data availability	Data availability is indicated as a percentage below each metric and asset class. If data for issuers are not available, the issuers may be mapped to their parent.
Historical data	Metric disclosures for the most recent year plus at least two previous years.

Table 2
Information on inputs for the metric calculations

Type of issuer/bond	GHG emissions (tCO_2e)	Normalisation factor	Attribution factor
Sovereign	Production emissions	GDP at PPP (€ millions)	GDP at PPP (€)
	Consumption emissions	Population (per capita)	GDP at PPP (€)
	Government emissions	Final consumption expenditure (€ millions)	GDP at PPP (€)
Supranational and agencies	Scope 1, Scope 2	Revenue (€ millions)	EVIC (€)
Corporates	Scope 1, Scope 2	Revenue (€ millions)	EVIC (€)
Covered bonds	Scope 1, Scope 2	Revenue (€ millions)	EVIC (€)

Table 3

Source of data used in the metric calculations

Data	Source
GHG emissions	ISS and C4F. Reported data from ISS are preferred; if they are not available, data from C4F are used, and if data from C4F are not available, modelled data are used.
The sovereign's GDP at PPP, population, total consumption expenditure	The World Bank
Enterprise value including cash (EVIC)	ISS; if not available, then EVIC or total assets from Bloomberg
Revenue	ISS; if not available, then Bloomberg
Green and sustainability bond indicators	Bloomberg

Table 4

Climate-related TCFD metrics in the euro-denominated non-monetary policy portfolio as at end-2022

2022	Sovereign			Non-sovereign			
	Sovereign and sub-sovereign bonds			TOTAL	Supranational and agency bonds	Corporate bonds	Covered bonds
	Production	Consumption	Government				
Portfolio size (€ millions)	102,43			1 308.70	20.08	62.01	1 226.61
WACI (tCO_2e/ revenue in € millions or GDP at PPP in € millions or per capita or total consumption expenditure in € millions)	286.28	12.48	152.02	2.95	0.00	1.66	3.02
Coverage	*100.00%*	*100.00%*	*100.00%*	*86.46%*	*0.00%*	*87.36%*	*87.74%*
Total carbon emissions (Scope 1 & 2 in tCO_2e)	30 059.97	34 222.87	3 303.08	534.74	0.00	146.71	388.03
Coverage	*100.00%*	*100.00%*	*100.00%*	*86.46%*	*0.00%*	*87.36%*	*87.74%*
Carbon footprint (tCO_2e per € millions invested)	286.29	325.93	31.46	0.45	0.00	2.45	0.34
Coverage	*100.00%*	*100.00%*	*100.00%*	*86.46%*	*0.00%*	*87.36%*	*87.74%*
Green and sustainability bonds (€ millions)	*0.00*			*101.73*	*0.00*	*0.00*	*101.73*

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

Note: The percentages below the metrics represent data availability, calculated as the percentage of investments (i.e. nominal value of investments / nominal value of portfolio) for which all required data (i.e. emissions data and financial data) are available.

Table 5

Climate-related TCFD metrics of the euro-denominated non-monetary policy for the years 2020 to 2022

	Sovereign			Non-sovereign			
	Sovereign and sub-sovereign bonds			TOTAL	Supranational and agency bonds	Corporate bonds	Covered bonds
	Production	Consumption	Government				
Portfolio size (€ millions)							
2022	102.43			1 308.70	20.08	62.01	1 226.61
2021	448.52			1 646.02	56.89	143.30	1 445.84
2020	330.65			1 972.64	47.15	160.06	1 765.42
WACI (tCO_2e/ revenue in € millions or GDP at PPP in € millions or per capita or total consumption expenditure in € millions)							
2022	286.28 *100.00%*	12.48 *100.00%*	152.02 *100.00%*	2.95 *86.46%*	0.00 *0.00%*	1.66 *87.36%*	3.02 *87.74%*
2021	260.02 *100.00%*	11.42 *100.00%*	151.06 *100.00%*	2.55 *87.25%*	0.72 *57.05%*	1.37 *54.64%*	2.66 *91.67%*
2020	281.97 *100.00%*	11.69 *100.00%*	155.28 *100.00%*	2.81 *89.63%*	1.36 *83.92%*	5.67 *46.01%*	2.72 *93.79%*
Total carbon emissions (Scope 1 & 2 in tCO_2e)							
2022	30 059.97 *100.00%*	34 222.87 *100.00%*	3 303.08 *100.00%*	534.74 *86.46%*	0.00 *0.00%*	146.71 *87.36%*	388.03 *87.74%*
2021	115 060.65 *100.00%*	135 519.69 *100.00%*	14 709.53 *100.00%*	460.46 *87.25%*	1.88 *57.05%*	11.41 *54.64%*	447.18 *91.67%*
2020	92 908.09 *100.00%*	109 115.17 *100.00%*	11 734.58 *100.00%*	828.73 *89.63%*	2.70 *83.92%*	117.03 *46.01%*	709.00 *93.79%*
Carbon footprint (tCO_2e per € millions invested)							
2022	286.29 *100.00%*	325.93 *100.00%*	31.46 *100.00%*	0.45 *86.46%*	0.00 *0.00%*	2.45 *87.36%*	0.34 *87.74%*
2021	260.02 *100.00%*	306.26 *100.00%*	33.24 *100.00%*	0.32 *87.25%*	0.06 *57.05%*	0.15 *54.64%*	0.34 *91.67%*
2020	281.97 *100.00%*	331.15 *100.00%*	35.61 *100.00%*	0.48 *89.63%*	0.07 *83.92%*	1.60 *46.01%*	0.44 *93.79%*
Green and sustainability bonds (€ millions)							
2022	0.00			101.73	0.00	0.00	101.73
2021	0.00			56.73	0.00	0.00	56.73
2020	0.00			76.35	0.00	24.35	52.00

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

Note: The percentages below the metrics represent data availability, calculated as the percentage of investments (i.e. nominal value of investments / nominal value of portfolio) for which all required data (i.e. emissions data and financial data) are available.

Abbreviations

C4F	Carbon4 Finance
CF	carbon footprint
CO_2e	carbon dioxide equivalent
COP21	21st Conference of Parties
ECB	European Central Bank
ESG	environmental, social and governance
EU	European Union
EVIC	enterprise value including cash
GHG	greenhouse gas
ISS	Institutional Shareholder Services
NBS	Národná banka Slovenska
NGFS	Network for Greening the Financial System
GDP at PPP	gross domestic product in terms of purchasing power parity
SA	supranational and agency
TCEs	total carbon emissions
TCFD	Task Force on Climate-related Financial Disclosures
WACI	weighted average carbon intensity