

BANKA
SLOVENIJE

EVROSISTEM

**Climate-related
disclosure of
Banka Slovenije's
own financial
assets**

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BANKA SLOVENIJE

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Executive Summary

This is the first report in which Banka Slovenije publishes, in line with previous decisions of the ECB's Governing Council, detailed climate-related information related to our own financial assets. It represents the first step towards increased transparency about climate-related risks and opportunities pertaining to our financial assets. Apart from being transparent, we also aim to raise public awareness and understanding of climate risks and opportunities.

We have decided to broaden the disclosure framework set at the Eurosystem level. The common Eurosystem disclosure framework was developed in collaboration among all Eurosystem members, taking into account recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) of the Financial Stability Board (FSB). Banka Slovenije has decided to disclose climate-related information relating to our entire financial assets. Moreover, we decided to disclose backward- and forward-looking metrics and five years of historical data. We are also disclosing information on all four elements recommended by the TCFD, namely Governance, Strategy, Risk Management, and Metrics and Targets.

The use of a socially responsible and sustainable investment framework in the management of our own financial assets predates the publication of this report by several years. In the last five years, we have increased our investments in green, social and sustainable bonds from less than 1% to more than 7% of our own financial assets, in line with our pre-set target. Moreover, since 2020 we have excluded specific companies from the list of eligible non-financial corporate bond issuers. Such companies include those in the tobacco and weapons sectors and those found to be involved in corruption, causing major environmental harm or breaching human rights.

In the last five years, the majority of backward-looking climate-related metrics of our own financial assets somewhat improved, while forward-looking metrics of our private sector investments show mixed results. The improvement in the backward-looking metrics was mainly due to the reduction of GHG emissions by the majority of sovereign and non-sovereign issuers in general and increased investments in non-sovereign issuers from less carbon-intensive sectors. The improvement of backward-looking metrics was even more pronounced within our EUR-denominated investments.

In line with the EU's climate neutrality strategy supporting the Paris agreement, our long-term objective is to strive to approach net-zero greenhouse gas emissions of our financial assets by 2050 as much as possible. Going forward, our aim is to gradually improve the climate-related metrics of our own financial assets in line with the renewed socially responsible and sustainable investment framework adopted in March 2023. Central banks are among the largest institutional investors. Therefore, it is important to include socially responsible factors and sustainability-linked considerations into our investment framework.

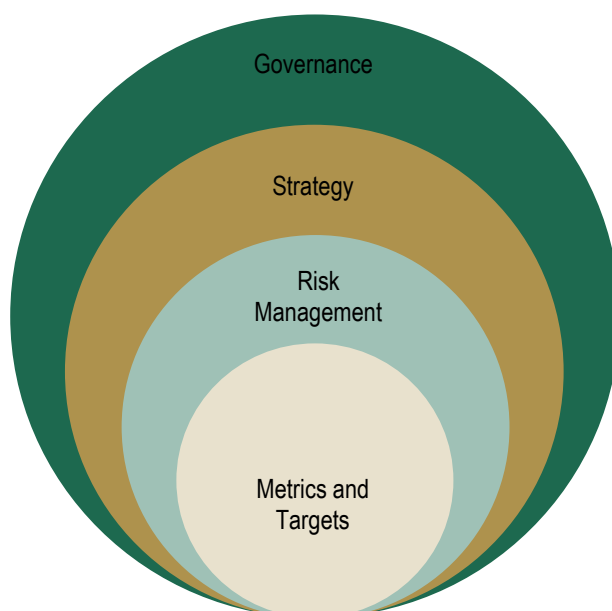
To reach our long-term objective, we decided to set two medium-term targets, to be achieved by the end of 2025. First, we plan to increase our investments in green, social and sustainable bonds to at least EUR 400 million. Second, we plan to visibly reduce the carbon footprint of our investments in the private sector issuers by considerably tightening our current criteria for excluding companies from the list of eligible non-financial corporate bond issuers and by setting carbon-lowering strategies for our other private sector investments.

In February 2021, the Eurosystem announced its aim to start climate-related disclosure for EUR-denominated non-monetary policy portfolios (NMPPs) within two years. The Eurosystem agreed to use the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) of the Financial Stability Board (FSB) as the initial framework and to report as a minimum the TCFD¹ element of Metrics and Targets.

Banka Slovenije has decided to disclose climate-related information under all four TCFD elements, namely Governance, Strategy, Risk Management, and Metrics and Targets. In addition, we have decided to disclose several backward- and forward-looking climate-related metrics of our entire financial assets and not only of our EUR-denominated NMPPs (see “Metrics and Targets” section for further information). We have also decided to report five years of historical data.

This report covers Banka Slovenije’s own financial assets only.

Figure 1: **Four core elements of TCFD climate-related disclosure recommendations**



Source: TCFD.

This report represents the first step towards increased transparency regarding climate-related risks and opportunities related to our financial assets. We aim to improve climate-related disclosures over time, in line with improving data quality. Through greater transparency of our own activities, we strive to contribute to the availability of climate data and a better overall understanding of climate risks and opportunities.

All figures used in this report are unaudited.

¹ Task Force on Climate-related Financial Disclosures (TCFD).

Banka Slovenije has adopted an integrated approach with regard to the governance of climate-related risks and opportunities. As a result, socially responsible factors and sustainability-related considerations are addressed within our existing governance framework related to the management of our own financial assets.

Our Governing Board is responsible for the adoption of high-level guidelines related to management of our own financial assets, including those related to the currency and asset class structure. The structure of our own financial assets is determined on the basis of strategic asset allocation, taking into account all constraints by optimising the expected return, while keeping quantitatively expressed financial risks at an acceptable level. The strategic asset allocation is approved annually by the Governing Board at the proposal of the Investment Committee. The Governing Board is also responsible for setting the investment objective, i.e. strengthening Banka Slovenije's capital over the medium term, thereby helping to ensure our financial independence in performing central banking tasks. While meeting this objective, we also strive for socially responsible and sustainable investing.

In oversight of management of our own financial assets, including the oversight of climate-related risks and opportunities, Banka Slovenije's Governing Board is supported by the Investment Committee, which continuously monitors the asset management process and meets, in principle, on a monthly basis. The Investment Committee is responsible for setting more specific asset management criteria, taking into account the Governing Board's high-level asset management guidelines. The Investment Committee reports to the Governing Board on a quarterly basis to ensure the monitoring of risks and returns, including those related to climate change.

Portfolio managers are responsible for managing our own financial assets in accordance with guidelines and criteria adopted by the Governing Board and Investment Committee. Portfolio managers are also responsible for the implementation of investment management strategies incorporating sustainability considerations. Risk managers are responsible, inter alia, for monitoring, assessing and reporting the risks stemming from these financial assets, including, progressively, the risks related to climate change.

To effectively link, coordinate, and steer the work in the area of climate change within Banka Slovenije, and to cooperate with other institutions in this area, we have set up a Committee responsible for Climate Change and Green Agenda. The committee is tasked with ensuring that climate change-related content relevant to the implementation of all Banka Slovenije's tasks is addressed comprehensively and in line with our strategic goals.

Being well aware of the increasing climate-related risks and the importance of collective efforts in this area, we have taken an active role in various international groups dealing with climate change-related topics. In October 2020, we joined the Network for Greening the Financial System (NGFS), which unites numerous institutions, including central banks, other banking supervisors and international financial institutions.

Banka Slovenije is well aware of the importance of understanding, anticipating and adapting to the implications of climate change and of the impact of the transition towards a more sustainable economy on future economic and financial outcomes. In recent years, therefore, we have been continuously developing our socially responsible and sustainable investment framework, with the aim of actively contributing to the transition to a low-carbon economy.² Beyond adapting our own behaviour, we also wish to raise public awareness and understanding regarding climate risks and opportunities. We are also striving to improve the quality and transparency of disclosed climate-related information.

In March 2023, we have adopted a renewed socially responsible and sustainable investment framework. In line with the EU's 2050 long-term strategy supporting the Paris agreement, we decided to contribute our share by striving to approach net-zero greenhouse gas (GHG) emissions of our own financial assets by 2050 as much as possible.

To achieve our long-term goal, we set two medium-term targets. By the end of 2025, we plan to further increase our investments in green, social and sustainable bonds (together referred to as thematic bonds) to at least EUR 400 million from the current approximately EUR 280 million. By doing so, we plan to provide additional financing for projects that actively contribute to the decarbonisation of the economy and to the general improvement of people's socio-economic situation. By the end of 2025, we also intend to visibly reduce the carbon footprint of our investments in the private sector issuers, i.e. corporate bonds (financial and non-financial), covered bonds and equities. In 2023, we plan to focus on our non-financial corporate bonds portfolio, where we currently follow the exclusion list of issuers of one of the world's largest pension funds, operated by Norges Bank Investment Management (NBIM). We have decided to considerably tighten the criteria for excluding companies from the list of eligible issuers by following the EU Paris-aligned benchmark recommendations as much as possible.³ By following these recommendations, we will discontinue investing in carbon-intensive companies, while companies from the tobacco and weapons⁴ sectors will continue to be excluded. Additionally, we plan to gradually divest our investments in such issuers by the end of 2025.

In 2024 and 2025, we plan to focus also on setting carbon footprint-lowering strategies for our other private sector investments, i.e. financial corporate bonds, covered bonds and equities. A detailed description of our long-term goal, medium-term targets and strategies can be found in the "Metrics and Targets" section.

² In this report, the expressions "carbon" and "greenhouse gas" are used interchangeably, both expressions meaning all greenhouse gases.

³ As stated in the Article 12 of the Commission delegated regulation (EU) 2020/1818 of 17 July 2020, supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards minimum standards for EU Climate transition benchmarks and EU Paris-aligned benchmarks.

⁴ Companies involved in the production of cluster munitions, landmines, chemical and biological weapons, and nuclear weapons.

Banka Slovenije's own financial assets are exposed to climate-related risks, which might lead to adverse financial outcomes in the event of a gradual change in risk factors or a climate shock. Climate-related risks are commonly distinguished into transition and physical risks. Transition risks concern the likelihood and impact of the economic consequences of the transition to a carbon-neutral economy. Physical risks, by contrast, concern the likelihood and impact of severe weather events or natural disasters occurring as a consequence of climate change.

Banka Slovenije is in the process of integrating the identification, assessment and management of our own financial assets' exposure to long-term climate-related risks into our risk management framework. For that purpose, the Eurosystem central banks have jointly identified common data sources which will be used to incorporate climate-related risks into the risk management framework. Climate-related risks are being integrated into the risk management process using a bottom-up approach, where climate risks do not form a new category of risk, but are rather an amplifying factor of existing financial risks such as credit and market risks.

Metrics and Targets

This section presents Banka Slovenije's first disclosure of climate-related metrics and targets for our own financial assets, which sum to approximately EUR 3.8 billion as of 31 December 2022. The calculations and disclosures follow the recommendations of the TCFD and the Partnership for Carbon Accounting Financials⁵ (PCAF) to the extent possible.⁶

5.1 Targets

Long-term target

Setting a long-term climate target, supplemented with one or more medium-term targets, is an essential step towards creating an efficient socially responsible and sustainable investment framework. These targets reflect our commitment to reduce our own financial assets' exposure to climate-related risks and their carbon footprint.

The Paris climate agreement, ratified in 2016 by members of the UNFCCC,⁷ sets out a global framework for combating climate change. The primary goal of the Paris agreement is to keep the average global temperature rise in this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C. Achieving this target requires significant reductions in GHG emissions globally. Climate experts, such as the IPCC,⁸ estimate that countries should achieve net-zero GHG emissions by 2050 to achieve the goal.

In line with the EU's climate neutrality strategy supporting the Paris agreement, our long-term objective is to strive to approach net-zero GHG emissions of our own financial assets by 2050 as much as possible.

Central banks are among the largest institutional investors. It is therefore important to include social responsibility factors and sustainability-linked considerations in our investment framework, thus increasing the public awareness of the importance of reducing GHG emissions and setting ambitious environmental objectives.

Nevertheless, the primary responsibility for improving environmental standards and combating global warming to achieve net-zero GHG emissions by 2050 lies with fiscal authorities rather than with investors. In fact, the most effective and efficient incentive to reduce GHG emissions is setting a price for these emissions, by means either of a carbon tax or of a trading scheme encompassing all carbon emissions. The decarbonisation of our own financial assets will also depend on the success in the reduction of GHG emissions by issuers within our investment universe. The higher the share of eligible issuers that reach their net-zero targets, the higher the probability that investors (including Banka Slovenije) will be able to meet their (or our) long-term targets (e.g. net-zero GHG emissions by 2050).

⁵ Partnership for Carbon Accounting Financials (PCAF).

⁶ Banka Slovenije is aware of data quality challenges as environmental data have been systematically collected only in the past few years. To mitigate and minimise data quality challenges, we will monitor, critically assess and over time possibly revise disclosed metrics and our environmental targets. Nevertheless, despite any data deficiencies, we believe that the benefits from promoting transparency and commitments regarding climate risks outweigh any limitations arising from data quality challenges.

⁷ United Nations Framework Convention on Climate Change.

⁸ Intergovernmental Panel on Climate Change.

Medium-term targets

To achieve our long-term target, we set two medium-term objectives, to be achieved by the end of 2025. First, we plan to increase our investments in green, social and sustainable bonds to at least EUR 400 million. Second, we plan to visibly reduce the carbon footprint of our investments in the private sector issuers, i.e. financial and non-financial corporate bonds, covered bonds and equities.

Increasing our investments in green, social and sustainable bonds

Over the last five years, we have increased our investments in green, social and sustainable bonds to almost EUR 280 million. By the end of 2025, we plan to further increase our investments in such bonds to at least EUR 400 million. By doing so, we will provide additional financing for projects that contribute to the decarbonisation of the real economy and to the general improvement of people's socio-economic situation. We plan to review the target by the end of 2025.

Investing in green, social and sustainable bonds is and will continue to be applied across all fixed-income asset classes that we invest into, i.e. sovereign, sub-sovereign, supranational, agency and corporate bonds.

Reducing the carbon footprint of our investments in the private sector issuers

We plan to visibly reduce the carbon footprint of our own investments in the private sector issuers by focusing first on our investments in non-financial corporate bonds. As part of investing in such bonds, we are currently following the exclusion list of NBIM. Companies in the tobacco and weapons sectors and companies engaged in coal mining and in electricity generation using thermal power stations are excluded from the list of eligible issuers. Companies found to be involved in corruption and companies causing major environmental harm or breaching human rights are also excluded. In 2023, we have decided to update and considerably tighten the criteria for excluding companies from the list of eligible issuers by following EU Paris-aligned benchmark recommendations as much as possible, taking also into account data quality and availability. By following these recommendations, we will discontinue investing in carbon-intensive companies which earn more than (i) 10% of their revenue from fossil fuels in general, (ii) 1% of their revenue from coal operations, (iii) 10% of their revenue from oil operations, (iv) 50% of their revenue from natural gas operations, or (v) 50% of their revenue from the generation of electricity from fossil fuels with a GHG intensity above 100g CO₂e/kWh. Additionally, we will discontinue investing in companies from carbon intensive sectors that do not report these data. Moreover, companies from the tobacco and weapons sectors will continue to be excluded. Besides discontinuing investing in excluded non-financial corporate bond issuers, we also plan to gradually divest our investments in such issuers by the end of 2025.

In 2024 and 2025, we plan to focus on setting carbon footprint-lowering strategies for our other private sector investments, i.e. financial corporate bonds, covered bonds and equities. We plan to reduce the carbon footprint of our equity holdings by switching from global market capitalisation-oriented Exchange traded funds (ETFs) to low-carbon ETFs. We plan to introduce carbon footprint-lowering strategies also for our investments in financial corporate bonds and covered bonds (e.g. the exclusion of inappropriate issuers and favouring issuers with lower GHG emission intensities and/or more ambitious climate targets). However, the plans presented are highly dependent on the quality and availability of suitable climate data for these asset classes.

5.2 Metrics

We have decided to disclose several backward-looking and forward-looking climate-related metrics of our entire financial assets. We are disclosing the following four backward-looking metrics: (i) Weighted average carbon intensity (WACI), (ii) Total carbon emissions (TCE), (iii) Carbon footprint, and (iv) Carbon intensity. In general, the higher (increasing) the value of disclosed backward-looking metrics, the higher (deteriorating) the portfolios' carbon footprint. Moreover, we have also decided to disclose the following three forward-looking metrics, which are available only for private sector issuers: (i) GHG emission reduction targets, (ii) Temperature score, and (iii) Carbon risk rating. In general, the higher (increasing) the exposure to issuers committed to global climate and temperature goals, the higher (improving) the portfolios' alignment with the climate goals of the Paris agreement. Furthermore, the higher (increasing) the Carbon risk rating, the higher (improving) the portfolios' preparedness for the transition to the low-carbon economy. In addition to the above-mentioned backward- and forward-looking metrics, we will continue to disclose the amount of our investments in green, social and sustainable bonds.

Various climate-related metrics provide an assessment from different but complementary perspectives on whether current and planned issuers' GHG emissions are consistent with climate-related targets. A detailed description of all disclosed metrics is presented in Annex 3.

GHG emissions are measured and expressed in tons of CO₂ equivalent⁹ (tCO₂e) and usually reported under three scopes (Scopes 1, 2 and 3), as defined by the most commonly used global standard, the GHG Protocol.¹⁰ Our calculations of backward-looking metrics (WACI, TCE, Carbon footprint and Carbon intensity) are based on the sum of Scope 1 and Scope 2 GHG emissions as recommended by the TCFD. In the future, we might include Scope 3 GHG emissions in our calculations as well, if and when methodologies, coverage and especially data quality improve to reduce the risk of double counting of GHG emissions.

We performed calculations of climate-related metrics using the data provided by Institutional Shareholder Services Germany AG (ISS) and Carbon4 Finance (C4F). In addition, we also obtained certain data from the World Bank, the ECB and Bloomberg.

When performing calculations of selected climate-related metrics, we try to ensure on a best-effort basis that all data (portfolio data, GHG emissions data, financial data and other data) typically refer to the same reference year. However, since a large amount of data is only available with a certain time lag (e.g. GHG emissions data and certain financial data), inputs for metrics calculations (especially for the most recent year(s)) typically refer to slightly different reference years. This means that the value of reported climate-related metrics could somewhat change in our future reports due to re-calculations of historical metrics using all the inputs (when available) for the same reference year.

⁹ Carbon dioxide equivalent (or CO₂ equivalent) is a metric measure used to compare the emissions of various greenhouse gases on the basis of their global warming potential (GWP) by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

¹⁰ Scope 1: Direct GHG emissions from owned or controlled sources (e.g. GHG emissions in the goods manufacturing process, use of company vehicles, etc.). Scope 2: Indirect GHG emissions from the generation of purchased and consumed energy (e.g. electricity, steam, heating, cooling). Scope 3: All other indirect GHG emissions not included in Scope 2 that occur in the value chain of the reporting company, including both upstream and downstream GHG emissions (e.g. business travel, waste disposal, consumption of goods, investments).

All tables and figures in this section refer to our total financial assets, i.e. both EUR- and non-EUR-denominated. The climate-related metrics of our EUR-denominated financial assets are summarised in Annex 2.

Table 1 shows climate-related metrics per asset class for our total financial assets as per year-end 2022 (historical data in Annex 1).

Table 1: Climate-related metrics for year-end 2022

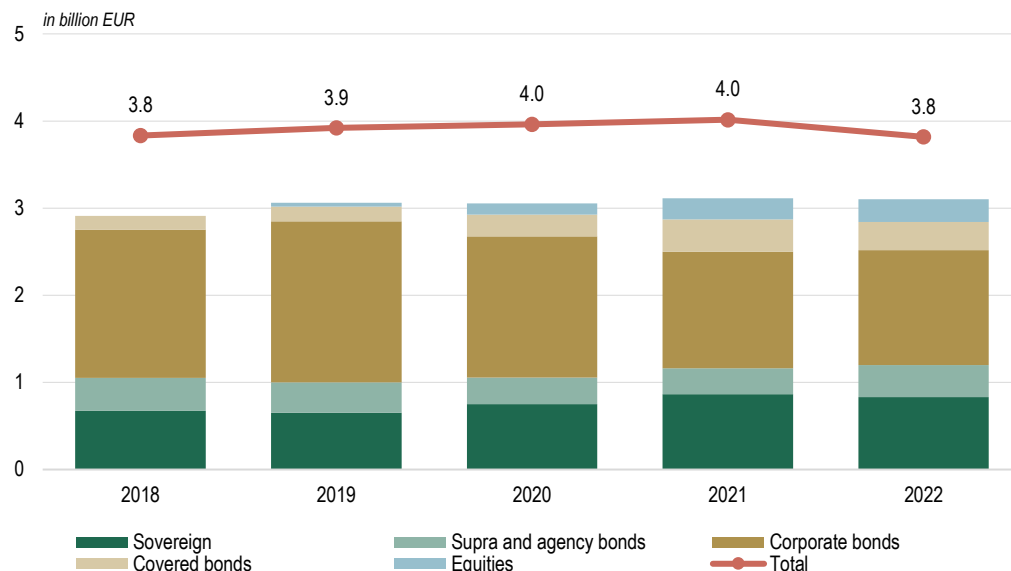
	Sovereign investments			Non-sovereign investments				
	Sovereign & sub-sovereign bonds			Total non-sovereign	Supra & agency bonds	Corporate bonds	Covered bonds	Equities
	Production	Consumption	Government					
Portfolio size (EURm)			832	2,271	366	1,320	323	261
WACI (tCO ₂ e per EURm PPP adj. GDP / population / EURm total consumption expenditure or per EURm revenue)	266 (100%)	14 (100%)	176 (100%)	68 (90%)	4 (54%)	71 (99%)	0.7 (87%)	192 (99%)
Total carbon emissions (tCO ₂ e)	239,957 (100%)	272,548 (100%)	27,099 (100%)	77,342 (89%)	18 (54%)	58,074 (97%)	34 (85%)	19,216 (99%)
Carbon footprint (tCO ₂ e per EURm invested)	266 (100%)	302 (100%)	30 (100%)	36 (89%)	0.1 (54%)	43 (97%)	0.1 (85%)	75 (99%)
Carbon intensity (tCO ₂ e per EURm PPP adj. GDP / population / EURm total consumption expenditure or per EURm revenue)	266 (100%)	13 (100%)	155 (100%)	107 (89%)	4 (54%)	98 (97%)	1.1 (85%)	209 (99%)
GHG emission reduction targets (% of investments into issuers committed to global climate goals)	-	-	-	56 % (96%)	-	62% (98%)	26% (86%)	59% (99%)
Temperature score below 2°C (% of investments)	-	-	-	90 % (96%)	-	91% (98%)	100% (86%)	76% (99%)
Carbon Risk Rating (score; % of investments)	-	-	-	60 (91%)	-	59 (97%)	70 (63%)	55 (95%)
Green, social and sustainable bonds (EURm; all asset classes)				279 (Green: 195, Social: 72, Sustainable: 12)				

Source: ISS, C4F, World Bank, Bloomberg, ECB, BS calculations.

Note: Portfolio size includes the market value of our total financial assets, excluding gold, cash and cash equivalents, as at 31 December 2022. The percentages in brackets below each metric's value indicate data availability (data coverage), calculated as the percentage of investments (i.e. market value of investments / market value of portfolio) for which all required data (i.e. GHG emissions data and financial data) is available. GHG emission reduction targets shows the percentage of investments in issuers committed to global climate goals (issuers with "Ambitious target", "Committed science-based target" (SBT) or "Approved SBT").

The historical evolution and asset class breakdown of our total financial assets is shown in Figure 2. Portfolio size remained broadly unchanged over the last five years. As per year end 2022, the portfolio (excluding gold, cash and cash equivalents) was composed of corporate bonds (43%), sovereign bonds (27%), supranational and agency bonds (12%), covered bonds (10%), and equities (8%).

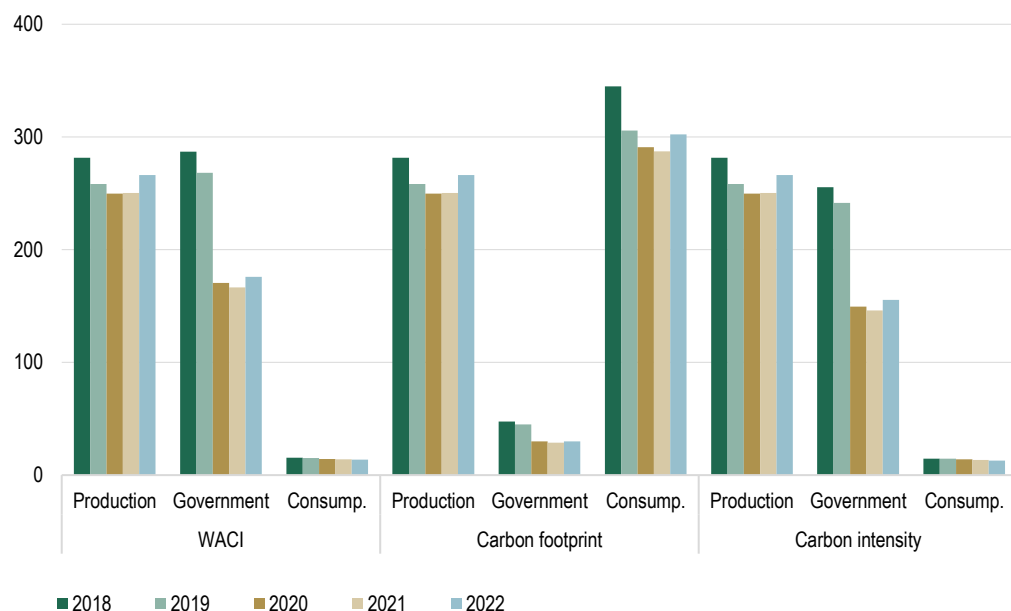
Figure 2: Historical evolution of our total financial assets



Source: BS calculations.
 Note: Total includes non-reported asset classes, such as gold, cash and cash equivalents.

Figure 3 shows the historical evolution of normalised climate-related metrics of our sovereign investments. In general, normalised backward-looking metrics¹¹ of our sovereign investments somewhat improved (decreased) over the observed period (2018–2022), which could be mainly attributed to the reduction of GHG emissions by sovereign issuers in general. Backward-looking metrics slightly deteriorated in 2022 due to a minor increase in CNY-denominated government bonds. The improvement in normalised backward-looking metrics is even more pronounced within our EUR-denominated sovereign investments (see Annex 2).

Figure 3: Evolution of selected climate-related metrics of our sovereign investments

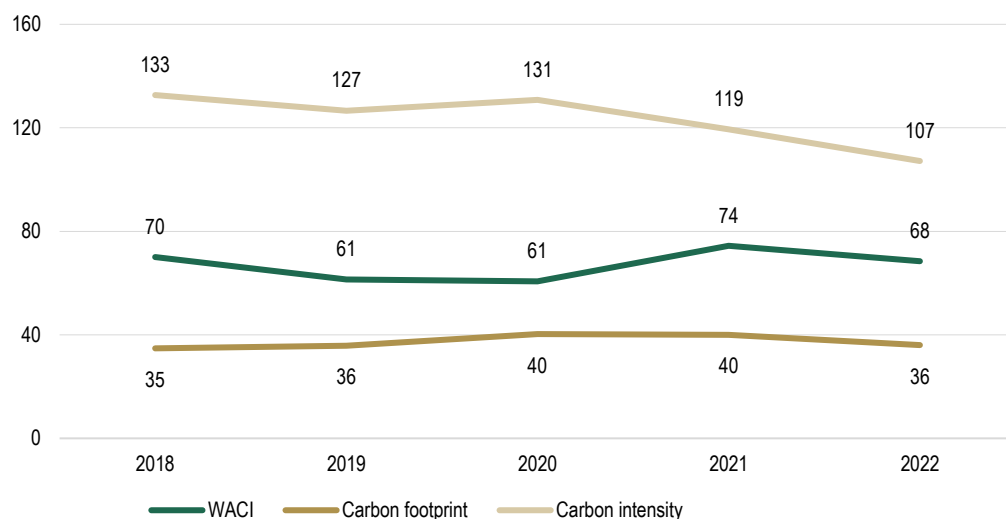


Source: ISS, C4F, World Bank, Bloomberg, ECB, BS calculations.
 Note: WACI and Carbon intensity: tCO₂e per EURm PPP adj. GDP or population or EURm total consumption expenditure. Carbon footprint: tCO₂e per EURm invested.

¹¹ Metrics for sovereign investments can be calculated using three different methods, i.e. the production, consumption or government method. The production method captures GHG emissions produced within a country. The consumption method captures GHG emissions associated with the use of goods and services consumed in a country. The government method captures only GHG emissions related to government institutions and government expenditures.

Figure 4 shows the historical evolution of the normalised climate-related metrics of our non-sovereign investments. Over the observed period, WACI and Carbon intensity of our non-sovereign investments somewhat improved (decreased), while Carbon footprint remained relatively stable. The improvement in WACI and Carbon intensity is mainly a consequence of the increased investments in non-sovereign issuers from less carbon-intensive sectors and the reduction of GHG emissions by non-sovereign issuers in general. The improvement in normalised backward-looking metrics is even more pronounced within our EUR-denominated non-sovereign investments (see Annex 2).

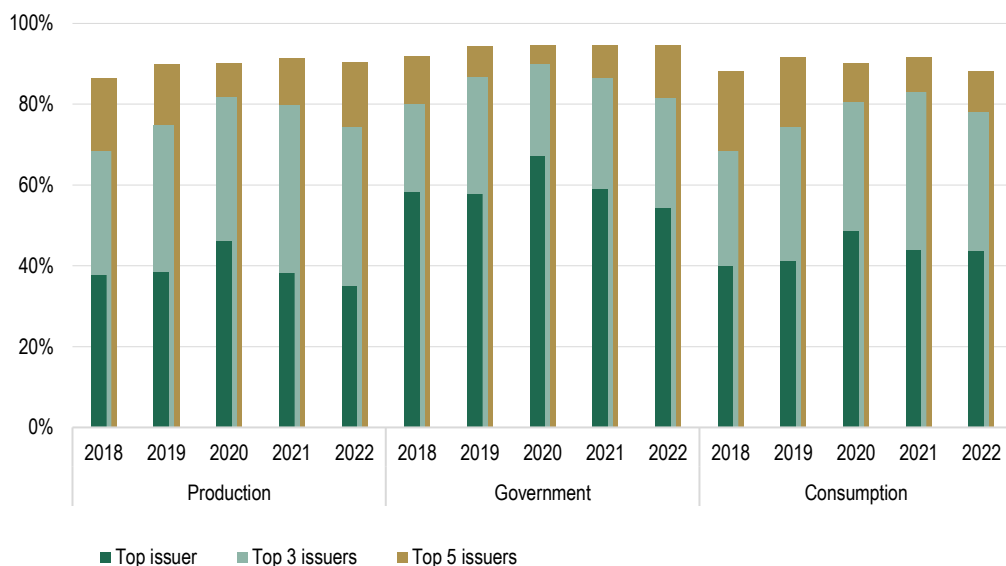
Figure 4: Evolution of selected climate-related metrics of our non-sovereign investments



Source: ISS, C4F, World Bank, Bloomberg, ECB, BS calculations.
 Note: WACI and Carbon intensity: tCO₂e per EURm revenue. Carbon footprint: tCO₂e per EURm invested.

Figure 5 shows that the share of the sovereign bond issuer contributing the most to WACI of our sovereign investments was relatively stable over time and amounted to roughly 40–60% (depending on the method). On the other hand, the contribution of sovereign bond issuers contributing second and third most to WACI somewhat increased over the observed period, from around 27% in 2018 to around 34% in 2022 (average contribution of all three methods).

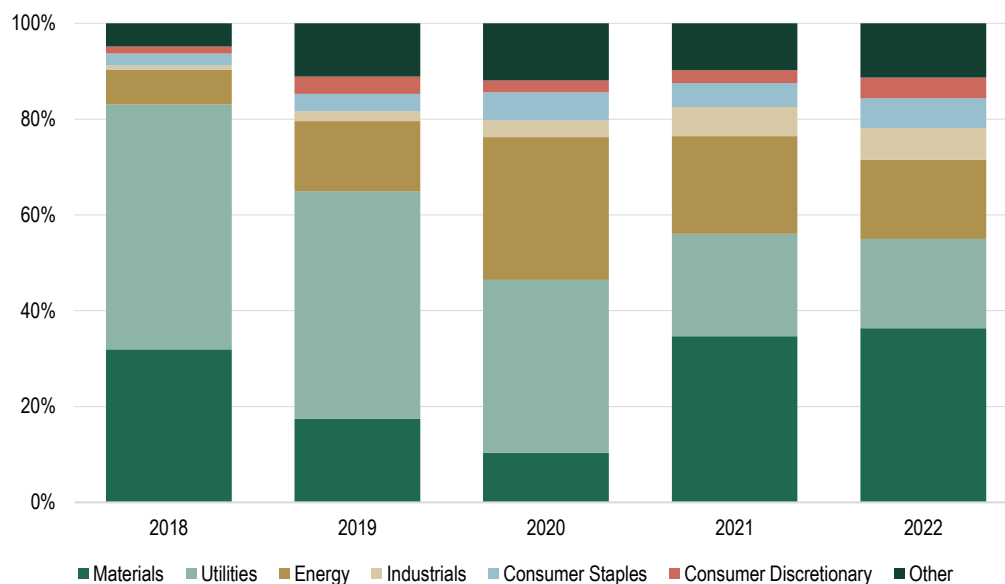
Figure 5: Contributions to the WACI of our sovereign investments



Source: ISS, C4F, World Bank, Bloomberg, ECB, BS calculations.

Figure 6 shows sector contributions to WACI of our non-sovereign investments. Over the observed period, the three most carbon-intensive sectors (i.e. Materials, Utilities and Energy) jointly contributed between 70% and 90% to WACI of our non-sovereign investments.

Figure 6: **Sector contributions to the WACI of our non-sovereign investments**



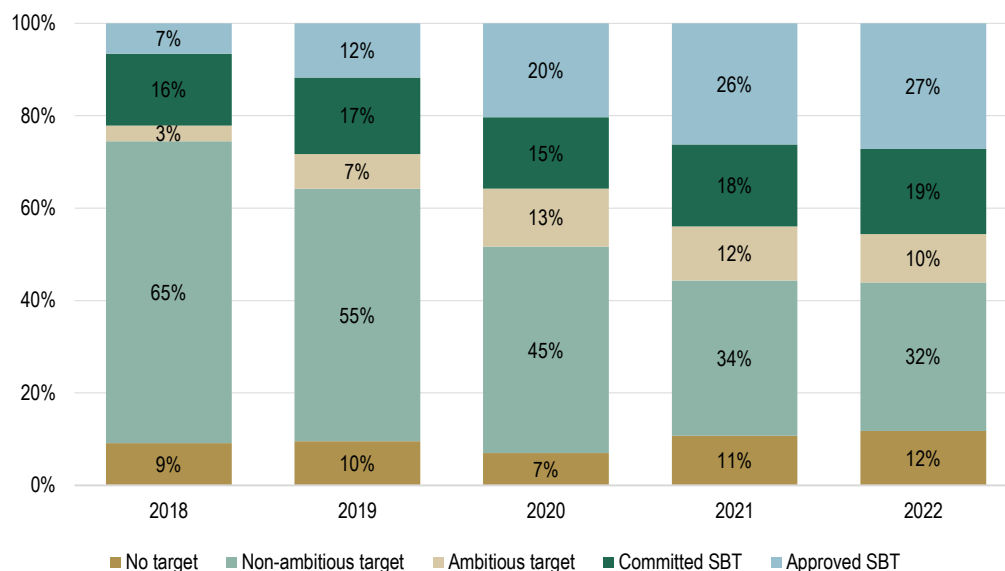
Source: ISS, C4F, World Bank, Bloomberg, ECB, BS calculations.

In addition to disclosing the above metrics, we have decided to also disclose several climate-related metrics that are available only for private sector issuers, i.e. equities, corporate bonds and covered bonds. These metrics are GHG emission reduction targets, Temperature score and Carbon risk rating. Moreover, we will continue to disclose the amount of investments in green, social and sustainable bonds.

Based on the ISS's GHG emission reduction targets data, Figure 7 gives an indication of how well our investments in the private sector issuers (corporate bonds, covered bonds and equities) are aligned with global climate goals. The share of investments in issuers that have committed to achieving global climate goals has increased from 26% in 2018 to 56% in 2022. The ISS considers issuers with "Ambitious target", "Committed SBT"¹² and "Approved SBT" as those committed to global climate goals.

¹² Science-based targets (SBT) provide a clearly defined pathway for companies to reduce GHG emissions, helping prevent the worst impacts of climate change and ensuring business growth. Targets are considered science-based if they are in line with what the latest climate science deems necessary to meet the goals of the Paris agreement.

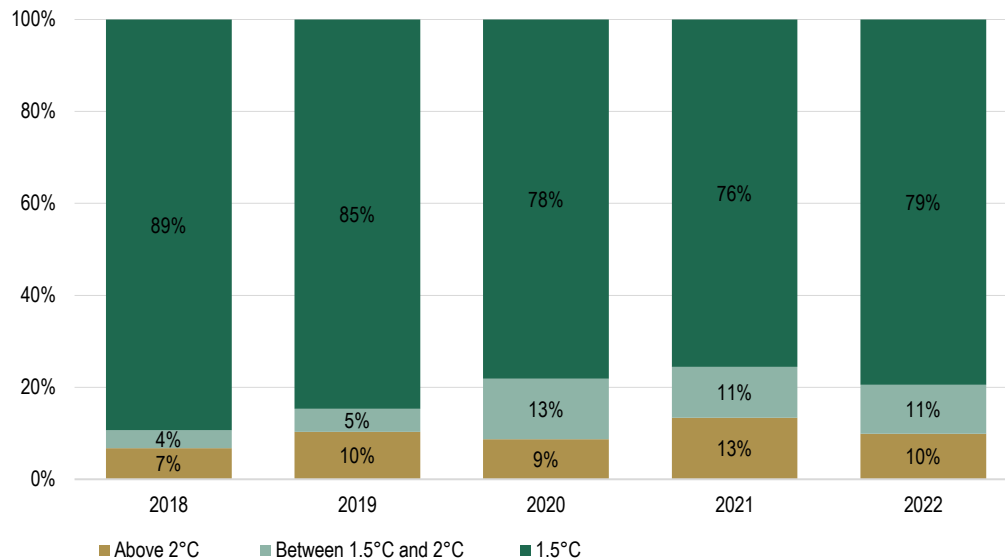
Figure 7: **GHG emission reduction targets of private sector issuers**



Source: ISS, BS calculations.

Based on the ISS’s Temperature score, Figure 8 gives an indication of how well our investments in private sector issuers are aligned with global temperature goals. The share of investments in issuers with GHG emission targets that, according to the ISS, are aligned with the SDS in 2050 somewhat decreased over the observed period but remained rather high (2018: 89%; 2022: 79%).¹³ In general, for an issuer to be labelled as aligned with the SDS in 2050, its Temperature score must fall into the category of 1.5°C.

Figure 8: **Temperature score of private sector issuers**



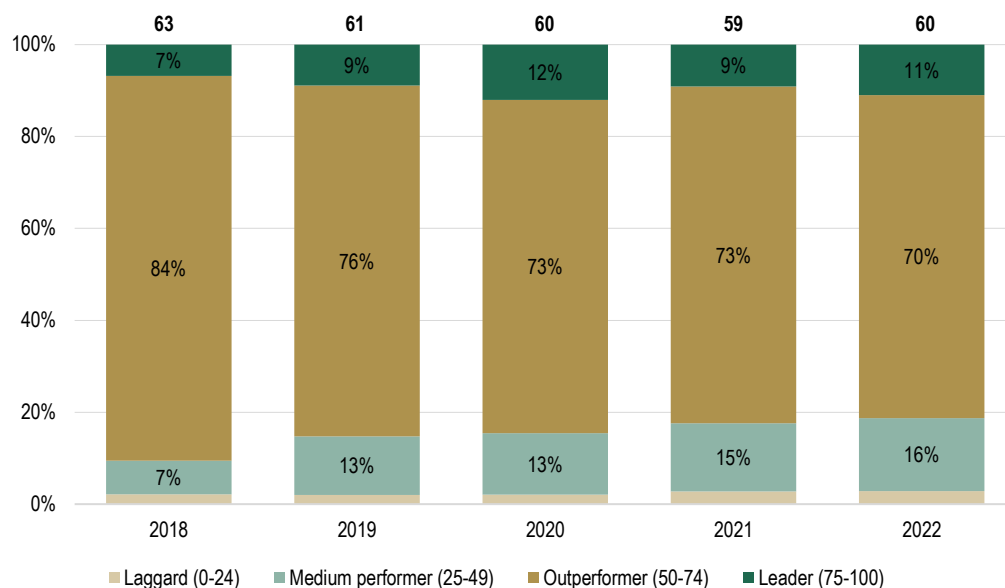
Source: ISS, BS calculations.

Based on the ISS’s Carbon risk rating, Figure 9 gives an indication of how well private sector issuers are dealing with industry-specific climate risks in their own operations and in the supply chain. The share of investments in issuers categorised as either “Out-

¹³ The Sustainable Development Scenario (SDS) pathway is fully aligned with the Paris agreement by holding the rise in global temperatures to well below 2°C and pursuing efforts to limit it to 1.5°C.

performers” or “Leaders” (Carbon risk rating above 50) slightly decreased over the observed period but remained relatively high (2018: 91%; 2022: 81%). Carbon risk rating is measured on a scale of 0 (very poor performance) to 100 (excellent performance).

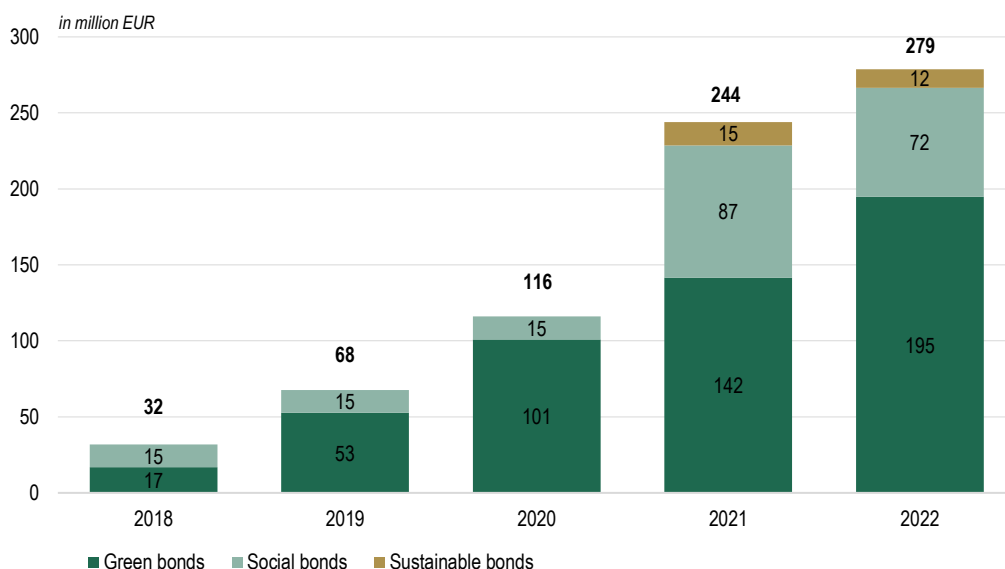
Figure 9: Carbon risk rating of private sector issuers



Source: ISS, BS calculations.

In the last five years, we have significantly increased our investments in green, social and sustainable bonds. In 2018, our investments in such bonds stood at only EUR 32 million, representing less than 1% of our own financial assets. At the end of 2022, we owned almost EUR 280 million of green, social and sustainable bonds (Figure 10), representing more than 7% of our own financial assets.

Figure 10: Investments in green, social and sustainable bonds



Source: Bloomberg, BS calculations.

Annex

Annex 1: Climate-related metrics (total own financial assets)

	Sovereign investments			Non-sovereign investments				
	Sovereign & sub-sovereign bonds			Total non-sovereign	Supra & agency bonds	Corporate bonds	Covered bonds	Equities
	Production	Consumption	Government					
Portfolio size (EURm)								
2022			832	2,271	366	1,320	323	261
2021			866	2,245	295	1,337	373	241
2020			749	2,304	305	1,622	250	126
2019			651	2,412	350	1,850	169	43
2018			673	2,238	377	1,702	158	-
WACI (tCO₂e per EURm PPP adj. GDP / population / EURm total consumption expenditure or per EURm revenue)								
2022	266 (100%)	14 (100%)	176 (100%)	68 (90%)	4 (54%)	71 (99%)	0.7 (87%)	192 (99%)
2021	250 (100%)	14 (100%)	166 (100%)	74 (92%)	4 (67%)	86 (98%)	0.9 (86%)	165 (99%)
2020	250 (100%)	14 (100%)	171 (100%)	61 (96%)	3 (91%)	67 (99%)	2.2 (79%)	184 (100%)
2019	258 (100%)	15 (100%)	268 (100%)	61 (95%)	4 (86%)	71 (100%)	0.5 (64%)	200 (99%)
2018	282 (100%)	15 (100%)	287 (100%)	70 (96%)	4 (89%)	87 (100%)	1.5 (65%)	-
Total carbon emissions (Scope 1 & 2 in tCO₂e)								
2022	239,957 (100%)	272,548 (100%)	27,099 (100%)	77,342 (89%)	18 (54%)	58,074 (97%)	34 (85%)	19,216 (99%)
2021	210,583 (100%)	241,608 (100%)	24,228 (100%)	80,194 (91%)	17 (67%)	65,061 (97%)	40 (85%)	15,076 (99%)
2020	176,401 (100%)	205,530 (100%)	21,123 (100%)	85,944 (96%)	19 (91%)	77,075 (99%)	24 (79%)	8,825 (100%)
2019	158,057 (100%)	187,086 (100%)	27,483 (100%)	79,721 (95%)	39 (86%)	76,048 (100%)	7 (64%)	3,628 (99%)
2018	180,839 (100%)	221,456 (100%)	30,428 (100%)	72,891 (96%)	77 (89%)	72,802 (100%)	13 (65%)	-
Carbon footprint (tCO₂e per EURm invested)								
2022	266 (100%)	302 (100%)	30 (100%)	36 (89%)	0.1 (54%)	43 (97%)	0.1 (85%)	75 (99%)
2021	250 (100%)	287 (100%)	29 (100%)	40 (91%)	0.1 (67%)	51 (97%)	0.1 (85%)	63 (99%)
2020	250 (100%)	291 (100%)	30 (100%)	40 (96%)	0.1 (91%)	49 (99%)	0.1 (79%)	70 (100%)
2019	258 (100%)	306 (100%)	45 (100%)	36 (95%)	0.1 (86%)	42 (100%)	0.1 (64%)	85 (99%)
2018	282 (100%)	345 (100%)	47 (100%)	35 (96%)	0.2 (89%)	43 (100%)	0.1 (65%)	-
Carbon intensity (tCO₂e per EURm PPP adj. GDP / population / EURm total consumption expenditure or per EURm revenue)								
2022	266 (100%)	13 (100%)	155 (100%)	107 (89%)	4 (54%)	98 (97%)	1.1 (85%)	209 (99%)
2021	250 (100%)	13 (100%)	146 (100%)	119 (91%)	4 (67%)	117 (97%)	1.2 (85%)	193 (99%)
2020	250 (100%)	14 (100%)	150 (100%)	131 (96%)	3 (91%)	131 (99%)	1.4 (79%)	203 (100%)
2019	258 (100%)	15 (100%)	241 (100%)	127 (95%)	4 (86%)	128 (100%)	0.7 (64%)	208 (99%)
2018	282 (100%)	15 (100%)	255 (100%)	133 (96%)	5 (89%)	138 (100%)	1.6 (65%)	-
GHG emission reduction targets (% of investments into issuers committed to global climate goals)								
2022	-	-	-	56% (96%)	-	62% (98%)	26% (86%)	59% (99%)
2021	-	-	-	56% (92%)	-	62% (93%)	27% (86%)	61% (99%)
2020	-	-	-	48% (95%)	-	50% (98%)	22% (75%)	61% (100%)
2019	-	-	-	36% (96%)	-	38% (99%)	0% (62%)	50% (99%)
2018	-	-	-	26% (95%)	-	27% (100%)	0% (42%)	-

Temperature score below 2°C (% of investments)								
2022	-	-	-	90% (96%)	-	91% (98%)	100% (86%)	76% (99%)
2021	-	-	-	87% (92%)	-	85% (93%)	100% (86%)	78% (99%)
2020	-	-	-	91% (95%)	-	91% (98%)	100% (75%)	77% (100%)
2019	-	-	-	90% (96%)	-	90% (99%)	100% (62%)	73% (99%)
2018	-	-	-	93% (97%)	-	93% (100%)	100% (62%)	-
Carbon risk rating (score; % of investments)								
2022	-	-	-	60 (91%)	-	59 (97%)	70 (63%)	55 (95%)
2021	-	-	-	59 (87%)	-	58 (92%)	69 (63%)	56 (95%)
2020	-	-	-	60 (92%)	-	60 (97%)	73 (53%)	55 (97%)
2019	-	-	-	61 (94%)	-	60 (99%)	71 (42%)	54 (96%)
2018	-	-	-	63 (95%)	-	63 (100%)	71 (42%)	-
Green, social and sustainable bonds (EURm; all asset classes)								
2022						279 (Green: 195, Social: 72, Sustainable: 12)		
2021						244 (Green: 142, Social: 87, Sustainable: 15)		
2020							116 (Green: 101, Social: 15)	
2019							68 (Green: 53, Social: 15)	
2018							32 (Green: 17, Social: 15)	

Source: ISS, C4F, World Bank, Bloomberg, ECB, BS calculations.

Note: The portfolio size includes all financial assets (EUR and non-EUR denominated), excluding gold, cash and cash equivalents. The percentages in brackets below each metric's value indicate data availability (data coverage), calculated as the percentage of investments (i.e. market value of investments / market value of portfolio) for which all required data (GHG emissions data and financial data) is available. Data for GHG emission reduction targets, Temperature score and Carbon risk rating is only available for corporate bonds, covered bonds and equities. GHG emission reduction targets shows the percentage of investments into issuers committed to global climate goals (issuers with "Ambitious target", "Committed SBT" or "Approved SBT").

Annex 2: Climate-related metrics (EUR-denominated financial assets)

	Sovereign investments			Non-sovereign investments				
	Sovereign & sub-sovereign bonds			Total non-sovereign	Supra & agency bonds	Corporate bonds	Covered bonds	Equities
	Production	Consumption	Government					
Portfolio size (EURm)								
2022			466	1,843	199	1,320	323	-
2021			547	1,898	188	1,337	373	-
2020			465	2,063	191	1,622	250	-
2019			440	2,225	206	1,850	169	-
2018			427	2,081	227	1,696	158	-
WACI (tCO2e per EURm PPP adj. GDP / population / EURm total consumption expenditure or per EURm revenue)								
2022	208 (100%)	11 (100%)	90 (100%)	56 (90%)	2.0 (33%)	71 (99%)	0.7 (87%)	-
2021	209 (100%)	12 (100%)	89 (100%)	66 (91%)	2.0 (49%)	86 (98%)	0.9 (86%)	-
2020	208 (100%)	11 (100%)	87 (100%)	56 (95%)	1.1 (86%)	67 (99%)	2.2 (79%)	-
2019	225 (100%)	13 (100%)	160 (100%)	62 (95%)	1.0 (78%)	71 (100%)	0.5 (64%)	-
2018	242 (100%)	14 (100%)	167 (100%)	75 (96%)	1.3 (87%)	87 (100%)	1.5 (65%)	-
Total carbon emissions (Scope 1 & 2 in tCO2e)								
2022	106,319 (100%)	124,927 (100%)	10,231 (100%)	58,112 (88%)	5 (33%)	58,074 (97%)	34 (85%)	-
2021	110,484 (100%)	130,582 (100%)	10,514 (100%)	65,106 (90%)	5 (49%)	65,061 (97%)	40 (85%)	-
2020	91,109 (100%)	110,346 (100%)	8,637 (100%)	77,102 (95%)	3 (86%)	77,075 (99%)	24 (79%)	-
2019	92,110 (100%)	113,967 (100%)	13,452 (100%)	76,057 (95%)	2 (78%)	76,048 (100%)	7 (64%)	-
2018	95,938 (100%)	131,133 (100%)	13,537 (100%)	72,816 (96%)	3 (87%)	72,800 (100%)	13 (65%)	-
Carbon footprint (tCO2e per EURm invested)								
2022	208 (100%)	244 (100%)	20 (100%)	33 (88%)	0.1 (33%)	43 (97%)	0.1 (85%)	-
2021	209 (100%)	247 (100%)	20 (100%)	39 (90%)	0.1 (49%)	51 (97%)	0.1 (85%)	-
2020	208 (100%)	252 (100%)	20 (100%)	41 (95%)	0.0 (86%)	49 (99%)	0.1 (79%)	-
2019	225 (100%)	278 (100%)	33 (100%)	37 (95%)	0.0 (78%)	42 (100%)	0.1 (64%)	-
2018	242 (100%)	331 (100%)	34 (100%)	37 (96%)	0.0 (87%)	44 (100%)	0.1 (65%)	-
Carbon intensity (tCO2e per EURm PPP adj. GDP / population / EURm total consumption expenditure or per EURm revenue)								
2022	208 (100%)	11 (100%)	90 (100%)	93 (88%)	2.3 (33%)	98 (97%)	1.1 (85%)	-
2021	209 (100%)	12 (100%)	89 (100%)	110 (90%)	2.1 (49%)	117 (97%)	1.2 (85%)	-
2020	208 (100%)	11 (100%)	86 (100%)	126 (95%)	0.6 (86%)	131 (99%)	1.4 (79%)	-
2019	225 (100%)	12 (100%)	160 (100%)	125 (95%)	0.6 (78%)	128 (100%)	0.7 (64%)	-
2018	242 (100%)	14 (100%)	165 (100%)	135 (96%)	0.6 (87%)	138 (100%)	1.6 (65%)	-
GHG emission reduction targets (% of investments into issuers committed to global climate goals)								
2022	-	-	-	56% (96%)	-	62% (98%)	26% (86%)	-
2021	-	-	-	55% (91%)	-	62% (93%)	27% (86%)	-
2020	-	-	-	47% (95%)	-	50% (98%)	22% (75%)	-
2019	-	-	-	36% (96%)	-	38% (99%)	0% (62%)	-
2018	-	-	-	25% (95%)	-	26% (100%)	0% (42%)	-

Temperature score below 2°C (% of investments)									
2022	-	-	-	92% (96%)	-	91% (98%)	100% (86%)	-	
2021	-	-	-	88% (91%)	-	85% (93%)	100% (86%)	-	
2020	-	-	-	92% (95%)	-	91% (98%)	100% (75%)	-	
2019	-	-	-	90% (96%)	-	90% (99%)	100% (62%)	-	
2018	-	-	-	93% (97%)	-	93% (100%)	100% (62%)	-	
Carbon risk rating (score; % of investments)									
2022	-	-	-	61 (90%)	-	59 (97%)	70 (63%)	-	
2021	-	-	-	60 (86%)	-	58 (92%)	69 (63%)	-	
2020	-	-	-	61 (91%)	-	60 (97%)	73 (53%)	-	
2019	-	-	-	61 (94%)	-	60 (99%)	71 (42%)	-	
2018	-	-	-	63 (95%)	-	63 (100%)	71 (42%)	-	
Green, social and sustainable bonds (EURm; all asset classes)									
2022							269 (Green: 185, Social: 72, Sustainable: 12)		
2021							233 (Green: 131, Social: 87, Sustainable: 15)		
2020							106 (Green: 91, Social: 15)		
2019							65 (Green: 50, Social: 15)		
2018							29 (Green: 14, Social: 15)		

Source: ISS, C4F, World Bank, Bloomberg, ECB, BS calculations.

Note: The portfolio size includes EUR-denominated financial assets, without cash and cash equivalents. The percentages in brackets below each metric's value indicate data availability (data coverage), calculated as the percentage of investments (i.e. market value of investments / market value of portfolio) for which all required data (GHG emissions data and financial data) is available. Data for GHG emission reduction targets, Temperature score and Carbon risk rating is only available for corporate and covered bonds. GHG emission reduction targets shows the percentage of investments into issuers committed to global climate goals (issuers with "Ambitious target", "Committed SBT" or "Approved SBT").

Annex 3: Description of climate-related metrics

Weighted average carbon intensity (WACI)

WACI measures a portfolio's exposure to carbon-intensive issuers. It is expressed in tons of CO₂ equivalent per EUR million of revenue (non-sovereign issuers) or per EUR million of PPP adjusted GDP / population / EUR million total consumption expenditure (sovereign issuers; production, consumption or government calculation method respectively). The TCFD recommends that asset owners report the WACI whenever possible. Calculation of WACI is straightforward, with good data coverage and intuitive interpretation, and it has application across asset classes. On the other hand, it is sensitive to outliers.

$$WACI = \sum_i^n \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \right) \times \left(\frac{\text{issuer's GHG emissions}_i}{\text{issuer's revenue}_i \text{ or } \text{PPP adj. GDP}_i, \text{ population}_i, \text{ total consumption expenditure}_i} \right)$$

Total carbon emissions (TCE)

TCE measures absolute GHG emissions associated with a portfolio. It is expressed in tons of CO₂ equivalent. Although the metric is widely applied across the financial sector, its usefulness is limited for benchmarking and comparison with other portfolios, as data is not normalised. In addition, it requires data on market capitalisation / total capital structure (non-sovereign issuers) or PPP-adjusted GDP (sovereign issuers), which might not always be available.

$$TCE = \sum_i^n \left(\frac{\text{current value of investment}_i}{\text{EVIC}_i \text{ or } \text{PPP adj. GDP}_i} \times \text{issuer's GHG emissions}_i \right)$$

Carbon footprint (CF)

Carbon footprint normalises the TCE of a portfolio by its market value. It is expressed in tons of CO₂ equivalent per EUR million invested. It allows for comparison across portfolios, regardless of portfolio size, and at different points in time. On the other hand, it requires data on market capitalisation / total capital structure (non-sovereign issuers) or PPP-adjusted GDP (sovereign issuers), which might not always be available.

$$CF = \frac{\sum_i^n \left(\frac{\text{current value of investment}_i}{EVIC_i \text{ or PPP adj. GDP}_i} \times \text{issuer's GHG emissions}_i \right)}{\text{current portfolio value}}$$

Carbon intensity (CI)

Carbon intensity measures the carbon efficiency of a portfolio. It is expressed in tons of CO₂ equivalent per EUR million of revenue (non-sovereign issuers) or per EUR million of PPP-adjusted GDP / population / EUR million total consumption expenditure (sovereign issuers; production, consumption or government calculation method respectively). Compared to Carbon footprint, it is more complex, its interpretation is less intuitive and its communication could be less straightforward. However, it enables comparison across portfolios, regardless of portfolio size, and at different points in time.

$$CI = \frac{\sum_i^n \left(\frac{\text{current value of investment}_i}{EVIC_i \text{ or PPP adj. GDP}_i} \times \text{issuer's GHG emissions}_i \right)}{\sum_i^n \left(\frac{\text{current value of investment}_i}{EVIC_i \text{ or PPP adj. GDP}_i} \times \text{issuer's revenue}_i \text{ or PPP adj. GDP}_i, \text{ population}_i, \text{ total consumption expenditure}_i \right)}$$

GHG emission reduction targets

To transit to a low-carbon economy, companies need to commit to alignment with global climate goals and demonstrate future progress. In this sense, the ISS differentiates companies' targets into "No target", "Non-ambitious target", "Ambitious target", "Committed SBT" or "Approved SBT", based on their existence and quality of GHG emission reduction targets. It takes into account both science-based targets (SBT) and other targets set by the individual company.

Temperature score

Temperature score is a forward-looking metric, expressed in degrees Celsius, designed to show the temperature alignment of companies with global temperature goals. The ISS's Temperature score examines the issuers' GHG emissions over-/undershoot of the SDS pathway (aligned with the Paris agreement). For example, a company aligned with the SDS pathway is also expected to have a temperature score of 1.5°C. However, due to the complexity and uncertainty of the analysis of temperature scores, these should be used with caution, since a single metric cannot explain the full dynamics of an issuer contribution to global temperature increase.

Carbon risk rating

Carbon risk rating is a forward-looking assessment that provides a metric to evaluate how well a company is prepared for the transition to the low-carbon economy. It assesses how a company is exposed to climate risks and opportunities and whether these are managed in a way to seize opportunities and to avoid or mitigate risks. It is measured on a scale of 0 (very poor performance) to 100 (excellent performance). The ISS categorises companies' carbon-related performance in four groups, i.e. "Climate laggards" (0–24), "Climate medium performers" (25–49), "Climate outperformers" (50–74) and "Climate leaders" (75–100).

Exposure to green, social and sustainable bonds

Investing in green, social and sustainable bonds falls in the category of thematic investing. Green bonds are used to finance investments with a positive impact on the environment. Social bonds are used to finance investments with a positive impact on the socio-economic status of the society. Sustainable bonds are used to finance investments with a positive impact on the environment or the socio-economic status of the society. Classification of these bonds should be based on widely used standards, such as the Green/Social Bond Principles, the Sustainability Bond Guidelines, the Climate Bond Standard and the European Green Bond Standard.

Annex 4: Abbreviations

BS	Banka Slovenije
C4F	Carbon4 Finance
CF	Carbon footprint
CI	Carbon intensity
CNY	Chinese yuan renminbi
CO ₂	Carbon dioxide
ECB	European central bank
ETF	Exchange traded fund
EU	European union
EUR	Euro
EVIC	Enterprise value including cash
FSB	Financial Stability Board
GDP	Gross domestic product
GHG	Greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
ISS	Institutional Shareholder Services Germany AG
m	Million
bn	Billion
NBIM	Norges Bank Investment Management
NGFS	Network for Greening the Financial System
NMPP	Non-monetary policy portfolio
PCAF	Partnership for Carbon Accounting Financials
PPP	Purchasing power parity
SBT	Science based target
SDS	Sustainable Development Scenario
TCE	Total carbon emissions
tCO ₂ e	ton of CO ₂ equivalent
TCFD	Task Force on Climate-related Financial Disclosures
UNFCCC	United Nations Framework Convention on Climate Change
WACI	Weighted average carbon intensity