



Banc Ceannais na hÉireann  
Central Bank of Ireland

Eurosystem

# Central Bank of Ireland's Climate-Related Financial Disclosures 2025

June 2025

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# Foreword

## “Climate history is playing out before our eyes<sup>1</sup>.”

This is the profound reality described by the Secretary-General of the World Meteorological Organisation (WMO) when confirming 2024 as the record hottest year. This confirms a disturbing trend. According to the WMO, global temperatures have risen beyond 1.5°C above pre-industrial levels, while the last ten years are each in the ‘Top Ten’ hottest on record. This is in spite of the landmark Paris Agreement in 2015<sup>2</sup>. In Ireland, thankfully 2024 did not breach the record set in 2023<sup>3</sup>. But, as seven of Ireland’s Top Ten warmest years have occurred since 2005, the trends are clear.

With the planet warming at an alarming rate, the dangerous effects brought on by the heating of our climate are becoming increasingly prevalent. Climate change is now affecting everyday lives and livelihoods. From floods to droughts, heatwaves to hurricanes, wildfires to rising seas, these are just some examples of the extreme events the world has witnessed recently. Worryingly, these events are increasing in frequency and severity<sup>4</sup>.

The Central Bank remains determined to act to support climate action, within our mandate. Strengthening the resilience of the financial system to climate and environmental-related risks and its ability to support the transition to a net zero economy, is a core part of the Central Bank’s multi-year Strategy<sup>5</sup>.

One aspect is our annual climate-related financial disclosures for our Investment Assets. Now in their third year, we continue to be transparent on our activities, and highlight achievements in respect of our sustainable investment agenda. During the course of 2024, we succeeded in reaching the €2bn (nominal) target we had set for ourselves, to increase our investment allocation to green, social and sustainability (GSS) bonds. Increasing our investment in GSS – from €450m in 2020 to €2bn now – allows us to support the transition to a carbon-neutral economy. We are also progressing the decarbonisation of our own investments. We will complete our move to a Paris-aligned benchmark for our equities portfolio in 2025 – a year earlier than previously planned and thus

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<sup>1</sup> World Meteorological Organisation, January 2025: *Press Release*

<sup>2</sup> The Paris Agreement aims to limit global warming to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius.

<sup>3</sup> Met Éireann, January 2025: *Annual Climate Statement for 2024*

<sup>4</sup> IPCC, 2022: *Climate Change 2022: Impacts, Adaptation, and Vulnerability*.

<sup>5</sup> [Our Strategy \(September 2024\)](#)

will ensure full alignment of our equities with a decarbonisation path consistent with the goals of the Paris Agreement.

The common Eurosystem disclosure framework that we report under has been enhanced this year. It now provides additional transparency on climate-related risks and the environmental footprint of our Investment Assets. We are publishing, for the first time, metrics for our non-sovereign investments, including scope 3 emissions. Notwithstanding some known limitations regarding data availability and estimation methodologies, our disclosures aim to act as an important catalyst, to improve the availability and accuracy of climate data, while encouraging disclosures by other entities.

The challenges presented by climate change are mounting. In 2024, the Climate Action Tracker provided a sobering assessment of the warming trajectory implied by the current plans of global policymakers<sup>6</sup>. The aggregate effect of these plans are estimated to be consistent with a path toward 2.7°C of warming by 2100, with a 50% chance that warming could exceed this level, far exceeding the Paris Agreement's goal to limit warming to 1.5°C. It is more essential than ever that the economy continues to transition away from fossil fuels and invest in decarbonisation. Global policymakers need to design and implement the necessary actions to tackle climate change at national and international level. As a society, we know that substantial increases in public and private investment are required. We know that delaying the energy transition is more costly in the long run, both for the economy and the planet. That is why, at the Central Bank of Ireland, we remain steadfast in playing our part, within our mandate, to support the transition to a carbon-neutral economy.

**Anne Marie McKiernan**

**Director of Financial Operations**

3 June 2025

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<sup>6</sup> Climate Action Tracker, November 2024: *Warming Projections Global Update*

# Introduction

We are Ireland's Central Bank, responsible for maintaining monetary and financial stability and ensuring the financial system works in the interests of the community. We are part of Europe's monetary and banking unions, and of the world's network of financial regulators. Our values underpin how we interact with each other and reflect our aspirations, for ourselves and for our community. We believe in the importance of an independent central bank that is transparent, accountable and connected across all public policy domains, in Ireland, in Europe and across the world. As part of our overall mission, we are committed to being a socially responsible and sustainable organisation, which we believe will help us achieve our vision: trusted by the public, respected by our peers and a fulfilling workplace for our people. We are also conscious of our ability to be a positive influence on the behaviour of others by leading on and by promoting important sustainability issues such as climate change.

This report is the Central Bank of Ireland's third climate-related financial disclosures for our non-monetary policy portfolio (NMPP), hereafter referred to as Investment Assets<sup>7</sup>. Our inaugural disclosures were published in March 2023, in a coordinated approach across the Eurosystem by National Central Banks. These disclosures follow the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) and include information in the categories of *Governance*, *Strategy*, *Risk Management* and *Metrics and Targets*.

Through providing transparency of its own activities, the Central Bank aims to strengthen awareness and understanding of climate-related risks and promote climate-related disclosures. As with our previous reports, we are disclosing climate-related information on our total Investment Assets, which stood at a value of about €18bn at the end of 2024<sup>8</sup>.

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<sup>7</sup> The Central Bank's NMPP is more commonly referred to as its 'Investment Assets' in official publications.

<sup>8</sup> Please note that the Central Bank's 2024 holdings data in this report reflect unaudited figures. Audited holdings data are published in the Central Bank's Annual Report for 2024.

## Box 1 : Recent progress on our sustainable investment objectives

### Adoption of an EU Paris-Aligned Benchmark:

In 2025, we expect to complete the transition from a standard equity benchmark to an **EU Paris-aligned Benchmark**. This brings forward the previously committed to date of completion by one year. As a result, our **equity portfolio will be fully aligned with a decarbonisation path** that is consistent with the goals of the Paris Agreement. We expect the full impact of the new benchmark will be visible in our climate metrics reported next year.

### Achievement of our target €2bn allocation to sustainable debt:

In the course of 2024, **we succeeded in meeting our target to allocate €2bn nominal to green, social and sustainability (GSS) bonds**. With this, we have increased our holdings of GSS bonds from €450m in 2020, to €2bn at the end of 2024. For 2025, **we aim to maintain this value of GSS bonds** in our portfolio.

### Positive trends in reported climate metrics:

Since we began measuring historical data for our climate metrics in 2020, we have seen improvements in our reported metrics. Within our non-sovereign holdings, this trend has been particularly evident for our **equities**. Between 2020 and 2024, their **carbon footprint reduced** from 52 to 16 tCO<sub>2</sub>e per €m based on scope 1&2 emissions. Across the same period, the **carbon footprint, based on production emissions, of our sovereign bond holdings has reduced** from 208 to 174 tCO<sub>2</sub>e per €m. Future improvement in these metrics will largely depend on governments delivering on their climate commitments.

### Increased transparency in the metrics reported in our disclosures:

Notwithstanding known limitations with climate data, the disclosures presented in this report **provide transparency** about the climate-related risks and the environmental footprint related to our Investment Assets. This year, as part of the common Eurosystem disclosure framework, we are **expanding our reporting** on non-sovereign issuers to cover metrics including **scope 3 emissions**, while we are also including for the first time our equity portfolio's **potential exposure to nature-related priority sectors**.

The incorporation of sustainable investment principles into the Investment Assets continues to be a priority. This is reflected in the Central Bank's Strategic Plan 2022-2026, which emphasises the importance of understanding, anticipating and adapting to far-reaching changes taking place across the economy and financial system, includes those associated with climate change and the transition towards a more sustainable economy. Further, the Central Bank is committed to act as a socially responsible and sustainable organisation. As a member national central bank of the Eurosystem, we are implementing shared Eurosystem initiatives and efforts that contribute to the transition to a net zero economy and to EU climate goals, including the common Eurosystem stance for climate disclosures.

As an integral part of the Central Bank's culture of acting sustainably, we aim to invest our financial assets in a sustainable manner in accordance with our Board's (the Central Bank Commission's) approved risk appetite and consistent with our Investment Policy Framework. The Central Bank is also conscious of our ability to be a positive influence on the behaviour of others by leading on, and by promoting, important sustainability issues, such as disclosures on climate-related financial exposures.

The Central Bank established its [Sustainable Investment Charter](#) in 2022. The purpose of the Charter is to guide us in considering how sustainable investment principles apply to our own investment practices. The impact of climate change is a strategic focus of the Charter. It represents a systemic risk that the Central Bank must consider as part of our sustainable investment approach to managing our discretionary Investment Assets. The Central Bank takes seriously the imperative to play our part in mitigating and acting on climate change.

# Governance

The Central Bank's Commission has ultimate responsibility for strategic decision-making relating to the Investment Assets, including the approval of the discretionary Investment Policy Framework, of which the Sustainable Investment Charter is a part.

The Financial Markets Division is responsible for the day-to-day management of the Investment Assets within the risk management frameworks that have been approved by the Commission. The Organisational Risk Division maintains the Central Bank's investment benchmarks, reports on the level of risk exposure in and performance of the investment portfolios to the Commission's Risk Committee, and compliance with the Commission-approved prudential limits and policies.

The Central Bank strives to adopt an integrated approach for the governance of climate-related risks and opportunities for the Investment Assets; that is, climate change-related considerations are addressed within existing governance structures. Further, this integrated approach is informed by the wider organisation's strategic approach to strengthen the resilience of the financial system to climate and environmental-related risks and its ability to support the transition to a net zero economy.



# Strategy

The Central Bank's Strategic Plan 2022-2026 emphasises the importance of understanding, anticipating and adapting to the broad implications for economic and financial outcomes in the future, associated with climate change and the transition towards a more sustainable economy. The Central Bank will continue to seek to deliver long-term sustainable investment returns, as part of fulfilling its mandate, while safeguarding its stock of financial assets.

The adoption of our Sustainable Investment Charter was the first formal step on the Central Bank's evolving journey towards integrating sustainability in the investment and risk management frameworks of the Investment Assets. Incorporating sustainable investment principles supports the existing policy objectives of the Central Bank's Investment Assets.

The Central Bank has implemented measures in recent years that have supported the sustainable investment agenda.

## Measures taken to incorporate sustainable investment principles:

- External manager commitment to the UN Principles for Responsible Investment
- Investment Exclusion Policy
- Impact Investing Policy
- ESG Integration
- Decarbonisation through Paris-aligned Benchmark Selection

Our appointed external asset managers are required to be signatories of the UN-supported Principles for Responsible Investment (UN PRI). The Central Bank implements an Exclusion Policy that in addition to the screening of Tobacco companies, excludes from our investment universe companies with ties to controversial weapons, companies in violation of the United Nations Global Compact and companies deriving greater than 1% of revenue from coal mining, extraction, distribution, or refining. In 2023, we began to transition our equities holdings from following a standard global benchmark to an EU Paris-aligned Benchmark (EU PAB). We will complete this transfer in 2025, one year ahead of schedule. During 2024, broad environmental, social and governance (ESG) factors were integrated into our triennial strategic asset allocation process. The Central Bank is also continuing to use the Eurosystem's jointly identified

common data sources to integrate climate considerations into the overall management of the Investment Assets.

In terms of our fixed income investments, during 2024, in line with our Impact Investing Policy, we succeeded in meeting our target to increase our allocation to GSS bonds to €2bn (nominal equivalent). We aim to maintain this stock of GSS holdings through 2025, subject to the availability of suitable issuance for reinvestment, and we will continue to review our target annually. The Central Bank also participates in the Bank for International Settlements' (BIS) euro-denominated and dollar-denominated green bond funds for central banks, with 100m nominal invested in each fund, respectively.

# Risk Management

A strategic priority for the Central Bank is to proactively identify, assess, and manage the exposure of its Investment Assets to long term climate-related risks. We continue to strengthen our understanding of climate-related financial exposures.

As a prominent public institution operating in the European financial system, the Central Bank recognises the importance of developing a thorough understanding of the climate risks that its Investment Assets may be exposed to. The Central Bank is working on improving this knowledge and exploring ways to best consider the impact of these risks.

The Central Bank takes a holistic view in managing the potential impact of climate-related risks via the Investment Assets on its balance sheet. Climate-related risks are not considered a new risk category within this process, but rather an amplifying factor of existing categories such as credit and market risks, which are managed as part of our financial risk management framework.

The Central Bank aims to invest its Investment Assets in a sustainable manner in accordance with the Central Bank Commission's approved risk appetite and consistent with the Central Bank's agreed Investment Policy Framework. As part of this process, climate considerations have been integrated into the investment limits framework, in order to support the Bank's Impact Investing Policy and our €2bn allocation to GSS bonds.

# Metrics and Targets

## Metrics

### Description of Metrics

Greenhouse Gas (GHG) emissions are measured and expressed as tonnes of CO<sub>2</sub> equivalent (tCO<sub>2</sub>e)<sup>9</sup> and usually reported under three 'scopes' as defined by the most commonly used global standard GHG Protocol. Our calculations of climate-related metrics for non-sovereign issuers are based on the sum of scope 1 and 2 GHG emissions, while we also report total GHG emissions (i.e. the sum of scopes 1, 2 and 3 emissions) separately. Climate-related metrics for sovereign issuers are reported for production and consumption-based emissions. See **Box 2** for further details.

#### Box 2: GHG emissions classification for non-sovereign and sovereign issuers

A company's direct and indirect GHG emissions are classified into three 'scopes'.

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

While the method of classifying emissions of corporates is standardised, there is currently no standardised allocation method for sovereigns. In order to provide a high degree of transparency, the Eurosystem's common disclosure framework reports on both production- and consumption-based methods of allocating emissions to sovereigns.

- **Production:** Emissions produced domestically within a country's physical borders, including domestic consumption and exports. This definition follows the territorial emissions approach adopted by United Nations Framework Convention on Climate Change (UNFCCC) for annual national inventories. Production emissions are reported excluding and including

<sup>9</sup> Carbon dioxide equivalent (or CO<sub>2</sub>e) is a metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential, by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential. For more information, see [Eurostat](#).

the effects of land-use, land-use change and forestry (LULUCF). Land can serve as a carbon sink (absorbing more carbon from the atmosphere than it emits) or carbon source (releasing CO<sub>2</sub> into the atmosphere, e.g. deforestation).

- **Consumption:** Emissions related to domestic demand, accounting for trade effects. This method provides a broader view of a country's emissions and tackles the issue of carbon leakage that arises due to production shifts from where goods are consumed later.

The metrics, which form the basis of the Eurosystem's common disclosure framework discussed in this section, are **Weighted Average Carbon Intensity (WACI)**, **Total Carbon Emissions (TCE)**, **Carbon Footprint**, **Carbon Intensity** and **Share of Green, Social and Sustainability bonds**. Calculation of metrics follows the recommendations of the TCFD and the Partnership for Carbon Accounting Financials (PCAF). Annex 1 sets out the definitions of each of these metrics, while the conceptual rationale behind each is set out below. To aid assessment of trends in metrics over time, we publish a time series.

The **Weighted Average Carbon Intensity (WACI)** measures a portfolio's exposure to carbon-intensive issuers, expressed in tCO<sub>2</sub>e per € million revenue for non-sovereign issuers, and per € million GDP in the case of countries. The carbon intensity of each issuer is computed by normalising their GHG emissions by a measure of economic activity. The portfolio WACI is then calculated by weighting the carbon intensity of each issuer by their respective share of holdings in the portfolio. The WACI is a central element of the Eurosystem's climate-related financial disclosures. High data availability, data normalisation and the widespread application of the metric across the financial industry ensure comparability across portfolios and time. The WACI delivers an "outside-in-perspective" (i.e. financial materiality), which serves as a proxy for a portfolio's exposure to transition risks.

The **Total Carbon Emissions (TCE)** metric quantifies the total financed emissions associated with a portfolio, expressed in tCO<sub>2</sub>e. GHG emissions are weighted by the investor's contribution to the issuer's total capital structure (e.g. enterprise value including cash for corporates, GDP for countries) and summed up to determine the portfolio's total carbon emissions. Due to its non-normalised nature, the metric's comparability across portfolios and time is limited, with the size of the portfolio being the main driver of the level of TCE. The metric serves as a foundation of related normalised metrics such as the Carbon Footprint and

the Carbon Intensity (see below). It provides an “inside-out-perspective” (i.e. environmental materiality), which serves as a proxy for a portfolio’s carbon footprint.

The **Carbon Footprint (CF)** normalises the total carbon emissions associated with a portfolio by its market value, expressed in tCO<sub>2</sub>e per € million invested. This complementary metric, helps to overcome the limitation of the total carbon emissions metric and allows for comparability of the footprint across differently sized portfolios and across time.

By contrast, the **Carbon Intensity (CI)** metric measures a portfolio’s associated total carbon emissions relative to its associated underlying issuer revenue (or GDP), expressed in tCO<sub>2</sub>e per € million revenue (or GDP). In other words, the carbon intensity measures the carbon efficiency of a portfolio in financing economic activity.

Notwithstanding known limitations with climate data (outlined in **Box 3** below), the disclosures presented in this report aim to provide transparency about the climate-related risks and the environmental footprint related to the Central Bank’s Investment Assets. The information provided in this report will be refined over time, in line with evolving market standards/frameworks for assessing climate risk, increasing availability of climate-related data and growing expertise in handling climate-related risks.

### Box 3: Data limitations

**The measurement of climate-related financial risks is gradually improving, but there remains both analytical and data gaps.** This should be borne in mind when interpreting the contents of this report. As measurement approaches advance, including in terms of data availability and quality, the Central Bank will seek to incorporate these in its regular reporting in future. This Box outlines some of the data limitations that can affect the interpretation of the climate-related financial metrics used in this report, especially in making comparisons over time.

The metrics in this report draw on published data and on data and methodologies from external data providers used by the Eurosystem. The Eurosystem relies on climate data and financial data that are gathered from various internal and external public and non-public data sources. The main measurement limitations include:

**The lagged nature of data:** When performing calculations of climate-related metrics, it is important to note that, aside from the year-end holdings of the

Central Bank's Investment Assets, which are up to date as of end-2024, a significant amount of input data are only available with time lags. The calculation of sovereign climate metrics is based, for the most part, on 2022 emissions data, while non-sovereign climate metrics are based on emissions data that are available up to 2023. For other inputs into the calculation of the metrics, such as country-level data for PPP-adjusted GDP and population for sovereign issuers, as well as financial data such as revenue and enterprise value for non-sovereign entities, these are available up to 2023. Given the lagged nature of the data, disclosures of the Central Bank's climate metrics made in any given year will subsequently be revised and restated in light of updated data becoming available.

**Coverage:** In calculating portfolio-level climate metrics, data coverage is an essential element to consider when comparing metrics across portfolios and across time. As such, where there is less availability of inputs to each metric calculation, the comparability of each metric is reduced. The coverage percentage denoted alongside each metric in this report (Annex 3) indicates data availability, which is calculated as the percentage of investments (i.e. the value of investments per the value of the portfolio) for which the required emissions and financial data are available. In general, for the data providers used for the purposes of this report, the availability of all required data is high for sovereign and corporate issuers, while coverage is less comprehensive for holdings of supranational and agency issuers.

**Scope 3 Emissions:** The Central Bank reports and analyses metrics for supranational, agency and corporate issuers based on issuers' scope 1, 2, and 3 emissions. The underlying issuer emissions are partly self-reported by issuers and partly modelled by data providers. Scope 3 emissions data remain subject to data quality issues that limit their reliability and comparability over time, including: i) considerable estimation uncertainty, ii) diverging estimates across different data providers, and iii) methodological refinements over time.

The disclosure of climate-related financial risks will, in and of itself, act as an important catalyst to improve the availability of climate data and to accelerate the development of robust metrics and risk assessment methodologies. This is why it is important that organisations such as the Central Bank continue to make progress in disclosing their climate-related financial risks, even recognising gaps in data and measurement techniques, with a view to build on this experience to improve the quality of disclosures in future reports.

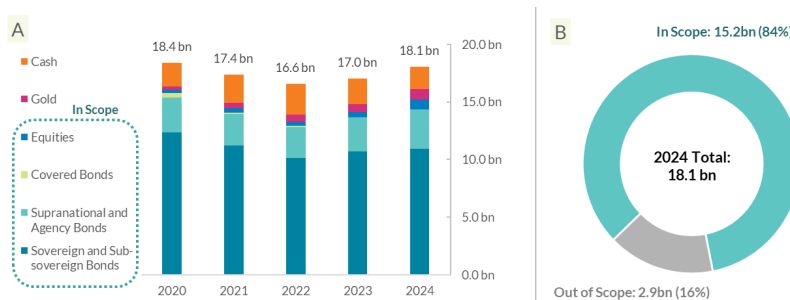
## Reported Metrics, Trends and Commentary

### Composition of the Investment Assets

The Central Bank's investment approach, similar to that of many central bank peers in the euro area, is a conservative one founded on a primary allocation to highly liquid, high quality financial instruments such as sovereign, sub-sovereign, supranational and agency fixed-income bonds. As at end-2024<sup>10</sup>, the Central Bank held about €18bn of Investment Assets (see **Figure 1A**), comprised of 72% of euro-denominated assets and 28% denominated in foreign currencies. Sovereign bonds are the largest asset class in the Investment Assets (about 61%) while Supranational and Agency bonds (about 19%) is the largest asset class amongst non-sovereign issuers in the Investment Assets. The Central Bank also allocates about 5% of our Investment Assets to corporate equities. Holdings 'in scope'<sup>11</sup> of climate-related metrics is approximately €15bn or 84% of our total Investment Assets (see **Figure 1B**).

### 84% of the Investment Assets' value is in scope for climate-related metrics

Figure 1 | Investment Assets, total value and asset allocation (A), and share in scope (B)



Source: CBI calculations.

### Climate Metrics of the Investment Assets

The coverage (data availability) for sovereign holdings is close to 100%. Coverage across non-sovereign bond issuers is less comprehensive, ranging from 65-97% over the years considered. It is noted that among the non-sovereign issuers held in the Investment Assets, the reduced level of overall coverage (as explained in **Box 3**) is driven by data availability issues, in particular for Supranational and Agency issuers. For holdings of issuers of equities and covered bonds, coverage is generally close to 100%.

<sup>10</sup> Please note that the Central Bank's 2024 holdings data in this report reflect unaudited figures. Audited holdings data are published in the Central Bank's Annual Report for 2024.

<sup>11</sup> Gold, Cash and Cash-like instruments are not in scope for climate metrics reporting.



**Table 1** below shows the climate-related metrics, split by asset class, for the Central Bank's Investments Assets, as at end-2024. Please see Annex 1 for further information on the calculations and Annex 3 for a comprehensive overview of historic metrics.

**Table 1 | Climate metrics of our Investment Assets at the end of 2024**

	Sovereign			Non-sovereign			Total
	Sovereign and sub-sovereign bonds			Supranational and Agency Bonds	Covered Bonds	Equities	
Portfolio Value (€bn)	10.94			3.41	0.02	0.83	4.25
	Production Excluding LULUCF	Production Including LULUCF	Consumption	Emissions Scope 1 + 2			
WACI (tCO <sub>2</sub> e per €m)	174	161	14	4	2	46	14
Total Carbon Emissions (tCO <sub>2</sub> e)	1,897,293	1,756,001	2,415,672	3,932	6	13,160	17,099
Carbon Footprint (tCO <sub>2</sub> e per €m)	174	161	221	1	0	16	5
Carbon Intensity (tCO <sub>2</sub> e per €m)	174	161	13	13	2	58	33
				Total Emissions (Scope 1 + 2 + 3)			
WACI (tCO <sub>2</sub> e per €m)				1,185	1,198	802	1,098
Total Carbon Emissions (tCO <sub>2</sub> e)				259,229	4,747	233,766	497,742
Carbon Footprint (tCO <sub>2</sub> e per €m)				94	300	285	138
Carbon Intensity (tCO <sub>2</sub> e per €m)				889	1,245	1,032	954
GSS Bonds (% share)	4%			58%	5%	n/a	46%
Green Bonds (% share)	4%			30%	5%	n/a	24%
Social and Sustainability Bonds (% share)	0%			28%	0%	n/a	22%

**Sources:** ISS, Carbon4 Finance, UNFCCC, World Bank, Bloomberg and CBI calculations.

**Notes:** **Sovereign issuers:** For sovereign bonds, metrics are provided for production-based emissions, excluding and including the effects of LULUCF and consumption-based emissions. **Non-sovereign issuers:** Metrics are provided per asset class and aggregated, based on issuers' scope 1 and 2 emissions. Scope 1, 2 and 3 emissions metrics are also provided for non-sovereign issuers.

### Sovereign and sub-sovereign bond holdings

**Trends in the metrics of our sovereign bond holdings are shown in Figure 2 for the years 2020 to 2024.** The metrics are reported based on production emissions excluding and including land use, land use change and forestry (LULUCF), as well as based on consumption emissions. Typically, the total level of consumption emissions tend to exceed production emissions as the countries held in the Investment Assets are generally net carbon importers. For production-based emissions metrics, the inclusion of LULUCF reduces aggregate emissions due to the effects of carbon sinks. The trends in our sovereign bond metrics can be summarised as follows:

- The **Total Carbon Emissions (Figure 2A)** of our sovereign bonds have decreased over the period. This is driven mainly by a reduction since 2020 in the size of sovereign bond holdings. This is evident across both consumption and production-based emissions metrics. Variations in the issuer composition of the sovereign portfolio also has an impact over time.
- The **Weighted Average Carbon Intensity, or WACI**, of our sovereign holdings, based on production emissions (excluding LULUCF), increased by 3% between 2020 and 2021, but has since fallen by 20% (**Figure 2B**). This reflects the impact of the euro-denominated redemptions across 2020 and 2021, which caused a relative re-weighting towards higher emitting countries. The observed decarbonisation since 2021 is driven mostly by increases in countries' GDP, which could be attributed to post-pandemic economic recovery as well as global inflation dynamics. In tandem, there have also been modest decreases in issuers' overall level of emissions (about 2% on average). Changes since 2022 are largely due to the inclusion of more up to date GDP figures for 2023, while emissions are still anchored to 2022 levels as the latest available. Trends in the WACI, based on consumption emissions, fluctuate less as consumption emissions are expressed on a per capita basis.
- The **Carbon Footprint (Figure 2C)**, which normalises Total Carbon Emissions by portfolio size, has also fluctuated over the period for similar reasons as the WACI. The re-weighting toward more carbon intensive issuers resulting from euro area redemptions is observed between 2020 and 2021, while the subsequent decarbonisation can be explained by increases in countries' GDP as well as decreases in countries' emissions.
- Similar trends are observed for the **Carbon Intensity metric (Figure 2D)**.

## Trends in sovereign metrics are mainly due to changes in economic variables

**Figure 2 | Total Carbon Emissions (A), Weighted Average Carbon Intensity (B), Carbon Footprint (C) and Carbon Intensity (D) of sovereign and sub-sovereign holdings:**



Sources: ISS, Carbon4 Finance, UNFCCC, World Bank, Bloomberg and CBI calculations.

### Non-sovereign bond and equity holdings

For non-sovereign issuers held in our Investment Assets, climate metrics have generally trended downwards (**Figure 3A**). Trends in the individual metrics (based on scope 1 and 2 emissions) can be summarised as follows:

- Total Carbon Emissions (TCE)** has fluctuated in line with year-to-year changes in the value of non-sovereign holdings. Equities are the main component of TCE for non-sovereign issuers, accounting for about 77% of the total, based on scope 1 and 2 emissions. In general, TCE has trended downwards since 2021 and plateaued between 2023 and 2024. This plateauing is due to the fact that an increased allocation to equities since 2023, was invested only in a Paris-aligned Benchmark. Despite the potential for a large increase in financed emissions associated with increased investment, the lower emissions profile of the Paris-aligned benchmark prevented a major increase in TCE.
- The Weighted Average Carbon Intensity or WACI** of non-sovereign assets also fluctuated over the period. However, the changes year-on-year are relatively muted due to the large weighting toward Supranational and Agency issuers, which are associated with typically lower scope 1 and 2 emissions. The notable decrease in WACI in 2022 was driven by a

widespread increase in issuers' revenues, which may have been partly caused by global inflation dynamics.

- The level of the **Carbon Footprint** has remained very stable over the period. This is due to the small absolute deviations in the footprint of Supranational and Agency bonds, which comprise the majority of non-sovereign issuers in the Investment Assets (about 80%).
- The **Carbon intensity** metric has reduced significantly over the period since 2021. This has been driven in part by the large improvement in the financials of corporate equity issuers, particularly since 2022, which caused an improvement in their carbon efficiency (i.e. corporate revenues have increased without a similarly sized increase in corporate emissions). Carbon Intensity has also been decreasing since 2022 due to the increased allocation to less carbon intensive issuers through the Paris-aligned Benchmark, while carbon intensity is also lower for Supranational and Agency issuers in recent years.

For non-sovereign metrics reported based on total emissions i.e. scope 1, 2 and 3 emissions, the asset class composition and data limitations (**Box 3**) have a significant impact. Supranational and Agency issuers comprise the majority of our non-sovereign holdings, about 80%. While these types of issuers tend to have lower scope 1 and 2 emissions compared to corporate issuers, their scope 3 emissions are more similar. The Total Carbon Emissions (TCE) metric for non-sovereign holdings has increased over the period. A significant jump is observed between 2020 and 2022 due to a methodological change in how scope 3 emissions are estimated by our data providers. Additional increases in TCE have been observed since 2022, as a result of our increased allocation to equities and also to GSS bonds, which are issued in volume by Supranational and Agency issuers. While GSS bond investments help us to contribute to the transition to a low carbon economy, the real-world emissions avoided by these investments are not included in the measurement of scope 3 emissions. As a result, our absolute level of financed emissions increases with each additional unit of investment. However, the Carbon Footprint, which has stayed relatively stable since 2022 shows that the observed increase in TCE is largely driven by an increased level of investment rather than increasing emissions (**Figure 3B**).

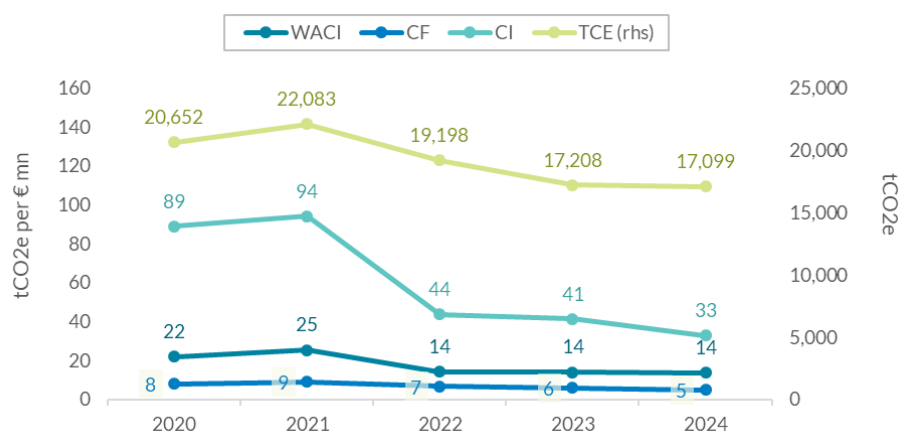
It is important to note that measurement of scope 3 emissions for Supranational and Agency issuers is subject to a high degree of modelling by our data providers. This is due to the fact these entities are primarily involved in

development finance and related investment activities, which are one of the larger categories of scope 3 emissions as defined by the GHG Protocol<sup>12</sup>. Across all non-sovereign asset classes, there is more limited availability of reported scope 3 emissions compared to scope 1 and 2 emission, where there is a higher degree of disclosure by entities. Therefore, a considerable proportion of our metrics rely on estimated data when scope 3 emissions are included.

All metrics should be considered in tandem with the data coverage percentages given that data availability (or lack thereof) – in particular in the case of Supranational and Agency issuers – has a material impact on the aggregated metrics of our non-sovereign holdings. Please see the tables in Annex 3 for historical figures, including the data coverage per asset class.

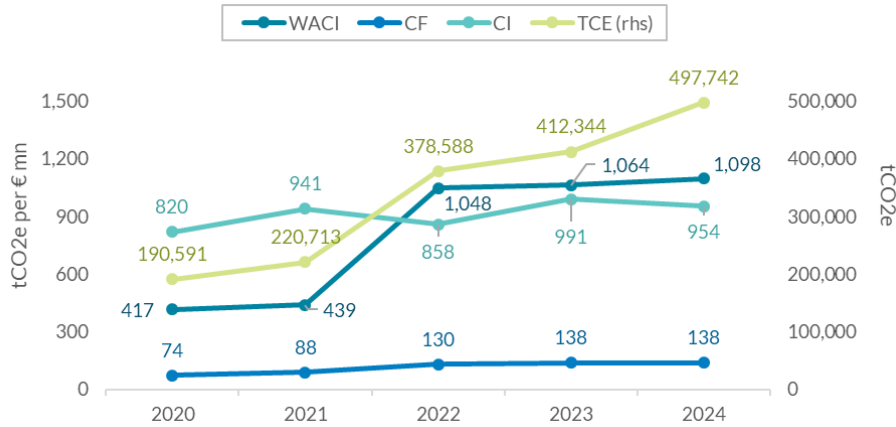
#### Trends in non-sovereign metrics driven by changes in portfolio composition, changing the equity benchmark and economic factors post-pandemic

Figure 3A | Trends in climate metrics for non-sovereign assets (scope 1 + 2 emissions):



<sup>12</sup> Other examples of scope 3 emissions include: business travel, use of sold products, transportation and distribution.

**Figure 3B | Trends in climate metrics for non-sovereign assets (scope 1 + 2 + 3 emissions):**



Sources: ISS, Bloomberg and CBI calculations.

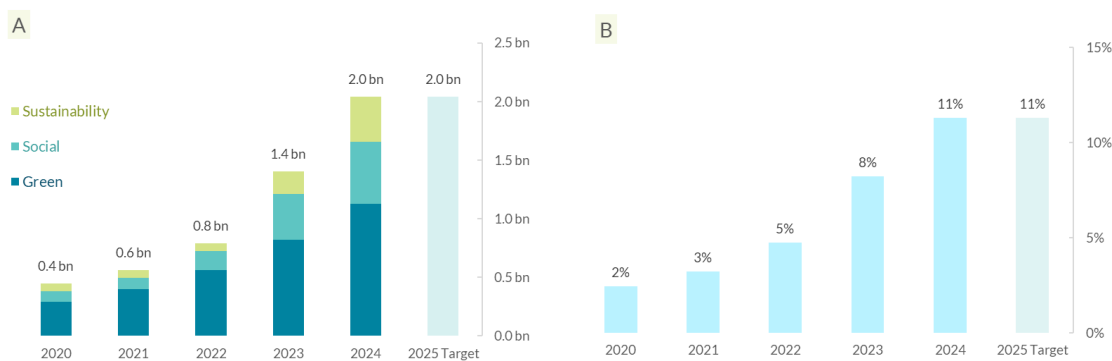
## Additional Disclosures

### Green, Social and Sustainability Bonds

Over the period under review, the amount of green, social and sustainability (GSS) bonds in the Central Bank's Investment Assets increased from about €450m nominal equivalent at end-2020 to €2.0bn nominal equivalent at end-2024, as shown in **Figure 4**. This increased allocation to GSS bonds followed the adoption of an Impact Investing Policy, which includes a target allocation to GSS bonds of €2.0bn nominal equivalent<sup>13</sup>. Please see the *Targets* section below for additional information on the Central Bank's Impact Investing Policy.

**We achieved our GSS bond target of €2bn during 2024 and aim to maintain the stock for 2025**

**Figure 4 | GSS Bond nominal holdings (A) and share of Investment Assets (B)**



Sources: BIS, Bloomberg and CBI calculations.

Note: The 2025 Target referenced in Figure B is an estimated share based on the size of the Investment Assets at end-2024.

<sup>13</sup> Our GSS bond investments are required to be, at a minimum, aligned with one of the International Capital Markets Association (ICMA) Green Bond Principles, Social Bond Principles and Sustainability Bond Guidelines, or certified under the Climate Bonds Initiative Climate Bonds Standards, or aligned with the EU's Green Bond Standard.

The Central Bank invests in GSS bonds as part of its day-to-day portfolio management. As at the end of December 2024, we held the following amounts (nominal equivalent) in issuance by countries, multilateral development banks, supranational organisations and sovereign-linked agencies:

- Green bonds totalling €1.1bn;
- Social bonds totalling €0.5bn; and
- Sustainability bonds totalling €0.4bn.

As part of the Central Bank's holdings of green bonds, we invest in the BIS green bond funds for central banks.

At end-September 2024, the **BISIP G1 (USD fund)** invested in green bonds, where the proceeds are used to fund projects in the following main categories: 27% in clean transportation and 27% in renewable energy. The environmental impact attributable to the Central Bank's share in the USD fund is an estimated level of "avoided emissions" of 53,464 tCO<sub>2</sub>e per \$100m invested in 2024<sup>14</sup>. At end-September investment levels, 66% of this estimated impact is accounted for by projects in renewable energy.

At end-September 2024, the **BISIP G2 (EUR fund)** invested in green bonds, where the proceeds are used to fund projects in the following main categories: 38% in clean transportation and 20% in renewable energy. The environmental impact attributable to the Central Bank's share in the G2 fund is an estimated level of avoided emissions of 59,773 tCO<sub>2</sub>e per €100m invested in 2024. At end-September investment levels, 39% of this estimated impact is accounted for by projects in renewable energy.

### *Corporate Holdings Potential Exposure to Nature-related Priority Sectors*

This report discloses for the first time Investment Assets exposure to nature-related priority sectors in its corporate equity portfolio, incorporating an element of the Taskforce on Nature-related Financial Disclosures (TNFD)<sup>15</sup>.

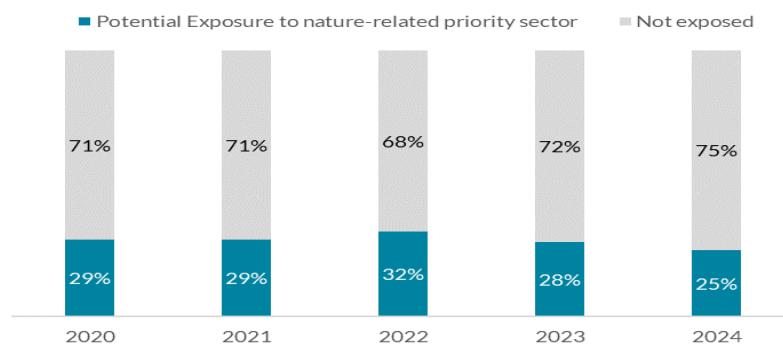
This disclosure is the first step towards assessing the Investment Assets exposure to sectors considered to have material nature-related dependencies or impacts.

<sup>14</sup> Related to investments in green bonds, whose proceeds finance green projects that "avoid" emissions.

<sup>15</sup> Calculation of the metric requires mapping the sector classifications of our equity holdings to the nature-related priority sectors as specified in Annex 1 of the TNFD's Additional Guidance for Financial Institutions.

The corporate disclosure metric provides an overview of *potential*, rather than *actual*, dependencies of, or impacts on, nature. Although companies within the priority sectors are more likely to have impacts and dependencies, these are influenced by various factors, such as the company's location, actions taken to limit the impacts and dependencies, and the robustness of the company's supply chains. Identifying *actual* dependencies and measuring the financial implications that nature-related risks may have, requires further analysis. Identifying priority sectors from the outset could help to provide guidance in this respect.

**Figure 5 | Investment Assets, level of equities portfolio's potential exposure to nature-related priority sectors**



**Table 1 | Top 3 nature-related priority sectors by holdings in equity portfolio**

Equity portfolio, as at end of 2024	
Potential exposure to priority sectors	25%
Priority sector 1	Semiconductors and Semiconductor Equipment, 10%
Priority sector 2	Transportation, 3%
Priority sector 3	Food and Beverage, 2%

Sources: ISS, TNFD, CBI calculations.

Note: Figures reported are based on the TNFD's sector list and mapping for core financial institution metric on exposure to sectors, using sector classification codes

## Targets

The Central Bank has a **long-term target** to align our Investment Assets with the EU and the Irish State's decarbonisation objectives in support of the Paris Agreement. The EU's objectives stated in its 2050 long-term strategy targets EU climate neutrality by year 2050. This is in line with the Paris Agreement's objective to keep the global temperature increase to well below 2°C and pursue



efforts to keep it to 1.5°C. Work is ongoing on how the Central Bank will move towards medium and long-term sustainability targets for its Investment Assets.

Achievement of our long-term target will depend, amongst other factors, on the degree to which governments succeed in meeting the objectives defined in the Paris Agreement. This is due to the Central Bank's conservative investment approach outlined above, where the majority of the Investment Assets is invested in sovereign/public sector bonds. The Central Bank expects governments to continue to lead the way in delivering the transition towards a net zero economy.

As part of our efforts to decarbonise the Investment Assets, we will complete the process of replacing our corporate equity benchmark with an **EU Paris-aligned Benchmark (EU PAB)**<sup>16</sup> in 2025. Once complete, our equity portfolio will be on a decarbonisation path that is consistent with the goals of the Paris Agreement. This will help to support a reduction in the exposure of our Investment Assets to climate transition risks. The full impact on our climate metrics of tracking the new benchmark will be visible in subsequent disclosures.

To contribute towards a broad set of positive environmental and social outcomes, the Central Bank implemented an **Impact Investing Policy** in 2023. As part of this policy, we set a target allocation to GSS bonds, which fulfilled a previous commitment to do so in our Sustainable Investment Charter. The Impact Investing Policy formalised our process for investing in GSS bonds and embedded a commitment to allocate capital towards GSS bonds in a targeted manner. Accordingly, we **achieved our target allocation of €2bn (nominal equivalent) of GSS bonds** during 2024. We are committed to maintaining this stock of GSS bonds in our Investment Assets during 2025 (subject to the availability of suitable issuance for reinvestment). We will continue to review regularly our impact investing approach and GSS bond target, to ensure that it continues to be supportive of the transition to a greener and more sustainable economy.

<sup>16</sup> An EU PAB has the objective of a decarbonisation trajectory of at least 7% reduction of GHG intensity on average per annum, while the GHG intensity (including Scope 1, 2 and 3 GHG emissions), shall be at least 50% lower than the GHG intensity of the investable universe.

# Annexes

## Annex 1: The Eurosystem disclosure framework

### The Eurosystem disclosure framework for the TCFD category 'Metrics and targets'

Element	Details
Weighted average carbon intensity (WACI)	$= \sum_n^i \left( \frac{\text{current value of investment}_i}{\text{current portfolio value}} \right) \times \left( \frac{\text{issuer's carbon emissions}_i}{\text{issuer's revenue, PPP adj. GDP, population, or final consumption expenditure}_i} \right)$
Total carbon emissions (TCE)	$= \sum_n^i \left( \frac{\text{current value of investment}_i}{\text{EVIC or PPP adj. GDP}_i} \times \text{issuer's carbon emissions}_i \right)$
Carbon footprint (CF)	$= \frac{\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{EVIC or PPP adj. GDP}_i} \right) \times \text{issuer's carbon emissions}_i}{\text{current portfolio value}}$
Green Bond Share	Of fixed income portfolios based on ICMA's Green Bond Principles (GBP).
Social Bond Share	Of fixed income portfolios based on ICMA's Social Bond Principles (SBP).
Sustainability Bond Share	Of fixed income portfolios based on ICMA's Sustainability Bond Guidelines (SBG).
Portfolio size	Expressed in € billions.
Asset classes	All asset classes of the portfolio, with metrics to be shown per asset class.
Data availability	Indicated as a percentage for each metric and asset class.
Data sources	Such as the names of the (climate) data providers.
Target	At least one broadly defined long-term target covering all non-monetary policy portfolios under management control of the central bank that is aligned with the objectives of the Paris Agreement and the EU's climate neutrality objectives. Targets can be set at portfolio level, central bank level, or a combination of both. Targets should ideally be quantitative, and long-term targets should ideally be enriched by intermediate targets.

In addition to the elements of the common Eurosystem disclosure framework, the Central Bank publishes the carbon intensity metric and the corporate exposure to nature-related priority sectors metric, which are defined as:

- Carbon intensity

$$= \frac{\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{EVIC or PPP adj. GDP}_i} \right) \times \text{issuer's carbon emissions}_i}{\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{EVIC or PPP adj. GDP}_i} \right) \times \text{issuer's revenue, PPP adjusted GDP, or population}_i}$$

- Corporate exposure to nature-related priority sectors

$$= \frac{\sum_n^i \text{current value of investment}_i \times \text{issuer's sector TNFD priority}_i}{\text{current portfolio value}}$$

where 'issuer's sector TNFD priority' equals 1 if the issuer's sector is listed in the TNFD priority sectors list, and 0 if not, as shown in Annex 1 of the [TNFD Additional guidance for financial institutions](#) (Version 2.0, June 2024).

**Note:** TCFD formulas are provided here. For the Eurosystem disclosure framework, they have been adjusted where necessary to reflect latest PCAF guidance and cover additional asset classes.

## Annex 2: Emissions allocation, normalisation and attribution

### Carbon emissions allocation methods, normalisation factors and attribution factors

Allocation			
Issuer type	Factor	Remarks	Unit
Corporate	Scope 1, 2 and 3 emissions	Scope 1 comprises direct GHG emissions that occur from sources that are controlled or owned by an organisation (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles). Scope 2 comprises indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.	tCO <sub>2</sub> e
Supra & Agency			
Sovereign	Production emissions	Emissions produced domestically within a country's physical borders, including domestic consumption and exports. This definition follows the territorial emissions approach adopted by United Nations Framework Convention on Climate Change (UNFCCC) for annual national inventories. Production emissions are reported excluding the effects of Land Use, Land Use Change and Forestry (LULUCF).	
	Consumption emissions	Emissions related to domestic demand, accounting 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.	

Normalisation			
Issuer type	Factor	Remarks	Unit
Corporate	Revenue	The total amount of income generated by the sale of goods and services related to the primary operations of the business. Commercial revenue may also be referred to as sales or as turnover.	€ million
Supra & Agency			
Sovereign	Production: PPP adj. GDP	GDP is the sum of gross value added by all resident producers plus any product taxes and minus any subsidies not included in the value of the products. The Purchasing Power Parity (PPP) conversion factor is a spatial price deflator and currency converter that eliminates effects of differences in countries' price levels.	€ million
	Consumption: Population	Total population of a country.	People

Attribution			
Asset class	Factor	Remarks	Unit
Sovereign bonds	PPP adj. GDP	See description of "PPP adj. GDP" in normalization factor.	€
Equities	EVIC	The sum of the market capitalisation of ordinary shares at fiscal year-end, the market capitalisation of preferred shares at fiscal year-end, and the book values of total debt and minorities' interests.	
Supra & Agency bonds			
Corporate bonds			
Covered bonds			

## Annex 3: Historical Metrics

### Historical Climate Metrics for the Investment Assets from 2020-2024, sovereign and non-sovereign issuers (scope 1 + 2 emissions)

		Sovereign			Non-sovereign			
		Sovereign and sub-sovereign bonds		Supranational and Agency Bonds	Covered Bonds	Equities	Total	
Portfolio Value (€ million)								
2024		10,938			3,411	16	826	4,253
2023		10,719			2,920	20	449	3,389
2022		10,137			2,699	84	352	3,135
2021		11,220			2,747	83	402	3,232
2020		12,338			3,042	384	304	3,731
		Production Emissions Excluding LULUCF	Production Emissions Including LULUCF	Consumption Emissions	Scope 1 and 2 emissions			
WACI (tCO2e per € million revenue, PPP adjusted GDP, or per capita)								
2024	WACI	174	161	14	4	2	46	14
		100	100	100	81	100	100	85
2023	WACI	172	159	14	5	1	66	14
		100	100	100	86	100	100	88
2022	WACI	179	166	14	7	1	73	14
		100	100	100	97	100	99	98
2021	WACI	215	198	13	10	2	124	25
		100	100	100	91	100	99	92
2020	WACI	208	191	12	9	1	149	22
		100	100	100	79	100	99	83
Total Carbon Emissions (tCO2e)								
2024	TCE	1,897,293	1,756,001	2,415,672	3,932	6	13,160	17,099
		100	100	100	81	100	99	85
2023	TCE	1,839,558	1,705,967	2,357,062	4,517	6	12,684	17,208
		100	100	100	86	100	99	88
2022	TCE	1,812,140	1,678,968	2,305,423	5,692	21	13,485	19,198
		100	100	100	92	100	99	93
2021	TCE	2,413,120	2,222,488	2,998,122	5,472	20	16,591	22,083
		100	100	100	74	100	99	78
2020	TCE	2,571,570	2,362,356	3,182,578	5,111	40	15,501	20,652
		100	100	100	65	82	99	69
Carbon Footprint (tCO2e per € million invested)								
2024	CF	174	161	221	1	0	16	5
		100	100	100	81	100	99	85
2023	CF	172	159	220	2	0	28	6
		100	100	100	86	100	99	88
2022	CF	179	166	228	2	0	39	7
		100	100	100	92	100	99	93
2021	CF	215	198	267	3	0	42	9
		100	100	100	74	100	99	78

2020	CF	208	191	258	3	0	52	8
		100	100	100	65	82	99	69
Carbon Intensity (tCO <sub>2</sub> e per € million revenue, PPP adjusted GDP, or per capita)								
2024	CI	174	161	13	13	2	58	33
		100	100	100	81	100	99	85
2023	CI	172	159	13	17	1	89	41
		100	100	100	86	100	99	88
2022	CI	179	166	13	20	1	99	44
		100	100	100	92	100	99	93
2021	CI	215	198	12	51	2	142	94
		100	100	100	74	100	99	78
2020	CI	208	191	11	46	2	159	89
		100	100	100	65	82	99	69

### Historical Climate Metrics for the Investment Assets from 2020-2024, non-sovereign issuers (scope 1 + 2 + 3 emissions)

	Non-sovereign			
	Supranational and Agency Bonds	Covered Bonds	Equities	Total
2024	3,411	16	826	4,253
2023	2,920	20	449	3,389
2022	2,699	84	352	3,135
2021	2,747	83	402	3,232
2020	3,042	384	304	3,731
Scope 1-3 emissions				
WACI (tCO <sub>2</sub> e per € million revenue)				
2024	1,185	1,198	802	1,098
	81	100	100	85
2023	1,071	1,116	1,024	1,064
	86	100	100	88
2022	1,021	1,271	1,203	1,048
	97	100	99	98
2021	322	453	1,169	439
	91	100	99	92
2020	346	346	1,073	417
	79	100	99	83
Total Carbon Emissions (tCO <sub>2</sub> e)				
2024	259,229	4,747	233,766	497,742
	81	100	99	85
2023	215,451	5,464	191,429	412,344
	86	100	99	88
2022	146,549	19,196	212,843	378,588
	92	100	99	93
2021	40,284	4,381	176,048	220,713
	74	100	99	78

2020	41,613	8,353	140,625	190,591
	65	82	99	69
Carbon Footprint (tCO <sub>2</sub> e per € million invested)				
2024	94	300	285	138
	81	100	99	85
2023	86	271	430	138
	86	100	99	88
2022	59	228	612	130
	92	100	99	93
2021	20	53	443	88
	74	100	99	78
2020	21	26	467	74
	65	82	99	69
Carbon Intensity (tCO <sub>2</sub> e per € million revenue)				
2024	889	1,245	1,032	954
	81	100	99	85
2023	801	1,174	1,342	991
	86	100	99	88
2022	506	1,312	1,555	858
	92	100	99	93
2021	374	437	1,507	941
	74	100	99	78
2020	377	341	1,439	820
	65	82	99	69

**Sources:** ISS, Carbon4 Finance, UNFCCC, World Bank, Bloomberg and CBI calculations.

**Notes:** **Sovereign issuers:** For sovereign bonds, metrics are provided for production-based emissions, excluding and including the effects of LULUCF. The attribution factor applied to sovereign bonds is PPP-adjusted GDP. As a result, when emissions are allocated on a production basis, the numbers reported for WACI, Carbon Footprint and Carbon Intensity are the same. **Non-sovereign issuers:** For supranational and agency bonds, covered bonds and equity, metrics are provided per asset class and aggregated, based on issuers' scope 1 and 2 emissions, while total emissions (scope 1, 2 and 3) are reported separately. **Scope:** Gold, Cash and Cash-like instruments are not in scope for emissions reporting. **Coverage:** The coverage percentage included in italic below each metric value, indicate data availability, calculated as the percentage of investments (i.e. the value of investments / value of portfolio) for which all required data for the calculation (i.e. emissions and financial data) are available.



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