



BANK ĊENTRALI TA' MALTA
EUROSISTEMA
CENTRAL BANK OF MALTA

CLIMATE-RELATED FINANCIAL DISCLOSURES OF THE CENTRAL BANK OF MALTA'S NON-MONETARY POLICY PORTFOLIOS

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Foreword

Climate change is the greatest challenge humankind is facing this century, and its impact is becoming increasingly evident. To secure a livable future, urgent decisions need to be taken. They need to be taken now.

The Central Bank of Malta, with the rest of the Eurosystem, actively contributes to this process by promoting sustainable finance via its own investments. In so doing, the Bank not only seeks to create a positive environmental impact through its thematic investments, but also takes advantage of investment opportunities that are created. As institutional investors, Central Banks must ensure that their non-monetary policy portfolios (NMPPs) are resilient to such risks to protect their balance sheets. This report outlines the actions taken by the Bank in this regard.

The Bank will continue to strive to reduce its own environmental impact, aiming to decarbonize its own investments in line with the Paris Agreement and the EU Climate Law, whilst fostering action beyond the institution. The Bank also continues to support climate related considerations in the monetary policy strategy and portfolios through various Eurosystem Committees.

Professor Edward Scicluna
Governor

Introduction

It is widely recognised that climate change is one of the biggest existential threats to our economies, financial systems, ecosystems, and communities. Unless immediate action is taken, the increasingly extreme weather events are expected to negatively impact economic growth, social conditions, and biodiversity. To this effect, several policies, regulatory and technological developments combined with changes to consumer preferences, need to be implemented to facilitate the shift towards net zero economies. This shift is expected to impact financial asset valuations. While national governments and EU legislators remain the primary drivers of the transition to carbon neutral economies, Central Banks and supervisory authorities also need to closely monitor these developments as they can hinder the achievement of both monetary and financial stability objectives.

Climate change is one of the biggest existential threats to our economies, financial systems, ecosystems, and communities.

In February 2021, the Eurosystem announced that within two years, it would start making climate-related disclosures for its euro-denominated NMPPs, in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD),¹ as the initial framework and reporting, in the category of “Metrics and Targets”.² In preparation of these disclosures, the Eurosystem has in February 2022, concluded a joint procurement process³ for two specialised data sources,⁴ which will enable a certain degree of data harmonisation for these disclosures and any future research in this area.

In line with this commitment, the Bank is publishing its first climate-related financial disclosures report, providing climate

¹ See [TCFD Recommendations 2017](#) *The TCFD was established by the Financial Stability Board to improve and increase reporting of climate-related financial information.*

² See Press release [Eurosystem agrees on common stance for climate change-related sustainable investments in non-monetary policy portfolios \(europa.eu\)](#).

³ This process was led by the Bundesbank.

⁴ ISS ESG and Carbon4 Finance (C4F).

metrics for the NMPPs covering the period 2019 to 2022.⁵ This report covers both euro and foreign currency denominated NMPPs for increased transparency of the Bank’s environmental footprint and climate-related transition risks emanating from these portfolios, whilst also outlining actions taken to date to benefit from climate-related investment opportunities.

In addition to the category “Metrics and Targets”, the Bank has also opted to disclose information on all the other three TCFD categories, namely “Governance”, “Strategy” and “Risk Management” related to its NMPPs, as it recognises the interdependency of these pillars. The “Metrics and Targets” category interacts with the other pillars, creating a feedback loop that enables more informed investment decision making. In so doing, the Bank has incorporated the recommendations made by the Central Banks’ and Supervisors’ Network for Greening the Financial System (NGFS).⁶

It is anticipated that, going forward, both the level of disclosures as well as the actions taken by the Bank with respect to its NMPP’s decarbonisation trajectories will be adjusted over time, as climate data quality improves, becoming more reliable and comparable. In the meantime, the Bank aims to continue building capacity in understanding and managing climate risks in its NMPPs.

Chart 1
FOUR CORE CATEGORIES
OF THE TCFD
RECOMMENDATIONS



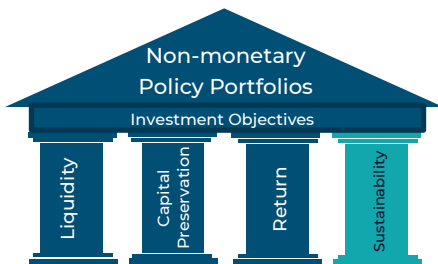
⁵ The metrics for 2021 and 2022 will be updated in future reports until holdings, emissions and/or financial data are available for the same reference year.

⁶ See [Guide on Climate-related disclosures](#), NGFS, December 2021.



Governance

The Bank manages portfolios of financial assets which vary in terms of asset class and currency composition. These NMPPs are separate from the Eurosystem’s monetary policy portfolios, and thus the Bank has the sole responsibility for their management. In addition, in the absence of initiatives by the private sector, the Bank has been assigned the role of Market Maker for Malta Government Treasury Bills and Bonds.⁷ This role is solely limited to secondary market trading, as the Bank is statutorily precluded from participating in the primary market. The market-making portfolio’s exposure is solely for Maltese Sovereign debt fully denominated in euro with no involvement in local equity or corporate bonds. Accordingly, given the specific nature of this portfolio, the Bank is obliged to buy whatever amounts, at daily published prices, to ensure liquidity in the market for Malta Government Securities (MGS).⁸



In recent years, as the Bank continued to progressively diversify its NMPPs, increased consideration has been given to sustainability factors when making investment decisions. To this effect, the Board of Directors approved “sustainability” as an investment objective for the NMPPs in 2023, alongside the traditional objectives of ensuring an adequate level of liquidity, preservation of capital, and optimising return to help maintain financial independence in line with pre-established risk parameters.

In addressing its climate-related risks and opportunities for the NMPPs, the Bank adopts an integrated governance approach, whereby existing committees and decision-making bodies take

⁷ To date there have been no other private market-makers or primary dealers in Malta who have been prepared to take on this role given the market’s small size.

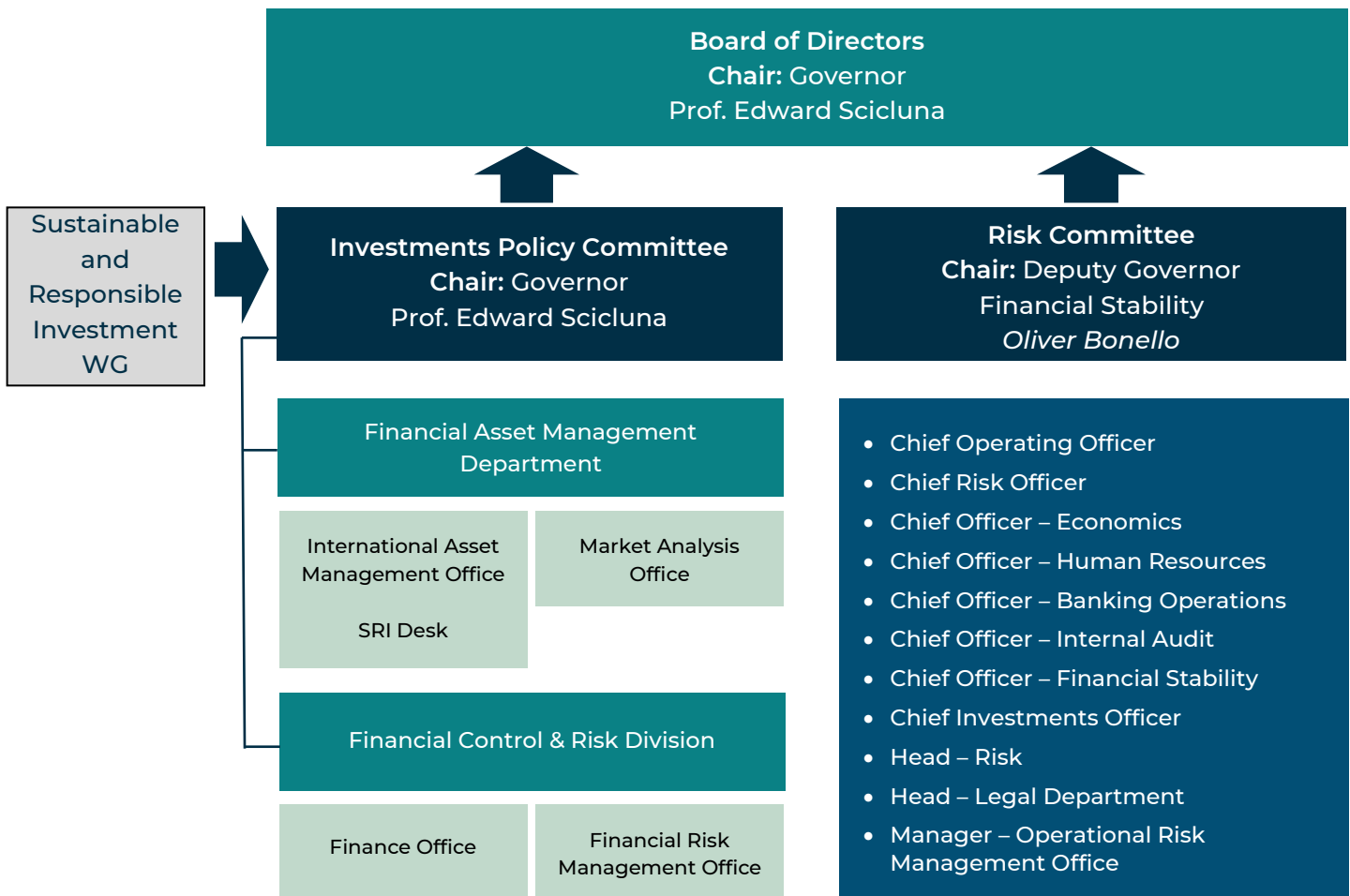
⁸ The Bank publishes a set of bid prices on a daily basis and therefore the portfolio is dependent on the offers submitted by market participants. Even though the Bank is mostly involved on the buy side of the trade, in order to enhance the liquidity in the local market, the Bank also participates in two-way trading whereby the Bank offers some bonds subject to availability and as per internal policies.

account of the broader Environmental, Social and Governance (ESG) aspects, together with specific climate considerations as part of the whole investment process. The Bank's approach regarding its own investment policies for NMPPs is also guided by the common Eurosystem stance for applying climate change-related sustainable investment principles. The broad investment strategy for the NMPPs, and the vehicles used for its implementation, are discussed, and decided upon during the annual Strategic Asset Allocation (SAA) process which is coordinated by the Investments Policy Committee (IPC). The SAA, which adopts a medium-term perspective,⁹ is initiated by the Financial Control and Risk Division in close collaboration with the Financial Markets Division. The SAA is then discussed and agreed upon by the IPC and subsequently presented to the Board of Directors for approval. The SAA is complemented by investment guidelines which contain the main parameters within which each portfolio and/or asset class is to be managed. The IPC, which meets at least on a monthly basis, comprises the Governor as Chairperson, the Deputy Governors, and officials from both the Financial Markets Division and the Financial Control and Risk Division. It is also responsible to set the tactical benchmark for the internally managed marked-to-market fixed income portfolios and monitor the implementation of the SAA. The International Asset Management Office (IAMO) within the Financial Markets Division is responsible for the execution and the daily implementation of the Investment Strategy. The Financial Risk Management Office develops the strategic benchmark for the marked-to-market portfolios, reports on the financial performance of both internally and externally managed funds, oversees compliance to risk parameters and controls risk. Both offices engage with asset managers of the Bank's externally managed funds on a regular basis, where in addition to market-related discussions, the Bank also discusses their sustainability and stewardship activities at both fund and enterprise level. The Bank ensures that all external asset managers are signatories to the UN-supported Principles for Responsible Investment (UN PRI).

⁹ Typically, a three-year horizon is considered.

During 2022, a dedicated Sustainable and Responsible Investment desk has been set up within the IAMO with the aim of increasing expertise in this area (see Organogram). A Sustainable and Responsible Investment Working Group, which includes officials from both the Financial Markets Division and the Risk Division, has also been established in the latter half of 2022. The aim of this working group is to prepare and analyse climate-related data, identify the respective risks and opportunities; as well as act as the technical expert group, providing guidance on priority topics and climate-related observations that need to be addressed to the IPC. The Risk Committee is then informed of key findings and proposed mitigation actions at least on an annual basis. The Risk Committee has the role to consider all forms of risk covering the enterprise-wide activities of the Bank, including credit, market, liquidity,

Organogram for Investment and Risk Processes related to NMPPs



operational, reputational, legal, and strategic risks. It consists of the Deputy Governors, the Chief Operating Officer, all the Chief Officers of the Bank, and the Heads of the Risk and Legal Departments.

During 2022, the IPC was updated on a quarterly basis with developments in ESG scores for externally managed funds as reported by the external managers, while climate-related topics related to the NMPPs were discussed during dedicated IPC meetings. Climate considerations were an integral part of the discussions during the formulation of the SAA presented to the Board of Directors for 2023. An overview of the physical and transition risks emanating from exposures held in the Bank's own NMPPs were presented to the Bank's Risk Committee.¹⁰

Climate change is a source of risk intrinsic to other Bank's core functions and operations. To address these challenges, the Bank has set to increasingly integrate climate and sustainability considerations in its [Corporate Strategic Plan](#), which was first published in 2021.¹¹ Actions and developments related to climate change and sustainability in the Bank's key areas are then published in the Bank's Annual Report to provide transparency on its own activities, increasing awareness and lead by example.

For 2022, several initiatives related to climate change were undertaken. In September 2022, the Bank hosted a joint European Investment Bank (EIB) and Central Bank of Malta Conference, entitled "Financing the Transition to a Carbon Neutral Economy". The conference was opened by the Minister for the Environment, Energy and Enterprise with the participation of the EIB's Chief Economist and the Bank's Governors. The Bank's Deputy Governor for Monetary Policy also chaired an expert panel discussion entitled 'Getting Fit for 55 – the role of policy and green financing', while staff members from the Financial Stability Surveillance & Research Department also presented a first assessment of the

¹⁰ Based on ISS and C4F data and reports.

¹¹ [Launch of the Central Bank of Malta Corporate Strategic Plan - Central Bank of Malta \(centralbankmalta.org\)](#).



Climate considerations were an integral part of the discussions during the formulation of the SAA.

Maltese financial sector's direct exposure to economic sectors that may be affected by the transition to a less polluting economy. In the same month, the Monetary Operations & Government Securities Department of the Bank published a paper entitled "Green Finance in the Local Capital Markets", presenting the results of a survey investigating the local market's perspective towards the issuance of green bonds and awareness related to the topic.



Strategy

Most of the Bank's financial assets are internally managed through fixed income portfolios that are either held to maturity or actively managed against internally constructed benchmarks. A relatively smaller part of the Bank's financial assets is managed externally, either through a mandate or through investments in funds. Since 2021, the Bank diversified its NMPPs by investing in equities,¹² whilst continuing to diversify its fixed income holdings geographically. The fixed income holdings are predominantly invested in sovereign bonds, securities issued by supranational and national agencies, bank covered bonds and investment grade corporate debt.

In recent years, the Bank has been more actively incorporating ESG considerations in its fixed income holdings, whilst climate considerations were a determining factor in the selection of equity funds. This is in line with the NGFS recommendation, which encourages central banks to lead by example and start integrating sustainability factors into the management of their portfolios where possible and relevant.¹³ The NGFS also outlined several sustainable and responsible investment strategies that can be adopted, depending on each portfolio's objectives and constraints¹⁴ (see Box 1). The Bank has been a member of the NGFS since 2019 and has participated in several workstreams related to sustainable and responsible investment and climate disclosures, amongst others.

Several of these strategies have been adopted to date. As a first step, the Bank started by progressively increasing the share of

¹² Only a marginal exposure was held prior to this date through mutual funds.

¹³ NGFS 2019 [A Call for Action](#).

¹⁴ NGFS 2020 [Progress report on the implementation of sustainable and responsible investment practices in central banks' portfolio management](#).

green, social and sustainable bonds¹⁵ in its internally managed fixed income portfolios. Only thematic bonds from high rated issuers were purchased, in line with existing risk parameters. The proceeds collected by the issuers were intended to be used to finance projects with clear environmental and/or social benefits. Investment in green and sustainable bonds for the NMPPs does not necessarily directly imply lower emissions because the underlying projects do not automatically translate into comparatively low or falling carbon emissions at the issuer firm level.¹⁶ However, the climate mitigation projects financed by the capital raised by the issuer firm, result in “avoided emissions”¹⁷ that would have otherwise occurred.

In addition to shifting capital towards energy and ecological transition through investments in green and sustainable bonds, the Bank has in 2022 started to invest in equity funds which focus on the long-term capital growth of companies that engage in activities that will assist in the transition to low carbon economies. The funds are therefore predominantly invested in companies that are engaged in alternative energy and energy technologies, waste management, and/or offer solutions with active positive contribution to the improvement of the supply, efficiency or quality of a low-carbon economy.¹⁸ Through these investments the Bank takes into account the 'environmental materiality' of its investments to achieve a positive environmental impact, as well as 'financial materiality' to mitigate transition risk by investing in companies which are at the forefront of the low carbon transition process, and thus have a lower risk of becoming stranded assets. Circa half of the holdings in the said funds' have approved science-based targets (SBTs),¹⁹ which indicates their willingness to align

¹⁵ As defined by Bloomberg's Green, Social and Sustainability bond indicators based on the International Capital Market Association (ICMA) principles. See [Green Bond Principles](#) and [Sustainability Bond Guidelines](#).

¹⁶ [Green bonds and carbon emissions: exploring the case for a rating system at the firm level](#).

¹⁷ See [PCAF Financed Emissions](#).

¹⁸ These Funds fall under the SFDR Category 8 or 9.

¹⁹ As per ISS Climate GHG Reduction Targets.

their own emissions pathways to the Paris Agreement²⁰ and the global carbon budget.

When selecting funds for both its fixed income and equity exposure, the Bank ensured that certain positive screening was being implemented. In fact, the Bank also invests in equities through passive exchange-traded funds (ETFs) that are consistent with international norms and climate change-based criteria or have lower fossil fuel exposure than the broader market, whilst also having a high minimum level of ESG performance. Investments are also made in active funds where almost all the underlying assets are evaluated using a Sustainable and Responsible Investment (SRI) rating, and where the focus is on companies with a strong record of both financial and ESG performance. Moreover, when looking into diversifying further its fixed income exposure geographically, wherever it was possible, the Bank has opted for both passive and active funds which apply an ESG scoring or screening methodology aimed at tilting toward issuers that rank higher on ESG criteria and green bond issues, and to be underweight or remove issuers that rank lower.

The Bank applies a norm-based negative screening approach for the investments under its direct control, whereby it seeks to avoid having exposure to companies that cause or contribute to serious violations of fundamental ethical norms. Since 2021, such screening based on the exclusion list of one of the world's largest pension funds, managed by the Norges Bank Investment Management,²¹ has been applied to the externally managed corporate bond portfolio through a change in the mandate. This has resulted in divestment from companies involved in the tobacco industry and/or linked to the production of nuclear weapons. The Bank does not have any exposure to issuers listed in the Norges Bank negative list through its internally managed fixed income portfolios.

²⁰ [Paris Agreement on Climate Change](#).

²¹ The Norges Bank Investment Management manages Norway's Government Pension Fund Global [Observation and exclusion of companies | Norges Bank Investment Management \(nbim.no\)](#).

The access to climate data obtained in 2022 has been a critical tool to identify and monitor climate-related risks. The Bank is currently in the process of identifying the extent of climate-related risks emanating from the NMPPs over different time horizons. These risks are expected to be further integrated into the Bank's Risk Management framework. A Responsible Investment Strategy is being developed to address these risks and opportunities, laying out actions required to decarbonise the portfolio in line with pre-set targets. Following its completion, this Strategy is expected to be reviewed regularly and amended as required to ensure that the Bank keeps its NMPPs within an acceptable decarbonisation trajectory.

The Bank is continuously seeking to increase its expertise in this field through the establishment of dedicated teams and through the continued participation of Bank officials in NGFS work streams and Eurosystem fora.



Box 1: Sustainable and Responsible Investment Strategies

The Network for Greening the Financial System (NGFS) identifies the following possible investment strategies in its 2019 Sustainable and Responsible Investment Guide.

1. Negative screening

This refers to restricting the investment universe based on pre-selected criteria (or screens). This strategy is often seen as a first step in the adoption of SRI practices.

2. Best-in-class

This is a broad strategy that involves either positive screening or index-adjusted weighting ("SRI tilting") by comparing the SRI characteristics of a firm to those of its peers.

3. ESG integration

This enhances traditional financial (risk) analyses by systematically including all financially material ESG-criteria in the investment analysis to improve the risk-return profile of the portfolio.

4. Impact investing

This aims to generate an intentional and quantifiable positive impact alongside financial returns and can range from private to listed impact solutions. The latter entail investing in green bonds (or other labelled bond instruments with an SRI label).

5. Voting and engagement

This involves exercising one's ownership rights and "voice" with the intention of changing a company's behavior regarding SRI issues.

Source: NGFS 2019.



Risk management

The Bank's risk framework encompasses an analysis of market, credit and liquidity risks associated with the various asset classes the Bank is invested in, and which can negatively impact its balance sheet. Going forward, climate and sustainability will become an integral part of this risk framework. Prior to the availability of climate data, the framework focused on the importance of ESG factors in determining the creditworthiness of issuers and has taken several steps to integrate these factors into the risk assessment process. Previously, ESG factors were highlighted during the issuer analysis, but they were not a determinant of obligor limits. On the social front, the analysts research the main risks that stem from regulatory risk, litigation exposure, compliance standards, cyber risks, and the financial and reputational implications of data breaches. The governance assessment of risks includes board structure, risk management, and capital and liquidity management. All these ESG factors can have an impact on the overall issuer limit for the Bank's internally managed fixed income holdings.

The Bank NMPPs are also exposed to climate risks that could result in adverse outcomes in the event of a gradual change in risk factors, or a climate shock. It differentiates between transition risks and physical risks, with transition risks relating to the likelihood and impact of the economic consequences of the transition to a carbon-neutral economy, and physical risks relating to the likelihood and impact of severe weather events of natural disasters.

To date externally managed funds have been selected based on sustainability or specific climate-related criteria provided by the external fund managers, with ESG scores and strategies monitored and discussed with the respective asset managers on a regular basis. The results fall within the scope of the internal reporting of the impacts of investment activities.

The Bank, as part of the Eurosystem, has identified common SRI data sources, and procured two SRI data providers to enable it to actively identify, assess, and manage exposure of its NMPPs

to long-term climate-related risks, including transition risks and physical risks. These risks, as estimated using several metrics and indicators, are being integrated into the risk management process. They will not form a new risk category, but rather an amplifying factor of existing categories, such as credit and market risks.

To this effect, the Bank is analysing the climate risks by looking into several metrics, including carbon footprint (CF), weighted average carbon intensity (WACI), total carbon²² emissions and carbon intensity (CI) of all the portfolios within traditional asset classes, such as government debt, SSAs, corporate bonds, covered bonds, and equities. For the corporate bonds and equities, the Bank has also started looking into forward looking indicators such as climate temperature score, climate greenhouse gases (GHGs) reduction targets and carbon risk rating, with the aim of integrating these indicators, or similar ones as part of the risk management framework. The inclusion of these indicators depends on the data coverage and quality.²³ While sovereigns and sub-sovereign bonds remain an important part of the Bank's NMPPs given their high level of safety and liquidity compared to corporate issuers, tracking their net zero pathways is more challenging.²⁴ Factors such as sovereign historical emissions, targeted emission pathways, climate policies, as well as opportunities to finance a just transition need to be additionally considered when analysing a sovereign's climate-related risks and opportunities.²⁵ Data and frameworks that enable investors to make a fair assessment of a sovereign's climate performance still need to develop further. The decarbonisation rate for the sovereign part of the portfolios remain dependent on the countries' actual actions with regards to the low carbon transition. For the internally managed fixed income funds, the Bank also monitors the exposure to thematic bond holdings.

²² The term 'carbon' includes the greenhouse gases (GHG) covered by the Kyoto protocol.

²³ See Chapter on 'Metrics and Targets'.

²⁴ See [Climate Action Tracker \(2022\)](#).

²⁵ The first ASCOR tool is expected to be published in Q4 2023. See [UN PRI ASCOR](#).



Metrics and Targets

In this section, the Bank has opted to report beyond the Eurosystem's minimum disclosure framework by covering the metrics and targets for both the euro and foreign currency denominated NMPPs for the years 2019 to 2022 (see Annex 1 for historical metrics).

Metrics

Calculations of the presented metrics follow recommendations of the TCFD²⁶ and the Partnership for Carbon Accounting Financials (PCAF).²⁷ The three main metrics discussed in this chapter are the "Weighted Average Carbon Intensity" (WACI), "Total Carbon Emissions" (TCE) and the "Carbon Footprint" (CF), which together form the basis of the Eurosystem's common minimum disclosures on NMPPs. For the maximum degree of transparency and to minimize the issues of double counting²⁸ and carbon leakage²⁹ to the extent possible, the Eurosystem is disclosing three sovereign emission allocation metrics using production, consumption and government-based methods (see Annex 3 Table 7). For all calculations, the sub-sovereigns are treated like their parent sovereign. For corporate, supranational and agency issuers the Bank has estimated the climate metrics using Scope 1 and Scope 2 GHG emissions (see Box 2) provided by the SRI Data providers.³⁰ Reported data was preferred over estimated/modelled data when both were available.

²⁶ TCFD formulas are provided [here](#). For the Eurosystem disclosure framework, these have been adjusted where necessary to reflect latest PCAF guidance and cover additional asset classes.

²⁷ See [The Global GHG Accounting and Reporting Standard for the Financial Industry](#).

²⁸ It is to note that double counting of emissions remains an unavoidable element of climate-related reporting. The Scope 1 and Scope 2 emissions of non-sovereign issuers are also captured in sovereigns' production and consumption emissions.

²⁹ Carbon leakage refers to instances when businesses move production facilities to countries with less restrictive emissions constraints and thus would not be captured under the emissions of a sovereign when using the production-based method.

³⁰ Given the distinct allocation methods for sovereign and non-sovereign investments, metrics are presented separately.

The *WACI* measures a portfolio's exposure to carbon-intensive issuers, expressed in tons of CO₂ equivalent per EUR million revenue.³¹ The CI of each issuer is computed by normalizing their GHG emissions by a measure of economic activity. The portfolios' 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 normalization, and the widespread application of the metrics across the financial industry ensure comparability across portfolios and time. The WACI delivers an "outside-in-perspective" (i.e., financial materiality) which serves as proxy for a portfolio's exposure to climate change-related transition risks.

The *Total Carbon Emissions* metric quantifies the emissions associated with a portfolio, expressed in tons of CO₂ equivalent. Carbon emissions are weighted by the investor's contribution to the issuer's total capital structure (e.g., equity, debt, GDP etc.) and summed up to determine the portfolio's total carbon emissions. The metric serves as a foundation of related normalized metrics such as the "Carbon footprint" and the "Carbon intensity". It provides an "inside-out-perspective" (i.e., environmental materiality) which serves as proxy for a portfolio's environmental footprint. Due to its non-normalized nature, the metric's comparability across portfolios and time is limited, with portfolio size being a main driver. To overcome this limitation and to provide a more holistic view of a portfolio's associated emissions, complementary disclosure of the CF is essential.

The CF normalizes the *Total Carbon Emissions* associated with a portfolio by its market value, expressed in tons of CO₂ equivalent per EUR million invested, thereby allowing for comparability across differently sized portfolios and time.

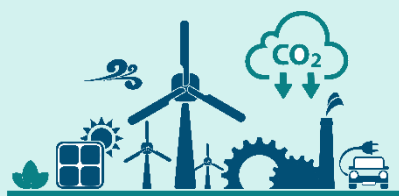
³¹ Carbon dioxide equivalent (or CO₂ equivalent) is a metric measure used to compare the emissions from various GHG on the basis of their global-warming potential (GWP), by converting amounts of other gases to the equivalent amount of CO₂ with the same global warming potential. For more information, see [Eurostat](#).



By reporting on these different climate-related metrics, we seek to obtain an assessment from different but complementary perspectives.

In addition to these minimum metrics defined in the Eurosystem’s minimum disclosure framework, the Bank is also reporting the *Carbon Intensity (CI)* of the NMPPs. The Carbon Intensity measures a portfolio’s associated *Total Carbon Emissions* relative to its associated underlying issuer revenue (and/or PPP adj. GDP, population, total consumption expenditure), expressed as tons of CO₂ equivalent per EUR million revenue (and/or PPP adj. GDP, population, total consumption expenditure). This metric can be considered as a carbon efficiency ratio of the NMPPs and allows comparison between different asset classes as well as across time.

Each climate metric described above has its own strengths and limitations and thus by reporting on these different climate-related metrics, we seek to obtain an assessment from different but complementary perspectives.³² In addition, the Bank is reporting several forward-looking indicators which are currently being observed to improve its assessment of the climate-related profile of our NMPPs.



Box 2: Greenhouse Gas Emission Scopes

Scope 1: Direct GHG emissions

Direct GHG emissions occur from sources that are owned or controlled by the company.

Scope 2: Indirect GHG emissions

Scope 2 accounts for GHG emissions from the generation of purchases electricity consumed by the companies. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated.

³² In the case of the Production method for Sovereigns, the WACI, CF and CI are equal.

Scope 3: Other indirect GHG emissions

Scope 3 emissions are a consequence of the activities of the company but occur from sources not owned or controlled by the company. Some examples of scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

Source: [The Greenhouse Gas Protocol](#).

The Bank is also including metrics for the NMPPs held as at 31 December for the years 2019 to 2022 in line with TCFD recommendation to provide at least two years of historical data. When estimating climate metrics, the general principle is to have all holdings, emissions and financial data included in the calculations pertaining to the same reference year. While data on NMPPs holdings is readily available and accessible, there is a delay until both GHG emissions and financial data become available. This delay varies between asset classes and regions. Therefore, some of the metrics will need to be updated in future versions of the report until all the inputs for the same reference year become available. It should be noted that when mixing data with different reference years, there is a risk that the change in metrics might be due to changes in market prices rather than any real changes in portfolio's emissions characteristics. Whilst the Bank has been including climate considerations in its investment decisions throughout these reported years, metrics for the reported historical years were estimated ex-post during 2022 with the availability of climate data.

The SRI data providers employ strict methodologies to assess the reliability of company-reported data to ensure that only the most reliable self-reported emissions data is utilised. The quality of reported emissions data is assessed taking several control measures into account. These include deviations from previous disclosures, deviations between different disclosure sources, external validation of data and a company's experience in CF.

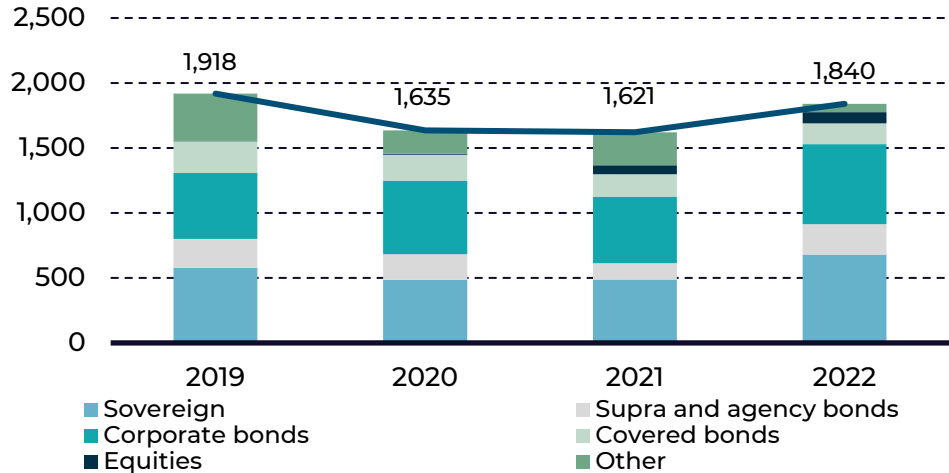
The Bank's disclosure policy is based on applying the best available information and transparency to promote the development of high-quality disclosures. For all reported emissions data that are deemed unreliable, the data providers use proprietary and granular modelling systems to estimate emissions. Furthermore, verification is a central part of the providers' data collection processes. Data analysis focuses on the identification and elimination of potential error sources and conduct of targeted analysis to monitor data quality.

The data providers' methodologies include several checks and balances to ensure the quality of the data. A combination of automatic data processing and analyst input is applied. Following data collection, the data providers have systems in place to identify red flags, outliers, and contradictions automatically. After emissions data has been collected and fed through models, assessments are manually reviewed by experts to ensure maximum reliability. Each assessment is first reviewed by an analyst, quality checked by a second analyst and then the data lead provides final approval on the overall calculations.

The charts below show how the size and asset composition of the Bank's euro (see Chart 2) and foreign currency (see Chart 3) denominated NMPPs have evolved during the reporting period.³³

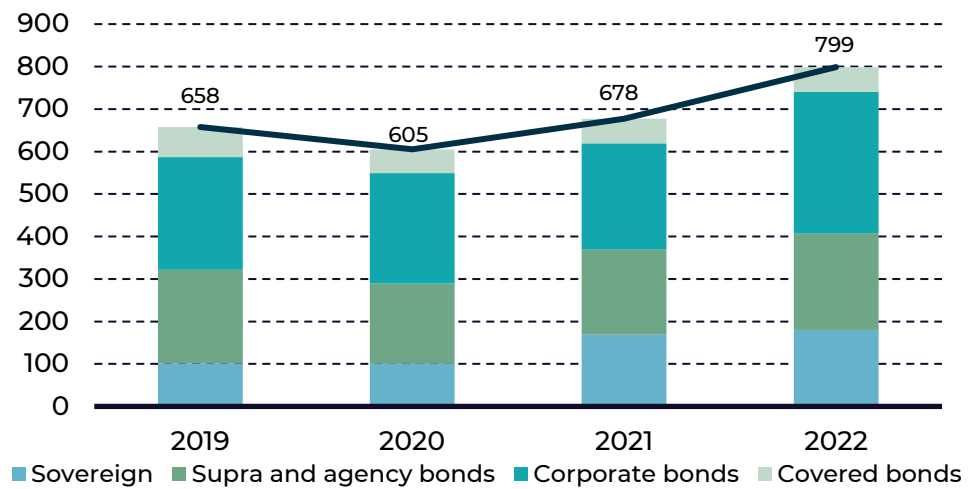
³³ These holdings include the market-making portfolio.

Chart 2
HISTORICAL EVOLUTION
OF SIZE AND ASSET
ALLOCATION –
EUR PORTFOLIO
(EUR millions)



Sources: Bloomberg; Central Bank of Malta calculations.

Chart 3
HISTORICAL EVOLUTION
OF SIZE AND ASSET
ALLOCATION –
FCY PORTFOLIO
(EUR millions)



Sources: Bloomberg; Central Bank of Malta calculations.

Table 1 below shows the above-described metrics, as at 31 December 2022, for the **EUR denominated** NMPPs which incorporate the internally and externally managed financial assets, as well as the market-making MGS portfolio. It is noteworthy to mention that when using the production allocation method for sovereign holdings, the WACI, CF and CI metrics are equivalent to each other.

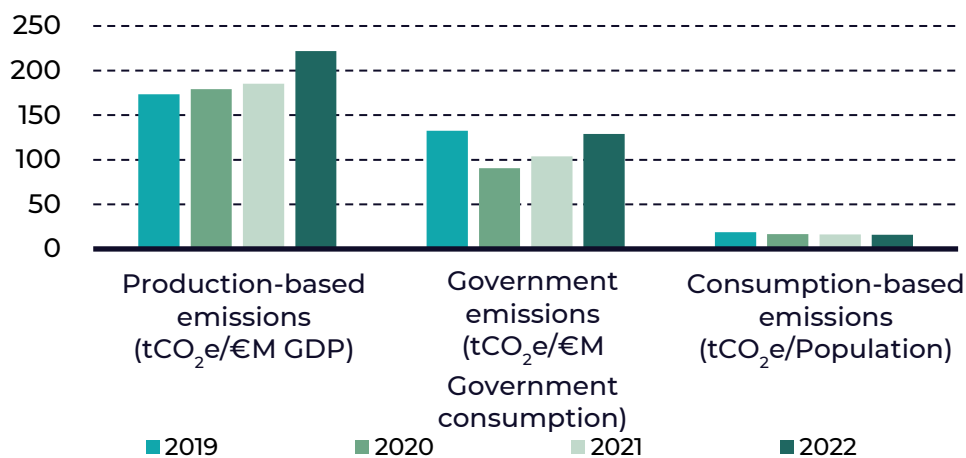
Table 1
EUR-DENOMINATED PORTFOLIO

	Sovereign			Non-sovereign				
	Sovereign and sub-sovereign bonds			TOTAL	Supra and agency bonds	Corporate bonds	Covered bonds	Equities
	Production	Consumption	Government					
Portfolio Size (€ billion)	0.68			1.09	0.23	0.61	0.16	0.09
WACI (tons of CO ₂ equivalent per € million revenue, GDP, consumption exp., or per capita)	222 100%	16 100%	129 99%	61 83%	4 50%	66 90%	3 96%	215 100%
Total carbon emissions (tons of CO ₂ equivalent)	150,855 100%	267,962 100%	16,452 100%	30,800 82%	84 49%	22,968 90%	139 93%	7,609 100%
Carbon footprint (tons of CO ₂ equivalent per € million invested)	222 100%	394 100%	24 100%	34 82%	1 49%	41 90%	1 93%	88 100%
Carbon Intensity (tons of CO ₂ equivalent per € million revenue, GDP, consumption exp., or per capita)	222 100%	15 100%	122 99%	111 82%	28 49%	124 90%	2 93%	271 100%

Sources: ISS; C4F; World Bank; Bloomberg; Central Bank of Malta calculations.

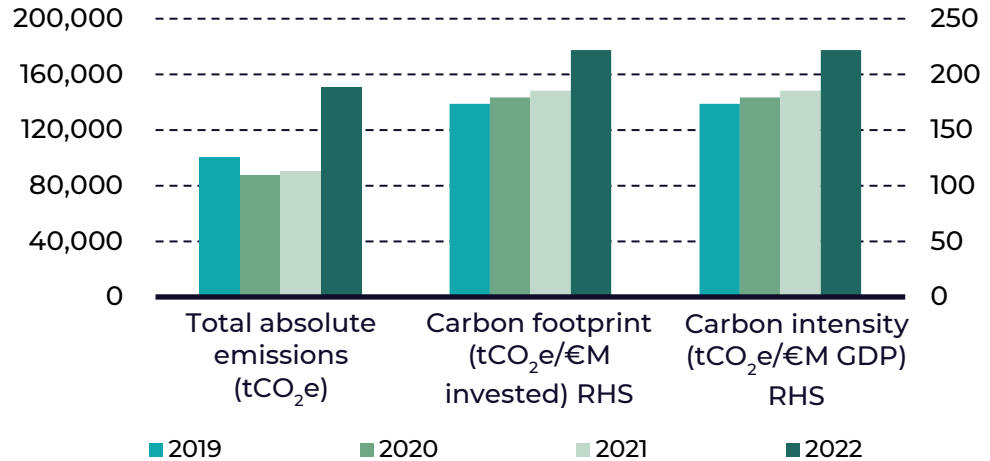
Chart 4 and Chart 5 below show how the metrics for the **sovereign** investments of the **EUR NMPPs'** climate metrics developed over the reporting period.

Chart 4
EUR SOVEREIGN PORTFOLIO – WACI METRICS (tCO₂e)



Sources: ISS; C4F; World Bank; Bloomberg; Central Bank of Malta calculations.

Chart 5
 EUR SOVEREIGN
 PORTFOLIO –
 GHG PRODUCTION-
 BASED METRICS
 (tCO₂e)



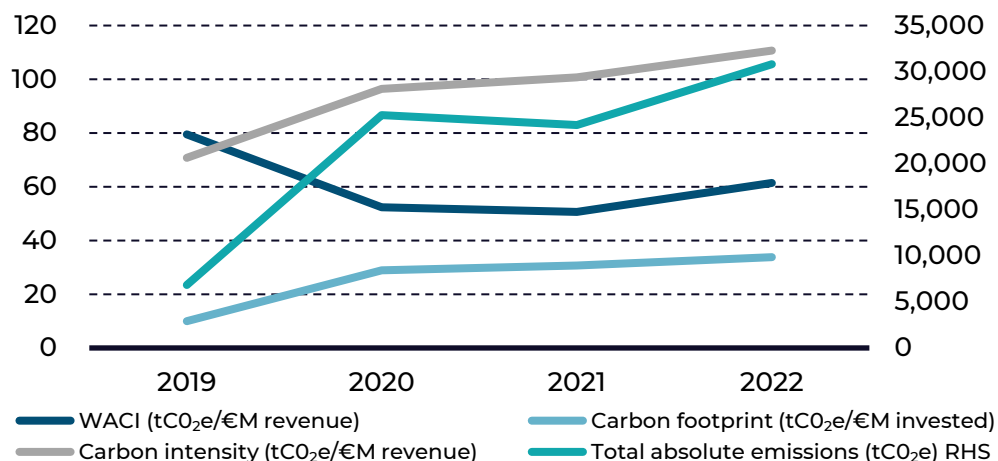
Sources: ISS; C4F; World Bank; Bloomberg; Central Bank of Malta calculations.

One can observe that the non-normalised Total Carbon Emissions trajectory reflects the size of the sovereign holdings in the EUR portfolio over the years (see Chart 2). The rise in the normalised metrics from 2019 to 2021 reflects the increased diversification investments in global unconstrained fixed income funds.³⁴ During 2022, the further increase in these metrics reflects investments in inflation-linked bond funds and further geographical diversification in fixed income sovereign holdings.

Chart 6 shows how the metrics for the **non-sovereign** component of the EUR NMPPs' climate metrics developed over the reporting period.

³⁴ The only exception is for Government emissions, where the decrease is also reflecting a change in methodology by ISS.

Chart 6
EUR PORTFOLIO –
NON-SOVEREIGN



Sources: ISS; C4F; World Bank; Bloomberg; Central Bank of Malta calculations.

The WACI had decreased between 2019 and 2021 because the additional funds injected in the externally managed corporate bond mandate were invested in lower emission intensive issuers. This was more than offset by the increase in WACI coming from the higher investment in global unconstrained fixed income funds which have higher emission intensity. The WACI increased somewhat thereafter due to investments in inflation-linked corporate bonds and further geographical diversification of other corporate fixed income holdings. The increase was also due to investments in equity funds whose underlying holdings are in companies that while being in the forefront to enable the transition to low carbon economies, do not have comparatively low emissions at firm level at this juncture. However, around 80% of these equity fund holdings have ambitious GHG targets, approved or committed SBT targets.³⁵ The CF and CI of the portfolio both increased over the years for similar reasons. The increase in total carbon emissions reflects the increased exposure to non-sovereign holdings in the portfolio over the reporting period.

³⁵ As per ISS classification.

Table 2 below shows the above-described metrics for the **foreign currency** denominated internally³⁶ managed NMPPs and cover the asset classes held as at 31 December 2022.

Table 2
FCY-DENOMINATED PORTFOLIO

	Sovereign			Non-sovereign			
	Sovereign and sub-sovereign bonds			TOTAL	Supra and agency bonds	Corporate bonds	Covered bonds
	Production	Consumption	Government				
Portfolio Size (€ billion)	0.18			0.62	0.23	0.33	0.06
WACI (tons of CO ₂ equivalent per € million revenue, GDP, consumption exp., or per capita)	355 100%	16 100%	195 100%	3 88%	4 70%	2 99%	3 100%
Total carbon emissions (tons of CO ₂ equivalent)	63,904 100%	60,504 100%	7,214 100%	232 88%	86 70%	110 99%	35 100%
Carbon footprint (tons of CO ₂ equivalent per € million invested)	355 100%	336 100%	40 100%	0 88%	1 70%	0 99%	1 100%
Carbon Intensity (tons of CO ₂ equivalent per € million revenue, GDP, consumption exp., or per capita)	355 100%	16 100%	189 100%	3 88%	17 70%	2 99%	3 100%

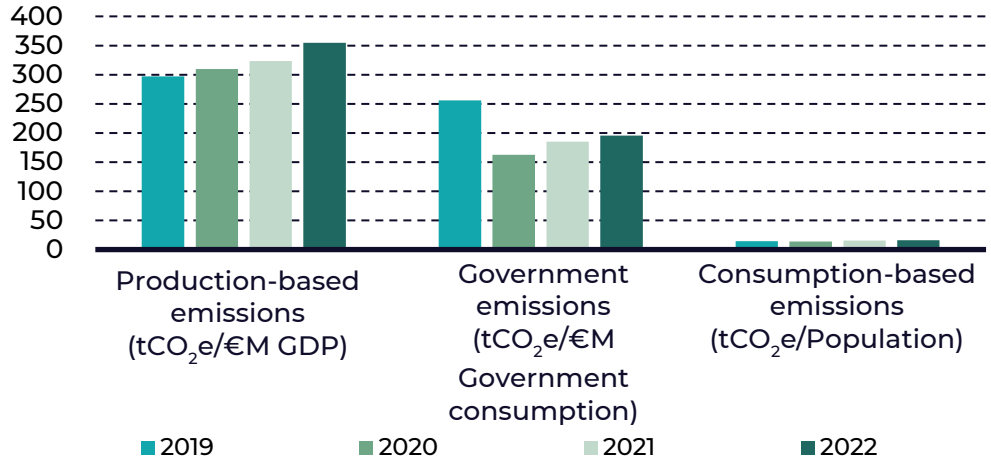
Sources: ISS; C4F; World Bank; Bloomberg; Central Bank of Malta calculations.

Chart 7 and Chart 8 show how the metrics for the **sovereign** instruments of the **foreign currency** denominated NMPPs' climate metrics developed over the reporting period.

Similarly, the non-normalised TCE trajectory reflects the size of the sovereign holdings in the foreign currency NMPPs (see Chart 2).

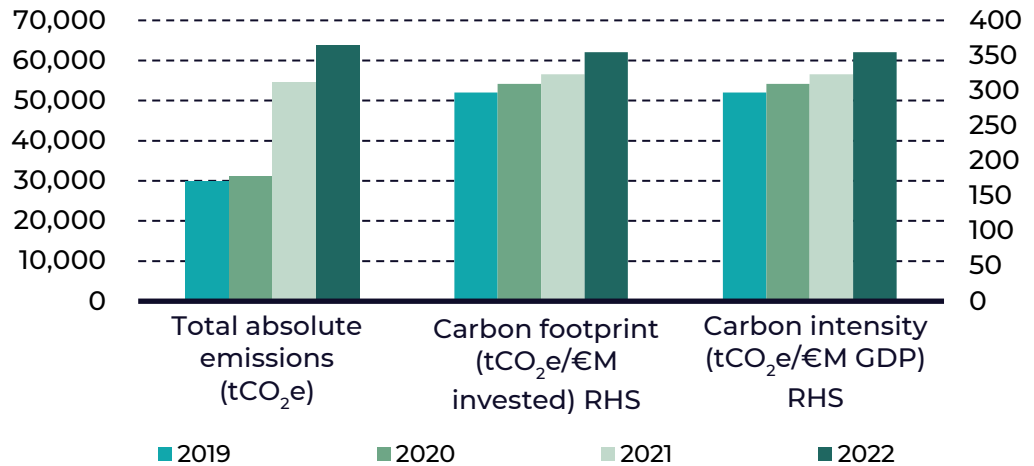
³⁶ The Bank does not have any externally managed foreign currency denominated portfolios.

Chart 7
FCY SOVEREIGN
PORTFOLIO –
WACI METRICS
(tCO₂e)



Sources: ISS; C4F; World Bank; Bloomberg; Central Bank of Malta calculations.

Chart 8
FCY SOVEREIGN
PORTFOLIO –
GHG PRODUCTION-
BASED METRICS
(tCO₂e)



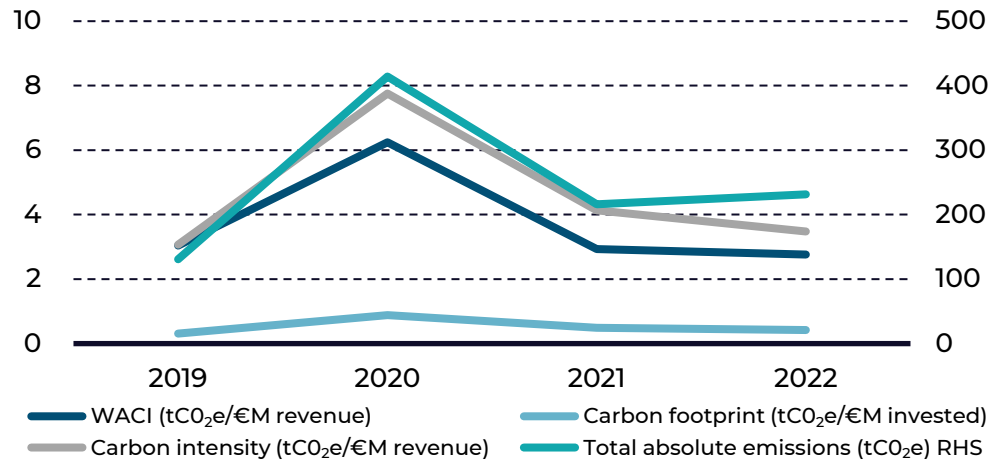
Sources: ISS; C4F; World Bank; Bloomberg; Central Bank of Malta calculations.

The gradual rise in the normalised metrics over the reporting period³⁷ is mainly due to increased weight to a highly rated sovereign, with relatively higher emissions intensity.

³⁷ The only exception is for Government emissions, where the decrease might be explained by the change in methodology undertaken by ISS.

Chart 9 shows how the metrics for the **non-sovereign** component of the **foreign currency** NMPPs' climate metrics developed over the reporting period.

Chart 9
FCY PORTFOLIO –
NON-SOVEREIGN



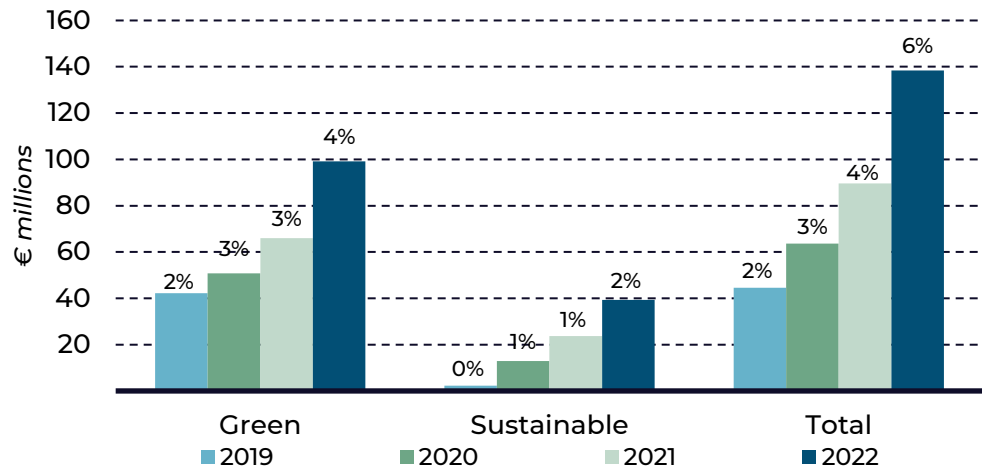
Sources: ISS; C4F; World Bank; Bloomberg; Central Bank of Malta calculations.

Foreign currency investments are only held in internally managed funds. The rise in metrics between 2019 and 2020 was primarily due to a relatively small holding of an agency bond which focused on the production of electricity. This bond matured in 2021 leading to the subsequent decrease in both the normalised and non-normalised metrics. All the normalised metrics marginally decreased thereafter despite the increase in the portfolio size, as investments were made in lower emission-intensive corporates. Moreover, holdings of a relatively high emission-intensive utility agency matured during 2022, which also contributed to the decrease.

While the Bank has not yet set a quantitative target on green and sustainable bond holdings, it did progressively increase such holdings of eligible issuers in its internally managed portfolio over the reporting period. Investments to date were dependent on supply, liquidity and the observed greenium. Currently these

holdings amount to around 6%³⁸ of the Bank's NMPPs and are predominantly held in the EUR NMPPs (see Chart 10).

Chart 10
THEMATIC BOND
HOLDINGS
(nominal/percentage of
AUM)



Sources: Bloomberg; Central Bank of Malta calculations.

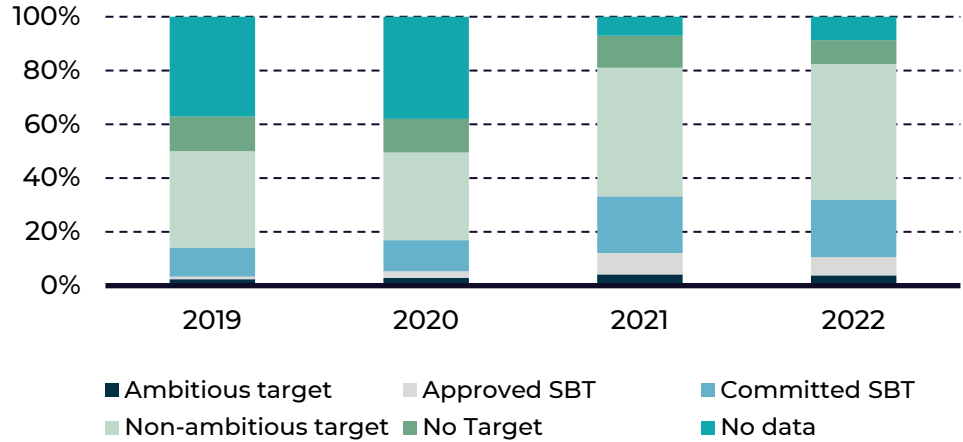
The forward-looking indicators below are part of the Bank's climate risk and alignment analysis for the equity and corporate bond holdings, which account for around 48% of the Bank's total holdings as at end of 2022.

Chart 11 shows *GHG Reduction targets*³⁹ for both euro and foreign currency holdings. This metric gives an indication of the extent to which these issuers plan to reduce their GHG emissions and are committed to climate goals. The combined share of issuers with ambitious targets, approved SBTs and committed SBTs more than doubled from 14% in 2019 to 32% in 2022. The share of corporate

³⁸ The Bank also holds exposure to green and sustainable bonds through externally managed funds where the prerogative of such holdings lies with the external asset manager. The Bank still monitors such holdings on a regular basis.

³⁹ This factor differentiates an entity's targets as "No Target", "Non-Ambitious Target", "Ambitious Target", "Committed SBT", "Approved SBT" based on the existence and quality of GHG emissions reduction targets. It considers both SBTs and other targets set by the company (ISS).

Chart 11
CLIMATE GHG
REDUCTION TARGETS
(per cent)



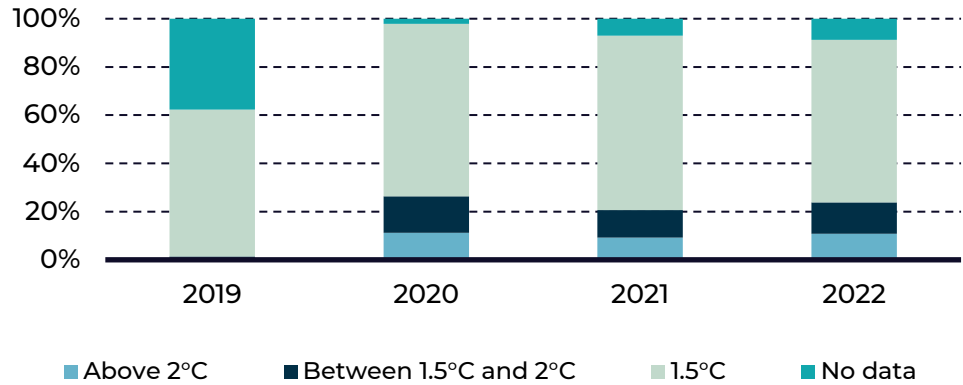
Sources: ISS; Central Bank of Malta calculations.

and equity holdings with SBTs make up 28% of such holdings. This is equivalent to around 36% of issuers. Financial corporates and covered bond holdings in the internally managed funds, together with equity holdings contributed to an increase in holdings with committed SBTs. The increase in holdings for approved SBTs is attributed to corporate holdings in the global unconstrained fixed income funds, as well as from the equity funds with a focus on sustainability and/or climate transition.

Chart 12 shows the *Climate Temperature Score* based on ISS data for both the euro and foreign currency holdings for corporates and equities. This indicator assesses the issuer’s emissions over or undershoot relative to the carbon budget in the Sustainable Development Scenario (SDS) pathway⁴⁰ at a particular point in time. The share of corporate and equity issuers whose emissions are aligned to the Paris Agreement temperature goals, for the end of 2022 stood at 80%. This metric can be used to complement other alignment analysis as on its own it cannot be used to explain the

⁴⁰ SDS is a climate scenario provided by the International Energy Agency that is fully aligned with the Paris Agreement and meets several sustainable development goals.

Chart 12
CLIMATE TEMPERATURE
SCORE
(per cent)

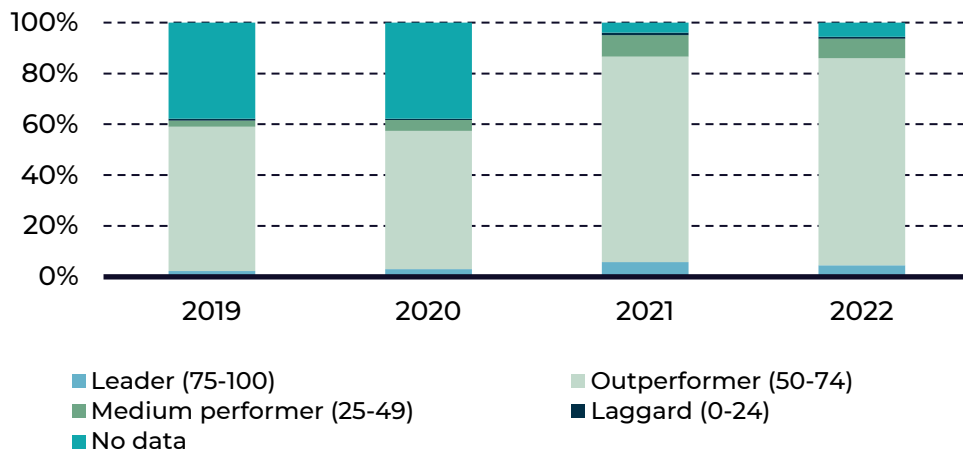


Sources: ISS; Central Bank of Malta calculations.

full dynamics of an issuer’s contribution to the global temperature increase. This metric is also not comparable across time given differences in the applied climate scenario.

Chart 13 shows the *Carbon Risk Rating*⁴¹ for corporates and equities in both the euro and foreign denominated NMPPs. This is

Chart 13
CARBON RISK RATING
(per cent)



Sources: ISS; Central Bank of Malta calculations.

⁴¹ The Carbon Risk Rating is a combination of the Carbon Risk Classification and the Carbon Performance Score. The Carbon Risk Rating assesses, on a scale from 0 (very poor performance) to 100 (excellent performance), how a company deals with industry-specific climate risks. The scale can be translated into four broader performance categories: Climate Laggard (0-24), Medium Performer (25- 49), Outperformer (50-74), and Leader (75-100) (see [ISS Carbon Risk Rating](#)).

an indicator of how well a corporate is prepared for the eventual low-carbon economy following an analysis of how it deals with industry-specific climate risks both in its own operations as well as in the supply chain. Therefore, the Carbon Risk Rating can be utilised as part of the transition risk assessment. The percentage of such holdings which are classified as 'outperformers' (currently c81%) have increased over the reported years, while a more marginal increase can be observed in the 'leaders' (c5%).

Targets

The Sixth Assessment Report (AR6) of the United Nations (UN) Intergovernmental Panel on Climate Change (IPCC) confirmed that each of the last four decades has been successively warmer than any decade that preceded it since 1850, mainly due to human influence. Going forward, the likelihood of keeping the temperature rise well below the 2°C above pre-industrial levels, whilst pursuing efforts to keep it to 1.5°C in line with the Paris Agreement, is decreasing unless immediate action is taken⁴² to deeply cut carbon dioxide (CO₂) and other GHG emissions.

To this effect, the Bank will aim to decarbonise its NMPPs in line with the goals of the Paris Agreement and the EU's long-term objective to reduce emissions to net zero by 2050 as defined in the European Climate Law.⁴³

The Bank also aims to work towards portfolio or asset class-specific,⁴⁴ interim decarbonisation targets for its NMPPs which consider data quality and availability, as well as portfolio objectives and constraints.

⁴² With further global warming, every region is projected to increasingly experience concurrent and multiple changes in climatic impact-drivers. Changes in several climatic impact-drivers would be more widespread at 2°C compared to 1.5°C global warming and even more widespread and/or pronounced for higher warming levels (see [IPCC AR6 WG1](#)).

⁴³ [EU Climate Law](#).

⁴⁴ It is anticipated that actions to align certain asset classes to the Paris Agreement will be more challenging, due to data and methodological challenges.

Annexes

Annex 1

The below tables show the historical climate metrics for the euro and foreign currency denominated NMPPs as well as the combined metrics for all holdings.

Table 3
EUR-DENOMINATED HOLDINGS

		Sovereign			Non-sovereign				
		Sovereign and sub-sovereign bonds			TOTAL	Supra and agency bonds	Corporate bonds	Covered bonds	Equities
		Production	Consumption	Government					
Portfolio Size (€ billion)									
	2021		0.49		0.88	0.13	0.51	0.17	0.07
	2020		0.49		0.97	0.20	0.56	0.20	0.01
	2019		0.58		0.98	0.22	0.51	0.24	0.00
WACI (tons of CO ₂ equivalent per € million revenue, GDP, consumption exp., or per capita)									
	2021	185 100%	16 100%	104 99%	51 90%	0 49%	74 95%	3 100%	56 100%
	2020	179 100%	17 100%	91 100%	52 90%	1 62%	79 97%	4 99%	249 100%
	2019	173 100%	19 100%	132 100%	79 70%	1 74%	161 65%	4 77%	110 97%
Total carbon emissions (tons of CO ₂ equivalent)									
	2021	90,380 100%	186,538 100%	9,678 100%	24,197 89%	1 49%	22,072 94%	136 100%	1,989 99%
	2020	87,203 100%	213,427 100%	8,939 100%	25,275 85%	2 62%	24,181 89%	329 95%	763 99%
	2019	100,348 100%	260,959 100%	13,894 100%	6,836 70%	5 74%	6,645 65%	72 77%	115 97%
Carbon footprint (tons of CO ₂ equivalent per € million invested)									
	2021	185 100%	383 100%	20 100%	31 89%	0 49%	46 94%	1 100%	30 99%
	2020	179 100%	439 100%	18 100%	29 85%	0 62%	44 89%	2 95%	129 99%
	2019	173 100%	451 100%	24 100%	10 70%	0 74%	20 65%	0 77%	60 97%
Carbon Intensity (tons of CO ₂ equivalent per € million revenue, GDP, consumption exp., or per capita)									
	2021	185 100%	15 100%	100 99%	101 89%	0 49%	131 94%	3 100%	102 99%
	2020	179 100%	16 100%	88 100%	96 85%	1 62%	128 89%	5 95%	359 99%
	2019	173 100%	18 100%	132 100%	71 70%	0 74%	111 65%	3 77%	162 97%

Sources: ISS; C4F; World Bank; Bloomberg; Central Bank of Malta calculations.

Table 4
FCY-DENOMINATED HOLDINGS

	Sovereign			Non-sovereign			
	Sovereign and sub-sovereign bonds			TOTAL	Supra and agency bonds	Corporate bonds	Covered bonds
	Production	Consumption	Government				
Portfolio Size (€ billion)							
2021		0.17		0.51	0.20	0.25	0.06
2020		0.10		0.50	0.19	0.26	0.06
2019		0.10		0.56	0.22	0.27	0.07
WACI (tons of CO ₂ equivalent per € million revenue, GDP, consumption exp., or per capita)							
2021	323 100%	15 100%	185 100%	3 87%	4 69%	2 99%	3 100%
2020	310 100%	14 100%	163 100%	6 93%	12 83%	3 99%	3 100%
2019	297 100%	15 100%	256 100%	3 75%	2 73%	3 74%	3 87%
Total carbon emissions (tons of CO ₂ equivalent)							
2021	54,548 100%	53,027 100%	6,254 100%	216 87%	102 69%	80 99%	34 100%
2020	31,066 100%	30,705 100%	3,490 100%	414 90%	222 77%	173 99%	19 91%
2019	29,965 100%	30,081 100%	5,050 100%	131 75%	10 73%	92 74%	29 87%
Carbon footprint (tons of CO ₂ equivalent per € million invested)							
2021	323 100%	314 100%	37 100%	0 87%	1 69%	0 99%	1 100%
2020	310 100%	306 100%	35 100%	1 90%	1 77%	1 99%	0 91%
2019	297 100%	298 100%	50 100%	0 75%	0 73%	0 74%	0 87%
Carbon Intensity (tons of CO ₂ equivalent per € million revenue, GDP, consumption exp., or per capita)							
2021	323 100%	15 100%	176 100%	4 87%	21 69%	2 99%	3 100%
2020	310 100%	14 100%	150 100%	8 90%	83 77%	4 99%	3 91%
2019	297 100%	15 100%	233 100%	3 75%	2 73%	3 74%	3 87%

Sources: ISS; C4F; World Bank; Bloomberg; Central Bank of Malta calculations.

Table 5
EUR AND FCY DENOMINATED HOLDINGS

	Sovereign			Non-sovereign				
	Sovereign and sub-sovereign bonds			TOTAL	Supra and agency bonds	Corporate bonds	Covered bonds	Equities
	Production	Consumption	Government					
Portfolio Size (€ billion)								
2021		0.66		1.39	0.33	0.76	0.23	0.07
2020		0.59		1.47	0.39	0.82	0.25	0.01
2019		0.68		1.53	0.44	0.77	0.31	0.00
WACI (tons of CO ₂ equivalent per € million revenue, GDP, consumption exp., or per capita)								
2021	221 100%	16 100%	125 99%	33 89%	3 61%	49 96%	3 100%	56 99%
2020	202 100%	16 100%	103 100%	36 91%	7 72%	55 98%	4 99%	249 100%
2019	192 100%	18 100%	151 100%	50 72%	2 74%	102 68%	4 79%	110 97%
Total carbon emissions (tons of CO ₂ equivalent)								
2021	144,928 100%	239,565 100%	15,932 100%	24,413 88%	102 61%	22,152 95%	170 100%	1,989 99%
2020	118,270 100%	244,132 100%	12,428 100%	25,690 87%	224 69%	24,354 92%	348 94%	763 99%
2019	130,312 100%	291,040 100%	18,943 100%	6,967 72%	15 74%	6,737 68%	101 79%	115 97%
Carbon footprint (tons of CO ₂ equivalent per € million invested)								
2021	221 100%	365 100%	24 100%	20 88%	1 61%	30 95%	1 100%	30 99%
2020	202 100%	416 100%	21 100%	19 87%	1 69%	30 92%	1 94%	129 99%
2019	192 100%	428 100%	28 100%	6 72%	0 74%	13 68%	0 79%	60 97%
Carbon Intensity (tons of CO ₂ equivalent per € million revenue, GDP, consumption exp., or per capita)								
2021	221 100%	15 100%	120 99%	83 88%	16 61%	108 95%	3 100%	102 99%
2020	202 100%	15 100%	99 100%	81 87%	39 69%	105 92%	5 94%	359 99%
2019	192 100%	18 100%	149 100%	50 72%	1 74%	76 68%	3 79%	162 97%

Sources: ISS; C4F; World Bank; Bloomberg; Central Bank of Malta calculations.

Annex 2

Table 6
ELEMENTS OF THE EUROSISTEM MINIMUM DISCLOSURE FRAMEWORK FOR THE TCFD CATEGORY METRICS AND TARGETS⁽¹⁾

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	$= \sum_n^i \left(\frac{\text{current value of investment}_i}{\text{EVIC or PPP adj. GDP}_i} \times \text{issuer's carbon emissions}_i \right)$
Carbon footprint	$= \frac{\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{EVIC or PPP adj. GDP}_i} \right) \times \text{issuer's carbon emissions}_i}{\text{current portfolio value}}$
Portfolio size	Expressed in € billions.
Asset classes	All asset classes of the portfolio, with metrics to be shown per asset class.
Data availability	Indicated in brackets 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 euro-denominated 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.

⁽¹⁾ 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.

In addition to the minimum elements of the Eurosystem disclosure framework, the Bank publishes the CI metric, which is defined as:

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

Annex 3

Carbon emissions allocation methods, normalisation factors and attribution factors.

Table 7 ALLOCATION			
Issuer type	Factor	Remarks	Unit
Corporate	Scope 1 & 2 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.	tCO ₂ 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.	
	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.	
	Government emissions	Direct emissions (e.g. from buildings, vehicles) and indirect emissions (e.g. emissions related to energy consumption, but also expenditures, subsidies, and investments) of the central government.	

Table 8 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.	EUR 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.	EUR million
	Consumption: Population	Total population of a country.	People
	Government: Final consumption expenditure	General government final consumption expenditure (formerly general government consumption) includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditures on national defence and security but excludes government military expenditures that are part of government capital formation.	EUR million

Table 9 ATTRIBUTION			
Issuer type	Factor	Remarks	Unit
Sovereign bonds	PPP adj. GDP	See description of "PPP adj. GDP" in normalization factor.	EUR
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 4

List of abbreviations

C4F	Carbon4 Finance
CF	Carbon Footprint
CI	Carbon Intensity
CO ₂	Carbon Dioxide
EIB	European Investment Bank
ESG	Environmental, Social and Governance
ETFs	Exchange-traded Funds
EVIC	Enterprise Value Including Cash
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GWP	Global-warming Potential
IAMO	International Asset Management Office
IPC	Investments Policy Committee
IPCC	Intergovernmental Panel on Climate Change
ISS	Institutional Shareholder Services
MGS	Malta Government Securities
NGFS	Network for Greening the Financial System
NMPP	Non-monetary Policy Portfolio
PCAF	Partnership for Carbon Accounting Financials
SRI	Sustainable and Responsible Investment
SAA	Strategic Asset Allocation
SBT	Science-based Target
SDS	Sustainable Development Scenario
SRI	Sustainable and Responsible Investment
TCE	Total Carbon Emissions
TCFD	Task Force on Climate-related Financial Disclosures
UN PRI	United Nations Principles for Responsible Investment
UN	United Nations
WACI	Weighted Average Carbon Intensity