

May 2024 |

# GAM SUSTAINABLE CLIMATE BOND ANNUAL IMPACT REPORT 2024



GAM  
Investments

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# INTRODUCTION

GAM is an active, independent global asset manager that thinks beyond the obvious to deliver distinctive and differentiated investment solutions.

Climate and nature are key themes influencing the investment landscape and market for our clients and we are committed to helping our clients navigate this transition to a low-carbon economy by providing solutions to meet their objectives.

Our climate bond strategy focuses on European financials, a pivotal player in financing the lowcarbon transition. We are therefore proud that the GAM Sustainable Climate Bond strategy won Environmental Finance's 2023 Best Green Bond Fund award<sup>1</sup>.

This is the strategy's third annual impact report - outlining our approach to impact measurement and the portfolio footprint. We aim to improve our reporting year on year and would welcome any feedback at [Sustainability](#).

## Organisational Overview

### Atlanticonnium

Atlanticonnium S.A., regulated by the Swiss Financial Market Supervisory Authority (FINMA) is an independent Geneva-based fund management company, which has specialized in credit investing since it was founded in 1976. The firm has managed assets for GAM since 1985 and has a strong track record, through 40 years of experience investing in the bonds of financials.

### Carbone 4

Carbone 4 was created in 2007 by climate and energy experts Jean-Marc Jancovici and Alain Grandjean. Initially a consulting firm specialising in low carbon strategy and climate change adaptation, Carbone 4 has expanded its activities with Carbon4Finance – a specialised data provider for the financial sector. Carbone 4 employs more than 50 climate professionals across Carbone 4 and Carbon4Finance.

### GAM Investments

GAM is a leading independent, pure-play asset manager providing active investment solutions and products for institutions, financial intermediaries and private investors. We operate in 14 countries and collectively managed CHF 63.8 billion in assets for our clients as at 31 December 2023.

As a global asset manager, GAM's purpose is to protect and enhance our clients' financial future. By attracting and empowering the brightest minds to think beyond the obvious, we strive to provide investment leadership, innovation and a positive impact on society and the environment.

Our investment management capabilities provide clients with differentiated investment strategies across equity, fixed income, alternatives and multi-asset. These are actively managed with discretionary, systematic and specialist approaches. Our product and solutions capabilities are focused on client needs and we are focused on building out our sustainable product offering.

<sup>1</sup><https://www.environmental-finance.com/content/awards/environmental-finances-bond-awards-2023/winners/green-bond-fund-of-the-year-gam-sustainable-climate-bond.html>



# A YEAR IN REVIEW

# 1. A YEAR IN REVIEW

## Climate extremes

It is difficult to reflect on the past year without starting with climate events. 2023 was once again the hottest year on record, with an average global temperature close to 1.5°C above pre-industrial levels according to the World Meteorological Organisation. 2023 was yet another year of “records”, spanning from local peak temperature records, such as 52.2 °C recorded in the Xinjiang province in China in July 2023, to record sea surface temperature levels.

Unsurprisingly, this has in turn led to further climate-related damage, including record breaking wildfires in Europe and Canada and the record-breaking rainfalls in China. Swiss Re estimates<sup>1</sup> that economic costs of global natural catastrophes were once again above 10-year average levels in 2023, and a record number of insured catastrophe events were recorded over the year.

## Lagging climate finance

The Climate Policy Initiative estimates<sup>2</sup> a continued ‘climate finance gap’ of just below USD 7 trillion per annum, despite climate flows doubling in 2022/2021 compared to 2020/2019 to a USD 1.3 trillion. However, while the cost of transitioning to net zero is considerable, the cost of inaction is greater – estimated USD 1,266 trillion losses associated with the social and economic costs due to climate-related impacts over 2025 to 2100, compared to USD 266 trillion of climate financing needs from 2025 to 2050 estimated to maintain a 1.5°C scenario.

## Banks setting climate targets

The Net Zero Banking Alliance, covering over USD 70 trillion of assets (over 40% of the sectors’ assets), published a progress update report<sup>3</sup> in 2023. Since 2021 more than two thirds of banks in the alliance have set interim science-based targets aligned with 1.5 scenarios – focusing on the most carbon intensive sectors. The Alliance now covers 136 banks, compared to 43 founding signatories, with an increasing number of Emerging Market banks.

## EU sustainable finance framework

The EU taxonomy sets out a common definition of economic activities that can be considered environmentally sustainable. Following the application of the green taxonomy for the first two environmental objectives – climate change mitigation and adaptation, the publication of final criteria for the four remaining objectives – sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems – marked progress towards more consistent approaches to sustainable finance. ‘In scope’ banks will be required to start disclosing EU taxonomy alignment of their activities in 2024.

The development of the EU green bond standard is a major milestone for the green bond market – a robust framework governing the issuance of green bonds. While voluntary, this EU standard will support the strengthening of global green bond market, as issuers’ frameworks are likely to gradually converge towards the standard even if not formally claiming alignment. Several issuers have already updated their green or sustainable bond frameworks to consider the green bond standard.

## Looking ahead

Looking ahead to 2024, regulatory pressure around banks’ climate strategies will remain elevated. The European Banking Authority is expected to release the results of the one-off ‘Fit-for-55’ climate risk scenario analysis that will assess the resilience of the banking sector. Moreover, EU banks are expected to meet all supervisory expectations on climate risks from the ECB by the end of 2024. Failure to meet those could lead to higher capital requirements for individual banks, in a sign that climate risks will increasingly be linked to capital requirements. Nature will also continue to gain prominence with the publication of the Taskforce for Nature-related Financial Disclosures final recommendations in September 2023, accelerating disclosures and the expectation nature considerations within climate transition plans. However, as we look ahead, the efforts from banks, regulators and standard setters alone are insufficient. Global coordinated efforts from policymakers across sectors remains critical in delivering the net zero transition.

<sup>1</sup>New record of 142 natural catastrophes accumulates to USD 108 billion insured losses in 2023, finds Swiss Re Institute | Swiss Re

<sup>2</sup>Global Landscape of Climate Finance 2023 – CPI (climatepolicyinitiative.org)

<sup>3</sup>NZBA-Progress-Update-2023.pdf (unepfi.org)

# WHY GREEN BONDS?

## 2. WHY GREEN BONDS?

### Financing green

Green bonds, as defined by the ICMA Green Bond Principles (GBP), are any type of bond instrument where the proceeds or an equivalent amount will be exclusively applied to finance or re-finance, in part or in full, new and/or existing eligible green projects and which are aligned with the four core components of the GBP.

Despite commitments and pledges, climate financing still falls short of required levels to stay on a 1.5°C pathway. According to the CPI, climate financing levels in 2021/2022 averaged USD 1.3 trillion, compared to an average USD 8-9 trillion in estimated annual financing required by 2030<sup>4</sup>.

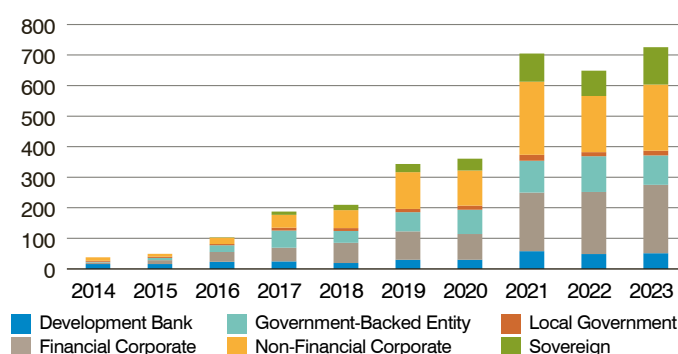
We view the green bonds market as a key tool to support financing towards a net zero economy and bridging the climate financing gap.

### Green bond market trends

2023 has been a strong year of green bond issuance, with a 12% increase in issuance volumes to a record USD 726 billion – 3% above 2021 levels. The market has continued to grow sizably, with a cumulative USD 3.4 trillion issued since inception. Overall, issuance in the global green bond market has grown at a swift 39% compound annual growth rate (CAGR) over the period 2014-2023.

Supply from financial corporates has remained solid at +10%, albeit below corporates (+18%), as issuance from corporates rebounded following the sharp decline in 2022 (-23%), while financials continued to grow (17% above 2021 levels while issuance from corporates remains 10% below 2021 levels). Corporates (both financial and non-financial) continue to dominate the green bond market at a combined 61%, followed by sovereign at 32% (including government backed and local government), and development banks at 7%.

### Green Bond Market by Issuer Type

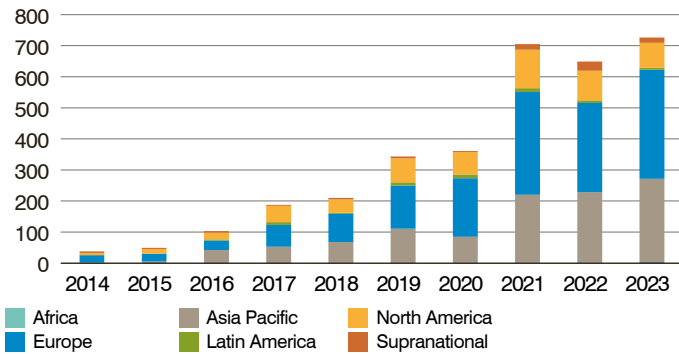


Source: Climate Bonds Initiative, 2023

Developed markets continue to be the main issuers of green bonds (65% of total issuance), compared to emerging markets (31%) and supranational issuers (4%). Europe remains the largest region (48%), +4pp YoY, followed by APAC (37%) and North America (11%). While issuance in major geographies was strong in 2023 and above 2021 levels (+18% YoY in APAC and +22% in Europe), issuance in North America declined materially (-16%) YoY, with 2023 issuance levels 35% below 2021 levels. The top three largest geographies in the green bond market are China (18%), US (15%) and Germany (9%).

<sup>4</sup>Global Landscape of Climate Finance 2023 - CPI (climatepolicyinitiative.org)

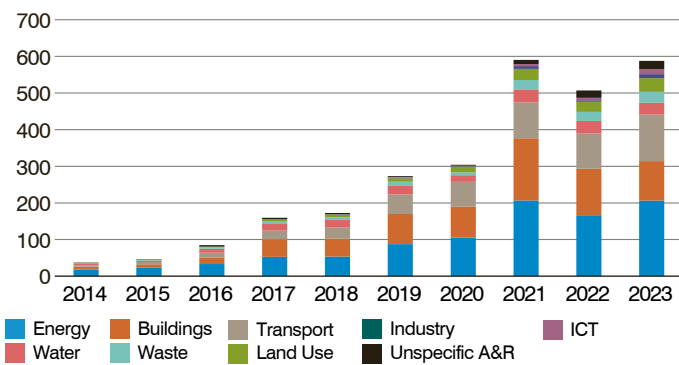
## Green Bond Market by Region



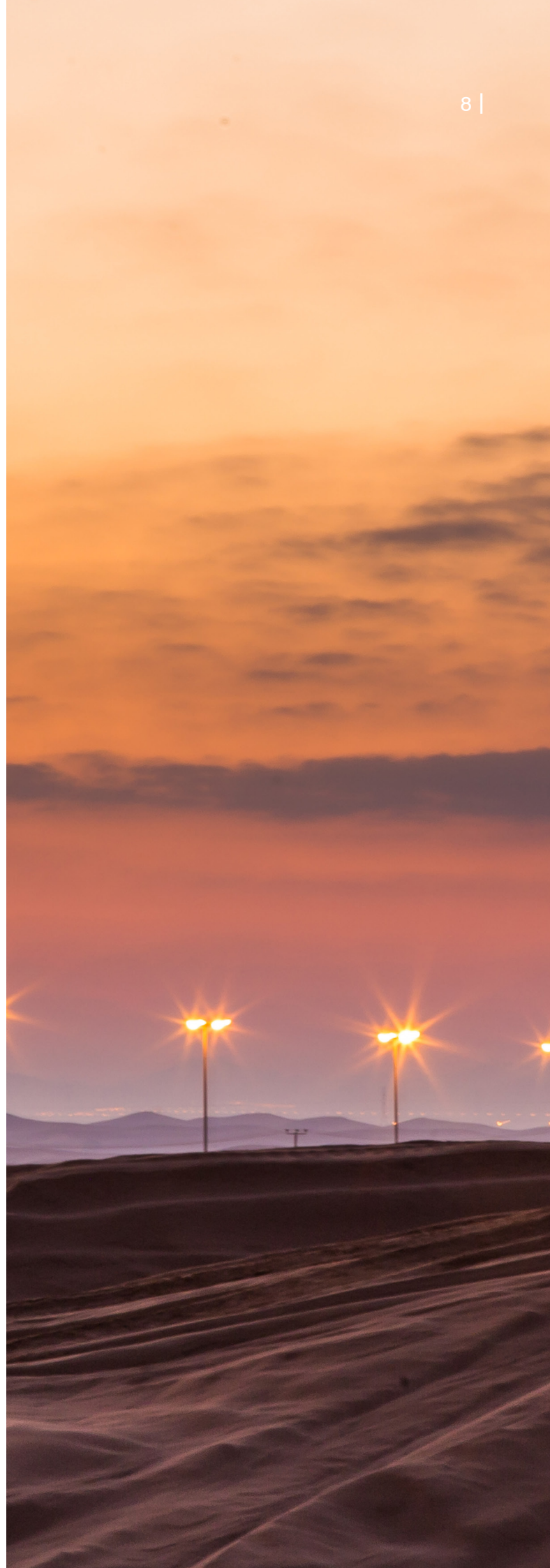
Source: Climate Bonds Initiative, 2023

Looking at 'use of proceeds', energy (35%), transport (22%) and buildings (18%) are the top three categories at a cumulative 75% of new issuance. While energy and transport saw strong growth year-on-year (+24 and 32%), buildings saw a further decline in 2023 (-15%), and are now sitting 36% below 2021 levels.

## Green Bond Market by Use of Proceeds



Source: Climate Bonds Initiative, 2023

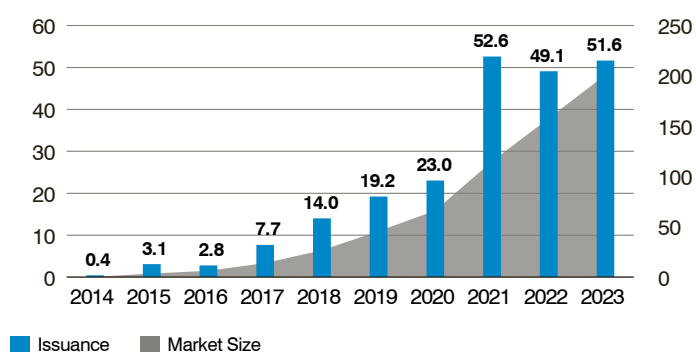




## Focus on European Financials Green Bond Market

European financials have remained highly active in the green bond market in 2023, with close to USD 50 billion of issuance, bringing the total outstanding market size to around USD 200 billion.

### European financials green bond issuance & market size



Source: Climate Bonds Initiative, 2023

There has been clear continued growth of the market size, with around 27% growth in green bonds outstanding year-on-year. While USD 52 billion stands slightly below the record USD 53 billion of 2021, the market has continued its very strong growth (3-year CAGR of ~45%). Issuance has stabilised around the USD 50 billion mark over 2021-2023, with a small 5% increase year-over-year. The increase has been driven by higher supply from both banks and insurers (+5 and +11%), while sustainability bond issuance has been strong (+58%) albeit from a small base. In terms of seniority, subordinated debt issuance continues to outpace senior debt (+18% versus +4%).

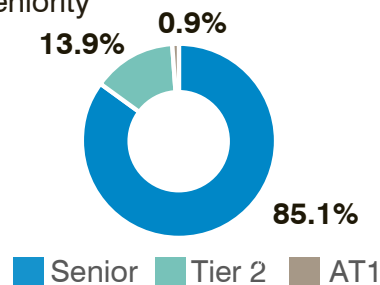
By sector, banks represent the overwhelming majority of green bond issuance, 91% compared to 9% for insurers. By seniority, senior debt is the largest portion of the market at 85%, followed by Tier 2 (both from banks and insurers) at 14% and marginal Tier 1 issuance (1% – only three bonds). There remains some aversion from issuers, especially banks, to issue green bonds in subordinated format. The preference remains for senior debt (both senior non-preferred, senior preferred).

The currency split of the market continues to show that euro issues dominate at 90%, followed by 5% US Dollar and 5% UK Sterling. This reflects the “EUR” focus of the funding structure of issuers, as well as demand from continental European investors.

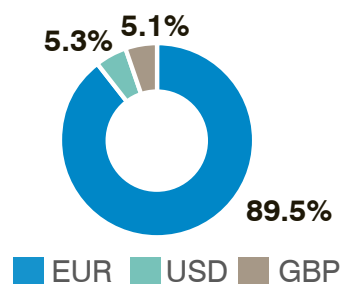
Finally, looking at the maturity (at issuance) split of bonds, 5-7 years remains the sweet spot for green bonds. This reflects the focus on senior debt, as subordinated debt typically has longer maturity, and 5-7 years is the typical tenor for EUR IG bonds.

### Splits by seniority, sector, currency and tenor

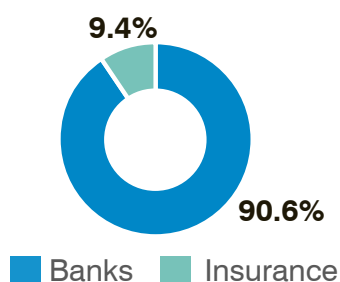
Split by Seniority



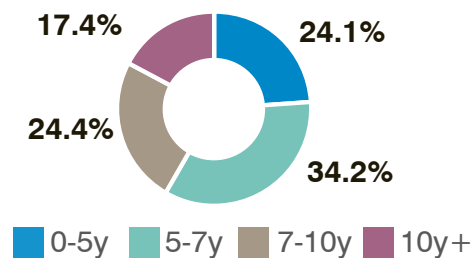
Split by Currency



Split by Sector



Split by Tenor



Source: Atlanticomnium, Bloomberg

## Outlook for 2024

We continue to expect strong supply of European financial issued green bonds over the coming years as financials continue to set increasingly ambitious green financing targets. The market is expected to continue to grow steadily, with 2024 supply likely to be around or exceed 2023 levels. Longer term, as banks continue to set increasingly ambitious climate strategies that include green financing targets, we expect green bonds to make an increasingly large percentage of the European financials bond market. Over the medium to long-term, the market could comfortably exceed USD 400 billion in size according to our estimates.

# STRATEGY OVERVIEW

## 3. STRATEGY OVERVIEW

The GAM Sustainable Climate Bond strategy is a high conviction strategy focused on delivering a positive environmental impact alongside attractive financial returns for investors. Positive environmental impact is generated by investing in green bonds (and other impact bonds) where proceeds can only be allocated to green projects such as renewable energy or green buildings. Green bonds provide investors with visibility on the use of proceeds and a measurable impact.

The strategy invests mainly in green bonds from the financial sector (banks and insurers). This is based on a conviction that the financial sector has a pivotal role to play in the environmental transition. The European banking sector has tremendous impact potential as it finances the bulk of the economy (around 80% of corporates). Momentum on banks' own environmental strategies is increasing rapidly due to regulation and banks' own efforts, and banks are increasingly ramping up green financing and pressuring clients to align their activities to net zero.

The Climate Bond strategy also potentially offers attractive returns by investing across the capital structure, in both senior and subordinated green bonds of financials. This allows a significant pick-up in spread and yield compared to the Euro Investment Grade Corporate Bond market. The strategy is conservatively managed, aiming for a strong investment grade rating.



# IN NUMBERS

## Environment indicators

**570**

Tonnes of CO<sub>2</sub> avoided

**2.1**

MW Renewable installed

**1,630**

MWh generated

**1,424m<sup>2</sup> / 607m<sup>2</sup>**

green buildings financed / refurbished

**60m<sup>3</sup> / 200 tonnes**

of Water / Waste managed per year

## Financial indicators

**4.3%**

vs. 3.6% for the index<sup>5</sup>

**220bps**

Average spread (vs. 138bps for the index)

**BBB+**

Average rating

**4.1**

Average duration

**100%**

Financials

<sup>5</sup>Index – Barclays Bloomberg Euro Aggregate Corporate  
Source: Atlanticonium, GAM, Carbon4Finance.  
All figures are presented as at 31 December 2023.

# OUR GREEN BOND ASSESSMENT FRAMEWORK

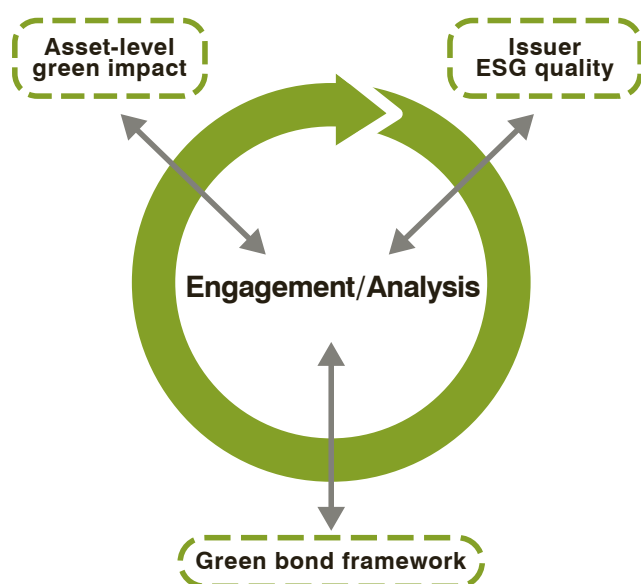
# 4. OUR GREEN BOND ASSESSMENT FRAMEWORK

## Framework overview

Our green bond assessment framework is designed to identify green bonds and other ‘impact’ bonds that will deliver meaningful impact.

Our framework recognises the ICMA Green Bond Principles (June 2021) and builds on an approach consistent with our investment philosophy – bottom-up research-intensive and adding value and insight through engagement.

### Green Bond assessment framework



Source: GAM Investments

Our green bond assessment framework is designed to identify green bonds and other ‘impact’ bonds that will deliver meaningful impact. Our framework recognizes the ICMA.

Our framework is split into three layers of analysis – issuer, bond, and green asset level. Each is assessed individually, using both proprietary research and data from external third parties. Engagement is an important part of our investment process – aimed at enhancing our analysis and encouraging improvements outlined in our framework.

We detail minimum expectations for each of our three pillars:

- 1. Issuer ESG Quality:** At the issuer level, the general ESG profile of the issuer is analysed with a particular focus on environmental strategy and expected to be aligned with the issuance of green bonds.
- 2. Green Bond Framework:** At the bond level, the quality of the governance and processes related to the green bonds’ use of proceeds are assessed. This provides visibility on the allocation of proceeds and confidence in the environmental impact.
- 3. Asset-level Green Impact:** the financed green assets are assessed through a quantitative lens using comparable and consistent data to ensure meaningful impact. Each pillar is assessed individually within the selection and allocation process to form a holistic assessment of the impact potential of each green bond.

As of the end 2023, the eligible investable universe meeting the minimum requirements in our green bond framework was estimated to be approximately 36% of the total universe by count of issuers and 57% weighted by the amount of debt outstanding. The discrepancy between both numbers is explained by the highly skewed distribution of the financial green bond market – as 20% of issuers make up around half the debt outstanding. Moreover, as larger banks tend to be more advanced in terms of climate and overall sustainability strategy – there is a bias towards these issuers.

The clear expectations and minimum requirements for issuers, green bond frameworks and asset are outlined in greater detail in the Appendix. This framework includes engagement as an important part of the assessment process and to guide our engagement activity.

## Engaging for impact

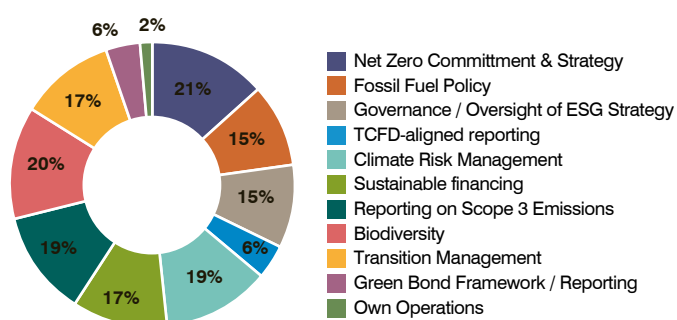
Engagement is an important part of our assessment framework – supporting our research and analysis, as well as strengthening the governance, transparency, and performance of issuers. Engagement with issuers is therefore key to our investment process and impactful in supporting improved green bond market practices. We engage both pre-investment when green bonds fail our internal assessment, and post-investment when issuers meet minimum requirements but fall short of best practices.

In addition to those issuer specific areas, two themes guide our engagement – climate transition strategy and the quality of impact reporting.

**Climate transition strategy** – in 2022, we initiated a thematic engagement campaign on climate transition strategy, based on the IIGCC Paris-aligned expectation for banks and insurers. This included an initial analysis of issuers held in the strategy which we update annually.

Overall, we continue to be pleased with the response rate from issuers, and their willingness to provide further information regarding their climate strategy. We have engaged with the majority of issuers held within the strategy over the course of the year. The breakdown of topics discussed with issuers is detailed below, based on individual engagements conducted over the course of the year.

### Split of engagement topics



Source: Atlanticonium

### Engagement supporting our green bond framework –

Under our green bond assessment framework, issuers whose environmental or overall ESG score is “Medium Risk” can be included in the fund, if after engaging there is a conviction that the issuer’s environmental and/or overall ESG profile is on an improving trend. These issuers are on “watch”, as we seek to assess the progress of issuers. The number of issuers on watch is stable compared to 2022, and in terms of market value this has slightly declined (reflecting a shift in portfolio allocation).

For these issuers, progress made in 2023 has been masked by the implementation of a more stringent internal assessment model – which has driven down scores on average (especially on the environmental pillar). Encouragingly, environmental scores of issuers on “watch” have declined less than the average of fund.

We continue to engage with issuers on watch, and following engagements conducted in 2023 to cover specific areas needing improvement – we expect climate and environmental strategies to improve further.

Most issuers on our watchlist are smaller institutions, which have typically lagged larger institutions in terms of sustainability. We feel that supporting these issuers, where management teams are committed to a material improvement in their climate strategies, can lead to material positive sustainability outcomes.

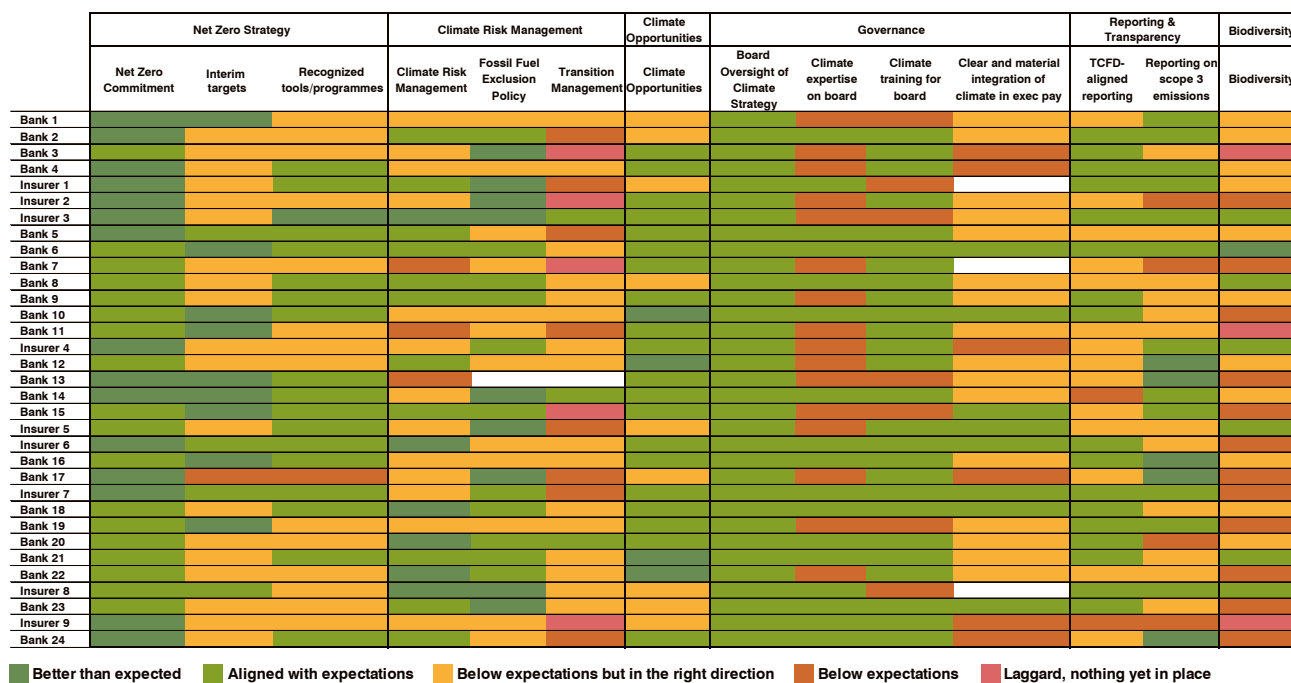
### ESG assessment scores

	2021	2022	2023
Average ESG Score (Rating)	4.12 (Low ESG Risk)	4.22 (Low ESG Risk)	4.16 (Low ESG Risk)
Average Environmental Score (Rating)	4.19 (Low Risk)	4.24 (Low Risk)	3.96 (Low Risk)
Number of issuers on “watch” (weight)	5 (13.6%)	4 (12.7%)	4 (12.0%)

Source: Atlanticonium



## Assessment of issuers' climate strategy – Heatmap



Source: Atlanticomnium, Company documents

# CASE STUDY #1

## Nordea – Assessing the First Green Tier 2 Issuer from the Nordics

### Bond details

- **Issuer:** Nordea Bank ABP
- **ISIN:** XS2723860990
- **Issuance Date:** November 2023
- **Coupon:** 4.875% (spread of 244.4bps vs government bonds)
- **Maturity / First Call Date:** Feb-34 / Nov-28
- **Bond Ratings (Moody's / S&P / Fitch):** Baa1 / A- / A

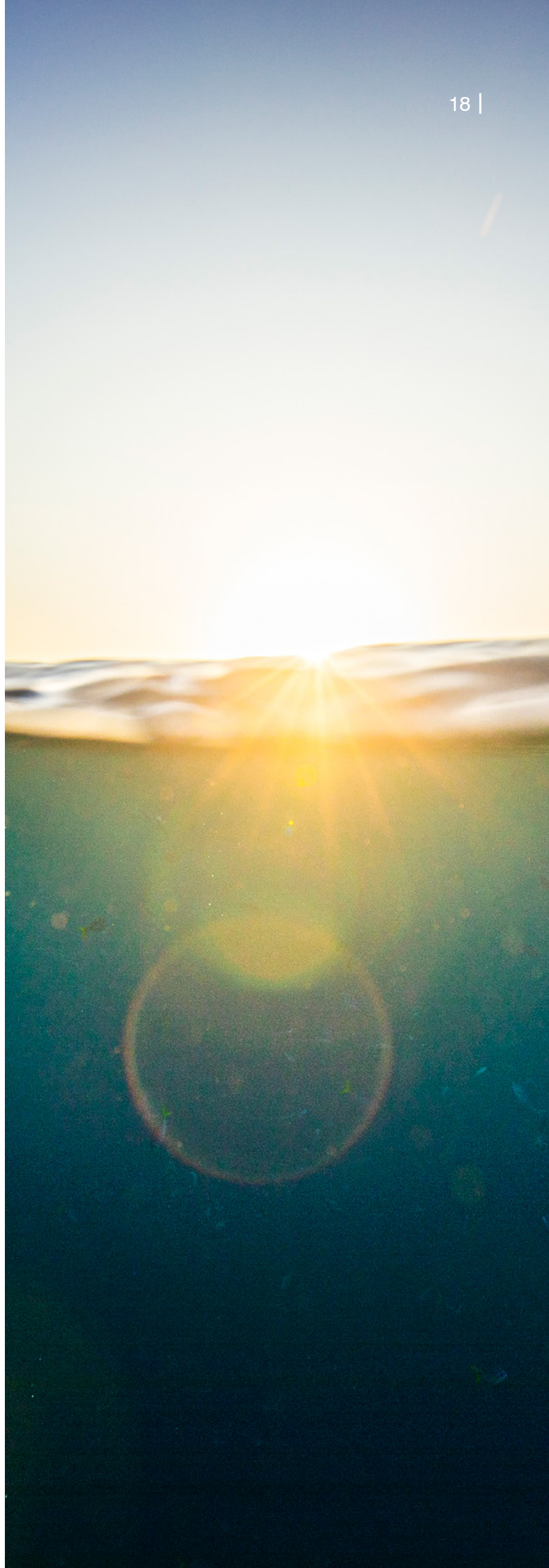
### Issuer Analysis

**Overall ESG Assessment:** Low ESG Risk

**Environmental Assessment:** Low Risk

#### Key Drivers (non-exhaustive):

- **Climate strategy:** Nordea has established ambitious science-based interim targets for 7 sectors, including residential mortgages, that cover 60% of total loan book and 65% of total loan book's GHG emissions. The targets are granular and aligned to 1.5c scenarios, with almost all sectors mandated to have GHG emission reductions by at least 50% by 2030.
- **Risk assessment:** Nordea conducts ESG assessment on its loan book regularly. Using different internally developed tools, Nordea applies risk-based assessment on different sectors and adjusts accordingly the exposure thresholds based on the sector's climate vulnerability. Scenario analysis has been conducted only on its investment portfolio so far, but Nordea has been continuously broadening the scope of the scenario analysis.
- **Scope 3 emission disclosure:** Nordea's reporting on financed emissions is aligned with best practices. Using PCAF standard and methodology, Nordea provides detailed and granular disclosure of the finance emissions of the majority of its on-balance sheet loan book and off-balance sheet assets under management.



**Social Assessment:** Medium Risk**Key Drivers (non-exhaustive):**

- Despite consistently low turnover at <10% since 2016, Nordea's disclosure regarding labour management somewhat falls short of best practices, for example around gender pay gap.
- Cyber security is solid, thanks to the strong governance structure, data security practice developed based on recognised industry best practices, and coordination with different counterparties. However, this is hindered by its inherently limited disclosure.

**Governance Assessment:** Very Low Risk**Key Drivers (non-exhaustive):**

- Nordea's Board structure is aligned with best practice, in terms of independence, diversity and inclusion, as well as ESG expertise and training.
- Nordea's management remuneration policy integrates ESG considerations. However, currently it only integrates certain quantifiable ESG criteria in the short-term incentive plan, while looking to integrate additional ESG criteria in the long-term incentive plan in the near term.

**Green Bond Framework Analysis**

**Mandatory Criteria:** The bond fulfils all mandatory criteria. Green bond assets are reviewed annually by ISS.

**Additional Requirements ("Best Practices"):** Nordea's Green Bond Framework scores 60%, with some highlights:

- Nordea conducts semi-annual review of green assets and quarterly review of investment progress.
- Certain asset categories are required to acquire high ratings from selective recognised certification programs to be included in the asset pool. These sectors include properties, forests, agriculture, and aquaculture in the Nordics.
- Uninvested proceeds are managed in accordance with Nordea's liquidity management policy, with restriction of certain GHG intensive sectors, including fossil fuel and coal mining.

# CASE STUDY #2

## European Bank – Engaging to improve green bond reporting quality

After conducting due diligence on the issuers' green bond framework, our assessment showed that the green bond failed our requirements. This was due to the fact that the issuer did not commit to including in its green bond reporting (post-issuance allocation and impact reporting) a split of green assets by geography. This information is important as impact metrics vary materially depending on the country or region of the projects – when computing avoided CO<sub>2</sub> emissions for example (a renewable energy project in a country where energy supply is highly carbon intensive will be very high compared to the same project in a country where energy supply has very low carbon intensity). While initially this prevented us from investing, following multiple discussions with the issuer, we were able to invest as the bank committed to provide this info in the next green bond report.



# CASE STUDY #3

## BNP – environmental strategy

**Objective:** Better understanding of BNP's challenges when executing their strategy to reduce GHG emissions.

**Asset class:** Corporate Fixed Income

**Context:** Our green bond assessment framework includes an analysis of the issuer's ESG strategy, and particularly its net zero strategy, which includes improving BNP's scope 3 emission reporting, setting decarbonization targets for key sectors, and improving its assessment and disclosure of climate-related risks. We engaged with BNP in October 2023 after sending out a formal letter setting out our expectations for banks and our own assessment of the issuer.

**Activity:** We discussed how BNP plans to follow up on its commitment to improve scope 3 reporting and publish decarbonization targets for 10 sectors from June 2024. In line with best practices, the group first started with the biggest sectors in terms of GHG emissions and will follow on with aviation, shipping, agriculture, and real estate (both commercial and residential). Altogether, these will cover >75% of the loan book. BNP highlighted the issue of data quality and availability, especially for sectors such as agriculture and real estate – out of its total scope 3 emissions, the group only has access to about 10% of real emission data while the remainder is estimated. Regarding its reporting, BNP plans to show a more comprehensive breakdown of emissions by sector, but with significant disclaimers due to the issue of data quality. BNP's objective is to report and work through gross emission data (before any use of carbon offset), but it is sometimes unclear if emission data provided by its own clients are gross or net.

On the topic of climate risk analysis, BNP focuses on two main types of scenarios: (i) scenarios related to regulation for climate stress tests, and (ii) other scenarios to assess a broad range of climate risks. The latter focuses on physical risks, but data quality and inconsistent methodologies across the industry are challenges. BNP has issues to analyse and explain the scenarios' output. Regarding transition risk, the main way to manage for BNP is to focus on achieving its decarbonisation targets, i.e., it is dealt with in a more qualitative way vs trying to quantify the risks.

**Outcome:** We welcomed the transparency from the company, which improved our understanding of the company's strategy and the challenges of implementation. We will continue to monitor the company's progress and engage where necessary.



# CASE STUDY #4

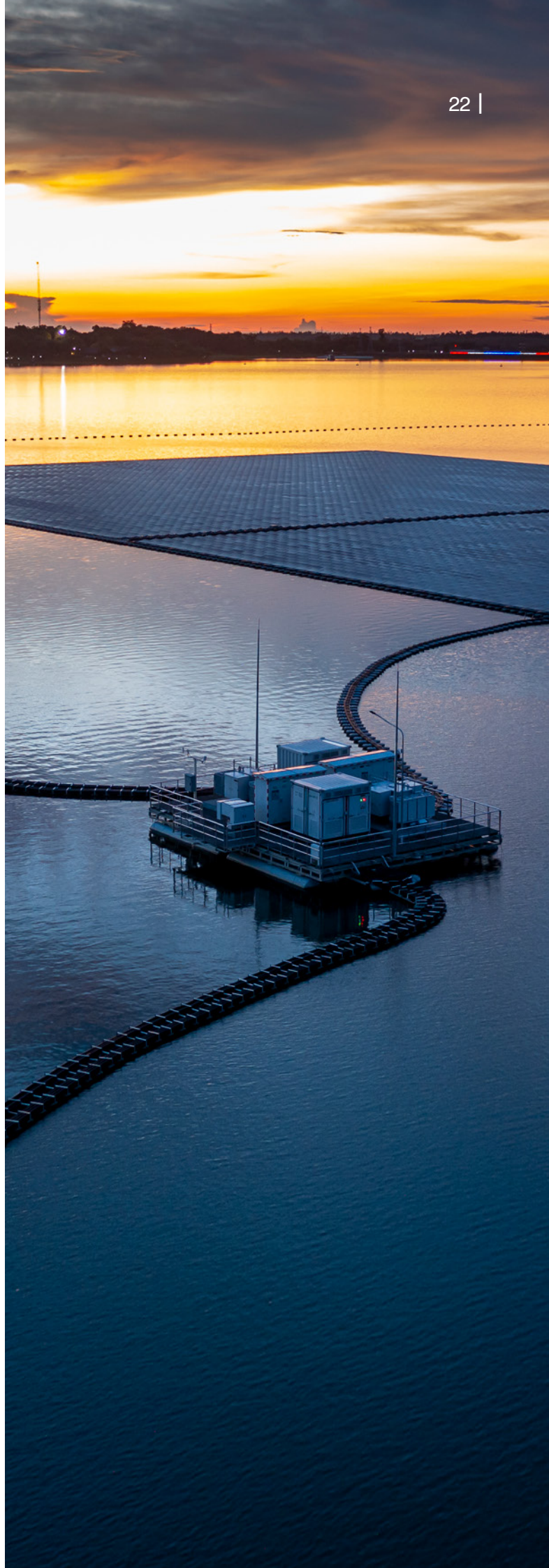
## Banks – financing fossil fuel projects

**Context:** As part of the fund's thematic climate engagement, they reviewed their exposure through banks, to financing fossil fuel projects. This included reviewing a point-in-time exposure from banks, the fossil fuel exclusion policies these banks have adopted and their overall commitment to climate transition.

**Activity:** This engagement project covered twelve of the largest banks around Europe and Australia. The team met with management from these companies to discuss at least one of the following topics, point-in-time exposure to fossil fuel sector, Fossil fuel exclusion policies and their overall commitment to transition management.

- I. Point-in-time exposure to fossil fuels** – Our findings showed that of the twelve banks we engaged, the exposure to the fossil fuel sector is limited. We acknowledge that data availability through the companies or public sources remains a challenge as disclosures sometimes lack transparency and granularity.
- II. Fossil fuel exclusion policies** – We found that the approach banks are taking appears to differ substantially. This mainly comes down to the scope and detail of their policy. There appears to have been a clear trend of coal policies being tightened, for example. lower thresholds and phase-out of exposures, while on the Oil and Gas (O&G) side, a lot of focus has been on unconventional O&G, while progress on conventional O&G somewhat slower. The key challenge remains comparability of policies to make like for like comparisons between banks, plus wording may allow for leeway to remain involved in certain areas. Challenges also arise from geographic footprint of banks, those operating in countries more reliant on coal or where countries have set less ambitious phase-out plans.
- III. Transition management** – Banks are increasingly setting their approach and reporting on engagement with clients in GHG-intensive sectors. This typically includes requiring clients to publish transition plans, disclose GHG emissions – and best-in-class practices includes setting time bound targets for these to be implemented (and progress to be made where lacking expectations). Banks are at very different stages of progress, with some already reporting on the outcome of their engagement plus disclose how they assess clients' transition plans in detail, others are at earlier stages.

**Outcome:** The topics covered in this engagement are extremely complex and require many stakeholders playing their part in the value chain to see real world changes. We will continue to engage with the banks in which we invest to ensure they're doing their part in shifting the dial in favour of an appropriate climate transition.



# MEASURING IMPACT

# 5. MEASURING IMPACT

## Our approach

Measuring the environmental impact from green projects and assets funded is a key challenge. Methodologies and assumptions can vary significantly, leading to difficulties in comparing key performance indicators. As outlined above, our investment process and engagement focus on improving the robustness, accuracy and granularity of the green bonds 'use of proceeds' and associated impact reporting. We rely on these reports to provide portfolio level reporting. Given the divergence in reporting methodologies we work with Carbon4Finance – a specialist data provider – to assess and aggregate the associated environmental impact on a comparable basis.

## Key performance indicators

We typically report on four environmental key performance indicators based on 'use of proceeds' together with temperature alignment and alignment with the Sustainable Development Goals (SDGs). Details of the methodology are in Appendix 3.

- **CO<sub>2</sub> emissions avoided**
- **Renewable capacity installed/generated (MW/MWh)**
- **Green buildings financed/refurbished (m<sup>2</sup>)**
- **Waste & water managed (m<sup>3</sup>)**
- **Temperature alignment**

## Taxonomy alignment and Do No Significant Harm (DNSH)

The EU taxonomy is a classification system that establishes a list of environmentally sustainable economic activities. Eligible activities include a wide range of activities with a positive environmental impact, covering activities contributing to six environmental objectives (including climate change mitigation, adaptation, pollution, biodiversity). For each activity, the taxonomy sets out the technical screening criteria and requires compliance with the "Do no significant harm" principle.

Due to the recent introduction of mandatory taxonomy-related reporting, determining taxonomy alignment is challenging. We have therefore conducted a detailed review of green bond reporting and documentation to assess alignment to the EU taxonomy.





# OUR PORTFOLIO IMPACT

# 6. OUR PORTFOLIO IMPACT

The objective for this strategy is to deliver a positive environmental impact alongside attractive financial returns by investing predominantly in green and sustainable bonds issued by the financial sector. Investing in green bonds allows investors to have strong visibility on the underlying green projects financed, through the use of proceeds, and estimated associated environmental impact.

## Scope of data

The strategy supported the financing of a wide range of projects with a positive environmental impact, and to a lesser extent social impact (social component of sustainability bonds). The analysis is based on the portfolio as of 31 December 2023, with data reported by the issuers in their most recent green bond reports.

The split of the portfolio by project type and geography is based on 95% of the portfolio (excluding cash and others). The aggregate impacts reported are based on reported data for 84% of the portfolio, and estimates based on indicative or comparable portfolios for 11% of the portfolio.

## Financial characteristics<sup>6</sup>

**4.3%**

Average yield to call (vs. 3.6% for the EUR IG index)

**220bps**

Average spread (vs. 138bps for the EUR IG index)

**4.1**

Average duration

**BBB+**

Average bond rating

**57%**

allocation to subordinated debt

**100%**

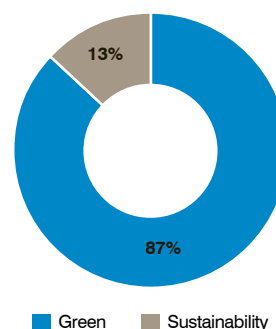
Financials (68% Banks, 30% insurance, 3% cash & FX)

<sup>6</sup>Data as of 31 of December 2023. Index refers to the Barclays Bloomberg Euro Aggregate Corporate

## Bond Type

The strategy (excluding cash and other at approximately 3%), is mainly invested in green bonds (87%) and sustainability bonds (13%). This split has remained stable year-on-year.

### Split by instrument type



| Source: Atlanticomnium as of year end 2023

## Green project type

The largest single category financed is **green buildings (48%)**, which reflects the large exposure of the financial sector to the property sector – as lenders for banks and direct investors for insurers. Green buildings cover both individual housing and commercial real estate projects (such as residential, office). The green building category is roughly two thirds individual housing (mainly green mortgages for individuals) and a third commercial real estate.

The second largest category is **renewable energy (34%)**, which reflects a focus from the financial sector to provide capital for green energy production as part of their green finance targets. Solar PV and wind (onshore and offshore) were the two largest sub-categories within renewable energy with some allocation to other renewable sources such as biomass or hydro. The renewable energy category also includes infrastructure for renewables, such as transmission lines or manufacturing of components for renewable energy.

The rest of the portfolio is split between several other types of projects, such as **sustainable transport (4%)**, **pollution prevention and control (1%)**, **environmentally sustainable management of living natural resources (1%)**, **water and wastewater management (1%)**, **energy efficiency (1%)** and **social projects (5%)**.

Sustainable transport projects are mainly related to train and other rail projects, with the rest split between other green transport (electric buses for example), and infrastructure for green transport (electric vehicle infrastructure for example).

Pollution prevention and control relates mainly to waste-to-energy projects and waste treatment projects and to a lesser extent other types of projects – such as carbon capture and storage.

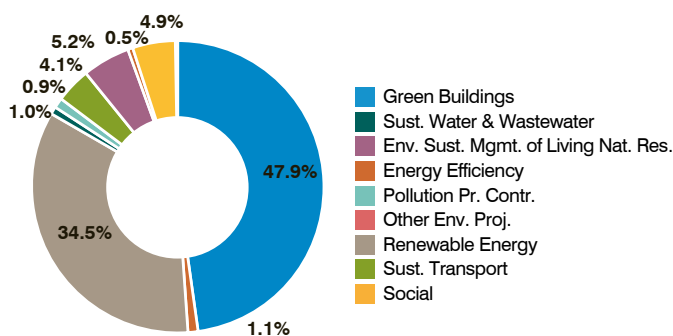
Environmentally sustainable management of living natural resources projects relate mainly to sustainable agriculture projects and forestry projects.

Energy efficiency includes a wide range of private energy efficiency projects for individuals (home renovations for example) and corporates.

Finally, through the investment in sustainability bonds, 5% of proceeds relate to projects with a positive social impact. Main social categories include digital inclusion, access to essential services (mainly healthcare and education), employment generation (access to finance or employment generation and micro finance) and other social projects such as affordable basic infrastructure (including water and roads), social and affordable housing.

Looking at the evolution of green projects year-on-year, green buildings and renewable energy remain the top two categories, albeit green buildings have increased (48% versus 45%) and renewables have decreased (34% versus 42%) – with their combined weight declining from 87% to 82%. Environmentally Sustainable Management of Living Natural Resources (forestry and sustainable agriculture) have increased from 2 to 5%, while social projects have also increased from 3 to 5%.

### Split by project type



Source: Issuer green bond reports. Atlanticomnium as of year end 2023

## Summary of project categories and examples of project types (illustrative and non-exhaustive)

Project Category	% of the strategy	Examples of projects	SDGs targeted
<b>Environmental Projects (95%)</b>			
Green Buildings	48%	<ul style="list-style-type: none"> <li>• Individual Residential property</li> <li>• Commercial Real Estate projects</li> <li>• Includes both new properties and property refurbishments, retrofitting</li> </ul>	7, 9, 11, 13
Renewable Energy	34%	<ul style="list-style-type: none"> <li>• Solar and Solar PV projects</li> <li>• Wind projects, both on- and offshore</li> <li>• Other renewable energy generation (geothermal, hydro etc.)</li> <li>• Renewable Energy infrastructure (transmission lines, grid, battery storage etc.)</li> </ul>	7, 9, 11, 12, 13
Sustainable Transport	4%	<ul style="list-style-type: none"> <li>• Rail transport</li> <li>• Sustainable Public transport (metro, electric buses etc.)</li> <li>• Infrastructure for sustainable transport (EV)</li> </ul>	3, 9, 7, 11, 13
Environmentally Sustainable Management of Living Natural Resources	5%	<ul style="list-style-type: none"> <li>• Sustainable forestry projects</li> <li>• Sustainable Agriculture projects</li> <li>• Sustainable Aquaculture</li> </ul>	2, 12, 13, 14, 15
Pollution Prevention & Control	1%	<ul style="list-style-type: none"> <li>• Waste to energy</li> <li>• Waste management</li> <li>• Carbon Capture &amp; Storage</li> </ul>	3, 7, 11, 12, 13
Sustainable Water & Wastewater management	1%	<ul style="list-style-type: none"> <li>• Water and wastewater treatment and distribution facilities</li> </ul>	6, 9, 11, 12
Energy efficiency	1%	<ul style="list-style-type: none"> <li>• Efficient lighting</li> <li>• Smart meters</li> </ul>	7, 9, 13
Other Environmental Projects	<1%	<ul style="list-style-type: none"> <li>• Aquatic biodiversity conservation</li> <li>• Climate Change Adaptation</li> </ul>	6, 9, 11, 12, 13, 14, 15
<b>Social Projects (5%)</b>			
Affordable Basic Infrastructure	<1%	<ul style="list-style-type: none"> <li>• Road infrastructure</li> <li>• Water supply (Access to water)</li> <li>• Sewage treatment</li> <li>• Telecom infrastructure</li> </ul>	6, 9
Social & Affordable Housing	<1%	<ul style="list-style-type: none"> <li>• Emergency accommodation for vulnerable populations</li> <li>• Affordable housing</li> </ul>	1, 10, 11
Employment Generation	<1%	<ul style="list-style-type: none"> <li>• Business banking to SMEs</li> <li>• Micro finance</li> </ul>	1, 8, 9, 10
Access to essential Services	1%	<ul style="list-style-type: none"> <li>• Education (schools, university)</li> <li>• Hospitals and hospital equipment</li> <li>• Healthcare related services and products</li> </ul>	3, 4
Socioeconomic advancement empowerment	3%	<ul style="list-style-type: none"> <li>• Digital inclusion</li> <li>• Financial education</li> </ul>	4, 9, 10, 11
Other Social projects	<1%	<ul style="list-style-type: none"> <li>• Food security</li> </ul>	2

Source: Atlanticomnium, Company documents

Examples of projects are provided to illustrate the environmental impact of the strategy.

## Sustainable Development Goal (SDG) alignment of green projects financed

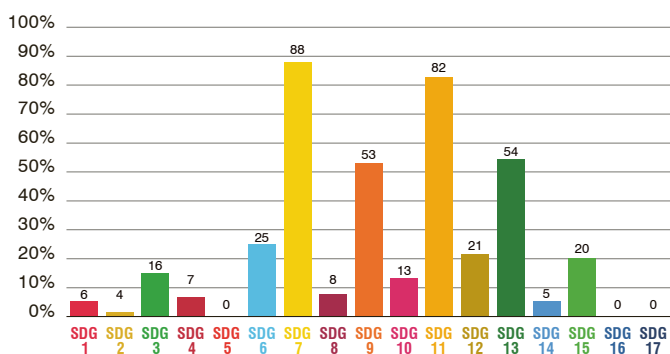
When issuing green bonds, issuers typically map each type of project to be financed to specific SDGs. This means that each green bond can target multiple SDGs, which reflects the fact that percentages do not add up to 100%. The SDG alignment of the fund is calculated as the % (based on market value) of green bonds aligned to each specific SDG. Projects financed by the fund cover 14 of the 17 SDGs, reflecting the positive environmental and social impact of green and sustainability bonds.

For example, SDG 7 – Affordable and Clean Energy, is the most targeted SDG by the green bonds in the fund, with 88% of the green bonds in the fund targeting this SDG. SDG 9 – Industry, Innovation and Infrastructure (53%), 11 – Sustainable Cities and Communities (82%) and 13 – Climate Action (54%) were the other top SDGs targeted.

The most targeted SDGs, 7, 9, 11 and 13 clearly reflect the focus on climate change mitigation of the fund.

Compared to 2022, the SDG alignment of the projects financed have remained relatively stable, with no major change overall.

### Allocation by Sustainable Development Goal



Source: Issuer green bond reports. Atlanticomnium / GAM as of year end 2023

## Geography of projects

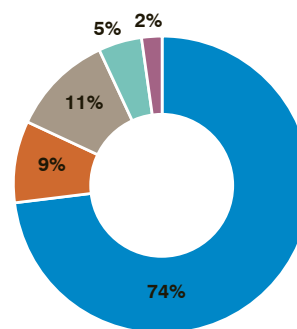
The fund finances a global pool of projects, in more than 60 countries and on six continents, and in both developed and emerging markets. Nevertheless, given the European bias of the issuers in the fund (~90%), Europe accounts for around 73% of projects financed. Australia & New Zealand (11%), Americas (9%), Asia (5%) and the rest of the world (2%) are the largest geographic zones.

More granularly, the Netherlands (21%) is the largest single country exposure, followed by the UK (12%), Australia (11%), France (10%), and Spain (7%).

The fund has 9% exposure to North America (mainly US), 5% exposure to Asia (Hong Kong and India are the two single largest countries), and 2% to the rest of the world that includes Latin America, the Middle East, Africa and other global (includes undisclosed) exposures.

There has been a further diversification of the geographic split of projects within the fund, as European projects now account for around 73% of the total compared to around 75% last year. Notably, the exposure to Australia has increased driven by higher exposure to green and sustainability bonds from Australian banks. Within Europe, the Netherlands is now the largest single country, reflecting the change in the issuer mix of the fund.

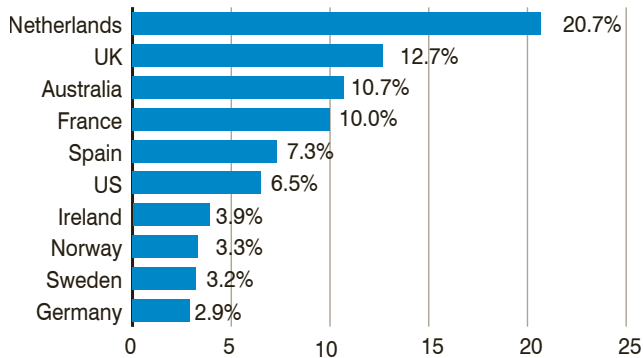
### Split by geography



Source: Issuer green bond reports. Atlanticomnium as of year end 2023

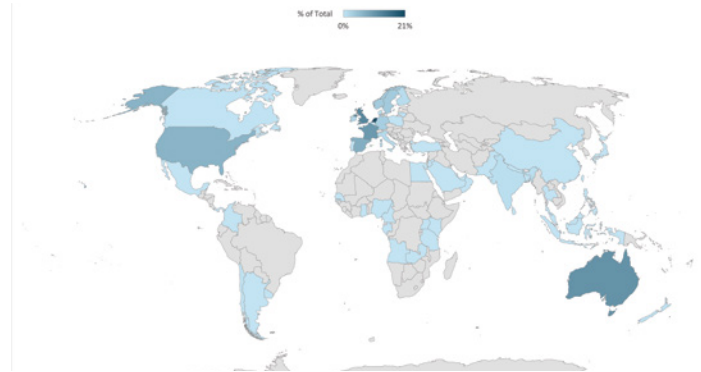


### Top 10 Country Exposures



Source: Atlanticomnium, Company documents

### World Map of Projects Financed



Source: Atlanticomnium based on issuer reported data. As of December 2023

### Top 10 issuer split

The chart below illustrates the projects financed by the 10 largest issuers held in the fund. As described previously, green buildings and renewables make up the bulk of projects financed. Moreover, issuers have different strategies to allocation their green bonds. For example, issuers like BNP will allocate a wide range of projects to their green bonds, while others like Societe Generale focus on a single project category.

### Top 10 issuer split

Issuer	Weight in Fund	Green Buildings	Energy Efficiency	Renewable	Water & Wastewater	Pollution Prev. & Control	Sustainable Transport	Env. Sust Mgmt Liv. Nat Res.	Other Environm.	Social
1 ING	6%	80%		20%						
2 DeVolksbank	5%	100%								
3 Westpac	5%	29%		56%			16%			
4 AXA SA	4%	11%		58%				31%		
5 ANZ	4%	40%		19%	1%		9%			29%
6 Storebrand	4%	70%		8%			22%			
7 NN Group	4%	100%								
8 BNP	4%	21%	18%	55%	1%	1%	4%			
9 Munich RE*	4%	24%		12%	13%	5%				46%
10 Soc. Generale	4%			100%						

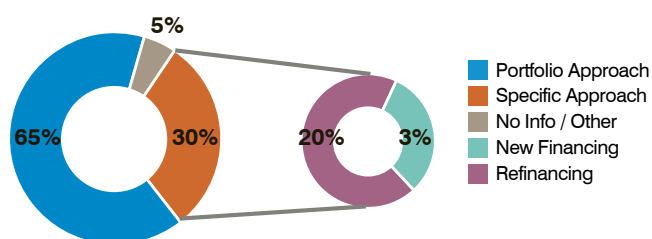
Source: Issuer green bond reports. Atlanticomnium as at 31 December 2023

## Financing & Refinancing

Green bonds can either be used to finance new projects or refinance existing projects. Providing an estimate of the percentage of refinancing is challenging, given a significant portion of issuers use the so-called “portfolio approach”, where green bonds are not allocated to specific projects but rather to the issuers’ pool of green projects, typically well in excess of all green bonds issued. In this case, day one the bonds are 100% refinancing, but as the green project pool grows, the percentage of refinancing decreases. For example, BBVA’s pool of green projects increased from EUR 1.1 billion in 2018 to EUR 9.1 billion in 2022 (an increase of five times over four years). This means that their green bond issued in 2018 was close to 100% refinancing as of end-2018, but now closer to 10% refinancing as of end 2021. This should continue to decline as new green projects are included in the green asset pool.

In the case of our fund, 66% of the portfolio is allocated to green bonds where the portfolio approach is used. In this case, as we focus on issuers with strong sustainability strategies, in particular around climate, we expect the pool of green assets to grow – therefore leading to an incrementally lower refinancing rate.

### Financing vs. Refinancing



Source: Atlanticomnium, Company documents

For the remaining part of the portfolio (30%), where green bonds are allocated to specific projects, the refinancing rate is 68%. As set out in our green bond assessment framework, we expect issuers to limit the portion of green bonds used for refinancing purposes. However, we understand the challenges of only financing new projects for issuers (balancing financing new projects versus allocating the full amount of the green bond in a timely manner). Therefore, we expect that in case of refinancing, the lookback period (how seasoned projects are) should be short. As an example, one of CNP’s green bonds issued in 2020 is 50% allocated to projects refinanced and 50% to new projects.

Out of the projects refinanced, around 91% relate to real estate projects under development that were or are set to be operational after the issuance date of the green bond. The rest of refinanced projects relate mainly to assets acquired less than 24 months before the issuance of the green bond.

Focusing on issuers with strong pipelines of green assets (as part of their environmental strategy) means that the incremental impact is robust despite the use of refinancing. These issuers use green bonds as a tool to support the growth of their pool of green assets. As long as the future pipeline of green assets is strong, issuing green bonds before green assets, or financed or financing assets before green bonds are issued is a marginal consideration in our view.

Data is based on the portfolio as of end-December 2023, where data is available for 95% (excluded cash and equivalents) of the portfolio. Data is based on issuers’ latest green bond reports, and in some cases internal estimates.

Compared to 2022, the share of issuers using the portfolio approach has slightly declined (66% versus 68%). Around 30% of the bonds in the portfolio are allocated using the specific approach, where the refinancing rate is roughly stable at 68% (versus 71%).

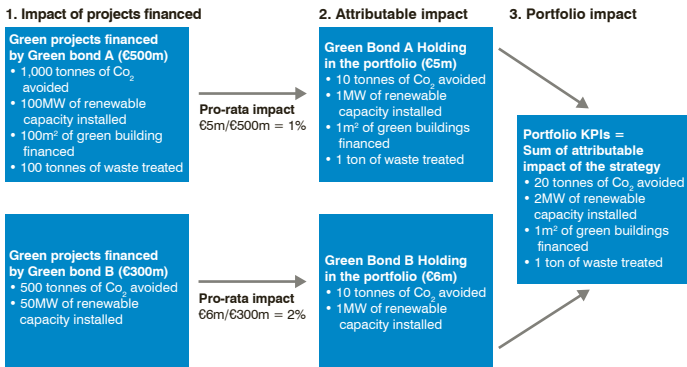
## Environmental impact indicators

The proceeds raised from green and other impact bonds generate a positive environmental (or dual social and environmental in case of sustainability bonds). For each green bond, issuers provide post-issuance reporting, including an estimate of the green bonds’ environmental impact. For comparability and consistency purposes, we have chosen to work with Carbon4Finance, a specialised data provider on climate and environmental issues for the financial sector, to re-estimate the impact of each green bond we invest in. This is due to the lack of comparability between estimates provided by issuers, each using different methodologies and assumptions.

All KPIs are calculated by Carbon4Finance based on an analysis of individual green bond of the portfolio, then aggregated at the fund level. The analysis of the portfolio as of the end of 2023 covers 95% of the bonds in the portfolio (by market value excluding cash and equivalents), reflecting two green bonds that were issued recently and where reporting was not yet available. Aggregate figures are given for EUR 10 million, for illustrative purposes.

The fund’s environmental KPIs represent an estimate of the impact attributable to projects financed by the green (and other impact bonds) held in the fund. For individual green bonds, the overall impact of projects financed is estimated, after which the fund is attributed the pro-rata impact depending on the size of the holding (portfolio exposure as percentage of the bonds’ size). The impact is then computed at the fund level by summing up the attributed impact of each green bond, while eliminating potential double counting (same emissions being attributed to two different green bonds). Note that green bonds often finance a broad range of projects, and therefore can contribute to multiple environmental KPIs.

## Illustrative calculation – portfolio impact



Source: Atlanticomnium, Carbon4Finance

Compared to 2022, emissions savings are lower YoY, mainly reflecting the change in mix of green projects, with a lower allocation to renewable energy projects and higher allocation to green buildings and other non-climate projects (social projects for example). Renewable energy projects have the highest emissions saving intensity (tCO<sub>2</sub> per EUR million).

Further details on Carbon4Finance's methodology are available in the Appendix 3.

## Diversified environmental benefits of the Green Bonds Portfolio

For 10M Eur invested in the portfolios, there are....

**751 tonnes of CO<sub>2</sub>e emissions avoided each year**

Equivalent to the emissions of a car travelling 105 times around the earth



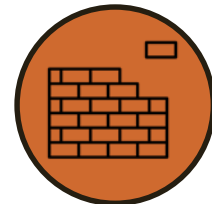
**2.2MW of renewable energy capacity installed, and 1,849MWh energy generated**

Equivalent more than 12,328,214 km driven by electric cars



**1,076m<sup>2</sup> of green buildings financed**

Equivalent to 10.5 average European Houses



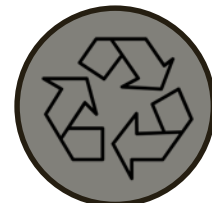
**1,191m<sup>2</sup> of buildings refurbished**

Equivalent to close to 12 European Houses



**99m<sup>3</sup> of water treated per day**

Equivalent to the consumption of nearly 690 European households



**633 tonnes of waste treated per year**

Equivalent to annual waste of more than 122 European people

Source: Carbon4Finance, Atlanticomnium as of year end 2023



- **CO<sub>2</sub> emissions avoided**

As a large portion of the portfolio is allocated to projects targeting climate change mitigation (renewable energy, green buildings, sustainable transport), tonnes of CO<sub>2</sub> equivalent avoided represents a useful metric. The projects financed by the green bonds in the portfolio help avoid 570 tonnes of CO<sub>2</sub> each year – equivalent to driving a car more than 80 times around the Earth. Tonnes of CO<sub>2</sub> avoided represent the CO<sub>2</sub> emissions not emitted as a green project replaces the average project that is typically GHG intensive. For example, a solar farm in Spain that replaces the average electricity mix, with a significantly lower CO<sub>2</sub> intensity per MWh generated.

- **Renewable capacity installed/generated (MW/MWh)**

The projects financed by the portfolio (of which around half was allocated to renewables) contribute to installing 2.1 MW of renewable energy capacity and therefore generating around 1,630 MWh of energy. This is equivalent to the energy necessary to drive an electric car for close to 11 million kilometers.

- **Green buildings financed/refurbished (M<sup>2</sup>)**

Green buildings are the largest project category financed, around 48% of portfolio. Each EUR 10 million invested in the portfolio supports around 1,400m<sup>2</sup> of green buildings financed and around 610m<sup>2</sup> of green buildings refurbished.

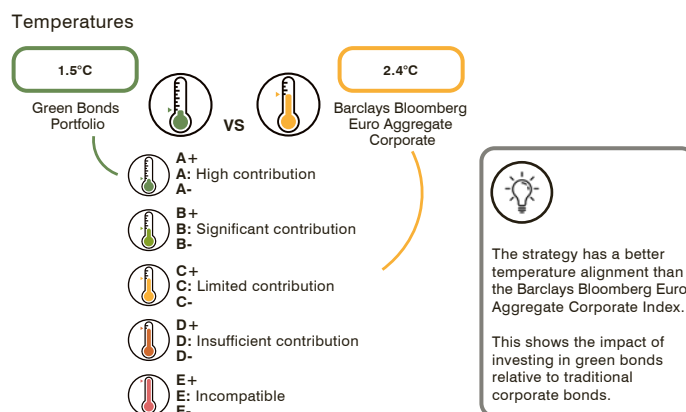
- **Waste & water managed (M<sup>3</sup>)**

Finally, the fund supports a wide range of problems tackling other environmental issues, such as water and waste treatment. The projects financed by the portfolio help treat 60m<sup>3</sup> of water per day (equivalent to the consumption of around 420 European households), and 200 tonnes of waste per annum (equivalent to the waste of 39 Europeans).

- **Temperature alignment**

Given the portfolio's focus on green bonds financing projects that contribute to climate change mitigation, the portfolio is aligned to the Paris Agreement targets – a 1.5°C rise in temperature. This compares to the Euro Corporate Investment Grade Index that is aligned to a 2.4°C rise in temperature, reflecting the inclusion of fossil fuel producers and more broadly a large number of issuers that are not aligned to 1.5°C.

## Temperature alignment



Source: Carbon4Finance methodology Atlanticomnium as of year end 2023

## Taxonomy alignment

We have conservatively estimated that taxonomy alignment for the fund would be at least 25%, based on currently available data.

Moreover, we have conducted a detailed review of green bond reporting and documentation to assess alignment to the EU taxonomy. These have been split into six categories:

**Category 1:** For 18% of holdings, the issuer's criteria for project selection and do no significant harm assessment are fully aligned with the EU taxonomy and alignment is externally assessed as part of pre-issuance verification/review (typically by a recognized ESG provider such as Sustainalytics or ISS).

**Category 2:** For 14% of holdings, proceeds are taxonomy-aligned, based on internal analysis conducted. Taxonomy alignment has been estimated using 2023-end taxonomy disclosures of issuers and mapping the volume of taxonomy-aligned assets on the issuers' balance sheet (for each category of assets), to green bond proceeds. Based on the assumption that the majority of taxonomy-aligned assets on issuers' balance sheets will be those allocated to issuers' green bonds, we estimate the percentage alignment of the green bond. The assessment is done only where data availability allows to map project types and ensure geographic overlap. As a result this has only been done only for green mortgages and renewable energy projects for a small number of issuers (8 issuers).

As an example, Devolksbank's green bonds are allocated to a pool of EUR 5.6 billion of green mortgages according to its latest green bond allocation and impact report. This is materially lower than the EUR 7.9 billion of EU taxonomy-aligned mortgages on the bank's balance sheet according to its 2023 year-end disclosures. Therefore, we assume that the majority of the EUR 5.6 billion of green mortgages will be taxonomy aligned, overlapping with the EUR 7.9 billion of taxonomy aligned mortgages. The issuer has confirmed our assumption is correct and that green mortgages in the green bond asset pool are part of the broader EU taxonomy aligned green mortgages on the bank's balance sheet.

**Category 3:** For 9% of holdings, the issuer's criteria for project selection and/or do no significant harm assessment is partially aligned with the EU taxonomy and alignment is externally assessed as part of pre-issuance verification/review (typically by a recognized ESG provider such as Sustainalytics or ISS).

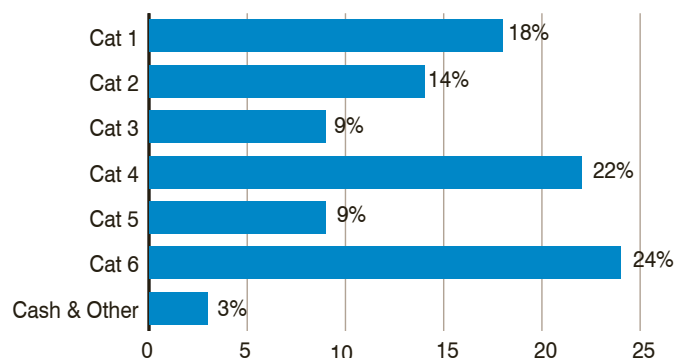
**Category 4:** For 22% of the strategy, the issuer considers the EU taxonomy in its criteria for project selection and conducts an assessment of "Do no significant harm", both on a best effort basis, with no external assessment.

**Category 5:** For 9% of the strategy, the issuer intends to align its green bond framework to the EU taxonomy and conducts a DNSH assessment of eligible projects.

**Category 6:** For 24% of the strategy, there is no information regarding the EU taxonomy, however the issuer conducts an assessment of DNSH for eligible projects.

Based on the above analysis, 100% of the proceeds of holdings in category 1 would be aligned to the EU taxonomy given that there has been an external verification on the alignment to the EU taxonomy either at the pre- or post-issuance level. Moreover, we conservatively estimate that 75% of the proceeds of holdings in category 2 would be aligned to the EU taxonomy based on our internal analysis. This implies that taxonomy alignment of the fund would be at least 29% (18% in category 1 and 75% of 14% in category 2), above the estimated 25% share stated above. For the rest of the projects, although we believe a material share would be aligned with the taxonomy, data limitations prevent us from estimating percentage aligned. Note that we expect taxonomy alignment to be materially above the 25% level, as the majority of proceeds financed by green bonds in the portfolio are in scope of the EU taxonomy.

## Taxonomy-alignment



- **Cat 1:** Taxonomy-Aligned – Externally Assessed
- **Cat 2:** Taxonomy-Aligned – Internally Estimated
- **Cat 3:** Partially Aligned – Externally Assessed
- **Cat 4:** Criteria to select projects considers the EU taxonomy & issuer conducts DNSH analysis – best effort basis
- **Cat 5:** Issuer intends to align framework to EU taxonomy & conducts a "DNSH" assessment of eligible projects
- **Cat 6:** Issuer conducts a "DNSH" assessment of eligible projects

| Source: Atlanticomnium, Company documents

Taxonomy alignment continues to be a key topic of focus when engaging with issuers. When assessing green bonds through our internal framework, we assess whether issuers have processes in place to identify and manage potential adverse environmental or social impacts of projects financed. Also note that as part of the latest version of the ICMA's Green Bond Principles (June 2021), issuers are required to have processes in place to identify and manage potential negative social and environmental impacts of projects financed.

# **GREEN BOND CASE STUDIES**

# 7. GREEN BOND CASE STUDIES

Green bonds from financials provide a unique opportunity to support a very wide range of projects across sectors and geographies. European financials finance the broadest set of projects within the green bond markets across three dimensions: geography, sector and stakeholders (customer types). The projects below illustrate the impact of the projects financed by the green bonds held in the strategy (as at December 2023).



# CASE STUDY #1

## Green Residential Buildings Portfolio – NN Group



### Project features

- **Project type:** Green Property – Residential
- **Location:** Netherlands, Nationwide
- **Total amount of property financed:** EUR 8.3 billion
- **Estimated CO<sub>2</sub> emissions avoided:** 49,757 tons CO<sub>2</sub>s per annum

### Interesting snippets

- Proceeds of the green bond are fully allocated to green residential buildings in the top energy efficiency category – energy label of “A” (represents less than 20% of all residential properties in the Netherlands).
- Allocation report audited by KPMG, Impact assessment performed by CFP green buildings to compute environmental KPIs.

### NN Group’s sustainability strategy highlights

- Net Zero commitment by 2050, including both investments and insurance underwriting portfolios.
- Interim science-based targets (2025/2030) of reducing GHG emissions in the group’s investment portfolio (residential mortgages and corporate investments), and underwriting portfolio (26% reduction in GHG emissions related to non-life commercial lines by 2030).
- Green bond issuance supports target to more than double investments in climate solutions to EUR 11 billion by 2030.
- Member of the Net Zero Asset Owner Alliance and Net Zero Insurance Alliance.



# CASE STUDY #2

Financing innovative projects in renewables – BNP



## Project features

- **Project type:** Renewable Energy – Solar-plus-storage facility
- **Location:** California, USA
- **Project owner:** Terra-Gen (independent renewables company)
- **Capacity in MW:** 410MW of Solar PV capacity and 1,786MWh of battery storage

## Interesting snippets

- Largest solar-plus-storage facility to be financed to date, winning “renewables deal of the year” by Project Finance International ([Americas Awards](#) | [PFI](#) (pfie.com)) in 2022.
- Financing is for the second phase of the project, that will bring it to 3,291MWh of total storage capacity, sufficient to produce clean energy for more than 160,000 homes and reduce more than 320,000t of CO<sub>2</sub> p.a..
- Financing was led by BNP as well as three other banks (share not disclosed)

## BNP's sustainability strategy highlights

- Net Zero commitment by 2050 including the group's lending portfolio.
- Granular approach to the group's net zero pathway, focus on sectors with the most impact, sector interim targets (2025/2030) have been set for 6 sectors.
- BNP has launched the Low Carbon Transition Group in 2021, a dedicated network for sustainable finance professionals (250 by 2025) to support the transition of its clients.
- BNP was part of the “Katowice banks” (BBVA, BNP, ING, SocGen, Standard Chartered) that pledged to develop an opensource methodology to steer their portfolios to the Paris agreement targets.



# CASE STUDY #3

Delivering positive environmental and social impact in Emerging Markets – Standard Chartered



## Project features

- **Project type:** Sustainable Transport / Affordable basic infrastructure – Rail Transport
- **Location:** Turkey
- **Project owner:** Turkish government
- **Project Scale:** 503.2km high speed railway line from Ankara to Izmir
- **Amount:** EUR 2.4 billion (Standard Chartered share not disclosed)
- **Project timeline:** Announced in 2022, expect to be operational in 2027

## Interesting snippets

- The project is financed in the context of the government's ambition to develop a 10,000km network of high-speed rail lines by 2023, and 28,590 by 2053.
- Project will both support GHG emissions reductions, as well as develop access to rail transport infrastructure. The travel time from Ankara to Izmir will be reduced from 14 hours to 3 hours and 30 minutes.
- Financing structured as a green loan (aligned with international standards such as the equator principles, green loan principles and SC's internal framework), in partnership with the UK Export Finance Credit Agency (UKEF) that provides a EUR 2.4 billion guarantee.



## Standard Chartered sustainability strategy highlights

- Sustainability bond financing both environmental and social projects across emerging (~50%) and developed markets (~50%), bringing robust European governance to deliver positive impact worldwide (Asia ~90% of projects financed).
- Net zero commitment by 2050 including the loan portfolio despite the significant exposure in emerging markets.
- Granular approach to the net zero pathway, with solid medium-term targets for GHG-intensive sectors: oil & gas (-29% in emission by 2030 from 2020 baseline); mining excluding coal (-33%); coal mining (-85%); steel producers (-33%); power (-63%).
- Actively supporting its clients' transition plans with a clear framework for green and transition activities, especially for the clients located in emerging markets.
- Part of the "Katowice banks" (BBVA, BNP, ING, SocGen, Standard Chartered) that pledged to develop an opensource methodology to steer their portfolios to the Paris agreement targets.



# CASE STUDY #4

## Waste-to-Energy Plant – Munich Re



### Project features

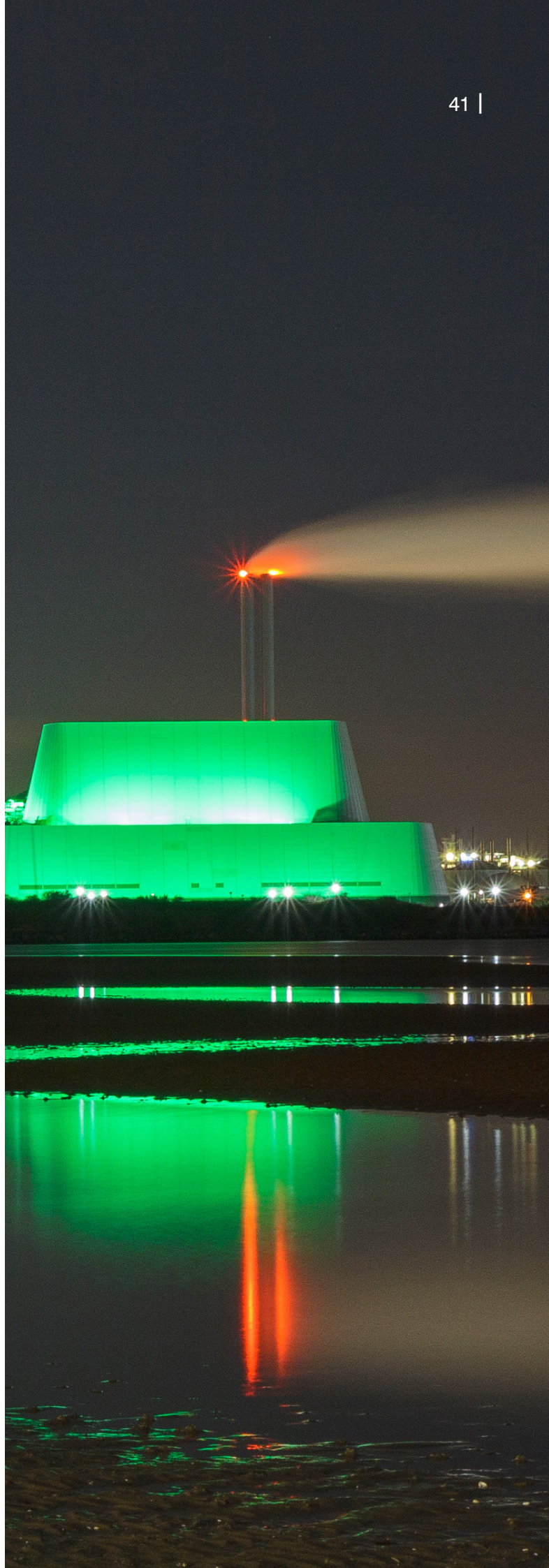
- **Project type:** Waste-to-Energy Plant
- **Location:** Ireland
- **Project owner:** Munich Re (minority equity share)
- **Total investment:** ~EUR 100 million (amount allocated to green bond)
- **Energy generation Capacity:** 69MW, generating ~500,000MWh per annum
- **Avoided CO<sub>2</sub> emissions per annum:** 112,000 tons

### Interesting snippets

- Facility has a dual role of waste disposal (non-recyclable waste) and generating energy from waste.
- Supplies power for 100,000 households by burning ~600,000 tons of waste.
- Recycling capacity of ~15,000 tons of material per annum.

### Munich Re's sustainability strategy highlights

- Net Zero commitment by 2050 including both assets (investments) and liabilities (insurance underwriting).
- Commitment to a 25-29% reduction in CO<sub>2</sub> emissions by 2025 for equities, corporate bonds and real estate (from end-2020), showing the group's commitment to decarbonise its investment portfolio.
- Comprehensive incorporation of climate risk within the group's risk management framework as a reinsurer and investor.



# CASE STUDY #5

## Renewable Energy – AXA



### Project features

- **Project type:** Renewable energy
- In 2020, AXA acquired a 20% stake in Acciona Energia Internacional (AEI) – a dedicated renewable energy [generation] business active across the globe.
- AEI owns and operates 3 solar parks (two photovoltaic and one concentrated solar) and 49 wind farms representing 2,510MW of installed capacity in 2021.
- **Total investment:** undisclosed amount

### Interesting snippets

- In 2021, AEI produced 6,035 GWh of zero-carbon, renewable energy.
- Avoided emissions: approximately 3.84 million tCO<sub>2</sub> in 2021; the proportion of CO<sub>2</sub> emissions avoided specifically allocated to use of proceeds is estimated at 767,000 tCO<sub>2</sub>.

### AXA's sustainability strategy highlights

- Net Zero commitment by 2050, including a long-term target to align its investments and underwriting portfolios with a 1.5c trajectory by 2050.
- Target to reduce the carbon footprint of its investment portfolio by 50% by 2030 (baseline 2019), including equities, corporate debt and real estate.
- Commitment to a 20% and 30% reduction in underwriting-related carbon footprint by 2030 (compared to 2021) for personal motor and commercial lines respectively
- The group's coal policies (for insurance and investments) are very robust and assessed as best practice, including a firm commitment to fully phase-out exposures in line with Paris agreement targets.
- Detailed assessment of the potential impact of physical and transition risk on the group's investment portfolio, for example physical risk assessment of the group's €45bn real estate portfolio with quantitative output, or the CVaR (Climate Value at Risk) of the equities and corporate bond portfolio that incorporates both climate risks.



# APPENDIX

# APPENDIX

## 1. Our green bond framework

### Overview

Our green bond framework comprises three pillars and all assessments are based on a best-efforts basis.

- 1. Issuer ESG Quality:** At the issuer level, the general ESG profile of the issuer is analysed with a particular focus on environmental strategy and expected to be aligned with the issuance of green bonds.
- 2. Green Bond Framework:** At the bond level, the quality of the governance and processes related to the green bonds' use of proceeds are assessed. This provides visibility on the allocation of proceeds and confidence in the environmental impact.
- 3. Asset-level Green Impact:** Finally, the financed green assets are assessed through a quantitative lens using comparable and consistent data to ensure meaningful impact. Each pillar is assessed individually within the selection and allocation process to form a holistic assessment of the impact potential of each green bond. Below is a summary of the minimum criteria for potential inclusion in the fund, and our expectations from issuers:

### Issuer ESG quality

We view issuers' overall ESG profile as a key component of our green bond assessment framework. This stems from our belief that issuers with strong ESG credentials, which include a clear and credible sustainability strategy, are more likely to:

- issue green bonds upholding the highest standards of quality, and
- have strategic reasons to issue green bonds.

Overall, we seek to invest in issuers with strong environmental, social and governance (ESG) credentials, including a clearly defined climate and sustainability strategy, a credible and transparent green bond framework, and strong pipeline of green assets.

Our analysis covers ESG factors to derive an overall assessment of the issuers' ESG profile. Given the environmental focus of green bonds, issuers' environmental profiles are a particular focus.

The analysis of issuers' ESG profile is performed internally with a proprietary scoring tool. The scoring tool assesses material ESG issues for each sector, including an assessment of any controversial elements. The output is an ESG Risk Assessment, ranging from Very Low Risk to Very High Risk. Each aspect (E, S, G) is also individually rated, from Very Low to Very High Risk.

We aim to invest in issuers with strong ESG credentials. Thus, issuers rated in a Very High or High ESG risk assessment are excluded from potential investment.

Similarly, issuers assessed as having severe controversies which are incompatible with the sustainability objectives of the fund would also be excluded. In particular, very severe controversies, especially those assessed to be in breach of UN Global Compact principles, will result in automatic exclusion of issuers for investment. Issuers may score average or below average in certain categories, while still being eligible for inclusion in the fund. These areas will be a priority in terms of engagement with issuers.

### Principal Adverse Impacts and Good Governance

Principal Adverse Impact (PAI) is any impact of investment decisions that results in a negative effect on sustainability factors, such as environmental, social and employee concerns, respect for human rights, anti-corruption, and anti-bribery matters. As part of this strategy, we monitor the specific mandatory PAIs both through internal research (see above for our internal ESG scoring models that captures material issues for the sector), controversy monitoring, and periodic reviews of PAIs. The research team also reviews controversies and changes in United Nations Global Compact (UNGC) assessments by MSCI are also reviewed on a weekly basis. On a quarterly basis, we monitor PAIs for all issuers in the fund using data from MSCI, and action is required where indicators are above or below thresholds set internally. We use a flagging process to prioritise our actions and follow-up. Since 2023, PAIs have also been assessed pre-investment.

## Internal ESG Scoring Framework (example using banks)

	Material issues	Risk Assessment	Overall ESG Risk Assessment
<b>E</b>	Exposure to high carbon industries	Very Low Risk	
	Climate Strategy	Low Risk	
	Sustainable Investments	Medium Risk	
	Underwriting Process	High Risk	
	Operations	Very High Risk	
<b>S</b>	Controversies		Very Low ESG Risk Low ESG Risk Medium ESG Risk High ESG Risk Very High ESG Risk
	Labor Management	Very Low Risk	
	Diversity & Inclusion	Low Risk	
	Employee health & well-being	Medium Risk	
	Human Rights	High Risk	
	Data Privacy	Very High Risk	
	Financial Inclusion		
Controversies			
<b>G</b>	Board & Organization	Very Low Risk	
	Risk Management & Oversight	Low Risk	
	Remuneration	Medium Risk	
	Auditors	High Risk	
	Culture & conduct	Very High Risk	
	Transparency		
Controversies			

### Green Bond Framework

The green bond framework is the reference pre-issuance document that sets out all aspects surrounding the proceeds of the green bonds (green assets), from the eligible types of projects to the governance and processes around the selection of assets to reporting.

We view this as a key pillar in our green bond analysis, as there is currently no legal or regulatory requirement as to what constitutes a green bond. Without a robust framework from issuers, confidence around the ultimate impact of bonds is greatly reduced and leaves investors vulnerable to greenwashing. For this reason, we support the development of a consistent set of principles to govern the green bond market as set out in the draft EU green bond standard.

The Green Bond Principles have emerged as the widely adopted voluntary standard for green bonds, and we support these standards and encourage issuers to comply with them. While these standards outline minimum requirements for bonds, we have established our own internal framework to evaluate bonds too, which builds on the Green Bond Principles.

Our internal framework provides a score (0-100%) of the quality of the green bond framework. There is a pass/fail mark (irrespective of the score), should green bonds not fulfil certain minimum criteria.

The assessment is split into four parts, and the overarching goal of identifying bonds is when we have confidence in governance and processes, and strong visibility on the use of proceeds.

### Internal Green Bond Assessment

**Use of proceeds:** As a starting point, the issuer should have a clear purpose to issue green bonds, including the sustainability objectives targeted, relevant alignment with the Sustainable Development Goals, and a list of potential projects for inclusion. Eligible projects should be clearly defined by the issuer and aligned with either categories described in the Green Bond Principles or aligned to the EU Taxonomy (where we encourage disclosure). These should also have clear environmental benefits and should not have any harmful impact on any other sustainable aspects. This is a core conviction and failure to comply will result in ineligibility for investment.

The green asset pool of the issuer should exhibit desirable characteristics. The use of refinancing versus finance should be clearly disclosed and limited, or the look-back period for refinancing of assets should be adequate to provide incremental impact. As we are conscious of the dilemma for issuers to minimize the use of refinancing while also investing proceeds from green bonds as soon as possible, we consider the use of refinancing with a short a look-back period as acceptable. Moreover, historical growth of the issuers' green asset pool, or eligible green assets, should reflect the issuers' strategy and incremental impact.

## Internal Green Bond Assessment

### Use of Proceeds

#### Minimum Criteria

- Clear issuance purpose and sustainability objectives (typically aligned to SDGs)
- List of eligible projects
- Eligible projects aligned with GBP or EU Taxonomy
- Do no significant harm, related to other sustainability aspects of projects financed

#### Expectations

- Low use of refinance
- If use of refinancing, short lookback period
- Strong increase of green asset pool

### Selection & Evaluation of Assets

#### Minimum Criteria

- Clearly defined process to select assets, including governance
- Process to identify and manage environmental and social risks of project
- Provisions to review and replace assets in case of non-compliance

#### Expectations

- Assessment of taxonomy alignment
- Periodic review of green asset eligibility
- Selection committee with strong ESG credentials and involvement of senior management (C-suite preferred)
- Use of external certifications to confirm "green" characteristics of projects (for example forestry)

### Management of Proceeds

#### Minimum Criteria

- Segregated proceeds of funds with internal tracking.
- Clear timeline for the investment of proceeds, consistent with life of bond and climate/environmental strategy

#### Expectations

- External audit of funds tracking
- Clear policy of the allocation of uninvested funds, consistent with objectives of the green bond

### Reporting & Certification

#### Minimum Criteria

- Annual reporting until maturity including both allocation and impact (at least until full allocation)
- Reporting is granular with split of projects by category and geography
- Pre-issuance Second Party Opinion from a recognized third party
- External audit of post-issuance allocation reporting

#### Expectations

- Transparent methodology for environmental KPIs, or impact metrics computed by 3rd party
- Adherence to stricter standards than ICMA GBP such as Climate Bond Standards
- External verification/audit of post-issuance reporting covers both allocation and impact reporting

**Selection & Evaluation of Assets:** The issuers' selection process is paramount in order to ensure that governance and processes are robust, and bondholders' interests are safeguarded. As a minimum, we expect issuers to have a clearly defined selection process, including appropriate governance and oversight. We expect issuers to set up a selection committee with appropriate expertise to select and review projects – representing both strong ESG credentials and representatives from senior management. Best practice dictates the use of third-party reviews for the selection of assets and processes. Moreover, the use of certifications or other external metrics used to evaluate the “green” eligibility of projects should be disclosed where possible, especially for projects where the eligibility is less well-defined, such as for forestry projects.

In addition, we expect issuers to have strict provisions in case green assets become non-compliant (no longer deemed to fit within green asset categories). This includes a policy for the replacement of projects, periodical review of asset eligibility, and even a review of the ‘green’ bond label in case green assets become insufficient to fully cover green bond issued amounts

**Management of Proceeds:** In line with the objectives of the green bonds, we expect issuers to have proceeds from green bonds clearly segregated, with the flows of invested cash closely tracked. Here again, the external audit of the internal tracking of funds is a positive and is encouraged.

Moreover, issuers should communicate a clear timeline for the full investment of proceeds. We expect issuers to communicate a clear time horizon, consistent both with the issuers' climate or environmental strategy, but also with the life of the bond.

Finally, we expect issuers to have a clear policy on the allocation of uninvested funds. We expect these to be consistent with the ESG objectives of the green bonds and avoid conflicts of interest when buying securities. We also expect a disclosure of those instruments which can be used for unallocated funds.

**Reporting & External Certifications:** Reporting is key for green bond investors, both to have visibility on the proceeds, as well as to have quantitative assessment of their impact.

We require issuers to provide post-issuance reporting on at least an annual basis until the bond reaches maturity or proceeds are fully allocated. Reporting should cover both allocation with a granular split by project category and geography, and disclose against key KPIs for their environmental impact. We also encourage reports to be verified by third parties to improve transparency.

Where environmental KPIs are provided, we expect the issuer to provide a transparent methodology around calculations and assumptions. The use of widely-recognised methodologies or third-party review of new methodologies to calculate environmental impacts is preferred.

At the pre-issuance level, we require issuers to have second party opinions on ICMA GBP compliance from a recognized assurance entity as a minimum requirement. We also encourage adherence to stricter standards such as the Climate Bond Standards of the Climate Bond Initiative.

Ultimately, where bonds meet minimum criteria for inclusion in the fund, the rating of the internal green bond assessment is considered in the overall assessment of the green bond. The output of the internal green bond assessment also helps steer engagement efforts. For eligible issuers with areas of weakness which do not force exclusion, discussions will be held to strengthen areas of concern. For issuers that do not meet minimum criteria, we aim to engage where relevant in order to voice our views on why upholding high standards is paramount for a well-functioning green bond market.

#### Asset-level Green Impact

The final step of our framework to assess green bonds is at the green asset or project level. Bonds eligible for investment after screening at the issuer and green bond framework levels provide investors with visibility on the allocation of proceeds and key KPIs for environmental impact.

One of the key challenges for green bonds investors is the lack of comparable and consistent data on reported environmental KPIs by issuers. The methodologies and assumptions used can vary significantly, leading to difficulties in comparing KPIs. While we support efforts to provide granular information on the climate impact of their green bonds, there remains a need for comparable data.

We aim to select green bonds with meaningful positive environmental impact, and our approach also includes a quantitative assessment of environmental indicators. Given the current lack of harmonized and comparable methodology in disclosed indicators, we have decided to use an independent third party to re-estimate the green bonds' environmental KPIs provided by issuers.

Working with Carbone 4, an independent specialised climate data provider, we aim to supplement issuer level reporting with a third-party estimate of their environmental impact.

As we strive to invest in those with meaningful impact, this step offers greater confidence in these green bonds' environmental credentials.

Both our issuer and green bond models have been audited by KKS Advisors, ESG consultants.

Level	Minimum Criteria
<b>Issuer ESG Quality</b>	<ul style="list-style-type: none"> <li>• Adequate sustainability strategy including climate strategy</li> <li>• ESG and Environmental Profile risk assessment: Medium</li> <li>• No severe controversies incompatible with the sustainability objectives of the strategy (especially in breach of UN Global Compact Principles)</li> </ul>
<b>Green Bond Framework</b>	<ul style="list-style-type: none"> <li>• Aligned with ICMA GBP or stricter standards (for example Climate Bond Standards)</li> <li>• Best-in class governance and processes</li> <li>• Granular impact reporting, using transparent third-party methodologies</li> <li>• Aligned with ICMA GBP</li> <li>• Post-issuance allocation and impact reporting</li> </ul>
<b>Green asset impact</b>	<ul style="list-style-type: none"> <li>• Meaningful positive environmental impact using third-party quantitative data</li> <li>• Aligned with Paris Agreement targets</li> </ul>

### Periodic Review of the Green Bond Assessment Framework

As part of our research process, we aim to review our internal ESG scoring frameworks (proprietary scoring tools for issuers and green bonds) periodically. The aim of the review is to ensure that the models remain fit for purpose. The aim of the periodic review is both to enhance the model based on industry developments (regulation etc) as well as adjust scoring to reflect evolving best practices (as time goes on expectations increase).

The review considers internal views, as well as company disclosures, engagement, regulatory developments, publications and guidance from collaborative investor initiatives and other external sources deemed relevant.

We have implemented an updated version of our models in early 2023 following a holistic review of the model. These changes were reviewed by KKS Advisors, who performed an audit of the revised models. More details on the update of models are available in the 2023 annual impact report page 20 ([gam-climate-bond-impact\\_report\\_202305\\_en\\_online.pdf](#))

## 2. Paris-aligned expectations for Banks and insurers

### Net Zero Commitments and Strategies

- We expect issuers to commit to net zero for all operations (including financing and investing activities) by 2050 at latest.
- We expect this commitment to be complemented by a clear and credible net zero pathway, including science-based interim targets (not further away than 2030).

- While the focus needs to be on reducing emissions across all operations, the use of carbon offsets should be detailed within the interim targets and net zero plan and be in line with best practice<sup>7</sup>.
- We encourage issuers to use recognized tools or programmes when setting targets and their net zero pathway, such as the SBTi or PACTA methodologies.
- We expect Net Zero strategies to prioritize the most carbon intensive sectors and set specific sector-by-sector targets (or by asset class in the case of securities portfolios).
- We expect issuers to set strict exclusions policies for fossil fuel financing (in particular thermal coal phase-out by 2030 on OECD countries and 2040 worldwide and no new unabated thermal coal generation) that is compatible with the Paris agreement targets.
- We expect issuers to outline their strategies and targets for scaling up green finance, and support frameworks such as the EU taxonomy to classify 'green' finance. In particular, we support the issuance of green bonds with robust green bond frameworks<sup>8</sup> (at least aligned with the ICMA Green Bond Principles with pre- and post- issuance reporting audited or verified by a third party).

### Governance and accountability

- We expect accountability at the board (this refers to the board of directors or equivalent) level for issuers' climate strategy, including oversight responsibility.
- We expect boards to ramp-up climate expertise, through training of board members on climate-related topics and/or directly adding board members with climate-related expertise.
- We expect a clear and material link between issuers' climate strategy and executive variable pay and performance assessment (only performance assessment if the bank does not have variable pay practices). This must be based on interim targets that occur within a typical CEO's tenure and assessed periodically.

### Risk Assessment & Reporting

- We expect climate reporting aligned with TCFD recommendations.
- In particular, we expect:
  - A clear and granular assessment of climate-related risks in investment, lending and underwriting portfolios.
  - Clear disclosure of areas vulnerable to climate risk (transition or physical risk) and use of scenario analysis/ stress tests to quantify vulnerability.
  - Clear reporting on scope 3 aligned emissions (lending/ investment portfolio) based on robust methodologies.

These expectations are aligned with the IIGCC Banking Sector Expectations<sup>9</sup> and the latest TCFD supplemental guidance for banks and insurance companies<sup>10</sup>.

<sup>7</sup>The Oxford Principles for Net Zero Aligned Carbon Offsetting 2020

<sup>8</sup>See our Green bond assessment framework for further details on our requirements and expectations for green bonds ([gam\\_article\\_green-bond-assessment-framework\\_eng-final.pdf](#))

<sup>9</sup><https://www.iigcc.org/download/investor-expectations-for-the-banking-sector/?wpdmdl=4454&refresh=61d4564867aab1641305672>

<sup>10</sup>P141021-4.pdf (fsb.org)

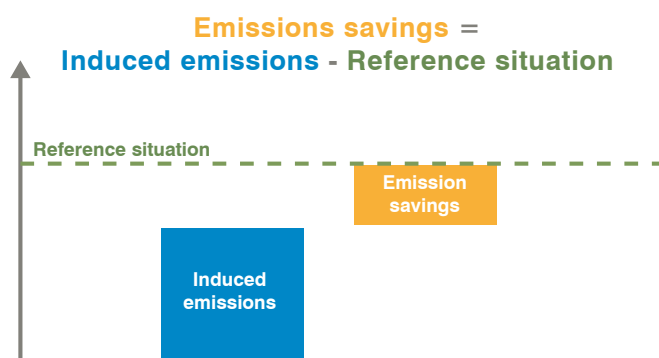


### 3. Impact measurement – KPI methodology

**CO<sub>2</sub> emissions avoided:** To assess the carbon impact of each green bond, Carbone 4 uses a proprietary methodology which calculates both the induced emissions and avoided emissions from projects financed. The net between both is the calculation for emissions saved. Data is compiled using physical data available, for example renewable capacity installed, to which Carbon4Finance applies industry ratios, for example the loading factor for solar farms. This is based on a combination of Carbon4Finance's proprietary database and public databases.

As an example, when building a solar farm, the calculation would consider the emissions saved through green energy generation less the emissions induced by the construction and purchase of material to build the farm.

#### Illustrative calculation of CO<sub>2</sub> emissions saved



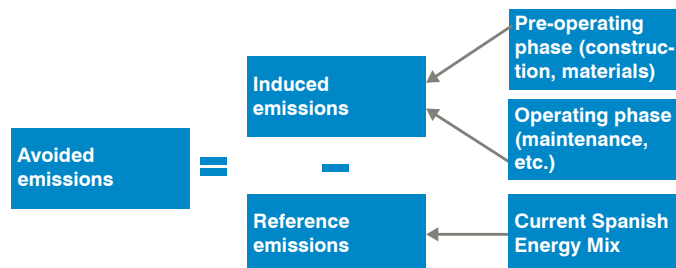
Source: Carbon4Finance Atlanticomnium / GAM

Avoided emissions are calculated by comparing the project's GHG emissions' impact with a reference situation (typically based on an average for the sector in the country). For example, the net emissions saved from a solar farm in Spain is calculated comparing the net carbon emissions of the solar project, compared to carbon emissions from electricity generation in Spain using the average energy mix.

This provides a more granular approach to understand true impact. To continue the example, solar projects in different countries will not have the same impact as the calculation depends on the underlying energy mix: the cleaner the energy mix, the less incremental impact.

#### Avoided CO<sub>2</sub> emissions example: Spanish solar farm

Avoided CO<sub>2</sub> emissions example: Spanish Solar Farm



Source: Carbon4Finance Atlanticomnium / GAM

Other environmental KPIs are based on similar methodologies.

**MW/MWh of renewable capacity installed/generated:** This is either taken from issuers' reporting (this is reported information rather than estimated), otherwise monetary ratios are applied. For MWh, these are computed either based on reported data or based on industry ratios, such as loading factor, that is derived from a combination of internal datasets and other external datasets (typically government databases).

**M<sup>2</sup> of green buildings financed/refurbished:** Square metres of green buildings financed and renovated are either taken from issuers' reporting or are computed based on monetary ratios. These ratios are based on Carbone 4's proprietary databases as well as other external databases.

**Waste & water managed:** Cubic meters of water treated and tonnes of waste managed are solely based on monetary ratios given limited disclosure from issuers. These ratios are based on Carbone 4's proprietary databases as well as other external databases.

**Temperature alignment:** There is increasing interest in understanding temperature alignment. Methodologies and metrics are still evolving, and our approach may change over time. This calculation is based on a curve that transforms the portfolio's overall Carbon Impact Analytics (CIA) score into an alignment temperature in 2100. This curve is constructed with 2 tangents (upper limit and lower limit), and two reference points, the LC100 (Euronext Low Carbon 100 Eurozone PAB Index) as the low carbon index aligned at 2°C, and the "Business as usual" data point represented by the MSCI World Large Cap Equity Index. By considering the upper and lower tangents along with these two reference points, the outcome is an S-shaped curve that is used as a tool to assign alignment temperature to all corporate instruments in a portfolio. This concept is illustrated by the graph below. The full methodology is available here: [CIA methodological guide \(https://www.carbon4finance.com/files/Carbon4\\_Finance\\_CIA\\_methodological\\_guide.pdf\)](https://www.carbon4finance.com/files/Carbon4_Finance_CIA_methodological_guide.pdf).

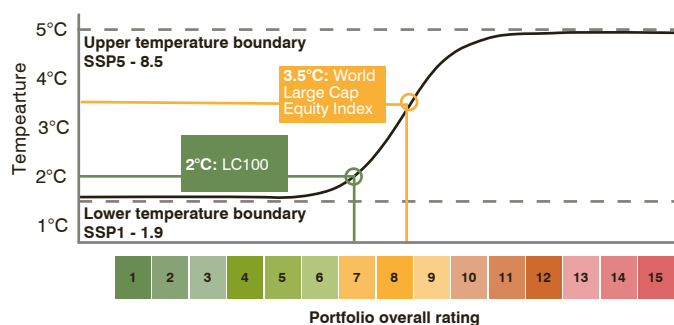
The portfolio's CIA score is a rating based on the average CIA score of individual green bonds. This score is based on the green bond's carbon performance and qualitative assessment of the green bonds' transparency. The quantitative assessment is mainly based on Carbone 4's "Carbon Impact ratio" (saved emissions divided by induced emissions), which reflects the green bonds' environmental impact. The qualitative adjustment is based on the green bond's transparency (quality of reporting). The reason why transparency forms part of the green bonds' rating is that for green bonds with poor reporting the environmental impact is discounted given higher uncertainty.

And finally, to give more context on the use of this alignment temperature: this allows us on the one hand to compare with a close benchmark, and on the other to evaluate the compatibility of the portfolio with the Paris Agreement.

### SDG alignment of green projects financed

When issuing green bonds, issuers typically map each type of project to be financed to specific SDGs. This means that each green bond can target multiple SDGs, which reflects the fact that percentages do not add up to 100%. The SDG alignment of the fund is calculated as the % (based on market value) of green bonds aligned to each specific SDG. Projects financed by the fund cover 14 of the 17 SDGs, reflecting the positive environmental and social impact of green and sustainability bonds.

## Illustration of temperature alignment methodology



Source: Carbon4Finance

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<https://www.gam.com/en/corporate-responsibility/responsible-investing>

<https://www.gam.com/en/policies-and-disclosures#sfdr>

The investment strategies described in this Report may involve the selection, prevent the acquisition of or require the disposal of securities of certain issuers for reasons other than investment performance or other financial considerations. As a result, the strategies may underperform other strategies with a similar financial objective or policy that do not utilise an ESG-focused investment strategies and may suffer investment losses if it is required to dispose of a security as a result of non-financial considerations.

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The Portfolio ESG Rating, where applicable, stated in respect of any given strategy is derived from ratings provided by a third party in respect of the investments and is designed to help investors understand the resiliency of the portfolio to long-term ESG risk and opportunities. A strategy with a high Portfolio ESG Rating implies that its investments are perceived to have a strong or improving management of financially relevant ESG risks and may be more resilient to disruptions from ESG events. However, the investments of such a strategy with a high Portfolio ESG Rating may still create significant negative externalities on environmental or social factors such as pollution and poor labour practices. Further, a strategy with a high Portfolio ESG Rating does not necessarily achieve or seek any positive ESG or sustainability impact. There can be no assurance that the Portfolio ESG Rating correctly represents the strategy's exposure to financial loss because of ESG risks.

The strategies described in this Report may invest in economic activities which are aligned with the EU Taxonomy. Alignment of investments with the EU Taxonomy is calculated by specific metrics (such as revenue or expenditure) and determined by data most recently disclosed or provided by investee companies or collected by third parties in relation to those economic activities. Such metrics are calculated and disclosed, provided, or collected as at a point in time for each investee company and are based on the activities of those investee companies which may vary over time or be impacted by external events. As a result, any taxonomy-alignment of the strategies will be indicative only and will not be a true reflection of the taxonomy-alignment of the strategies as at a point in time or over a particular reference period. The strategies may involve investment decisions based on the taxonomy alignment of an investment and the impact of such decisions may result in the strategies generating lower financial returns than if the taxonomy alignment were not considered.

The strategies described in this Report may include sustainable investments as defined in the EU's Sustainable Finance Disclosure Regulation (EU 2019/2088) ("SFDR"). A sustainable investment is an investment in an economic activity which contributes to an environmental or social objective, which does not significantly harm any environmental or social objective and where the investee company follows good governance practices. SFDR does not provide for objective criteria to determine the contribution of an economic activity to a particular environmental or social objective or set thresholds for identifying whether an economic activity causes significant harm to an environmental or social objective. As a result, the definition of "sustainable investments" is not standardised and requires firms to make subjective decisions. Firms subject to SFDR may take different approaches to categorising such investments. There can be no guarantee that a sustainable investment will attain its environmental or social objective or avoid harm to any particular environmental or social objective. The strategies may involve investment decisions based on the whether or not an investment is determined to be a "sustainable investment" and the impact of such decisions may result in the strategies generating lower financial returns than if it did not consider such determination.

The strategies described in this Report may be intended to have an ESG-related impact. Any impact will be calculated based on sustainability-related data, and will be subject to the data limitations outlined above. Any ESG-related impact may not be as expected and there is no assurance that any ESG-related impact will be achieved.

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