

Green Bond Funds Impact Report

Financing the transition to a more sustainable world
Report 2021



**NN investment
partners**

Foreword

Green bonds have come of age. Once a niche product, these bonds which finance environmentally beneficial projects have entered the investing mainstream. The market has expanded by an average of 60% per year over the past seven years, driven by strong investor demand and the urgent efforts of regulators and policymakers to address climate change.

At NN Investment Partners, 2021 was a year of milestones for green bond investing. We launched a fund that invests in high-quality sovereign green bonds, complementing our existing offerings – the flagship Green Bond fund, a short-duration version and a fund focused on corporate bonds. Assets under management in our strategies topped EUR 5 billion, and our team grew to seven full-time specialists – one of the world's largest dedicated green bond teams.

We also stepped up our engagement efforts, using our influence as an active investor to steer the companies and governments in our portfolios towards more sustainable practices. We engaged last year with 87 green bond issuers operating in 10 different sectors around the world.

This year's Green Bond Funds Impact Report explains **why** green bonds are a strong, sustainable alternative for fixed income investors and why NN IP is so committed to the market. The pages that follow will also demonstrate **what** we achieved in 2021, including reducing greenhouse gas emissions, boosting energy efficiency and promoting renewable-energy solutions.

The report also shows **how** NN IP puts clients' capital to work to achieve these results. It explains our investment process and how we engage with issuers to improve their performance on ESG criteria and their alignment with the European Union's taxonomy for sustainable activities.

We firmly believe that green bonds allow investors to make a positive environmental impact without sacrificing liquidity or returns. Consistently applying this conviction has made us a recognized market leader since we launched our first green bond strategy in 2016.

With vast sums needed to finance efforts to mitigate and adapt to climate change and build a sustainable economy, green bonds are now more important than ever. And with green bond issuance expected to surge in the years ahead, the opportunities for investors to greenify their portfolios are expanding.

This report shows how NN IP helps investors seize these opportunities. We hope you enjoy reading it.



Bram Bos

Lead Portfolio Manager, Green Bonds Team

Content



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Why invest in green bonds

Financing the transition to a more sustainable world

For fixed income investors who are serious about tackling climate change, the meteoric rise of green bonds in recent years has come at a critical time. At EUR 1.1 trillion¹, the market is now big enough to help advance urgent global efforts to reduce greenhouse gas emissions in line with the Paris Agreement and to help achieve the United Nations Sustainable Development Goals (SDGs) by 2030.

The green bond market is also deep and diverse enough to offer all investors the opportunity to make a positive environmental impact along with attractive returns. Institutional investors have been piling into green bonds over the past few years, attracted by the market's size, liquidity and performance, and their participation will help fuel continued rapid expansion.



¹ Source: Bloomberg, NN Investment Partners

On the supply side, governments around the world are stepping up issuance of green bonds to finance projects such as green infrastructure and renewable energy. New corporate issuers including electronics manufacturers, and shipping companies have also entered the market, encouraged by the presence of common standards and definitions such as the European Union’s taxonomy for sustainable activities and the Green Bond Principles endorsed by the International Capital Market Association (ICMA).

This growth momentum and the expanding range of products available have made green bonds a strong alternative to conventional fixed income products. They typically offer similar or better financial performance and a tangible, positive impact on the planet. In addition, they are tracked at issuer and project level, providing transparency on how investors’ money is used and the impact it generates.

Green bond pioneer

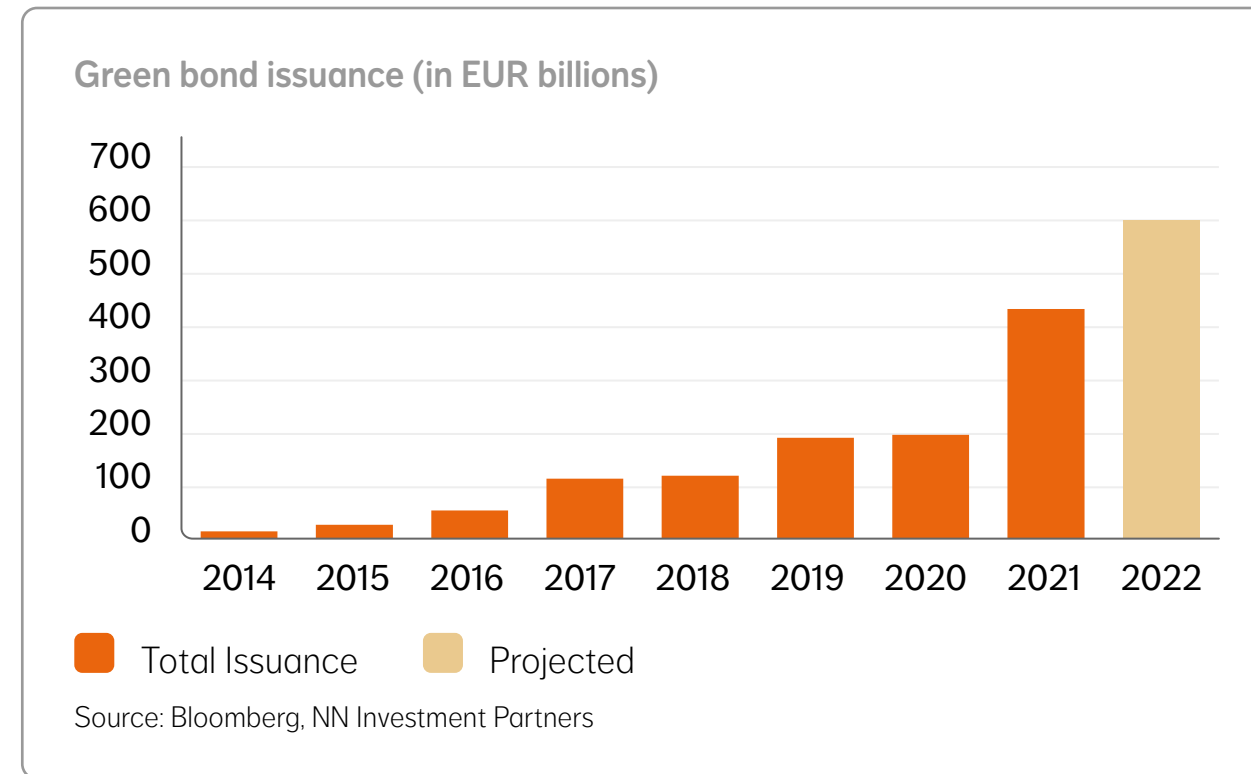
NN Investment Partners has a long track record of delivering significant impact and consistent returns with its green bond products. We started our first fund in 2016 with EUR 20 million. That has now developed into four dedicated green bond funds and a number of client-specific mandates with a total of EUR 5 billion of assets under management.

Green bonds are a natural addition to our product range and fit perfectly with our approach to responsible investing, which is built on the principles of putting capital to work and improving returns. We are dedicated to contributing to the transition to a sustainable, low-carbon economy that benefits all our stakeholders and society at large. NN IP’s role as a responsible asset manager begins with offering innovative financial products such as our green bond funds that help clients achieve their ambitions.

Our experience in the market and full range of green bond strategies have made us the partner of choice for many clients who want to invest in this asset class. Over the years, our position in the market has also enabled us to develop strong relationships with corporate and sovereign issuers.

Market outlook

The green bond market has come a long way in a relatively short time. The first green bond was issued in 2007 by the European Investment Bank, the EU’s lending arm.² That was followed a year later by the World Bank.³ In 2013, Swedish property company Vasakronan issued the world’s first green corporate bond.⁴



² Source: [European Investment Bank](#)


³ Source: [World Bank](#)

⁴ Source: [Vasakronan](#)

Market growth was slow at first, but began to take off with ICMA's publication of the Green Bond Principles in 2014. The signing of the Paris Agreement and the adoption of the UN SDGs the following year spurred further expansion as governments and companies rallied to address climate change. Since 2015, the market has expanded by an average of 60% per year.

By 2021, green bonds had become a mainstream fixed income market larger than European high-yield bonds and global convertible bonds. And rapid growth is expected to continue. New issuance reached EUR 440 billion last year, and we see this number surging to EUR 600 billion in 2022 despite a dip in the first quarter compared with the first three months of the previous year.

Green bond market characteristics as of the end of 2021

 [Click here to show issuance by:](#)

A key factor driving green bond growth last year was the “bounce-back” of issuance postponed in 2020 by the Covid-19 pandemic and resulting disruption to bond markets. Governments in countries including Italy, Spain and the UK also added to the market momentum with debut sovereign green bond issues. The introduction of the EU taxonomy, which sets green criteria for projects and economic activities, has been important in encouraging investment. The EU also began green bond issuance under its NextGenerationEU recovery programme.

Europe leads the way

Europe will continue to be the engine of green bond growth. We expect the EU to issue between EUR 50 billion and EUR 75 billion in green bonds in 2022 to finance NextGenerationEU, though this number could go higher if the bloc accelerates issuance. The EU plans to issue as much as EUR 250 billion in green bonds under the programme by the end of 2026, making it the world’s largest green bond issuer.

Denmark tapped the green bond market for the first time in January 2022, selling DKK 5 billion of new debt to fund the country’s energy transition. Green bond issuance may reach DKK 15 billion in 2022.⁵

The UK also plans to step up issuance in the 2022-2023 fiscal year with GBP 10 billion of green gilts. Rather than launching new bonds, the Treasury will build up two existing green gilts with the goal of ensuring they mirror other benchmark bonds in terms of liquidity.⁶

Outside of Europe, Canada entered the market in March 2022 with its inaugural CAD 5 billion green bond to finance investments in green infrastructure and

other environmental projects.⁷ Colombia, India and Singapore are considering selling green bonds in 2022, and countries including Chile, Egypt and Indonesia are preparing to return to the market. With the market growing rapidly, investors will benefit from greater diversification and range of investment options.

Global climate push

Climate initiatives will also encourage green bond issuance, with governments making greater commitments to improve their environmental practices. More than 70 countries have set net-zero targets that cover about 76% of global greenhouse gas emissions in regions including the world’s biggest polluters -- China, the US and the EU.⁸ The 2021 UN Climate Change Conference (COP26) introduced new targets on biodiversity, coal and methane emissions.

These initiatives should ultimately be reflected in regulatory changes. Companies should expect investors to demand more detailed information about their plans to address deforestation and phase out fossil fuels.

Boost from regulation

Regulation will also strengthen and broaden the market by requiring greater disclosure and transparency. In Europe, asset managers and other financial market participants are stepping up reporting to comply with the Sustainable Finance Disclosure Regulation (SFDR), including detailed information about how they reduce negative impacts their investments could have on the environment.

In general, corporates also face more stringent reporting rules. In Europe, the Non-Financial Reporting Directive requires about 11,700 large companies to disclose environmental, social and governance (ESG) information. A proposed

⁵ Source: [Reuters](#)

⁶ Source: [HM Treasury](#)

⁷ Source: [Department of Finance Canada](#)

⁸ Source: [United Nations](#)

successor to NFRD, the Corporate Sustainability Reporting Directive, would expand that requirement to about 50,000 companies.⁹ In the US, the Securities and Exchange Commission is also considering mandating climate-risk disclosures by public companies.¹⁰

These regulatory initiatives should encourage companies to adopt more sustainable business models, expanding the investable universe for green bond investors. By providing greater transparency and comparability of ESG data, these regulations should also boost the credibility of the sustainable investing market, including green bonds, leading to a scaling up of investment.

9 Source: [European Parliament](#)

10 Source: [SEC](#)



Impact

What our green bond strategies achieved in 2021

Investing in projects with real world impact

The success of a green bond investment strategy is measured in terms of positive environmental impact and strong financial returns.

This section of the report sets out the results our green bond funds achieved in mitigating the effects of climate change and spurring the development and implementation of solutions to key environmental challenges.¹

Some of our highlights from 2021 include helping reduce greenhouse gas emissions by financing work at Mercedes-Benz Group AG to scale up its production of electric vehicles. We promoted the development of renewable energy by helping finance projects such as Enel SpA's development of the Cerro Pabellon geothermal power plant in Chile.

¹ You can find more information on financial performance in the fact sheets for our green bond strategies on the NN IP website.

We invested to increase energy efficiency and reduce energy consumption, including Alliander NV's Fair Meter project, which is building the new generation of smart meters in a sustainable, responsible manner.

One of the green bond market's biggest advances in recent years has been increased disclosure about how investments affect the environment. Reporting has been stimulated by voluntary frameworks including the ICMA's Green Bond Principles as well as standards issued by the Climate Bonds Initiative and the EU's Green Bond Standard. With so much more information available about issuers and the projects they finance with green bonds, we are better able to analyse these securities and identify sound investments as well as to meet our clients' demands for greater transparency and quantifiable results.

Environmental impact

In what follows, we first look at the impact of our green bond portfolios for each of the metrics we report on, and then highlight achievements connected with individual portfolios. When reporting on environmental impact, we provide numbers for our four funds: NN (L) Green Bond, NN (L) Corporate Green Bond, NN (L) Sovereign Green Bond and NN (L) Green Bond Short Duration, which has portfolio features and impact similar to the aggregate Green Bond fund. See [page 18](#) for characteristics and risks per fund.

While issuers are reporting more information about their green bond strategies and project financing, they differ widely in terms of their progress in impact measurement. For this reason, NN IP as an asset manager has a crucial role to play in applying a harmonized methodology that allows for aggregate impact reporting at the portfolio level. To read more about how we harmonize impact tracking, see the Impact Calculation Methodology at the end of this report.

Results on reducing greenhouse gas emissions

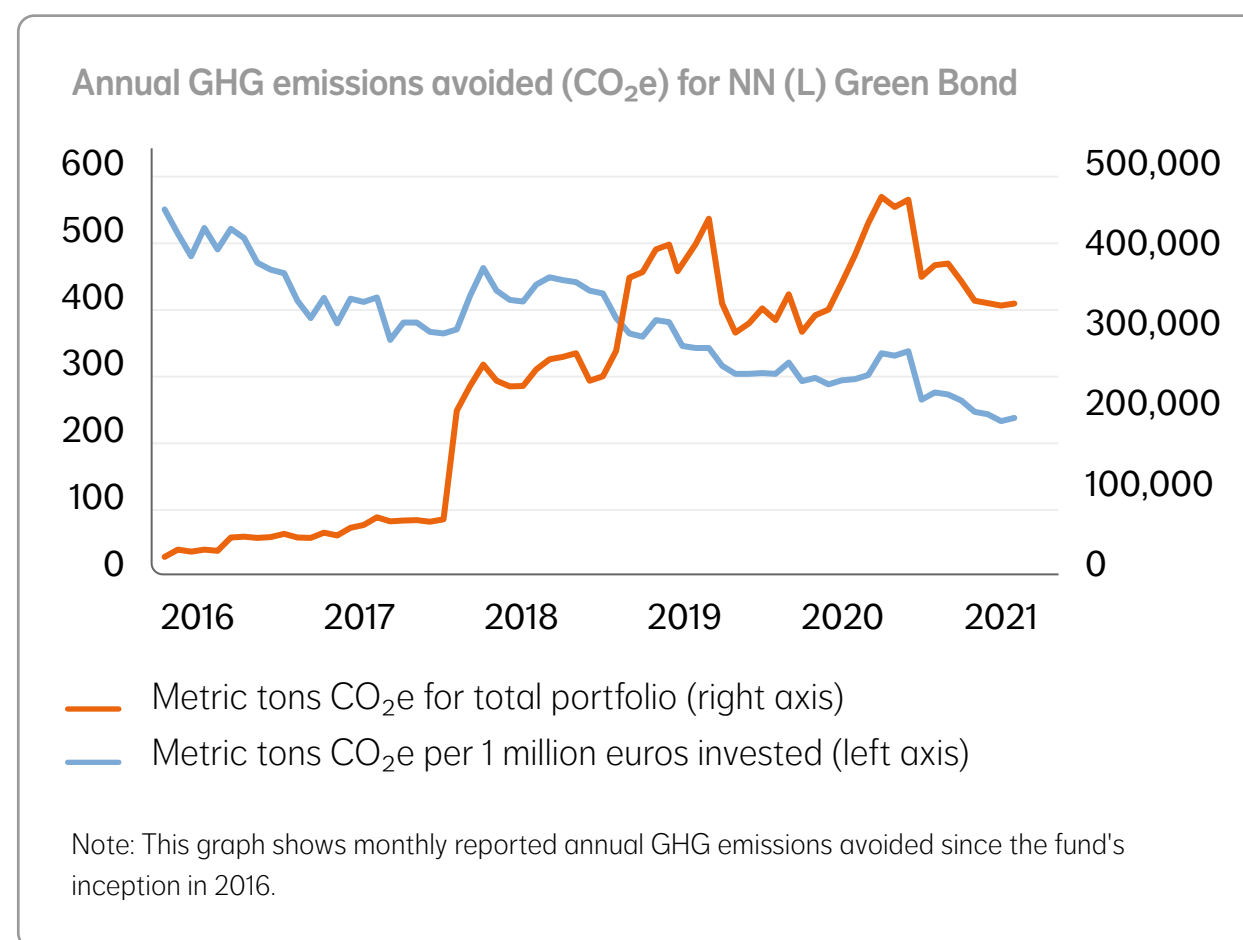
The most frequently reported green bond impact metric is “annual greenhouse gas emissions avoided”. It can come from a range of projects, such as renewable energy plants that help reduce our reliance on fossil fuels, and public transportation that allows people to travel less in private cars. Other projects that fall into this category include installing optical fibre to improve energy efficiency and financing green buildings that use energy and water more efficiently.

Greenhouse gas emissions are measured in carbon dioxide equivalent (CO₂e). This compares the emissions from greenhouse gases by converting amounts of other gases to the equivalent of carbon dioxide with the same global warming potential.



Our portfolio impact

The greenhouse gas emissions avoided through our four funds totalled 606,080 metric tons of CO₂e in 2021. The portfolios' total impact and impact per million euros invested are shown in the table. The higher emissions avoided per million euros invested for our Corporate Green Bond fund can be explained by the higher allocation percentage to the alternative energy category. Alternative energy projects usually make a greater impact on avoiding greenhouse gas emissions as they directly replace the use of fossil-fuel-based energies.



The numbers on emissions avoided by our NN (L) Green Bond and NN (L) Corporate Green Bond funds dipped in 2021 compared with a year earlier. This trend is aligned with our expectation that the progress made by companies and countries towards the Paris Agreement targets will drive down GHG emission baselines, which are a key element in calculating the GHG emissions avoided metric.

For accounting and reporting purposes, many companies break their emissions into three “scopes” defined in the Greenhouse Gas Protocol. Scope 1 covers direct GHG emissions from sources owned or controlled by the company. Scope 2 refers to indirect GHG emissions from the generation of purchased electric-

2 Source: European Environment Agency and Eurostat

3 Source: Milieucentraal

ity consumed by the company. Scope 3 covers all other indirect emissions that result from the activities of a company, but occur from sources that it neither owns nor controls. Companies could utilize green bond to help them reduce emissions on all three scopes, depending on the projects being financed. Examples include the use of sold products and services, waste disposal and employee business travel.

Company example: Mercedes-Benz Group AG⁴

Mercedes-Benz is a global automaker that aims to achieve CO₂ neutrality for its new passenger fleet and all of its manufacturing facilities by 2039. It issues green bonds that contribute to refinancing the development of electric vehicles.

Impact attributable to the bond:

60 metric tons of GHG emissions are avoided annually per EUR 1 million of investment⁵.

Key green asset portfolio information:

Size of holding: EUR 2.2 billion

Use of proceeds: Development of a modular battery electric vehicle (BEV) architecture that is flexibly scalable for the company's range from compact to luxury cars

Contribution to SDGs: 9, 13



Project contributing to the impact:

The BEV architecture is suitable for a wide variety of vehicle types because of its modular design, its variable wheelbase and wheel gauge, and its other components, notably the batteries. It has supported delivery of the EQ-line including EQS, EQA and EQB. Life-cycle carbon-footprint analysis of the EQS, the company's first all-electric luxury model, shows it could save about 48% of CO₂ compared with a similar model with a combustion engine.

Company target alignment:

Being part of measures to help Mercedes-Benz achieve its CO₂ neutrality target, financing for the modular BEV architecture and the production of electric vehicles will help it reduce scope 3 emissions. The bonds in this portfolio also refinance a project that gives batteries that can no longer be used in vehicles a second life as part of a system for storing electricity. At Mercedes-Benz's "Factory 56" in Sindelfingen, Germany, the batteries are connected to a photovoltaic system on the factory roof and act as buffers for excess solar power.⁶ This is key to its target of realizing CO₂ neutrality at all of its plants by 2039.

⁴ https://group.mercedes-benz.com/Green_Finance_Investor_Report_2021

⁵ Based on the annual delivery of 48,936 Mercedes-EQ battery-electric passenger cars in 2021.

⁶ Source: [Mercedes-Benz](https://www.mercedes-benz.com)

Company example: Telia Company⁷

Telia Company is a telecommunication services provider in the Nordic and Baltic regions. It has issued two green bonds that help finance and refinance network transformation to improve energy efficiency.

Impact attributable to the bond:

In 2020, 9,862 metric tons of GHG emissions were avoided by replacing the copper-based network.

Key green asset portfolio information:

Size of holding: EUR 570 million

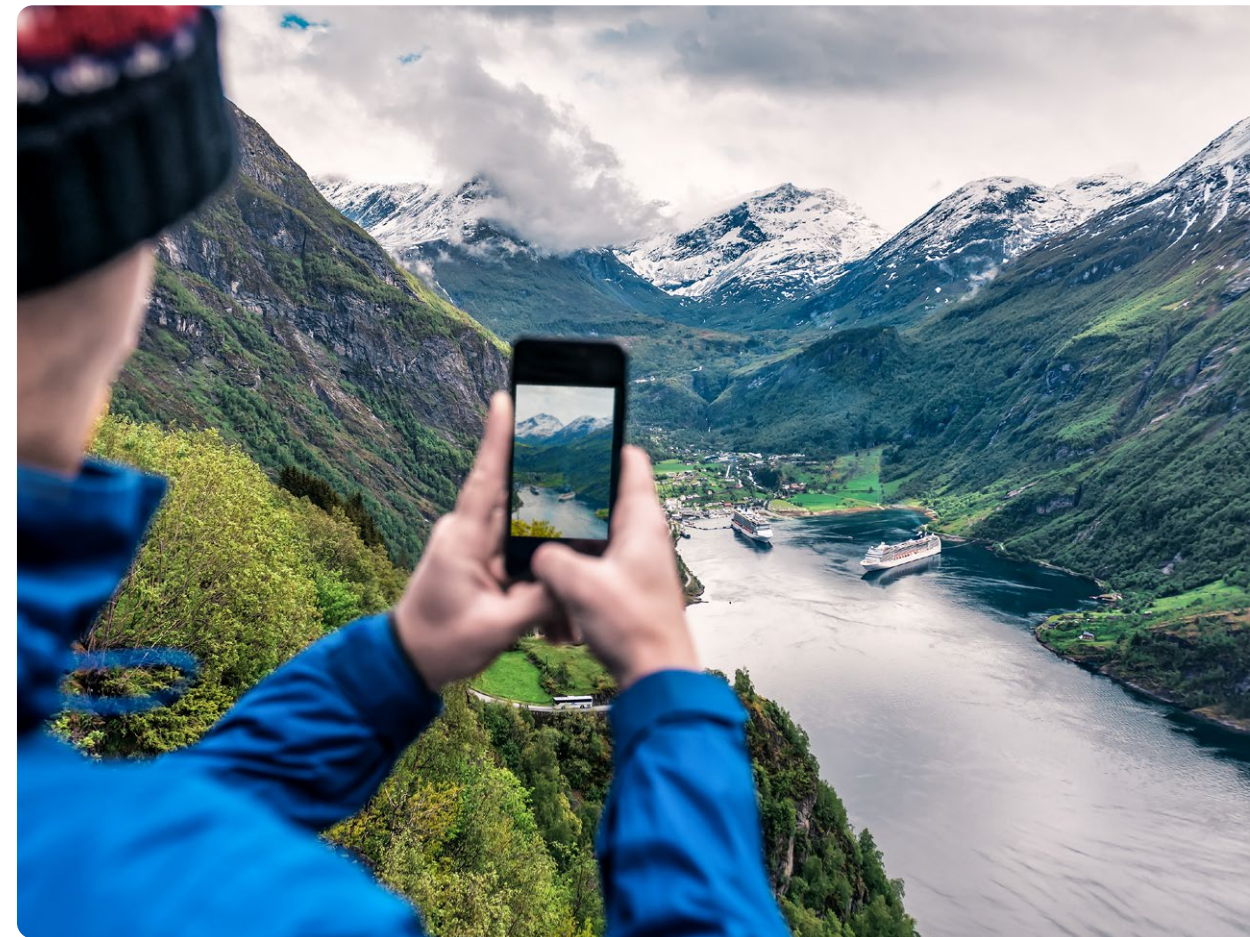
Use of proceeds: Fibre network investments in Sweden that represent 96% of total capital expenditure on fibre in Sweden during the period

Contribution to SDGs: 9, 13



Project contributing to the impact:

The fibre network primarily replaces an existing copper-based network that is still used for telephone and broadband. It will improve the energy efficiency of data transfer because fibre-based broadband is more than 15 times more efficient per unit of data transferred than copper-based broadband, Telia estimates. Telia expects to save 25% of total electricity consumption when the copper-based network is retired.



Company target alignment:

Telia's ambitious climate target has been verified by the Science Based Targets initiative (SBTi) to be aligned with the Paris Agreement goal of limiting global warming to 1.5°C. The company has committed to reducing absolute scope 1 and 2 emissions by 50% by 2025 compared with 2018 levels, and to be net zero by 2030.

⁷ www.teliacompany.com, Telia Company Green Bond Report February 2021

Results on promoting renewable energy

Green bonds used to finance renewable energy projects account for the largest share of our portfolio by far – over 30% on average. In addition to wind and solar, the main types of renewable energy, other sources are being developed. Hydropower and bioenergy in particular have recently been attracting increasing allocations of green bond proceeds. Renewable energy capacity is measured in megawatts (MW) and annual renewable energy output in gigawatt hours (GWh).

Our portfolio impact

Our green bond portfolios have added 407 MW of renewable energy capacity, and had an annual output in 2021 of 856 GWh of renewable energy. The portfolios' total impact and impact per million euros invested are shown in the tables. The higher impact per million euros invested for our Corporate Green Bond fund is also due to the higher percentage allocation to the alternative energy category.

Company example: Prologis European Logistics Fund¹⁰

The Prologis European Logistics Fund (PELF), formed in 2007, is an open-ended vehicle that owns and operates core industrial distribution properties across Europe. Its green bond programme focused on green buildings has issued seven bonds since 2018.

Impact attributable to the portfolio:

Solar panel capacity of 38 MW installed across its building portfolio.

Key green asset portfolio information:

Size of holding: EUR 2 billion
Use of proceeds: Eligible green buildings financed by the bonds, many with solar panels installed on-site, have received BREEAM, LEED or DGNB sustainability certificates

Contribution to SDGs: 7, 11, 13



8 Source: WindEurope

9 Source: ODYSSEE-MURE

10 <https://pelf.prologis.com>, 2021 Green Bond Report

Project contributing to the impact:

Prologis, a US-based real estate investment trust that invests in warehouses, is involved in designing sustainable buildings to ensure that its developments meet or exceed local certification requirements. Solar panels are one of the most important sustainable design features of its logistics facilities, such as the rooftop array on the Prologis Park Eindhoven DC3 property in the Netherlands.

Company target alignment:

Prologis has pledged to achieve carbon-neutral construction globally by 2025 as well as to reduce absolute scope 1 and 2 GHG emissions by 21% and scope 3 emissions by 15% by that date. This target has been verified by SBTi as aligned with a 2-degree scenario. Solar panel installation supports this goal by delivering clean energy. Prologis plans to have 400MW of solar capacity installed across its building portfolio by 2025.

Company example: Enel¹¹

Enel SpA is an Italian-based multinational producer and distributor of electricity and gas. It has market exposure in 30 countries so far. To support its target of having 154 GW renewable capacity by 2030, Enel has issued around EUR 3.5 billion in green bonds since 2017.

Impact attributable to the bond:

35 GWh energy is generated annually due to the allocation to the Cerro Pabellón geothermal project.



Source: www.enel.com

Key green bond information:

Size of holding: EUR 1.2 billion

Use of proceeds: This is a renewable energy-focused portfolio, including wind, solar, geothermal, and hydroelectric. Enel allocated EUR 57 million to the Cerro Pabellón geothermal project

Contribution to SDGs: 7, 13

**Project contributing to the impact:**

While investing in wind and solar energy, Enel is also exploring making use of geothermal. Cerro Pabellón Geothermal Power Plant was built by Geotérmica Del Norte, a joint venture between Enel Green Power Chile and ENAP, between 2015 and 2017. The plant uses high enthalpy technology with a binary cycle and has a total power of 81 MW. The capacity will enable the plant to produce 600 GWh of energy per year, avoiding the emission of 470,000 tons of CO₂ into the atmosphere.

Company target alignment:

Renewable energy capacity installation is key in Enel's decarbonization pathway. In late 2021, the Group committed to bringing forward its net-zero commitment by 10 years to 2040, for direct and indirect emissions. Thus Enel is looking to accelerate its sustainable growth to have around 154 GW of renewable capacity by 2030, including battery capacity.

Results on improving energy efficiency

We invest to increase energy efficiency and reduce energy consumption. This helps cut the use of fossil fuels and avoid more greenhouse gas emissions. Energy savings are measured in gigawatt hours (GWh) per year.

Our portfolio impact

The energy savings of our green bond portfolios totalled 52 GWh in 2021. The portfolios' total impact and impact per million euros invested are shown in the table below. Energy savings are mainly from three use-of-proceeds categories: energy efficiency, green building and low-carbon transportation.

Company example: Alliander NV¹³

Alliander is a Dutch energy network company that distributes energy including electricity, gas and heating to more than 3 million customers. It issues green bonds that help refinance energy-efficiency projects.

Impact attributable to the portfolio:

Energy consumption reduced by 299 GWh annually due to smart meter installation.

Key green asset portfolio information:

Size of portfolio: EUR 1.2 billion

Use of proceeds: Renewable energy transmission grid, energy-efficiency projects, and green buildings, with EUR 526 million allocated to smart meters

Contribution to SDGs: 7, 13



Project contributing to the impact:

Alliander started the Fair Meter project in 2013 together with electricity and gas grid manager Stedin. The project's aim is to build the new generation of smart meters in a sustainable, responsible manner.¹⁴ The 3 phase E360 meters contain 58% less metal and 33% less plastic, reducing their carbon footprint.¹⁵

¹³ www.alliander.com, [Green Finance Report 2020](#)

¹⁴ Source: [Fair Meter](#)

¹⁵ Source: [Fair Meter](#)

Company target alignment:

Alliander has targeted climate-neutral operations by 2023, covering their network activities, offices and vehicles. It uses a three-step approach starting with saving energy and boosting energy efficiency. Smart meters play an important role by enabling customers to manage their energy use more proactively. This leads to more energy-efficient assets and helps the company reduce emissions.

Company example: Equinix, Inc.¹⁶

Equinix is an American multinational company that develops and operates interconnected data centres. It operates a network of more than 200 International Business Exchange data centres in 63 metropolitan areas around the world and owns about half of them. It issues green bonds that allocate proceeds to energy efficiency projects.

Impact attributable to the portfolio:

Energy consumption savings of 31 GWh annually due to data centre efficiency improvement.

Key green asset portfolio information:

Size of portfolio: EUR 2.9 billion

Use of proceeds: Green buildings, renewable energy, and energy efficiency projects, with EUR 3.8 million allocated to projects designed to improve power usage effectiveness (PUE), an indicator for measuring the energy efficiency of data centres

Contribution to SDGs: 7, 13

**Project contributing to the impact:**

A portion of funding raised by the bonds is allocated to the Energy Efficiency Center of Excellence project that Equinix launched in 2020. Measures to improve efficiency at existing datacentres include retrofitting cold aisle containment across the facilities, installing blanking panels to optimize airflow management and continuous air balancing. The project has resulted in a 10% reduction of infrastructure energy and an annual avoidance of 543 metric tons of CO₂e thanks to reduced demand.

Company target alignment:

Equinix has pledged to reduce absolute scope 1, 2 and 3 GHG emissions by 50% by 2030 compared with 2019 levels. The company's target has been verified by SBTi as aligned with a 1.5°C scenario. To achieve it, Equinix is increasing the use of renewable sources in its energy mix and deploying design and operational innovations fostered by the Energy Efficiency Center of Excellence such as adaptive controls, machine learning and natural refrigerants.

Overview of our green bond product range

NN Investment Partners launched its first green bond fund, NN (L) Green Bond, in 2016. In the years since, we introduced new funds as the market expanded. Our full strategy range now has four funds, giving investors more options and making it easier to add green bonds to their fixed income portfolios.

Our flagship NN (L) Green Bond fund focuses primarily on euro-denominated investment-grade green bonds issued by companies and governments around the world. NN (L) Green Bond Short Duration has the same investment profile as the main fund, with some slight differences in positioning arising from portfolio management. NN (L) Green Bond Short Duration uses futures to hedge the

duration back to two years, making it ideal for investors who want to protect their portfolios against rising interest rates while financing positive climate action.

The NN (L) Corporate Green Bond fund focuses exclusively on bonds issued by companies, while our most recent addition, the NN (L) Sovereign Green Bond fund, invests in bonds issued by governments and government-related entities. In addition to our funds, we also manage bespoke mandates for clients tailored to their own ambitions and requirements. Mandate assets are included in our total figure for assets under management in green bond strategies, which recently passed the EUR 5 billion mark.

How our investments make a difference

Green bond issuers are expected to report once a year until full proceeds allocation on how the money raised is being used to finance eligible green assets. They usually publish a first allocation report one year after a bond has been issued. We store this information in our green bond database because it gives us valuable information on the issuer's strategy and allows us to calculate and report on the environmental impact achieved by our investments.

Demand is also increasing from investors for detailed disclosure on the expected and achieved impact of green bonds. Issuers can meet this demand by publishing green bond or dedicated impact reports and can have these reports audited to ensure quality and transparency.

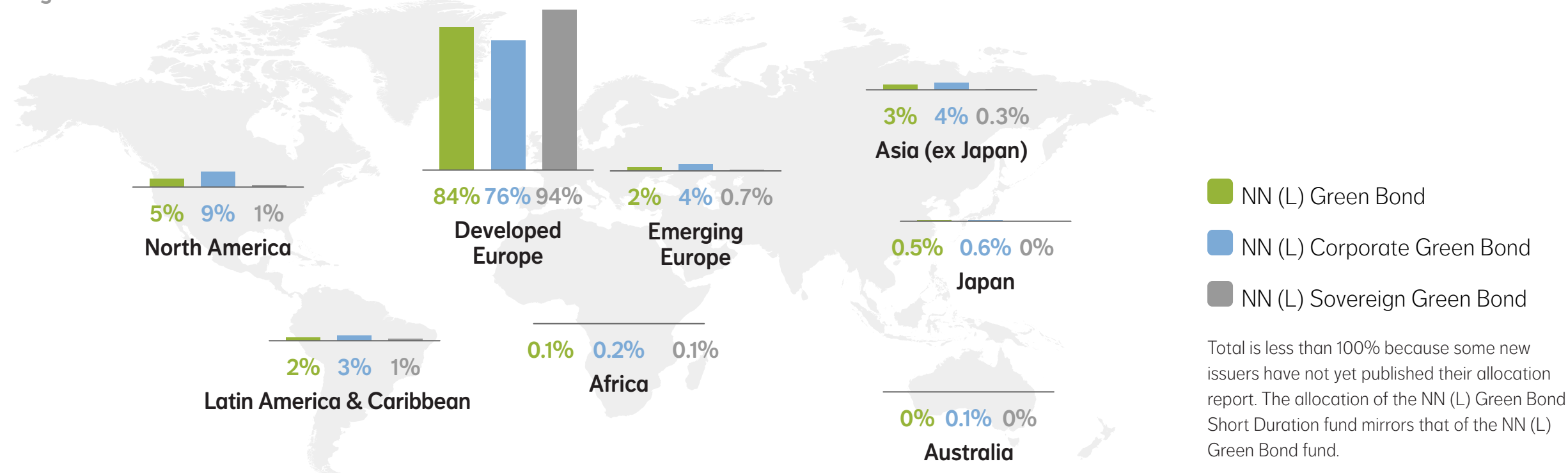
In this section, we focus on our funds' regional allocation, use of proceeds and contribution to the SDGs. In the charts that follow, we provide numbers for three funds: NN (L) Green Bond, NN (L) Corporate Green Bond and NN (L) Sovereign Green Bond. The allocation of the NN (L) Green Bond Short Duration fund mirrors that of the aggregate Green Bond fund.

Regional allocation

Europe remains the largest green bond market for corporate and sovereign issuers, and this is reflected in the regional allocations of our funds.¹⁷ The high percentage allocation of our funds to Europe has remained fairly constant over the years and shows the dominance of European issuers.

¹⁷ Source: Bloomberg

Regional allocation of our funds in 2021



This is particularly evident for our NN (L) Green Bond and NN (L) Sovereign Green Bond funds, reflecting the volume of European sovereign issues of recent years and their weight in the aggregate market indices. The heavy Europe weighting also highlights the difference in quality of green bond frameworks and transition plans. In our database, 85% of green bonds from the 27 EU countries are labelled green, while this figure is only 41% for US and Asian issuers.

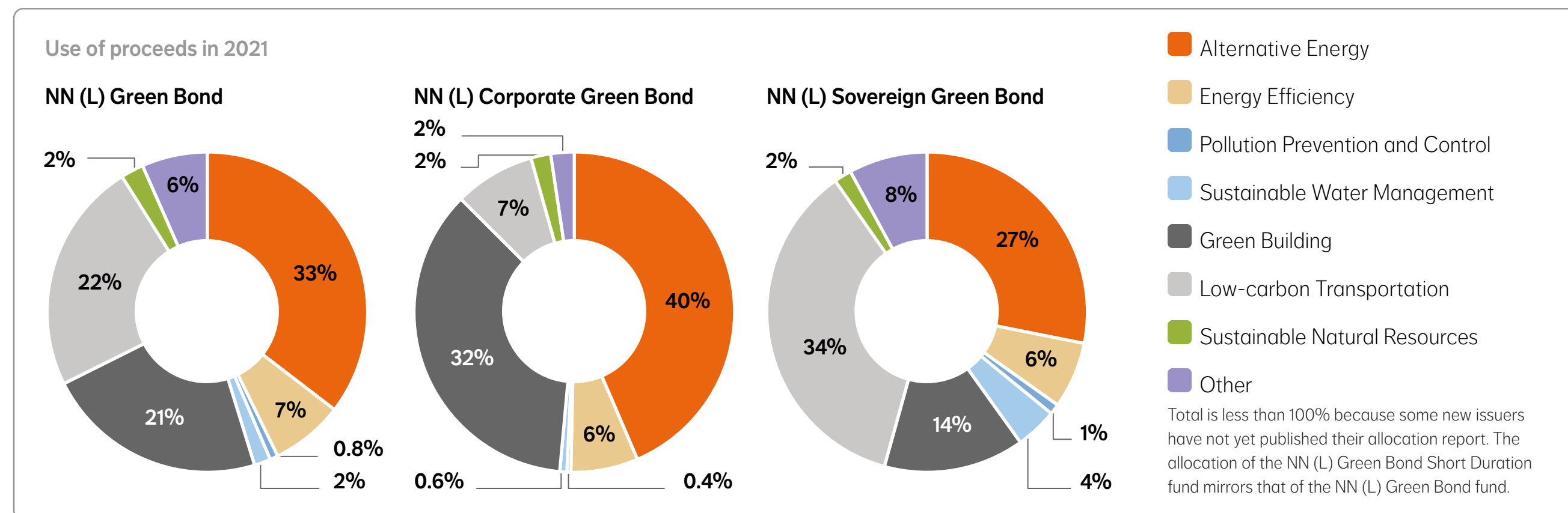
Use of proceeds

The premise of green bonds is that the money raised will be used for green projects. This use-of-proceeds concept is one of the four core components of ICMA's Green Bond Principles, which state that eligible projects should provide clear environmental benefits that are assessed and, where possible, quantified by the issuer and reflected in the legal documentation for the security.

The energy sector (electricity, heat and transport) accounts for 73% of global greenhouse gas emissions,¹⁸ so it is not surprising that bonds devoted to developing alternative energy comprise the largest use-of-proceeds category in our aggregate NN (L) Green Bond and NN (L) Corporate Green Bond funds.

The differences between how public and private issuers use the funds raised with green bonds are reflected in the holdings of our funds. The low-carbon transportation segment is a good example. Governments and government-related entities are investing heavily in infrastructure to electrify and modernize public transportation systems. As a result, low-carbon transportation accounted for 34% of our Sovereign Green Bond fund portfolio at the end of last year. The

18 Source: [Our World in Data](#)



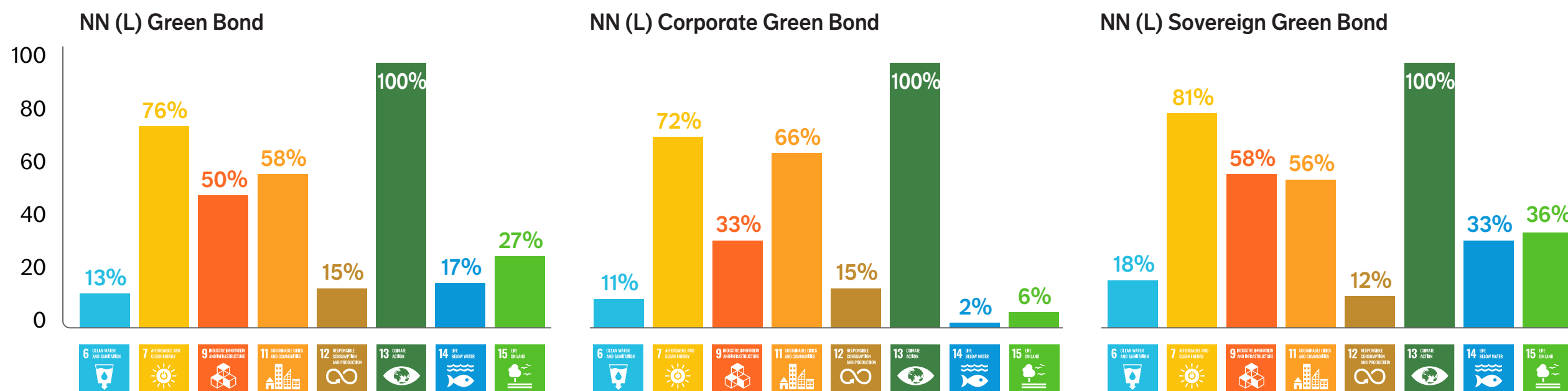
allocation to this segment in our Corporate Green Bond fund was just over 7%, reflecting the fact that private-sector car manufacturers are still in the early stages of developing and mass producing low-carbon-emission vehicles.

SDG contribution

The UN's 17 SDGs are intended to end poverty and other deprivations, improve health and education, reduce inequality and spur economic growth, while tackling climate change and preserving our oceans and forests. NN IP's green bond funds focus on the eight SDGs that cover climate- and environment-related issues. We assess the SDG contribution each individual green bond makes based on the specific projects it is financing and the direct contributions it makes to achieving the SDGs. We do not count indirect SDG contributions.

The difference between our funds is also evident in the SDG contributions they make. Our Sovereign Green Bond fund and aggregate Green Bond fund, which invests in government as well as corporate bonds, made substantial contributions to SDG 14 (Life below water) and SDG 15 (Life on land) last year. This is because governments are more likely to use green bonds to finance the sustainable management of natural resources through projects such as biodiversity research and protection and soil rehabilitation.

SDG exposure* in 2021



* Portfolio positions can have exposure to multiple SDG themes. The SDG contribution of the NN (L) Green Bond Short Duration fund mirrors that of the NN (L) Green Bond fund.



How we deliver results

Offering green bond solutions for every fixed income investor

NN Investment Partners has earned its reputation as a leader in responsible investing by helping our clients realize their ambition to earn potentially attractive returns while making the world a better place. Our ESG-integrated, sustainable and impact strategies are built on the same firm belief in the goals and principles of responsible investing.

Our green bond strategies are an important part of this commitment. Our offerings have grown along with the market since we launched our first green bond fund six years ago. We now provide a full range of strong, sustainable fixed income alternatives in corporate and sovereign bonds with a long-term approach or a shorter duration.

In this section of the report, we will explain our green bond investment philosophy and the disciplined, robust approach that has made us a frontrunner in the market. Our investment process is based on our Green Bond Assessment Methodology, which incorporates the latest industry and regulatory guidelines as well as what our dedicated team considers to be the crucial mitigation and adaptation criteria for green bond issuers.

In addition to our stringent selection process, our investment style is defined by active ownership. We hold regular dialogues with all the issuers in our portfolios on topics related to their transition plans, green bond programmes and impact measurement as well as project alignment with the EU taxonomy. We believe that consistent engagement delivers results that benefit all investors and stakeholders.

Finally, this section will examine the alignment of our portfolio with the European Union's taxonomy for environmentally sustainable economic activities. We have gone beyond regulatory reporting requirements, drilling down into each bond we own to assess the progress issuers have made in defining and disclosing their climate mitigation and adaptation activities. We then use this information to improve the efficacy of our efforts to steer issuers towards full alignment with EU standards.

Our green bond philosophy

Creating a truly green investment portfolio

We believe a bond's green credentials are determined not just by the projects it finances but also by the issuer's strategy. Our analysts and portfolio managers look beyond the green label and carry out their own thorough evaluation of a company's activities and plans to adopt more sustainable business practices. We follow a two-step process: robust assessment followed by an active investment approach based on solid credit analysis.

Our process begins with screening for alignment with the Green Bond Principles, a set of voluntary best-practice guidelines monitored and developed by ICMA since 2014. At this stage, we also assess sector and project criteria as well as

the ESG profile of the issuer. In conducting this analysis, we adhere to NN IP's Responsible Investment Policy. This process yields a selection of green bonds with significant environmental impact and ensures that we and our clients are shielded from misleading claims known as "greenwashing".

Green bonds are labelled by their issuers, so we review information from the issuer and other external sources, but always carry out our own assessment. Bonds must be tracked at issuer and project level to ensure that all investments are truly green. Inconsistent availability of data can make it difficult to determine how green issuers are, and some companies can issue green bonds for individual projects with no intention of addressing broader sustainability issues. We believe that it is imperative to analyse quantitative and qualitative indicators at project, company and even market level on an ongoing basis.

Frequent dialogue with issuers throughout the life of a bond, from preparing for issuance to reporting on impact, also provides vital input for our analysis. Engagement allows us to enhance our understanding of issuers and to advise them on best practices.

For investors, impact reporting is essential. We believe that investment in green bonds allows clients to reduce the carbon footprint of their fixed income portfolios without sacrificing liquidity and returns, and we demonstrate with maximum transparency in fund-specific documents and broader reports such as this one. Our active management style also helps us identify truly green bonds offering the best financial performance. As a result, we can achieve a higher degree of impact and deliver better risk-adjusted returns, giving us a competitive edge in global green bond markets.

A leader in green bond investing

Our solid track record sets us apart

Our green bond team has grown along with the market, and now has seven full-time specialists, one of the largest dedicated green bond teams in the market. It is part of the global investment grade credit department, and its portfolio construction is fully aligned with our regular credit process. This allows our green bond portfolio managers and analysts to work closely with other credit analysts to determine whether a bond and its issuer meet our strict green bond investment criteria while also fulfilling the fundamental credit requirements.

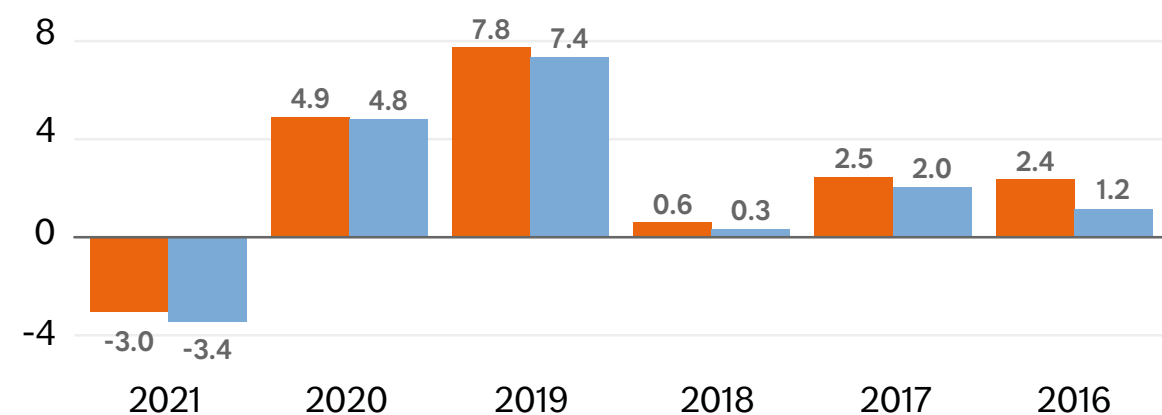
The Responsible Investing team also reviews every bond before it becomes eligible for investment. The result is that we exclude about 30% of the global total of bonds outstanding that carry a green label.

Our investment style results in a low tracking error and aims to deliver stable investment returns that offer benefits to impact and traditional fixed income investors. Since inception, our NN (L) Green Bond fund has outperformed the benchmark by an average of 43 basis points per year.

Our commitment to creating impact and transparent reporting has gained recognition from a number of independent agencies, garnering labels and awards including MSCI AA, four Morningstar globes, Scope AA+, Towards Sustainability (Belgium) and Greenfin (France). Our NN (L) Green Bond fund has a 5-star Morningstar rating.

Our green bond analysis, supported by our proprietary Green Bond Assessment Methodology and Database, provides a comprehensive overview of the market. We publish regular reports on our strategies' financial and impact performance as well as insights and research on trends and developments in the green bond market.

Gross rates of return (%)



■ NN (L) Green Bond ■ Bloomberg Barclays Euro Green Bond

Data 31 December 2021

Source: NN IP Performance Measurement. Benchmark: Bloomberg Barclays MSCI Euro Green Bond Index. Returns are presented after all transaction costs, but before Ongoing Charges (consisting of Management Fee + Fixed Service Fee + Tax d'abonnement). Returns include the reinvestment of income. Fund was launched on 1 March 2016. Past performance is no guarantee of future results and the possibility of loss does exist. The Ongoing Charges vary per share class – please refer to the share classes' Key Investor Information Document.

Assessing green bond credentials

Strict vetting of corporate and sovereign issuers

Our Green Bond Assessment Methodology incorporates the latest green bond project level assessment criteria from ICMA's Green Bond Principles and the taxonomies developed by the EU and the Climate Bonds Initiative. It also includes our own mitigation and adaptation criteria and is updated regularly to reflect the latest scientific and regulatory developments.

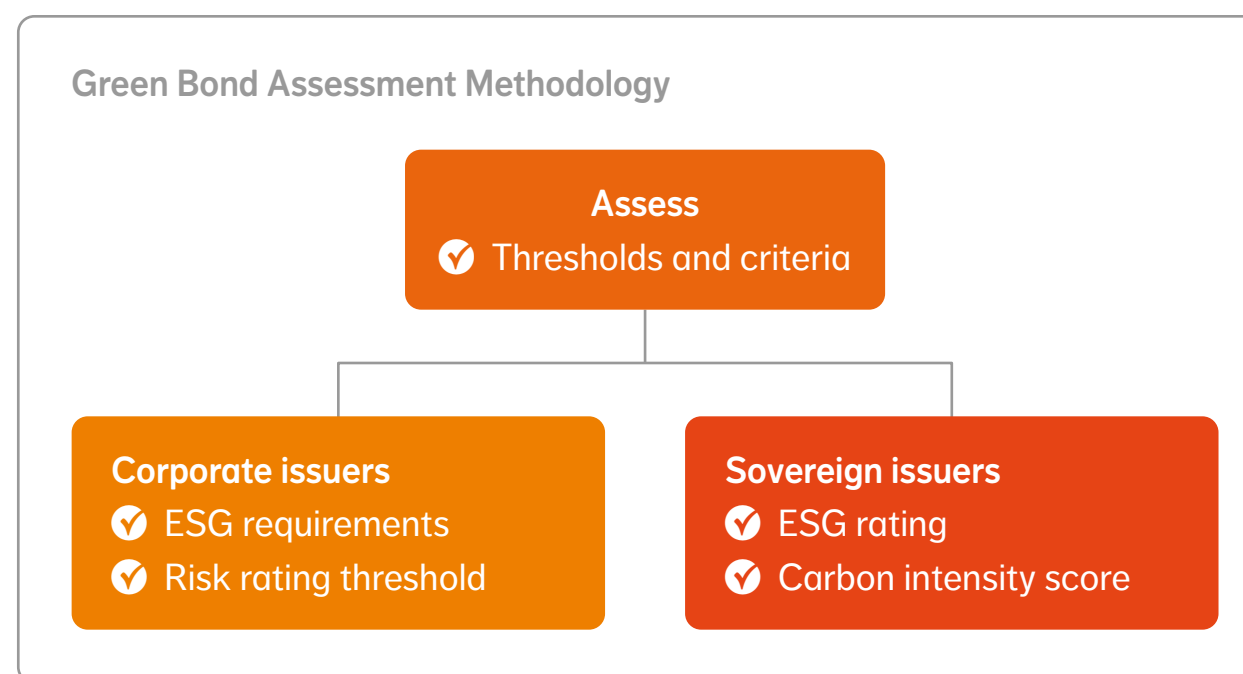
The first step in our analysis is the same for all issuers: we assess whether the activities financed by a bond meet our thresholds and criteria. If they don't, the bond is not eligible for investment.

The next step differs for corporate and sovereign issuers. For corporate green bonds, we determine whether the issuer meets our strict ESG requirements and risk rating threshold. In cases where serious controversies concerning an issuer have been reported, its bonds are excluded.

Companies involved in less egregious controversies can also be excluded if the events occurred in the past two years. In these cases, we would open a dialogue with the company to determine whether it has taken adequate steps to address the issue. If this dialogue gives us sufficient confidence in the company's strategy, it can be deemed eligible provided it is confirmed as aligned with at least the 2°C scenario under the Paris Agreement. If an issuer has exposure to controversial sectors as defined by NN IP's policy for sustainable and impact funds, this should not exceed a pre-defined percentage.¹

Bank issuers and those in the plastics sector face additional requirements. For banks these relate to controversies in their lending activities. Firms involved in plastics must meet criteria related to their position in the plastics supply chain.

For sovereign issuers, the next step is to assess whether the country's ESG rating and carbon intensity score meet our criteria. If the issuer's ESG score is sufficient but its carbon intensity is too high, it can still be eligible for investment if it has published a net zero plan that is in line with at least the 2°C scenario. If both criteria are met, the bond is eligible for investment.



¹ See [NN IP's Responsible Investment Viewpoint policy](#)

Our green bond database

Tracking the expanding green bond market

NN IP has one of the largest green bond databases in the market, tracking 1,140 bonds covering 10 sectors in 51 countries and regions. We primarily track green bonds denominated in Group of Ten currencies² that are constituents of the Bloomberg Barclays MSCI Global Green Bond Index. The database has three sections for each bond – bond overview, project allocation and impact reporting. This extensive information is essential to our green bond strategy, supporting portfolio management, bond assessment and impact reporting.

We began tracking green bonds when we launched our first strategy in 2016. Since then, we have refined our approach and the way we gather and record information. As the market has become more sophisticated and the range of data has improved, our database has developed along with it.

We add bonds to our database when they are launched and track them from that point onwards whether we invest in them or not. As a result, the database contains bonds that we label as non-green. This ensures that we have a clear overview of the market.

The green bond team documents the assessment process on the bond overview page. This includes the alignment of the issuer's green bond framework with the ICMA Green Bond Principles, the project-level alignment with the NN IP Green Bond Assessment Methodology and the issuer-level sustainability assessment.

NN IP green bond database – numbers*

- Tracks and assesses 1,140 bonds covering 10 sectors in 51 countries/regions
- 341 bonds (30%) labelled non-green/ineligible for our green bond portfolio
- Impact data on 579 bonds is available in the database

* Data is as of end-March 2022.

The project allocation section tracks use-of-proceeds allocation, percentage of financing versus refinancing, regional allocation and the contributions to the UN SDGs. Portfolio-level project allocation information is included in this report on pages 19-21.

The impact metrics are collated and standardized in the impact reporting section of the database to enable monthly and annual portfolio-level impact calculations. We report on our portfolio-level impact on pages 11-18.

² The G-10 currencies are the U.S. dollar (USD), euro (EUR), pound sterling (GBP), Japanese yen (JPY), Australian dollar (AUD), New Zealand dollar (NZD), Canadian dollar (CAD), Swiss franc (CHF), Norwegian krone (NOK) and Swedish krona (SEK).

Engagement approach

Regular dialogue with issuers is a pillar of our approach

NN Investment Partners expects the companies and governments in its fixed-income portfolios to adopt sustainable growth strategies. We use our influence as a responsible investor to encourage and guide them as they confront pressing issues such as reducing greenhouse gas emissions and building green infrastructure to mitigate the effects of climate change.

By stimulating green bond issuers to improve their performance on ESG criteria, we ensure that our clients' capital is put to work building a better world. Engagement also contributes to the value of their investments because we believe that sustainable corporate and government behaviour enhances risk-adjusted returns.

While plenty of green bond market guidelines are in place, issuers have only a voluntary commitment to report on their environmental impact and strategy. This and the self-labelled nature of green bonds mean that greenwashing is a significant risk for investors who want to make a positive contribution to the green transition and avoid reputational damage. Engagement is an important tool in reducing this risk. Regular contact gives us a better understanding of both the issuer and the individual bond issue and helps ensure that our investments meet our strict green standards.

Building a strong relationship

The green bond team meets with nearly every issuer we are considering as a potential investment. We start the conversation prior to a bond's issuance and focus on building up a mutually beneficial relationship with the issuer. This provides us with insights into their business and strategy and the information we need to carry out a bond-level assessment.

Increasingly, issuers reach out to us before tapping the market, when they are compiling their green bond framework. This trend has been accelerated by regulation, especially in the euro area and with the introduction of the EU taxonomy.

Engagement also allows us to advise current and prospective issuers on best market practices to boost their sustainability and enhance reporting. This guidance can range from improving the governance process for the selection of eligible projects to setting selection criteria thresholds for each category of use of proceeds.

Pursuing ESG dialogues

Our engagement efforts can focus on addressing controversies or pursuing thematic dialogues. Our approach starts from the international standards of corporate behaviour developed by the UN, the International Corporate Governance Network and the Organisation for Economic Cooperation and Development.

The Responsible Investing team takes a top-down engagement approach across strategies. Its controversy engagement focuses on severe and structural breaches of our norms-based criteria in the areas of governance, human rights, labour rights, environment, bribery and corruption. In thematic dialogues, the team addresses issues that have a material impact on society and where we believe our efforts can create positive change.

These themes share objectives and risks as defined by the UN SDGs and the World Economic Forum. Our current environment-related engagement themes

include utilities, oil and gas, and deforestation, areas also targeted by projects financed with green bonds.

In addition, the analysts and portfolio managers on our green bond team pursue a bottom-up dialogue with issuers on ESG subjects that have a material impact on a company's value.

Committed to fostering change

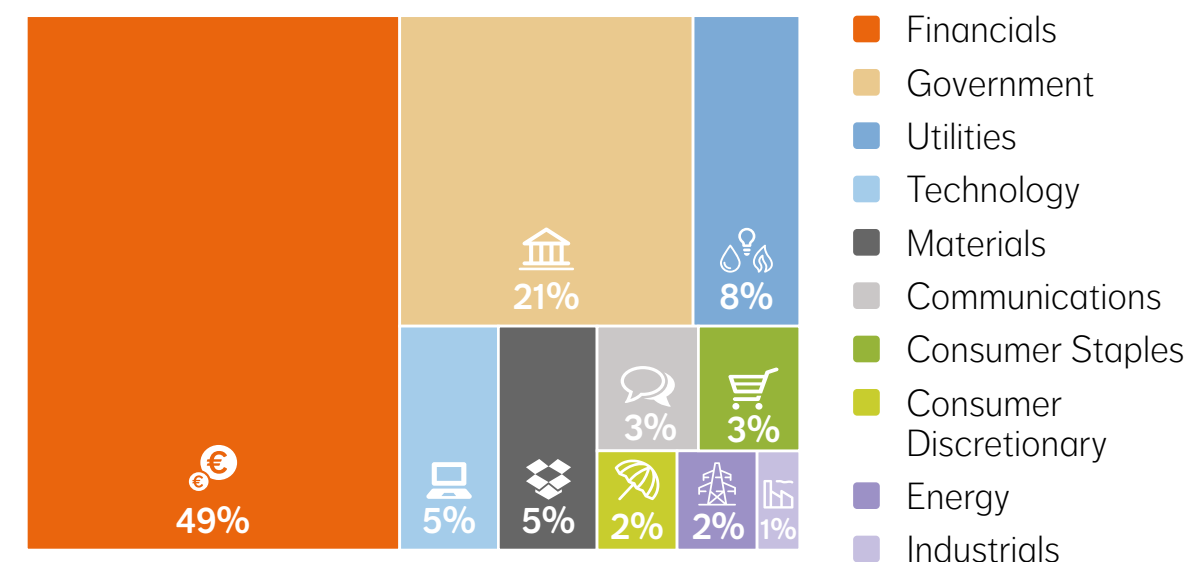
We maintain a bottom-up dialogue with most of the green issuers whose bonds we invest in. We also engage with the non-green issuers in our database to help them improve their green bond frameworks and reach our strict standards. We reach out specifically when we have questions about an issuer's annual allocation and impact report. These discussions help ensure transparency on how the proceeds are being allocated and that the quality of reporting meets expectations.

We are engaging more frequently with issuers regarding the information we need to assess alignment with the EU taxonomy, since many issuers are still unable to carry out this exercise on their own. This is also an opportunity to help them prepare for the stricter regulation of sustainable investments they will face in the years to come.

Our engagement efforts in 2021

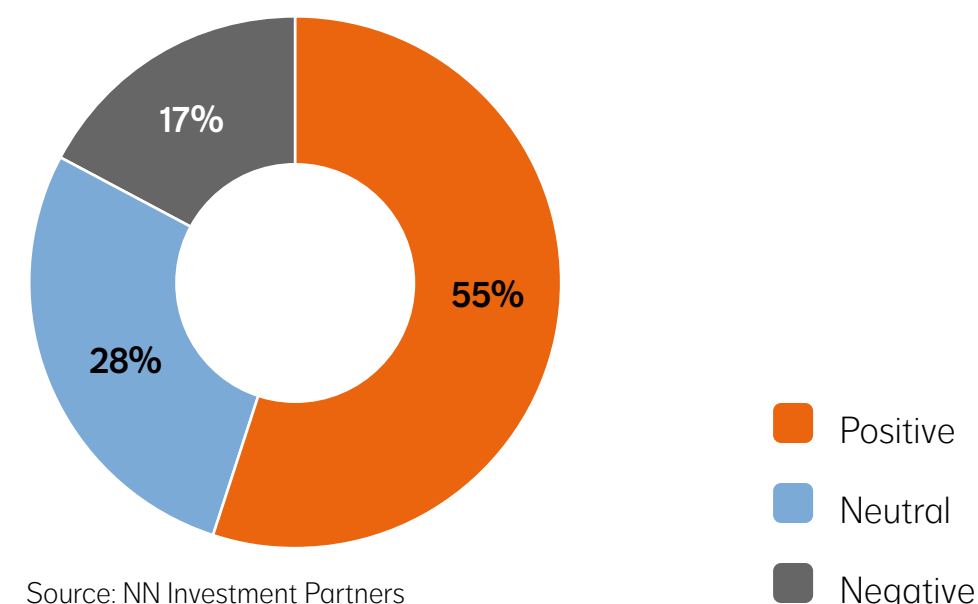
We held dialogues last year with 87 green bond issuers operating in 10 sectors around the world. Our outreach covered the full range of issuer types; we engaged with 8 sovereign issuers, 21 government-related issuers and 58 corporates. We found that an increasing number of issuers are improving their green bond frameworks and aligning with the EU taxonomy to provide more information for investors.

Engagement overview Green Bond issuers 2021 by sector



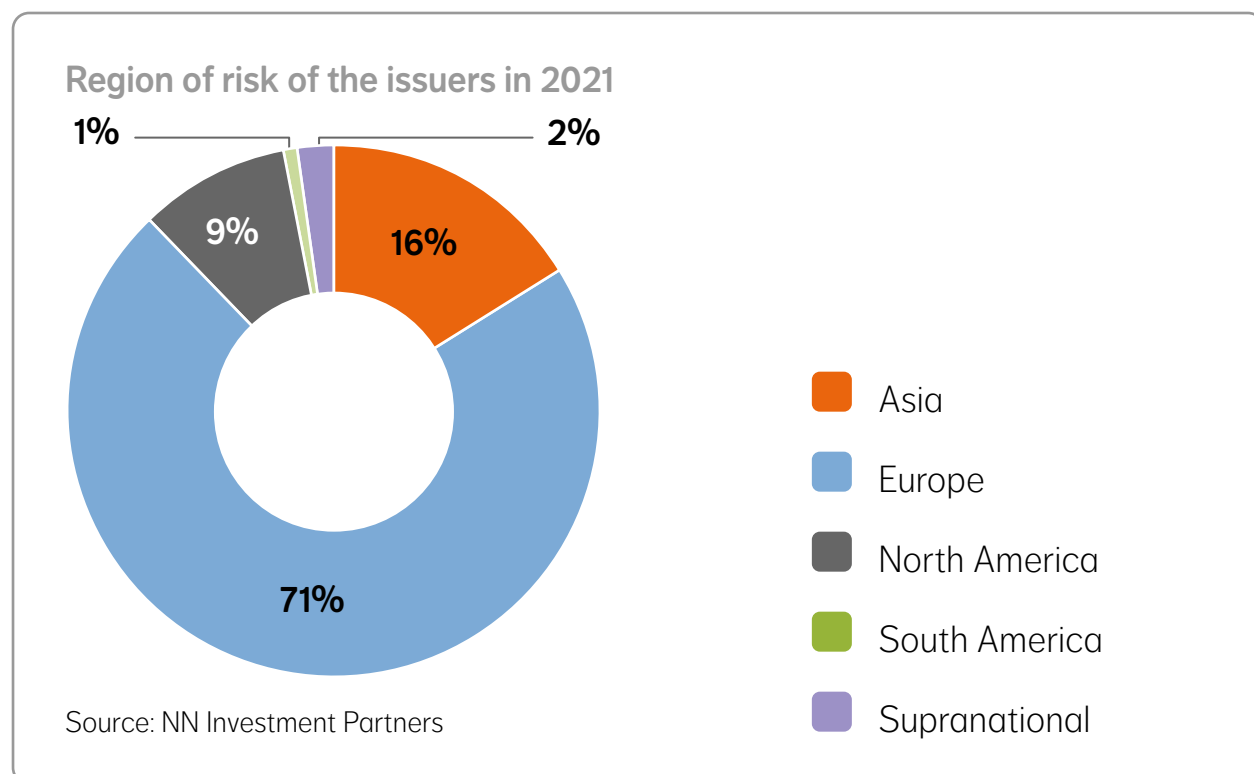
Source: Bloomberg Industry Classification Systems

Engagement with issuers in 2021



Source: NN Investment Partners

While the growing presence of issuers from outside the EU is diversifying the market many still have work to do to catch up with their EU peers in terms of their transition plans and eligibility of the activities financed by individual bonds. As a result, fewer of our engagement dialogues left us with a positive impression in 2021 compared with the previous year. This change is in line with the rising share of non-green bonds in our database to 30% at the end of last year.



Engagement example³: Hungary

Hungary has issued the equivalent of more than EUR 2.5 billion in green bonds since launching its sovereign green bond framework in May 2020. Its inaugural issuance denominated in euros accounts for EUR 1.5 billion of that

³ For more information on the issuer: <https://akk.hu/green-bond>

amount. The rest is made up of Samurai bonds issued on the domestic Japanese market, Panda bonds issued in China and Hungarian forint-denominated bonds issued at regular primary auctions since April 2021.



Rating	ISIN	Second Party Opinion	EU taxonomy alignment (pre-engagement)	EU taxonomy alignment (post-engagement)
BBB	XS2181689659	Cicero	61%	73%

Use of proceeds:

- **Clean transportation:** 87.5% of the money raised was allocated to the operation and electrification of the railway network, modernization of rail transport and tax exemptions for environmentally friendly vehicles along with other transportation spending
- **Sustainable management of natural resources:** 9% of the proceeds was allocated to projects including nature protection, biodiversity and sustainable agriculture
- **Other:** The remainder was used to finance projects in waste and water management, renewable energy, adaptation and energy efficiency



We met with the issuer, the Hungarian government debt agency (AKK), before and after issuance. We discussed its sovereign green bond framework and national-level decarbonization plan for the energy sector when the framework was published in May 2020. We also discussed the detailed criteria used

for selecting eligible assets as well as the potential projects identified for inclusion in the green bond proceeds allocation.

In a subsequent meeting, we covered impact reporting and alignment with the EU taxonomy. For projects that receive allocations in the form of tax exemptions and allowances, impacts attributable to the entire project are reported. We noted that prorated impact is preferred for portfolio-level aggregation. AKK responded by doing the research needed to estimate the portion of tax exemptions and allowances relevant to the projects financed by the bonds. This estimate allowed us to obtain a prorated impact figure. AKK and the Hungarian State Railways Co. (MAV) also provided additional information on their physical climate risk assessment, which boosted Hungary's green bond alignment with the EU taxonomy to 73% from 61%.

“Regular dialogue with NN IP has been highly beneficial for AKK, which represents Hungary in the debt market. The detailed feedback we received on Hungary's first impact report has helped us to focus and streamline our processes and set priorities when explaining our eligible green expenditures and impact calculation methodology. We will use this feedback to continue improving our reporting. The exchange of information with NN IP has also helped shape our thinking about the update of Hungary's green bond framework that will take into account the EU taxonomy and green bond standard as well as the views and preferences of the investment community.” - [Testimonial from Hungarian government debt agency \(AKK\)](#)

Engagement example⁴: KommuneKredit

KommuneKredit is the publicly owned Danish local government funding agency. It began issuing green bonds in 2017 and has tapped the market regularly since then. Its outstanding green bonds stand at the equivalent of EUR 2.6 billion.



Rating	ISIN	Second Party Opinion	EU taxonomy alignment (pre-engagement)	EU taxonomy alignment (post-engagement)
AAA	XS2081058096	Cicero	59%	91%

Use of proceeds:

- **Alternative energy:** 60% of the funds raised have been allocated to district heating that uses surplus heat from the data centre and biomass as the energy input
- **Sustainable water and wastewater management:** 32% of proceeds finance new waterworks with technology to reduce the risk of contamination and pollution
- **Low-carbon transportation:** The 7% allocation includes a state-of-the-art ferry featuring the world's first type-approved battery for marine use at the time
- **Energy efficiency:** 1% for building renovation to boost energy savings



⁴ For more information on the issuer: <https://www.kommunekredit.dk/en/green-bonds/>

We have held regular dialogues with KommuneKredit since the start of its green bond programme. Our engagement covers its green bond framework, allocation and impact reporting, eligible asset pool. Alignment with the EU taxonomy was the topic of extensive discussions in 2021. For example, KommuneKredit allocates about a third of green bond proceeds to new waterworks, but was not providing information needed to meet the taxonomy's climate change mitigation criteria. Through our engagement with the agency, it was able to furnish the data needed for us to conduct the alignment exercise. As a result, KommuneKredit's alignment jumped to 91% in our database from 59%.

“We have had several meetings with NN IP and have been impressed with their proficiency and technical competence in the area of sustainable finance. Their insights on investors' priorities helped us improve our green bond alignment with the EU taxonomy as well as our impact reporting methodology. This has helped us assess our new green bond framework's contribution to climate change mitigation and to achieve a more transparent, open dialogue with our investors, which is a priority for us.” - [Testimonial from KommuneKredit](#)

Engagement example⁵: Adif Alta Velocidad

Adif AV is a public service company within the Spanish Ministry of Transport, Mobility and the Urban Agenda. Its task is to build and manage the high-speed rail network.

In 2017, it became the first Spanish public entity to issue a green bond, and has gone to market regularly since that time, with EUR 3 billion of bonds outstanding.



Rating	ISIN	Second Party Opinion	EU taxonomy alignment (pre-engagement)	EU taxonomy alignment (post-engagement)
Baa2	ES0200002063	Cicero	17%	100%

Use of proceeds:

Clean transportation: Adif AV uses 95% of proceeds to finance new rail lines and extensions, including the Madrid-Levante and Madrid-Extremadura high-speed lines. The remaining 5% is used for maintenance, upgrades and steps to improve energy efficiency to promote sustainable transport.



Adif AV's construction of high-speed rail lines will encourage more people to travel by train, contributing to an emissions reduction in the transportation sector. Its trains have the lowest CO₂ emissions per passenger kilometre in Europe.⁶

⁵ For more information on the issuer: www.adifaltavelocidad.es

⁶ Source: [European Commission](#)

We have met with the issuer annually for the past five years to discuss its updated framework, impact metrics and new projects to be included in the proceeds allocation. We have also discussed the alignment of their bond to the EU taxonomy. Adif AV has been open to dialogue and provided additional information to assist our analysis. The alignment of its green bond reached 100% from a starting level of 17% after they provided us with details about a climate adaptation analysis of their business activities and circular economy programmes and commitments.

“As a public company, Adif Alta Velocidad had a fundamental commitment to transparency. We have an ongoing dialogue with all stakeholders – rail users and operators, citizens, taxpayers, suppliers, investors and employees – to help us create a safe, efficient and sustainable rail system. We intend to provide our investors and third parties with full financial information and ESG content relevant to their interests. We achieve this goal using various media, including our website, mailings, newsletter and meetings.

“Specifically, we have maintained a dialogue with NN IP over the years since we issued our first green bond in 2017. Our most recent meeting, held virtually, was in November 2021. We plan to continue this dialogue and to keep exchanging information with NN IP on our impact reporting as part of our commitment to our investors.” - [Testimonial from Adif AV](#)

EU taxonomy alignment

Demonstrating our green credentials

The EU launched the taxonomy for sustainable activities in 2020 as part of efforts to meet its climate and energy targets for 2030 and achieve the objectives of the European Green Deal. To direct money towards sustainable projects, a clear definition of sustainable economic activities was needed along with a common set of terms for talking about them.

The taxonomy is a classification system that sets out a list of environmentally sustainable economic activities. The EU created the taxonomy to provide assurance for investors and help protect against greenwashing. By providing standard definitions and boosting investor security, the taxonomy should reduce market fragmentation and channel investment to projects and programmes that will really make a difference, according to the EU.⁷

For this year’s Green Bond Funds Impact Report, our analysts assessed the alignment of every bond held in our four green bond funds with the EU taxonomy. This lengthy process involved testing each bond against technical screening criteria specified in EU regulations for climate change mitigation and adaptation activities. We also factored in the EU’s principle that activities intended to achieve one environmental objective should “do no significant harm” to other objectives.

A more nuanced approach

For reporting under the EU’s Sustainable Finance Disclosure Regulation, only the activities financed by a bond that are fully aligned with the taxonomy can count towards the portfolio’s alignment score.

⁷ Source: [European Commission](#)

While this all-or-nothing approach simplifies the reporting requirement, we decided that it did not provide sufficient information about how close an activity or issuer was to reaching full alignment with the taxonomy.

For our own internal purposes, we have therefore devised a methodology to show where an activity lies on the spectrum from 0% to 100% alignment. We count all the criteria met by an activity towards its alignment rather than assigning a 0% score when one criterion is missing. This gives us a fuller, more nuanced understanding that we can use in our dialogues with issuers to demonstrate how far they have to go to achieve full alignment.

Our taxonomy alignment exercise

Step 1: Mapping eligible economic activities

We begin by identifying the activities financed by each bond and mapping them against the eligible activities in the taxonomy, categorized as normal, transitional or enabling. Activities with no equivalent in the taxonomy are assigned to the “Other” category and receive a 0% alignment score.

Step 2: Applying substantial contribution criteria

The taxonomy’s technical screening criteria are designed to identify activities that can make a “substantial contribution” to climate change mitigation and adaptation. If a bond doesn’t meet these criteria, its alignment score is lowered by 50%.

Step 3: “Do no significant harm” test

Within each of the taxonomy’s eligible economic activities, risk areas are identified where there is potential to cause significant harm to another environmental objective. We determine whether steps have been taken to assess the risks a project could pose, and whether actions and infrastructure have been put in place to minimize those risks. A bond’s alignment score is lowered for each “do no significant harm” criterion it fails to meet.

Step 4: Reaching an aggregate score

We repeat steps 2 and 3 for each eligible activity financed by a given bond. Each activity is then weighted within the bond, and the bond’s position is weighted within the portfolio. In this way, each individual activity factors into the final alignment score.

Here are the alignment ratings of our four green bond funds using our internal methodology:

Fund	
NN (L) Green Bond	60%
NN (L) Green Bond Short Duration	58%
NN (L) Corporate Green Bond	66%
NN (L) Sovereign Green Bond	51%

Data as of end of April 2022.

Green Bond EU taxonomy alignment example

As an example of how the two methodologies compare in practice, consider a green bond issued by a British electricity and gas utility company. Two eligible economic activities are financed by the bond: transmission and distribution of electricity, and infrastructure enabling low-carbon road transport and public transport. The alignment breaks down as follows:

Transmission and distribution of electricity

	NN IP internal methodology	SFDR reporting methodology
Green bond allocation	93.2%	93.2%
Activity EU taxonomy alignment	87.5%	0%
Technical screening criteria (50%)	50%	50%
DNSH criteria (50%)	37.5%	0%
Weighted EU taxonomy alignment	81.6%	0%

Infrastructure enabling low-carbon road transport and public transport

	NN IP internal methodology	SFDR reporting methodology
Green bond allocation	6.8%	6.8%
Activity EU taxonomy alignment	90%	0%
Technical screening criteria (50%)	50%	50%
DNSH criteria (50%)	40%	0%
Weighted EU taxonomy alignment	6.1%	0%

For SFDR purposes, this bond has 0% alignment with the taxonomy and therefore contributes nothing to the portfolio's alignment score. Using our in-house methodology, however, the bond is 87.7% (81.6% + 6.1%) aligned, indicating that the issuer is close to achieving full alignment.

This discrepancy arises primarily because of the taxonomy's "do no significant harm" criteria. Transmission and distribution of electricity, for example, fulfills three of the four "do no significant harm" criteria in the taxonomy. The only one being missed is the "pollution prevention and control" criterion which stipulates that activities must not use polychlorinated biphenyls (PCBs). PCBs are a highly toxic man-made chemical whose production was banned under the Stockholm Convention, a global environmental treaty signed by 181 countries around the world.

Countries that are party to the treaty are prohibited from any new production or use of PCBs, but they have until 2025 to eliminate the use of the chemical in equipment that existed before the treaty came into force. Since some of the equipment in question in this case predates the treaty's entry into force in the UK (2005) and Belgium (2006), we would need specific information from the issuer to determine whether its use conforms with the terms of the treaty.

Based on this internal assessment, NN IP's green bond team would encourage the issuer to fulfil the remaining criteria to boost the bond, or at least some of the activities it finances, to 100% so that all of part of it can count towards the portfolio's taxonomy alignment. Some issuers have more work to do than others to get to where they need to be, but our initial findings are encouraging.

Main findings from the exercise

Our first finding from conducting the exercise is that methodology is key to interpreting alignment with the taxonomy. We applied our internal methodology to show how much work issuers need to put in to bring eligible economic activities financed by green bonds into full alignment. The resulting database can then be adapted to other reporting requirements to provide a similar progress check.

This is important because the reporting regulations are still evolving. The EU taxonomy, for example, is expanding to include new activities. Reporting may also change with the adoption of the EU Green Bond Standard, which enables asset managers to use the methodology for measuring alignment that is specific to green bonds.

Challenges for bank and sovereign issuers

Our second finding was that bank issuers frequently didn't have enough information about the projects their bonds were financing to allow us to measure alignment. In those cases, we took a conservative approach and assigned a 0% alignment score to those activities.

Sovereign issuers also fared poorly in the exercise, largely because of the types of activities their bonds finance and how they are documented. For example, if a sovereign issuer has a 12% allocation to a tax incentive for low-carbon transportation, we deem this activity to be non-aligned unless we have sufficient detail about the type of transportation.

Our hope is that bank and sovereign issuers will take the EU taxonomy criteria into account when developing future financing frameworks and selecting eligible assets.

Non-aligned doesn't always mean non-green

We disagree with the common perception, especially in the media, that activities not aligned with the taxonomy are necessarily non-green. We invest in bonds that allocate to activities that are not yet covered by the taxonomy, such as textile manufacturing and sustainable agriculture. Our funds also have significant holdings of sovereign green bonds, which currently have low alignment scores for the reasons outlined above.

Our third finding from the exercise is that alignment is a work in progress. The taxonomy is still expanding, for example bank and sovereign issuers are getting to grips with the level and type of detail needed to assess alignment. We expect this to improve as issuers take steps to raise their alignment percentages in the years to come.

For now, we will continue to consider bonds that perform well in our internal Green Bond Assessment Methodology, though our approach is likely to become stricter in line with future guidance from the EU. Specifically, asset managers must commit to a minimum threshold of alignment in their taxonomy disclosures which NNIP will do in 2022 for the green bond funds. Our buying behaviour could be affected as we approach this threshold.

Engagement improves alignment

Finally, we found that many bonds were not fully aligned with the taxonomy because their issuers had not prepared the necessary information in the way that the taxonomy requires. When we inquired, we found in many cases that issuers had at least some of the information available, but had not yet included it in their green bond frameworks. Our dialogues allowed us to exchange views on methodology with issuers and in some cases to narrow the data gap and boost alignment. More information on how engagement can improve alignment can be found in the [Engagement approach](#) section of this report.

Impact calculation methodology

Verify – Standardize & Document – Update

Our impact metric calculation is based on the data we have assessed and collected in our green bond database. When tracking green bonds, we follow a **Verify – Standardize & Document – Update** methodology to enable us to harmonize the allocation and impact figures reported by various issuers and report in a transparent way on the projects we finance via the bonds we hold in portfolio.

Verify

The annual allocation and impact report is usually published one year after a green bond is issued. We assess the allocation and impact report based on our standardization methodology (mentioned in the next Standardize & Document section) and engage with the issuer if the reporting does not follow best practice or if there is key information missing. For example, if the issuer reports GHG emissions avoided from both renewable energy generation and renewable energy transmission, we will request them to separate the GHG emissions avoided numbers for these two activities. We generally only use the avoided emissions from the renewable energy generation figure as we want to avoid double counting. The exception to this is when the emissions avoided from renewable energy transmission are due to an energy efficiency improvement. In such cases we also use these figures.

Standardize & Document

After the assessment of the allocation and impact data, we document the figures in our database. As issuers utilize a range of reporting methodologies, we usually harmonize the data and then record the standardized data in the database. Below we give an outline of how we standardize each of the allocation and impact metrics.

Use of proceeds and regional allocation: The allocation for these two metrics is usually reported clearly by issuers and the information can be used without further adjustments. Exceptions to this are when issuers report using their own self-defined categories. In this case, we assess the projects being financed and assign them to the corresponding ICMA Green Bond Principle categories.

SDG contribution: Issuers have different views on what projects contribute to which SDGs. Some issuers report more conservatively on SDGs, while others include both direct and indirect contributions. In our green bond database, we record only the SDGs each financed project directly contributes to when documenting bond-level SDG contributions.

Impact metric: Impact is the reporting area with the most varied assessment and reporting methodologies. In terms of reporting scope alone, there are at least three methodologies. In order of most general to most specific, these are: reporting based on (1) the total green asset pool at company level, (2) the aggregate green bond financing, and (3) on each individual project financed by a green bond. As a result, we usually prorate any impact figures that are not based on specific green bond financing. We then apply a standardized impact intensity calculation, which is defined as the impact figures per million eligible assets. The impact attributable to the bond is then calculated using the impact intensity and the size of the issue.

Update

If a green bond's proceeds have not been fully allocated in the first year, the issuer will usually update their allocation and impact report annually until the proceeds have been fully allocated. Our green bond database will send us a notification on the issue anniversary of each green-labelled bond we track, so that the green bond analysts can check and update the allocation and impact figures.

To aggregate specific bond information at portfolio level, we need the portfolio level share of allocation and impact per bond. This is calculated as the percentage of a certain bond's total issuance amount that the fund holds. In this report, we use the portfolio holdings on 31 December 2020 for this calculation. The aggregated fund level use of proceeds, regional allocation, SDG contribution and impact metrics can then be derived by adding together the portfolio level share weighted bond allocations/SDG contributions/impacts.

However, using this methodology will cause us to underestimate the portfolio level impact. The two main reasons for this are outlined below:

1. There is no impact data available for newly issued bonds

Issuers usually only publish their allocation and impact reports one year after a bond has been issued. For the newly issued bonds in our portfolio, we usually look for older bonds from the same issuer. If both the new and older bonds fall under the same framework from the same issuer and are subject to the same eligible asset pool, we will assume the new issue's impact is the same as that of the older bond. However if the bond is an inaugural issue, we take a conservative approach, do not include it in our total and assume the impact is zero.

2. Unresolved doubts on an issuer's impact reporting

If doubts exist as to how an issuer arrives at the impact figures they give us and these remain unsolved after engagement, we will leave the impact for this issuer blank and assume it is zero. This could be the case if the impact figures are not prorated or are subject to double counting.

Green bond team

Our green bond team has grown along with the market, and now has seven fulltime specialists, one of the largest dedicated green bond teams in the market.



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Client Portfolio Manager

Part of the global investment grade credit department and supported by credit portfolio manager, credit analysts, trading team and our responsible investing team.

This publication has been written to provide our clients and prospects with an update on NN Investment Partners' activities related to green bond impact investing. For regular updates on our green bond activities, we invite you to follow us on:



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