Carbon footprint disclosure

Analysis of carbon footprint of NN Group's Proprietary Assets

August 2017

As an insurer and long-term investor, NN Group considers climate change as a topic that warrants specific attention. In order to learn more about the climate-related risks in our investment portfolio, we performed a carbon footprint analysis of a large portion of our Proprietary Assets. This report summarises the results and insights from this analysis. It also sets out our broader approach to addressing climate change impacts on our investment portfolio.

There is clear scientific evidence that greenhouse gas (GHG) emissions from human activities are contributing to global warming. These findings, as represented by, for example, the Intergovernmental Panel on Climate Change (IPCC), were the basis for the negotiations at the Paris climate conference (COP21) in 2015. In the negotiated 'Paris Agreement', governments around the world committed to the goal of 'holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels'.

Achieving the Paris Agreement goals will require increasingly stringent regulations on greenhouse gas emissions over the coming decades. When not proactively managed, the transition towards a lower-carbon economy may negatively affect companies' cash flow and profits in many sectors and industries. In addition to these 'transition risks', there are also 'physical risks' related to flooding, droughts, and other extreme weather events, which could disrupt business activities. When policy actions fall short of what is needed to keep the temperature increase below 2°C, these weather events are expected to become more frequent and severe, posing a significant threat to livelihoods and well-being of society.

To increase our insight into climate-related risks, NN Group undertook a comprehensive carbon footprint analysis of the listed equity and fixed income investments, which we hold in the context of our insurance obligations and NN Group's own capital, hereafter referred to as our 'Proprietary Assets'.

The Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures (TCFD) has recommended this type of analysis. By publishing the results and insights, we aim to contribute to the industry's ongoing learning on this topic. We believe that it also helps as a basis for discussion with our stakeholders, who are asking us to disclose how we address climate change impacts on our investments.

The first part of this report summarises the results and insights from our analysis. The second part of this report sets out our broader investment activities to address risks and opportunities associated with climate change, in the context of our Proprietary Assets.

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I. Carbon footprint of our Proprietary Assets

What is a carbon footprint?

A corporate carbon footprint is the amount of greenhouse gas (GHG) emissions that an organisation releases directly or indirectly into the atmosphere, measured in tonnes of carbon dioxide equivalents (tCO_2e) per year. This can then be translated into an intensity number, by dividing it by the company's revenue, typically expressed as tonnes per EUR 1 million.

The Greenhouse Gas Protocol, the world's most widely used GHG accounting standards for businesses, governments and other entities, classifies an entity's GHG emissions into three 'scopes':

- **Scope 1** (or 'direct') emissions occur from sources that are owned or controlled by the entity;
- **Scope 2** emissions occur from the generation of purchased electricity, steam, or heat, consumed by the entity;
- **Scope 3** emissions are a consequence of the activities of the entity, but occur from sources not owned or controlled by the entity.

The graph of the GHG Protocol on page 5 provides a detailed explanation of the three scopes of GHG emissions for companies.

In the context of an investment portfolio, a carbon footprint measures carbon emissions and intensity associated with the underlying portfolio holdings.

Scope of our carbon footprint disclosure

The carbon footprint of NN Group's proprietary fixed income and listed equity holdings was measured as per 31 December 2016, and is based on the latest carbon dioxide emissions data for governments and companies available to us. The total assessed amount was EUR 81 billion, representing 61% of NN Group's total Proprietary Assets.[1]

The fixed income holdings that we assessed included government bonds and corporate fixed income securities. The Corporate Fixed Income portfolio comprised mainly corporate bonds, but also asset-backed securities and loans (although the data availability on these two asset categories was limited).

The analysis is based on emissions data provided by ISS-Ethix Climate Solutions[2], a leading global provider of investment climate data. The coverage[3] achieved thanks to the ISS-Ethix Climate Solutions database is 87% (94% for Equity and 86% for Fixed Income).

Methodology

Two types of analysis were performed:

- The carbon footprint (ownership) approach highlights an investor's exposure to carbon emissions through its investments. It aims to answer the question: 'how much of a company's or country's emissions have we financed with our portfolio?
- The intensity approach seeks to describe the carbon efficiency of underlying entities in the portfolio, by linking the emissions to revenue. The metric we have used is the 'weighted average carbon intensity', which is the main metric recently recommended by the TCFD. It aims to address the question: 'What is the exposure of a portfolio to carbon-intensive companies'. As such, this metric may provide insight into potential risks related to the transition to a lower-carbon economy (transition risk).

The overall methodology is based on guidance from ISS-Ethix Climate Solutions. For more background on the methodology and how we calculated the metrics, we refer to the box on page 5.

ISS-Ethix
Climate Solutions

Limitations

We believe it is important to keep in mind the challenges and limitations associated with investment portfolio carbon footprinting. These include:

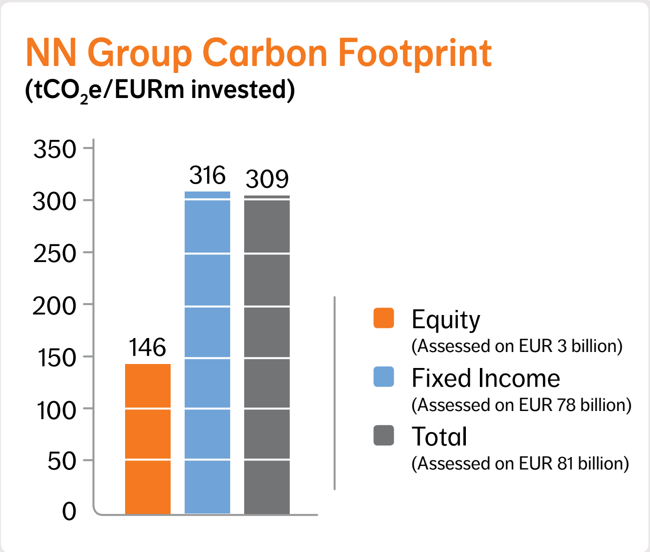
- The emissions data can be inaccurate or incomplete. This leads to the need for estimates, which can be more challenging for certain asset classes.
- A portfolio carbon footprint relies on historical data. It provides a snapshot of emissions at one particular point in time. Organisations may have set goals to reduce GHG emissions; the impact of those reductions are not reflected in the carbon footprint.
- Portfolio carbon footprinting gives a basis for assessing climate-related risks such as the potential impact of new regulations or price on carbon. It does not inform exposure to, for example, physical risks from extreme weather events.

1 The main asset categories that were not in scope of this carbon footprint analysis included mortgages, real estate, private equity, and cash. Note that for NN Group's proprietary Real Estate portfolio, we monitor carbon emissions using GRESB. See also the box on page 6.
2 Formerly the Investment Climate Data Division of South Pole Group.
3 Coverage means the percentage of (assessed) portfolio assets for which (actual or estimated) emissions data was available.

Results and insights

A. Carbon Footprint

NN Group's total portfolio emitted 309 tonnes CO_2 per EUR million invested[4]. We assessed the Fixed Income portfolio and the Equity portfolio separately. As can be seen in the chart below, the total carbon footprint number is close to that of the fixed income part of the portfolio (which is 96% of the total assessed assets). This is because portfolio size influences the financed emissions.



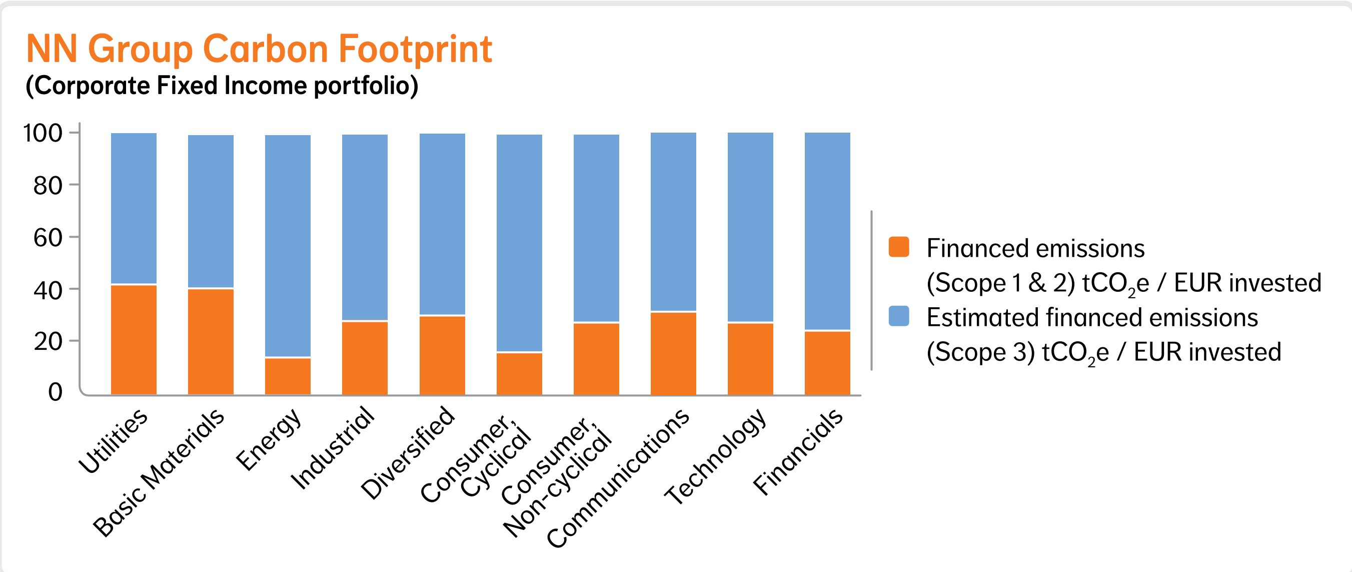
Within the Fixed Income portfolio, 72% of the portfolio assets are invested in government bonds, and 18% in corporate fixed income securities.

- Within the Government Bonds portfolio, Germany has the highest amount of financed emissions, followed by the Netherlands and Belgium. This is in line with the relatively large portfolio allocations to Eurozone countries.
- Within Corporate Fixed Income, the highest emitting sectors are Utilities, Basic Materials, and Industrials. These sectors combined account for 81% of the Corporate Fixed Income portfolio carbon footprint, whereas in terms of portfolio weight, they only account for 13% of the Corporate Fixed Income portfolio.

Consideration of Scope 3

The figures in this report are based on entities' direct emissions (Scope 1) and indirect emissions from purchased energy (Scope 2). ISS-Ethix Climate Solutions also provides estimates for Scope 3 emissions using input-output models, allowing us also to consider other emissions-generating activities within a company's supply chain, as well as the emissions of the products that it sells. These Scope 3 emissions represent the majority of total corporate emissions.

The graph below shows the proportion of financed Scope 1 & 2 emissions, as compared to financed Scope 3 emissions for each sector within our Corporate Fixed Income portfolio. For the Energy, Financials and Consumer (Cyclical) sectors, the proportion of Scope 3 relative to Scope 1 & 2 is the highest.



4 All the figures in this report are based on Scope 1 & 2 GHG emissions, unless it mentions otherwise.

Looking again at the largest contributors in our Corporate Fixed Income portfolio shows that - including Scope 3 - Utilities, Basic Materials, and Industrials are still amongst the highest emitting sectors (combined accounting for 63% of the Corporate Fixed Income carbon footprint). However, the Energy sector now contributes heavily, accounting for 26% of the footprint whilst only weighting 2% in our Corporate Fixed Income portfolio.

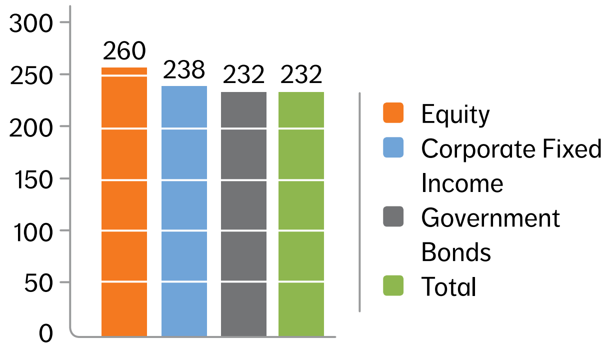
This shows that including Scope 3 emissions provides a more complete picture. As such, we take into account Scope 3 in our internal reporting. We feel, however, that data quality needs to increase (very few companies report on Scope 3, and the reporting is often not uniform as Scope 3 contains many different categories of indirect emissions).

B. Weighted Average Carbon Intensity

NN Group's portfolio weighted average carbon intensity is 232 tonnes of CO_2 per EUR million of revenue. This figure is based on the intensity approach, and can be broken down per asset category as shown below.

NN Group Weighted Average Carbon Intensity

(tCO_2e/EURm of revenue)



The total portfolio intensity number is close to that of the Government Bonds portfolio, reflecting the large allocation of portfolio assets to this category. The higher intensity of the Equity portfolio compared to the Corporate Fixed Income portfolio is influenced by the specific investment strategy for equities.

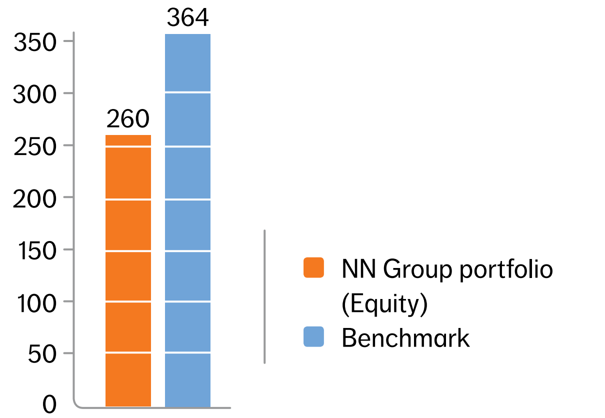
Besides monitoring the portfolio intensity numbers over time, it would be useful to compare the intensity of the portfolios against relevant benchmarks. However, as the Fixed Income portfolio is managed against the insurance liabilities and not against an external benchmark, this comparison cannot be made. For the purpose of this analysis, we did compare the Equity portfolio intensity against an appropriate benchmark.

Benchmarking (Equity portfolio)

For our Equity portfolio, we compared the carbon intensity with that of the 'MSCI EMU Mid CAP ex Financials'. This analysis shows that NN Group's Equity portfolio was 29% less carbon-intensive than the benchmark (260 vs. 364). An attribution analysis of sector allocation and stock selection showed that this outperformance is almost entirely explained by sector allocation.

Weighted Average Carbon Intensity

(tCO_2 / EURm of revenue)



Conclusions

This analysis gives insight into the overall profile and highlights the exposure to high-carbon holdings within NN's proprietary investment portfolio. The high-level asset class figures provide us with a starting point for monitoring and a basis for discussion. Still, the limitations with respect to data quality, methodology and definitions for the different asset classes should be kept in mind. The analysis is nevertheless useful to help prioritise our engagement efforts with those companies that are most carbon intense in our portfolio, such as those in the Utilities, Basic Materials and Industrials sectors.

We will continue to evaluate the results and also explore other metrics and more forward-looking tools that are introduced to help assess climate-related risks and opportunities. We further support initiatives such as the CDP and the TCFD, promoting availability and quality of climate disclosures, as explained further in section two of this report.

How did we calculate the metrics?

Carbon Footprint

Also referred to as portfolio financed emissions, this metric is based on the ownership logic. This means that it follows the reasoning that if an investor owns 1% of an issuer's market capitalisation, 1% of issuer's emissions are allocated to the investor. By aggregating the investor-financed emissions across all companies in the portfolio, we obtained the total Carbon Footprint for the Equity portfolio. We then divided by the portfolio value to express carbon footprint in tonnes CO_2 per EUR million invested.

Formula:

$$\frac{\sum_{n}^{i}\left(\frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} \times \text{issuer's Scope 1 and Scope 2 GHG emissions}_i\right)}{\text{Current portfolio value (EUR million)}}$$

When buying corporate bonds, investors do not own assets in the companies in which they invest (rather, they are providing a loan). Still, we applied the same ownership logic for the Corporate Fixed Income portfolio, but instead of a portion of a company's market cap, we used a portion of issuer debt.

For the Government Bonds portfolio, the amount of carbon emissions of an individual country that we 'financed' as an investor was calculated based on how much of the country's debt we own, relative to total debt outstanding of the country. We note that a weakness of this approach is that if the outstanding debt of a country increases, the carbon exposure decreases. This limitation applies to fixed income portfolio footprinting in general.

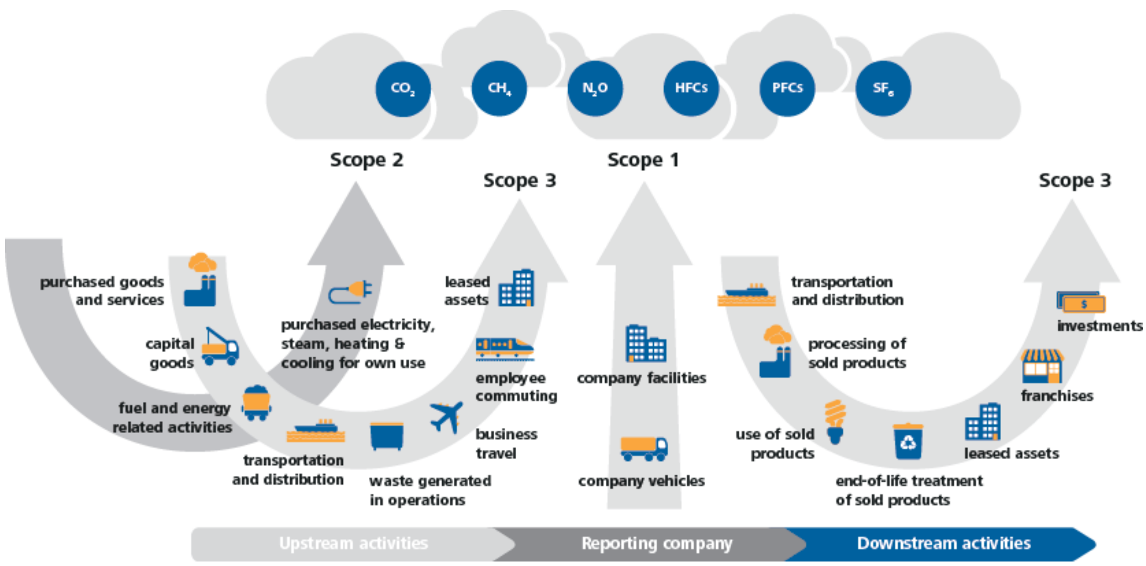
Weighted Average Carbon Intensity

This metric seeks to describe the portfolio's exposure to carbon-intensive companies, expressed in tonnes CO_2 per EUR million revenue. Each company's emissions are divided by its revenues to obtain the carbon intensity of each holding. The results are averaged using company weights in the portfolio to obtain an overall carbon intensity of the portfolio. For the Government Bonds portfolio, the same approach is applied, but instead of revenues we used Gross Domestic Product (GDP) as the denominator.

Formula:

$$\sum_{n}^{i}\left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \times \frac{\text{issuer's Scope 1 and Scope 2 GHG emissions}_i}{\text{Issuer's EUR million of revenue}_i}\right)$$

Scopes across the value chain



www.GHGProtocol.org

II. Broader climate change approach

This section provides an overview of NN Group's broader efforts to address long-term climate change risks and opportunities in our investment portfolio.

ESG integration

With the adoption of our Responsible Investment Policy Framework in 2014, NN Group set out to integrate Environmental, Social and Governance (ESG) considerations in a systematic way. The framework applies to all asset classes in which NN Group invests. We strongly believe that the consideration of ESG factors helps to optimise the long-term risk-return profile of our assets. Our asset manager, NN Investment Partners, which manages the majority of NN Group's Proprietary Assets, has been a signatory of the UN-backed Principles of Responsible Investment (PRI) since 2008. This demonstrates our commitment to integrating material ESG factors, such as climate change, into the investment process. Also for externally managed proprietary assets, notably real estate and private equity investments, we encourage all of our managers to consider ESG factors when they are making investment decisions.

Developing investment guidance papers

We use internationally recognised standards, such as the UN Global Compact, to help us evaluate the corporate behaviour of the companies in which we (may) invest. The UN Global Compact is a set of 10 principles for responsible corporate behaviour in four areas: human rights, labour relations, environment, and anti-corruption. For these areas, NN is developing investment guidance papers, to help support the implementation of our Responsible Investment Policy Framework. The first papers are on Human Rights and the Environment.

Read the guidance papers on our website

Active stewardship

NN Group believes that engagement is essential in the transition to a lower-carbon economy. As an active investor, we vote at general meetings, and initiate dialogue with companies on ESG issues to instigate change in companies' policy commitments and corporate practices. As an investor signatory of CDP's climate change, water and forests programmes, we encourage companies to report on their environmental performance through these programmes.
We also have focused in-depth engagement with investee companies on climate change risk. Since the start of 2016, NN Investment Partners pro-actively engages with companies in the power utility sector to encourage these companies to achieve a carbon risk exposure reduction from a long-term perspective and improved competitiveness in a lower-carbon economy. This effort, supported by one of Europe's leading engagement providers GES, targets a selection of 20 large companies worldwide; nine of which we also hold on behalf of our proprietary assets.
In the first year of this multi-year engagement, we have had constructive dialogues with a majority of the companies. We are increasing our efforts to engage with the companies that have been less responsive, and will evaluate the progress of the engagement efforts before the end of 2017. If we determine that there is not enough progress towards engagement goals set, NN may decide to divest.

Benchmarking our Real Estate portfolio

Real Estate is an important asset class in NN Group's proprietary investment portfolio. NN invests in real estate properties directly and indirectly via private real estate funds, all longer term. The portfolio, valued at around EUR 5 billion at the end of 2016, is spread over sectors and regions in Europe.

We use the Global Real Estate Sustainability Benchmark (GRESB) to assess the environmental and broader sustainability performance of the portfolio. In 2016, 90% of the portfolio was measured in GRESB. The portfolio's (value-weighted) score in 2016 was 72 (on a scale of 1 to 100), while the benchmark average (289 entities) was 59. The score of 72 represented an improvement, both in absolute terms and relative to peers, from the previous year when the score was 66 versus the benchmark average of 55. The portfolio was granted '4 Stars' in the GRESB Rating, which is a relative evaluation of the overall GRESB score among the global participants (with 5 stars being the highest).

The energy consumption for heating, cooling, lighting and other uses represents the greatest source of carbon and environmental impact from real estate properties. We have the greatest opportunity to exert influence to reduce the environmental impact of the individual properties we directly own. For the 'direct' part of our real estate portfolio (accounting for around 40% of the total real estate portfolio value), the emissions totalled 33,344 tonnes of CO_2 in 2015 (based on 82% data coverage). On a like-for-like basis, the emissions declined by 10% between 2014-2015. Steps to improve energy efficiency have contributed to this reduction.

Investing in low-carbon assets

NN Group seeks to increase its investments in those activities that are needed to support the transition to a lower-carbon economy. We actively look for opportunities that fit within our investment strategy for our Propietary Assets. For example, projects in the area of renewable energy and energy efficiency within our infrastructure debt portfolio.

Green bonds provide another way to invest in climate-friendly activities and support the energy transition. NN Group, on behalf of its own account, invested in the NN Euro Green Bonds fund, and also made green bond purchases in our existing mandates where this meets our insurance risk/return requirements. NN Group's total green bond investments were around EUR 150 million at year-end 2016.

Finally, in our Real Estate portfolio, we will continue to invest in measures that increase the energy-efficiency of our assets (see also box 'Benchmarking our Real Estate portfolio' on the previous page).

Public policy engagement

NN Group acknowledges the importance of climate change and the necessary governmental policy actions by signing of the Paris Pledge for Action (2015). In addition, NN Investment Partners endorsed various climate change investor statements; most recently the 'Letter from global investors to governments of the G7 and G20 nations' (2017). This letter, signed by 400 global investors managing more than USD 22 trillion in assets, reiterates the investors' call for governments to continue to support and fully implement the Paris Agreement. We believe that engagement with policymakers, but also with investee companies, can be more impactful when conducted in collaboration with other investors. Therefore, our company recently joined the IIGCC (refer to box below).

New partnership on climate

IIGCC
Institutional Investors Group on Climate Change

In June 2017, NN Group became a member of the Institutional Investors Group on Climate Change (IIGCC), a forum for collaboration on climate change. The IIGCC currently has nearly 140 members, including many of the largest pension funds, insurance companies and asset managers in Europe, representing assets of over EUR 18 trillion. Our asset manager NN Investment Partners will be using the IIGCC platform, among others, to exchange knowledge and collaborate with other investors in engagement initiatives.

Read more on the IIGCC

NN Group endorsed the recommendations of the FSB Task Force on Climate-related Financial Disclosures (TCFD). A consistent and comparable disclosure framework helps us as an insurer and long-term investor, to more effectively assess the financial implications of climate change. As such, we will promote these financial reporting standards to our investee companies, and take steps to further align our own reporting to the TCFD recommendations.

Important legal information
This document is created for informational purposes only and does not create any rights whatsoever to third parties.

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