

Investment Guidance paper on Environment

Supporting document to implement the RI Policy Framework

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Important legal information

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1. Introduction

At NN Group, we strive to conduct our business in a manner that is environmentally and socially responsible. This guidance paper focuses on our approach to the environment in our role as an investor. It provides background on environmental protection and illustrates due diligence processes we apply. It further highlights relevant standards and principles to promote best practices and avoid negative impact of companies in which we invest.

Background Guidance Papers

NN Group adopted the Responsible Investment Policy framework in 2014. We define Responsible Investment (RI) as the systematic integration of Environmental, Social, and Governance (ESG) factors into investment decision-making and active ownership practices. Our Responsible Investment Policy Framework reflects our commitment to various international and sector-specific standards and initiatives. A key part of our approach to Responsible Investing is that, where possible and feasible, we aim to mitigate the negative impacts of our investments on sustainability factors. These negative impacts are also called adverse impacts, whereby the most significant adverse impacts are referred to as principal adverse impacts (PAIs). Principal adverse impacts can occur in different areas, such as related to environmental, social and employee matters, human rights, corruption, and bribery.

NN is developing guidance papers, which are intended to be a basis for discussion between NN Group and our stakeholders. They are living documents that will regularly be reviewed by NN Group to ensure that they reflect evolving risks and best practices, as well as solidify our ongoing education on these topics. The guidance papers also help our external asset managers in evaluating investments from a topic-specific perspective. By publishing these papers externally, we aim to express our position and use it to leverage change in the sphere of our investment activities.

NN Group and the environment

The basis of our approach to the environment is embedded in the NN statement of Living our Values, which provides the foundation on which we do business. We avoid or responsibly manage any negative impact our business activities may have on people or the environment and seek positive change in society.

When investing in companies, there is a potential that we become linked to challenging environmental situations. Implementing a due diligence process to incorporate ESG considerations in investment analyses and active ownership practices, will help us to identify, prevent and mitigate sustainability-related risks, including those related to the environment. In addition, we believe such a process will support

us in making better informed business decisions and in identifying sound and beneficial opportunities.

This paper begins with an introduction to the international frameworks and principles that are the foundation of environmental protection. This is followed by an explanation of how companies and industries are exposed to environmental risks, illustrated with a risk assessment that we performed. Furthermore, it provides examples of sub-themes and developments within these themes which we believe are important in relation to environmental risks, impacts and opportunities in the investment context.

2. The environment and the role of companies

The environment is a complex and intricate system that encompasses air, water, land, and living organisms. It sustains life on Earth and plays a crucial role in maintaining ecological balance and supporting our human well-being and economy.

Unfortunately, the environment is currently facing a range of challenges, including climate change, biodiversity loss, pollution, and overexploitation of natural resources. These challenges pose significant threats to the health and resilience of ecosystems, as well as to human health and economic stability.

This chapter provides an overview of the framework, conventions, international norms, and standards that address environmental issues, some of which are also mentioned in the Appendix. It also explains the authoritative standards and guidelines for corporate behaviour that companies are expected to follow. As investors, we have certain expectations from companies, which are derived from these standards and guidelines. This chapter describes what we expect from companies in terms of environmental responsibility, whilst the next chapter covers more detailed topics related to environmental issues.

International frameworks and conventions

The environment is a global issue that requires international cooperation and action. The UN Conference on the Human Environment, held in Stockholm in 1972, was the first global environmental meeting of governments, which recognised the need to link long-term economic progress with environmental protection. Some argue that this conference had a real impact on the emergence of international environmental law.

Building upon the Stockholm Declaration, the Rio Declaration on Environment and Development of 1992 was established during the second global environmental conference. It is a significant environmental legal landmark that clearly outlines principles, including the precautionary principle and the polluter pays principle. These principles promote responsible environmental management and hold companies accountable for their impact on the environment.

Since the Rio Declaration, there has been a growing recognition of the need for businesses to take responsibility for their environmental impact. The International Organisation for Standardisation (ISO) developed ISO 14000, a set of internationally recognized standards focused on environmental management. These standards provide practical tools for organisations to address their environmental responsibilities, including the implementation of the precautionary and polluter pays principles mentioned in the Rio Declaration. By adopting ISO 14001:2015, the only standard that can be certified,

organisations can demonstrate their commitment to environmental sustainability and gain a competitive advantage in an increasingly environmentally conscious market.

Climate Change frameworks and conventions

Climate change is one of the most pressing challenges of our time, and international cooperation is essential to address it. The United Nations Framework Convention on Climate Change (UNFCCC), established in 1992, sets out a framework of action aimed at stabilising greenhouse gas (GHG) concentrations in the atmosphere to avoid dangerous anthropogenic interference with the climate system. The convention led to the adoption of the Kyoto Protocol in 1997 and the Paris Agreement in 2015, which established a framework for a new era in climate action.

The Paris Agreement is a key international framework that aims to mitigate GHG emissions, with both developed and developing countries submitting ambitious nationally determined contribution plans every five years. The agreement sets out global commitments to limit the average temperature increase to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.

In 2018, the Intergovernmental Panel on Climate Change (IPCC) released a report stating that global carbon emissions must reach net-zero by around 2050 to limit global warming to 1.5°C above pre-industrial levels. Since then, many countries and organisations have set their own net-zero targets. However, current plans fall short of keeping global temperatures to 1.5°C, in 2100 above pre-industrial levels. There is still a lot of work to be done to create a global consensus on climate pricing, and the phase-out of fossil fuels in order to achieve global climate ambitions.

Biodiversity loss frameworks and conventions

Biodiversity loss is one of the most significant environmental challenges we face today. To help combat this, several international agreements and frameworks have been established. One of the earliest agreements was the Ramsar Convention, established in the 1970s to conserve and use wetlands and their resources. Wetlands are critical ecosystems that provide crucial contributions to climate change mitigation, disaster risk reduction, and biodiversity preservation.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was another significant convention established in 1973. This convention resulted in a list of over 40,000 endangered and vulnerable species of animals and plants,

whose trade is strictly regulated or prohibited, to ensure their protection.

In more recent years, efforts to protect nature have increased. The Convention on Biological Diversity (CBD) was established in 1993 to protect biodiversity, support innovation, and ensure the equitable sharing of benefits. Building upon the CBD, the Kunming-Montreal Global Biodiversity Framework (GBF) was established in 2022, with 196 countries adopting the agreement. The GBF includes four long-term goals for 2050 related to the 2050 Vision for Biodiversity and 23 specific targets to be achieved by 2030. The GBF focuses on transformative action by governments and society to halt and reverse biodiversity loss, ensuring that biodiversity is valued, conserved, restored, and used responsibly.

Pollution frameworks and conventions

Pollution is a major threat to the environment and human health, and international cooperation is necessary to prevent it. Several conventions have been established to protect the environment from pollution, including those that address marine pollution, ozone depletion, and harmful waste transfer. Table 1 outlines significant pollution prevention conventions and treaties. Among them, the Montreal Protocol on Substances that Deplete the Ozone Layer stands out as a shining example of successful international cooperation. Since its establishment in 1987, this agreement has significantly reduced the production and use of ozone-depleting substances, leading to a remarkable recovery of the ozone layer in many regions. This highlights the importance of concerted efforts to address environmental issues and the positive impact that international cooperation can have on the environment.

Companies and the environment

Incorporating environmental responsibility into companies' sustainability strategies is crucial for promoting a sustainable future. The UN Global Compact and the OECD Guidelines for Multinational Enterprises are authoritative and widely accepted standards that outline environmental responsibility for companies. The guidelines require enterprises to avoid and address negative environmental impacts and contribute to goals such as climate change mitigation and adaptation, sustainable use of resources and energy, and pollution prevention. They also promote sustainable consumption and production, including circular economy approaches. These voluntary initiatives promote corporate responsibility and sustainable business practices. Additionally, the IFC Environmental and Social Performance Standards and the Equator Principles for project finance contain important references for environmental responsibility.

NN Group expects companies to comply with environmental regulations and aim to continuous improvement of their environmental performance and protect public health, in accordance with these standards. To demonstrate their commitment to improving the environmental performance of their processes, companies can implement an Environmental Management System (EMS) such as ISO 14001. Other actions companies can take include^{1,2,3}:

- Setting measurable objectives and targets for environmental performance.
- Align greenhouse gas emissions and carbon sink impact with IPCC international temperature goals.

Table 1: International conventions focused on pollution prevention.

Convention	Objectives
MARPOL (1972)	Prevent marine pollution from ships and promote measures to prevent and respond to marine pollution incidents.
Vienna Convention (1985)	Establish international cooperation to control and reduce ozone-depleting substances to protect the Earth from harmful ultraviolet radiation.
Montreal Protocol (1987)	Phase out production and consumption of ozone-depleting substances, leading to a significant recovery of the ozone layer in many regions.
Basel Convention (1989)	Prevent transfer of harmful substances, ensure safe and environmentally sound waste management, and restrict export of hazardous waste to countries lacking the capacity to manage it properly.
Rotterdam (1998), Stockholm (2001) and Minamata (2013) Conventions	Address specific hazardous substances and their impact on human health and the environment, regulate their production and use, and ensure safe and environmentally sound management.

¹ OECD Guidelines for Multinational Enterprises on Responsible Business Conduct

² The Equator Principles - Equator Principles (equator-principles.com)

³ The Ten Principles | UN Global Compact

- Implement science-based policies, strategies, and transition plans for climate change mitigation and adaptation, prioritizing emission reduction over offsetting, and publicly reporting the use of carbon credits or offsets.
- Promote environmental responsibility by collecting, evaluating, and transparently reporting information, including risk assessments where necessary.
- Contribute to the conservation of biodiversity and sustainable use of natural resources and ecosystems, avoiding land, marine, and freshwater degradation. Companies should also conduct due diligence to prevent adverse impacts on protected areas and species and follow the biodiversity mitigation hierarchy to avoid or minimize harm.
- Monitor and report on progress and obtain third party verification.
- Conduct regular environmental impact assessments using tools such as environmental impact assessment (EIA) and life cycle assessment (LCA) in the development of new technologies and products.
- Adopt sustainable consumption and production patterns, such as resource efficiency and circular economy models, to reduce their environmental impacts. The circular economy approach involves designing products and materials for reuse, repair, and recycling to minimize waste and greenhouse gas emissions.
- Engage with stakeholders and provide relevant information about their environmental practices.
- Establish effective grievance mechanisms (based on the scale of activities) that seek to resolve concerns promptly.
- Refocus research and development towards making operations sustainable and developing environmentally friendly technologies.
- Contribute to partnerships or initiatives that will enhance environmental awareness and protection.
- Take precautionary measures to prevent harm to the environment by avoid operating in locations where consequences of an accident to the environment and/or society are unmanageable.

In addition, companies are expected to include criteria for combatting climate change, protecting biodiversity and nature, and other ESG-criteria (such as compliance with health requirements) in their procurement and operational policies, as well as in contracts with suppliers and (sub)contractors where appropriate. By integrating sustainability criteria into their policies and contracts, companies can work towards a more sustainable supply chain.

NN Group further expects companies to report publicly on their environmental management and performance using established sustainability reporting standards such as the Global Reporting

Initiative (GRI). To integrate material sustainability indicators into financial reporting, companies are encouraged to use the tools provided by the Sustainability Accounting Standards Board (SASB) and International Integrated Reporting Council (IIRC) standards. In addition, the Corporate Sustainability Reporting Directive (CSRD) is the upcoming main framework for many European companies to report on their environmental sustainability. The CSRD is part of the EU Sustainable finance plan and requires materiality assessments to determine which sustainability topics should be included in the report. Refer to the case box for more information.

The EU's Sustainable Finance Action Plan: Promoting sustainable investments and reporting

In 2018, the European Union established the Sustainable Finance Action Plan to support the transition to a more sustainable European economy. The plan aims to redirect financial flows towards sustainable investments and ensure that the financial sector contributes to the long-term objectives of the Paris Agreement and the United Nations' Sustainable Development Goals (SDGs).

The plan includes several initiatives, such as the EU Taxonomy, which provides a classification system for sustainable economic activities. The Sustainable Finance Disclosure Regulation (SFDR) requires financial market participants to disclose the sustainability risks of their investments. The Corporate Sustainability Disclosure Regulation (CSRD) proposes new rules for sustainability reporting by European companies.

Other initiatives in the plan include the European Green Bond Standard and Label, which provide a framework for issuing and labelling green bonds, and the EU Ecolabel for financial products.

The overall goal of the Sustainable Investment Action Plan is to create a more sustainable financial system that supports the transition to a low-carbon, resource-efficient, and circular economy. By promoting sustainable investments and improving sustainability reporting, the plan aims to encourage companies and investors to contribute to a more sustainable future.

3. Understanding environmental risks and impacts

A good understanding of environmental issues will allow investors to identify investment impacts (positive and negative), risks and opportunities. These insights provide the means to focus dialogue and engagement on the topics that are relevant to the companies in which we invest. While all companies face some degree of environmental risks, the severity and likelihood of those risks will vary based on factors such as the region, industry, and specific circumstances of the company's operations and supply chain.

NN's Responsible Investment team conducted an assessment based on environmental incidents and controversies related to companies' activities. This assessment is based on data points retrieved from our external ESG data provider Sustainalytics, who base their research on public information. The analysis has not been limited to NN Group's investment universe. Instead, we assessed the entire investment universe that was made available to us, we therefore note that not all sectors and issues are fully covered. This approach was taken to ensure a comprehensive perspective on environmental risks and impacts. The data points provided relate to the involvement (both through direct operations and their supply chains) of companies in incidents and controversies across the following environmental topics:

- Land use and biodiversity
- Energy use and greenhouse gas emissions
- Water use
- Emissions to air
- Degradation and contamination (land)
- Discharges and releases (water)
- Environmental impact of products
- Carbon impact of products

Our assessment involved an analysis of the severity of the impact of incidents on society and the environment, as well as the level of financial risk posed to the company. Additionally, we evaluated the probability of a company within a specific industry getting involved in a severe incident. For each topic, the company's own operations and its supply chain as well as the company's adverse impacts and risk exposure were considered in the assessment, whereby we took the most conservative approach (a medium score on financial risks and a high score on adverse impacts rounds up to a high-risk score).

The sectors deemed to have the highest exposure to serious environmental risks and impacts are Consumer Discretionary, Consumer Staples, Energy, Financials, Materials and Utilities. Healthcare, Industrials, and Information Technology have medium exposure.

Table 2: Environmental Sector Matrix

Note: This sector breakdown is based on the Global Industry Classification Standard (GICS).

GICS SECTOR	OWN	
	OPERATIONS	SUPPLY CHAIN
Consumer Discretionary	Medium	High
Consumer Staples	High	High
Energy	High	High
Financials	High	Low
Healthcare	Low	Medium
Industrials	Medium	Medium
Information Technology	Low	Medium
Materials	High	High
Real Estate	Low	Low
Telecommunication Services	Low	Low
Utilities	High	Medium

Environmental risks and negative impacts can manifest in a company's own operations and/or in their supply chains. Conducting a thorough analysis of these risks and impacts during the due diligence process is important when considering investment in high-risk sectors.

It should be kept in mind that these assessments are based on public incidents and controversies data, and that the assessment is based on historical data at a specific point in time (February 2024), so it is important to update the analysis regularly as new incidents emerge and are resolved.

Table 3 on the next pages contains examples of environmental risks, opportunities and impacts for several industry groups. However, it is essential to keep in mind that that the environmental performance profile will vary from company to company. An analysis of a company's environmental performance should therefore always be carried out at the individual company level.

Table 3: Examples of key environmental risks, opportunities, and impacts

Industries (GICS)	Main environmental risks and adverse impacts
Oil & Gas producers (Energy)	<ul style="list-style-type: none"> • Oil spills constitute a major risk for oil extraction operations, leading to lost production and environmental fines. Particularly if access is limited, for example with deep-water or Arctic operations, a leak or a blow-out can lead to significant damage to animal life, human health and economic conditions in coastal areas. • The production and use of oil, gas and oil-based products are carbon intensive, contributing to climate change. • While natural gas is less carbon intensive when burned than oil, the transportation in pipelines results in leakage of methane, a very potent greenhouse gas. • Oil and gas extraction are associated with risks of significant air pollution, water contamination and soil degradation. <p><i>Positive impacts:</i></p> <ul style="list-style-type: none"> • Oil and gas producers and refineries can improve the safety of their operations and carbon efficiency. • Oil and gas producers can collaborate with downstream stakeholders to develop more carbon-efficient applications for oil and gas. • Oil and gas producers may leverage their expertise and equipment to design and install large-scale offshore wind turbine parks, geothermal energy, or to develop commercially viable sustainable biofuels or bioplastics.
Diversified metals (Materials)	<ul style="list-style-type: none"> • The waste of mining can seriously affect the quality of the surrounding surface water and groundwater. E.g. irresponsible tailings disposal is a major risk of many mining operations. • Mining operations, e.g. the large-scale open pit mining of minerals such as bauxite, are carbon intensive, contributing to climate change. • Mining (i.e. surface mining) results in land-use change and deforestation, representing a major component of global emissions. Toxic spills can further lead to loss of biodiversity and risk to human health. <p><i>Positive impacts:</i></p> <ul style="list-style-type: none"> • Energy efficient processing of minerals through use of renewable energy can reduce carbon intensity. E.g., aluminium can be produced with renewable energy such as geothermal or hydroelectric power. This will have a much lower carbon intensity than coal powered facilities. • When renewable energy is also combined with recycling of metallic waste, the emissions (e.g. CO₂, and SO₂) can be reduced even more. • Minerals and metals are also required for a low carbon development such as the building of renewable infrastructure.
Food products (Consumer staples)	<ul style="list-style-type: none"> • Food products require agriculture. Agriculture tends to be carbon intensive and the use of arable land and ground, or surface water bears the risk of over-exploitation of natural resources. Furthermore, monoculture, chemicals and genetic modification can lead to loss of biodiversity and hence, loss of ecosystem resiliency. • Many food products contain palm oil or soy. Palm oil and soy plantations continue to be associated with irresponsible and even illegal deforestation practices. • Packaging maintains the safety and quality of food, but packing waste can negatively impact the environmental impact when materials are not prudently selected, and it can create extra waste (e.g. all the plastic packaging). <p><i>Positive impacts:</i></p> <ul style="list-style-type: none"> • Efficiency and process improvements can reduce carbon intensity, water intensity and soil depletion. E.g. palm oil can sometimes be (partly) replaced by other oils and responsible plantation management can also make a large difference. • Regenerative or organic farming can benefit soil quality, biodiversity, and animal and plant health. • Besides risks, smart cross-pollination and/or genetic modification introduce opportunities such as improved resilience to draught for a plant or higher quality meat for an animal.

Table 3 (cont.)

Industries (GICS)	Main environmental risks
Utilities	<ul style="list-style-type: none">• Many traditional power utilities struggle to secure their future. The utilities industry is under heavy societal and increasing regulatory pressure to transition from a fossil fuel- based energy mix, towards a lower carbon power generation mix.• While nuclear power is significantly less carbon intensive (no emissions from power generation; just from constructing the plant) than fossil fuel-based power, safe storage of nuclear waste is a major challenge. Furthermore, the 2011 disaster at Fukushima’s plants has demonstrated that the local environmental (and social) risks of nuclear power cannot be underestimated.• Power generation is water intensive; growing water insecurity and potential conflicts with competing users may affect operations.• Thermoelectric power plants use large amounts of water (45% US industrial usage according to US Geological Survey), although just a small part (~4%) of this is consumed. Most water is used for cooling nuclear and coal power plants and is returned to surface water supplies and becomes available for other users. Large hydro does not consume water as such but has significant environmental (and often social) impacts that include forest clearing, biodiversity loss and changes to water systems. <p><i>Positive impacts:</i></p> <ul style="list-style-type: none">• Contrary to transport, aviation, steel and cement, utilities have clear opportunities to reduce their dependency on fossil fuels.• By incorporating more renewable energy sources like solar, wind, or green hydrogen utilities can contribute to making products cleaner (e.g. the driving of electric vehicles).• Utilities are increasingly incentivising their customers to make more efficient use of energy and water through conservation measures and the use of smart metering.

4. Important environmental themes and emerging trends

In this chapter, we discuss several environmental issues which we believe are important in relation to the environment, as well as emerging trends that play a crucial role in tackling global environmental challenges, such as climate change and biodiversity loss. These issues are also linked with the conventions, frameworks, and treaties mentioned in Section 2, and further described based on gathered feedback, environmental standards, and sector guidelines.

This paper on environmental investing has some common ground with the topics of animal welfare, governance, human rights and labour rights, but those specific topics are more thoroughly discussed in their own papers on Animal Welfare, Governance, Human Rights and Labour Rights.

Environmental management

Environmental management is the process of identifying, evaluating, controlling, and mitigating the impact of human activities on the environment. Its aim is to reduce environmental harm and promote sustainable use of natural resources through the implementation of responsible practices and strategies.

These practices can include pollution prevention, waste reduction, and resource conservation.

Despite a company's efforts towards environmental management, environmental incidents can still occur and have a negative impact on the surrounding air, soil and/or water quality. Damage can be caused by accidental incidents or negligence on behalf of the company. In some cases, an accidental incident may occur, however, the damage is then increased when the company fails to respond adequately.

Companies which do not have a proper risk management system in place, are exposed to financially material risks. This is because, alongside the negative environmental impact, environmental incidents can damage companies' reputation and brand image and may cause them to lose their licence to operate. A clear example of the financial materiality of these risks is the 2019 ExxonMobil Baytown Olefins Plant explosion. This incident occurred at ExxonMobil's Baytown Olefins Plant in Texas and resulted in a fire and explosion that injured 37 people and caused significant property damage. This event also resulted in a loss of \$310 million in the company's Chemical segment, as well as additional costs for repairs, legal fees, and potential fines. The explosion also led to nearby road closures, evacuations, and lawsuits from impacted individuals and businesses, resulting in a substantial financial impact on the community.

Therefore, NN Group expects the companies we invest in to follow recognised international environmental standards and implement an Environment and Social Risks Management System, based on - for instance – International Organisation for Standardisation (ISO) standards, to ensure effective management of environmental risks and minimisation of potential adverse impacts. We also emphasise the importance of the use of the most effective and advanced methods and technologies that are currently available (or best available technologies (BAT)) is an important consideration for companies to reduce their potential negative environmental impact. The case box in chapter 2 on international conventions related to environmental management is relevant as well in this context.

Strategies for companies to adapt and built resilience

Adapting and building resilience to climate change is crucial for businesses to remain competitive and mitigate the risks of climate-related impacts. To adapt and build resilience, companies can take several strategies and actions, including:

- Conducting a thorough climate risk assessment to understand how climate change might impact the company's operations, supply chains, and assets
- Investing in energy-efficient technologies and renewable energy
- Designing products for reuse, recycling, and remanufacturing
- Assessing water risks and develop strategies to ensure water availability during droughts or floods
- Collaborating with stakeholders, NGOs, and governments to develop climate adaptation plans
- Join industry associations and initiatives focused on climate adaptation
- Advocate for supportive policies and regulations at local and global level
- Disclose climate-related risks and adaptation efforts in annual reports

Climate change mitigation

As the world faces the urgent need to combat climate change and keep global average temperatures within inhabitable limits, companies are expected to act and publicly commit to being net-zero by 2050. This requires decarbonising their business and aligning with the Paris Agreement's 1.5°C pathway.

Companies' failure to manage and take responsibility for reducing GHG emissions and absolute carbon footprint can have severe consequences for the environment and society. The concentration of GHG emissions in the atmosphere can lead to structural changes in the planet's climate system, with potential large-scale negative impacts. As a result, several jurisdictions worldwide are enforcing stricter regulations and incentivizing companies to prepare for a low-carbon future.

We believe that companies with lower carbon intensities will be best positioned to maintain financial competitiveness in a carbon-constrained economy. To achieve a lower carbon footprint, companies must take several strategies and actions, including setting short- and medium-term targets, disclosing their GHG emissions, and developing a decarbonisation strategy with allocated capital aligned with their strategy. Once companies have taken all measures to decarbonise, they can apply adaptive measures to address unabated emissions, such as carbon offsetting and/or carbon capture utilisation and sequestration (CCUS) technologies.

In addition to reducing GHG emissions, companies can adapt and build resilience to climate change by taking several strategies and actions. Refer to the case box on the previous page.

For investors, it is important to measure how a company is advancing towards decarbonisation and to evaluate its risks and opportunities related to climate change. The box below shows

how we evaluate a company's progress related to climate change for NN Group's Proprietary Assets. To do this, we need consistent and trustworthy data on greenhouse gas emissions as well as their plans to transition to a low-carbon economy. At NN Group, we encourage companies to report on their carbon emissions and targets through direct and indirect engagement with the CDP and Science-based Targets Initiative (SBTi). Furthermore, we support the mission of the CDP and Climate Action 100+ to transform businesses into advocates, and stewards in preventing climate change and protecting the world's natural resources.

Moreover, investor initiatives, such as the Global Standard on Responsible Corporate Climate Lobbying, aim to promote more transparency about how companies and industry associations lobby on climate issues. This is relevant because climate-related lobbying can have a significant impact on policy outcomes related to climate change, and it is important for investors and other stakeholders be aware of the views and activities of companies when they look at their sustainability practices and evaluate their commitment to addressing climate risks and opportunities.

Addressing fossil fuels

The burning of fossil fuels, including thermal coal, oil, and gas, is a major contributor to greenhouse gas emissions, according to the Intergovernmental Panel on Climate Change (IPCC). Urgent action is required to reduce greenhouse gas emissions and transition to a low-carbon economy, which includes a rapid shift to renewables by 2035 and the adoption of just transition plans and new business models.

At NN Group, we are committed to promoting a sustainable future and recognise the urgent need to transition away from fossil fuels. As part of our Paris Alignment strategy for

Aligning investments with a net-zero future: NN Group's criteria and engagement policy for Proprietary Assets

To evaluate companies net-zero commitments and progress, NN developed a methodology for its own corporate investment portfolio, based on the six alignment criteria of the IIGCC Net-zero Investment Framework. These criteria are:

1. **Ambition:** A long-term goal consistent with achieving global net-zero by 2050 or sooner
2. **Targets:** Short- and medium-term emissions reduction target (scope 1, 2 and material scope 3)
3. **Emissions performance:** Current emissions intensity performance
4. **Disclosure:** Reports on scope 1, 2 and material scope 3 emissions
5. **Decarbonisation strategy:** A quantified plan setting out the measures that will be deployed to deliver GHG emissions targets, proportions of revenues that are green and where relevant increases in green revenues
6. **Capital allocation alignment:** A clear demonstration that the capital expenditures of the company are consistent with achieving net-zero emissions by 2050.

NN Group uses these alignment criteria to evaluate companies' net-zero commitments and progress and to allocate new assets. We also engage in active dialogue with investee companies to encourage them to shift towards renewable and low-carbon strategies, measure, disclose, and reduce emissions, and contribute to the transition to a low-carbon economy. Companies that are not making sufficient progress are divested and put on an exclusion list in accordance with our engagement policy for proprietary assets. For more details refer to [NN Group's Climate Action Plan 2023](#).

proprietary assets, we have set an objective to increase our investments in climate solutions, such as renewable energy, and support the development of new technologies that reduce the negative impact of fossil fuels on the environment. Additionally, we see thermal coal as no longer an acceptable form of energy, and this is reflected in our thermal coal phase-out policy. In developing our oil and gas policy, we have taken a comprehensive view of the entire oil and gas supply chain in our policy development process. We believe that all actors along the value chain, including producers and users, must take responsibility for transitioning to a low-carbon economy. Dialogue is essential to encourage this shift, and we are committed to working with stakeholders to achieve this goal.

For more information on our policies, please refer to the case box "Strengthening Our Stance on Fossil Fuels".

Climate change adaptation (including water use)

To ensure long-term sustainability and resilience, companies need to take action to adapt to the impacts of climate change. Companies with business operations that are vulnerable to the impacts of climate change should take precautionary measures to mitigate against these negative impacts. For example, companies should be aware of their vulnerability to extreme weather events, such as floods and hurricanes, based on their location and type of operations. In 2024, the World Economic Forum identified extreme weather events the second greatest risk in the 2 years and the first in the next 10 years⁴.

In addition, companies with water-intensive operations in water-scarce regions should develop contingency planning to avoid business discontinuity or conflict with competing requirements for the scarce water. The projected increase of the world

population growth rate and climate change impact will increase water scarcity unless water use, and management practices markedly change in future years.

At NN Group, we believe that developing effective strategies aimed at protecting water quality and supply is essential to maintaining a company's license to operate and ability to produce products and services. Therefore, we expect companies to recognise water scarcity as a strategic issue and develop policies and management systems to maintain water resources, including conducting an impact assessment of water scarcity when considering new operations in water-scarce regions and prioritising board oversight of water management efforts.

The Corporate Expectations for Valuing Water, set out by the Ceres Valuing Water Finance Initiative, provide a framework for companies to manage water resources sustainably. These expectations require companies to address water quantity, quality, ecosystem protection, access to water and sanitation, board oversight, and public policy engagement. By aligning with these expectations, companies can ensure that they are contributing to the social, economic, and ecological resilience of communities while maintaining their ability to produce products and services.

Protection of biodiversity

Biodiversity, the variety of life on Earth, is declining rapidly, posing a severe risk to society and the economy. Ecosystems provide essential services such as food, clothing, and medicines, and over half of global GDP depends on nature. Biodiversity loss is a complex issue with interconnected social and environmental implications, including threats to human rights and acceleration of climate change. Addressing biodiversity loss is crucial for

Strengthening NN's stance on fossil fuel investments

- NN Group is committed to promoting a sustainable future and recognizes the urgent need to transition away from fossil fuels to mitigate the environmental risks associated with them. To this end, we have taken steps to make the implementation of our coal phase-out policy stricter. This policy aims to reduce involvement in thermal coal mining and/or coal-fired power generation to 0-5% 'close to zero' by 2030.
- To supporting a just transition, NN regularly monitors remaining portfolio companies' progress to phase-out coal by 2030 and actively divests in companies that are not serious to their commitments to phase out (refer to [coal phase-out policy](#)).
- in 2023, NN also launched a [comprehensive oil and gas policy for our proprietary asset portfolio](#) covering unconventional and conventional oil and gas supply chain (except utilities), to transition its investment portfolio to net-zero by 2050.
- This policy directs investments towards best-in-class companies (<30% revenues (with conditions), and not more than 5% revenues for arctic and oil sands) willing to lower their emissions to net-zero by 2050 and makes a distinction between corporate and infrastructure investments.
- For new investments NN applies strict guidelines to ensure alignment with its Paris Alignment categorisation framework (no longer invest in 'not aligned' companies) and to encourage transition towards low-carbon solutions. For existing investments, NN engages with companies through direct and collaborative initiatives (i.e. Sustainability, CA100+, DCC) and considers divestment if progress towards transition is insufficient.

⁴ These are the biggest global risks we face in 2024 and beyond | World Economic Forum (weforum.org)

achieving sustainable development goals and protecting the planet's health, as emphasised by the Intergovernmental Panel on Climate Change and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

Companies have a responsibility to protect biodiversity, not only in sensitive or endangered areas but also in regular ecosystems. For instance, companies involved in agriculture, forestry, landscaping, and construction should take steps to prevent the introduction of invasive species and minimise their impact on regular ecosystems.

To guide their efforts in protecting biodiversity, companies can use several protocols and frameworks, such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the IUCN categories I-IV, IUCN Red List of Threatened Species, natural sites on UNESCO's World Heritage List, and the Ramsar Convention on Wetlands. These protocols and frameworks are generally associated with sensitive sites or endangered species, but they can also be applied to regular ecosystems.

The FSC's designation of High Conservation Value Forests is another framework that can be used to protect regular forests as well as highly endangered ones. Additionally, the Cartagena Protocol on Biosafety provides a framework for ensuring the safe handling, transport, and use of living modified organisms.

NN Group acknowledges the critical role of protecting biodiversity. As an investor, we expect companies to take into account internationally accepted standards and instruments when developing strategies to protect biodiversity. To achieve

this, companies should follow protocols and frameworks such as the mentioned above. Companies should also integrate biodiversity considerations into their management systems, including monitoring the impact of their business operations on ecosystems such as forests, peatlands, and other sensitive areas. We expect companies to take a proactive approach to preserving and protecting sensitive biodiverse areas, including designating and safeguarding protected nature areas. This proactive approach also means prohibiting the conversion of designated protected nature areas, such as peatlands, wetlands, and other areas with high carbon stock, as defined by international, regional, or local laws, for agricultural or other purposes. Before beginning a new project or expanding into new markets, companies should conduct an environmental impact assessment that considers the total consequences of the project on biodiversity, using frameworks such as GRI's Biodiversity Standard and other relevant standards like the International Finance Corporation's Performance Standards.

In addition to these measures, companies are expected to include criteria for combatting climate change, protecting biodiversity and nature, and other ESG-criteria (such as compliance with health requirements) in their procurement and operational policies, as well as in contracts with suppliers and (sub)contractors where appropriate. This is crucial for promoting sustainable practices and reducing the negative impact of business operations on biodiversity.

Deforestation

Deforestation is a pressing issue that has significant impacts on climate and biodiversity. While forests absorb carbon dioxide and produce oxygen, deforestation contributes to global warming by

Six corporate water expectations

NN Group is a participant in the Ceres Valuing Water Finance Initiative to address the growing water-related challenges faced by companies worldwide. The initiative has developed a set of six clear expectations called the Corporate Expectations for Valuing Water, which are aligned with the UN Global Compact CEO Water Mandate's six commitment areas and the UN's 2030 Sustainable Development Goal for Water (SDG6).

The Corporate Expectations for Valuing Water are intended to serve as an ambition for large companies to reach by 2030 and as the foundation for informing and measuring progress of investor engagements with companies as part of the Valuing Water Finance Initiative. These expectations require companies to take the following six steps:

1. **Water Quantity:** Companies must not negatively impact water availability in water-scarce areas across their value chain.
2. **Water Quality:** Companies must not negatively impact water quality across their value chain.
3. **Ecosystem Protection:** Companies must not contribute to the conversion of natural ecosystems critical to freshwater supplies and aquatic biodiversity and actively work to restore degraded habitats that their businesses depend upon.
4. **Access to Water and Sanitation:** Companies must contribute to the social, economic, and ecological resilience of communities they interact with by contributing to achieving universal and equitable access to WASH (Water, Sanitation, and Hygiene) across their value chain.
5. **Board Oversight:** Corporate boards and senior management must oversee water management efforts.
6. **Public Policy Engagement:** Companies must ensure that all public policy engagement and lobbying activities are aligned with sustainable water resource management outcomes.

releasing carbon into the atmosphere and leads to habitat loss, which can have a devastating impact on biodiversity. To address this issue, the EU deforestation-free regulation (adopted on 19 April 2023) requires companies placing for sale in Europe or exporting cattle, cocoa, coffee, palm oil, rubber, soy, or wood, along with products made from these commodities, to prove that their products are free from deforestation. This means they can only work with suppliers who provide a statement confirming that the product does not come from deforested land.

Implementing supply chain visibility requirements can be challenging for companies, as many industries have a significant environmental impact through their supply chains rather than their direct operations. For example, the automotive sector is known to have an average number of suppliers. However, companies that prioritise sustainability and implement robust systems to trace their supply chains are better positioned to meet regulatory requirements, mitigate reputational risks, and

remain competitive in the marketplace. By implementing a system to enhance traceability of their supply chain, companies can enable better decision making in supply chains to avoid primary forest loss. By doing so, companies can also safeguard their reputation and avoiding financial penalties associated with deforestation.

Investors are also taking note of these risks, and transparency around companies' supply chain practices is key. While policies around supply chain sustainability are common in Europe, fewer companies report on supplier audits. Regulatory requirements such as the European Corporate Sustainability Reporting Directive (CSRD) and voluntary disclosure frameworks such as CDP Forestry could help improve data availability and increase transparency.

Deep Sea Mining

The ocean plays an important role in supporting long-term environment, social, and economic stability, as well as mitigating

Managing Trade-offs at the Climate-Biodiversity Nexus: The Role of Certification Schemes

The climate-biodiversity nexus is the convergence point of climate change impacts and biodiversity conservation efforts. While this nexus presents opportunities for synergies between climate mitigation and biodiversity preservation, there is also a need to manage potential trade-offs between the two. To achieve both objectives, a holistic approach that prioritizes ecosystem integrity and resilience is necessary.

One example of the potential trade-offs at the climate-biodiversity nexus is biofuel production. While biofuels can help to mitigate climate change by reducing greenhouse gas emissions, they can also have unintended consequences on biodiversity conservation. For instance, monoculture plantations for bioenergy production can destroy natural habitats and reduce biodiversity. To address this, companies involved in biofuels encouraged to certify their production using sustainability standards like the Roundtable on Sustainable Biomaterials' (RSB) 12 principles.

The RSB covers a wide range of sustainability issues, including greenhouse gas emissions, biodiversity, water use, labour rights, and community engagement. Among these issues, the RSB includes 'soil' as one of its principles, promoting the diversification of crop plantations. By diversifying crops, companies can reduce the impact of biofuel production on natural habitats and promote more sustainable land use practices. Other voluntary schemes like ISCC, 2BSvs, KZR Inig, and REDcert can also be used to promote sustainable practices in biofuel production. By adopting these standards, companies can demonstrate their commitment to sustainability and meet the growing demand for environmentally and socially responsible biofuels.



the impacts of climate change. However, the ocean's ecosystems are delicate and sensitive, and there is widespread concern regarding the potential impacts of deep seabed mining (DSM). There is an understandable need for minerals for the economic transition to meet climate change goals, however, NN believes that more investment in the circular economy could be a more effective way to achieve this transition. Further research and exploration of alternatives should be conducted before DSM is considered. It is essential to comprehensively understand the environmental, social, and economic risks associated with deep sea mining before moving forward. Due to the emerging nature of this topic, we will continue to monitor the developments closely to further develop our position.

Circular Economy

The circular economy aims to reduce waste and pollution by keeping resources in use for as long as possible, protecting the environment and reducing the impact on biodiversity. In contrast to the traditional linear economy model of "take-make-dispose," the circular economy creates a closed-loop system where materials and products are continuously reused, recycled, and repurposed. This promotes the concept of "waste as a resource," minimising waste generation and reducing the depletion of natural resources.

The three principles of a circular economy are:

- Design out waste and pollution: Focus on preventing waste and pollution from being created in the first place.
- Keep products and materials in use: Maximise the lifespan of products and materials through strategies like reuse, repair, refurbishment, and recycling.
- Regenerate natural systems: Work towards enhancing natural systems and resources rather than depleting or destroying them.

To reduce the negative impact of human activities on the environment, companies should adopt circular economy principles wherever possible. This involves redesigning products and services to be more durable, reusable, repairable, and recyclable, as well as exploring new business models that create value from products and materials already in circulation, such as leasing, remanufacturing, and refurbishing. Transitioning from a

linear to a circular model requires companies to consider value creation, access to resources, and process optimisation. Establishing partnerships and taking a system view that encompasses all participants in the supply chain are crucial steps in this journey.

By adopting circular economy practices, companies can reduce their environmental impact by promoting responsible use of natural resources and minimising waste. This, in turn, can contribute to a more sustainable future and protect biodiversity. The circular economy offers a viable path towards achieving this goal and can create value for businesses and society as a whole. Overall, the circular economy can play a crucial role in promoting responsible use of natural resources, minimising waste, protecting the environment, and creating a more resilient and efficient economy.

Frameworks to standardise climate and nature disclosures

At NN Group, we recognise the financial materiality of climate-related and biodiversity risks and incorporate them into our investment decision-making process. However, the lack of uniform and standardised data from investee companies is a challenge for financial institutions.

To address this challenge, the Financial Stability Board established industry-led disclosure frameworks to standardise biodiversity and climate change disclosures. TCFD provides recommendations on incorporating effective climate-related risks into financial reporting, while TNFD aims to provide a standardised approach for companies to disclose their impacts on nature and biodiversity. Additionally, the proposed Corporate Sustainability Reporting Directive (CSRD) requires European companies to report on sustainability issues, including biodiversity, based on materiality. This will further encourage companies to report on their environmental risks and impacts and overlaps with TNFD and TCFD recommendations.

We welcome these initiatives to standardise biodiversity and climate change disclosures, which will help companies manage their environmental risks and contribute to a more sustainable future.

5. Concluding remarks

NN's Responsible Investment Policy Framework highlights the measures we will take to systematically integrate sustainability factors in the investment decision making and active ownership practices. NN has developed norms-based RI criteria, including environmental criteria, that are a reflection of relevant laws, the organisation's values, and internationally recognised standards such as the UN Global Compact and the OECD Guidelines for Multinational Enterprises. In case there are strong indications that an issuer may be in violation of any of NN's norms-based RI criteria, a decision will be taken about whether NN considers this a violation. Subsequently, in case of a violation, a decision will be taken on engagement or restriction.

NN Group will encourage our asset managers to use this paper as guidance to determine risks and opportunities and to engage in a dialogue with companies to address environmental risks, that could in our view affect the value of investments. Where needed, we will support these processes with additional tools or guidance materials. This may include more detailed theme or sector policies for areas to be identified of high risk.

This paper is developed to help our asset managers in evaluating investments from an environmental perspective. By publishing this paper also externally, we aim to express our position and use it to leverage change in the sphere of our investment activities.

Annex 1: Standards and guidelines

List of international standards, principles, guidance, and other tools consulted.

International standards and principles

Business and Biodiversity Offsets Programme

Cartagena Protocol on Biosafety

CDP Supply Chain Initiative

CEO Water Mandate

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

Electronic Industry Citizenship Coalition (EICC) Extractive Industries Transparency Initiative (EITI)

Environment and the OECD Guidelines for Multinational Enterprises, Corporate Tools and Approaches

OECD Guidelines for Multinational Enterprises Sustainable Development Goals (SDGs)

Rio Declaration on Environment and Development

Sustainable Packaging Coalition (SPC)

UN Global Compact Principles

The **ISO 14000** family of standards provides practical tools for companies looking to manage their environmental responsibilities. It includes most notably the ISO 14001: 2015 standard, which focus on environmental management systems (EMS) to achieve this.

International conventions focused on pollution prevention

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal

International Convention for the Prevention of Pollution from Ships (MARPOL)

Minamata Convention on Mercury Control and Management Systems

Montreal Protocol on Substances that Deplete the Ozone Layer

Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

Stockholm Convention on Persistent Organic Pollutants

Vienna Convention for the Protection of the Ozone Layer

Frameworks and conventions focused on Natural Resource extraction

Global Industry Standard on Tailings Management

International Council of Mining and Metals (ICMM)

Reporting frameworks

Corporate Sustainability Reporting Directive (CSRD)

Global Reporting Initiative (GRI) G4 International <IR> Framework

Sustainable Accounting Standards Board (SASB)

The **CDP** provides a framework for disclosing environmental impacts related to climate change. Other sustainability reporting frameworks include **GRESB** for real estate and infrastructure assets.

Abbreviations

IFC - International Finance Corporation

IIRC - International <IR> Framework; the International Integrated Reporting Framework

IUCN – International Union for Conservation of Nature OECD - Organisation for Economic Cooperation and Development

UN - United Nations

Examples of sector specific standards

IFC's Environmental and Social Performance Standards and the **Equator Principles** are helpful tools for financial institutions to evaluate the environmental and social risk exposure, management and impacts of companies (and specific projects in the case of the Equator Principles).

Examples of environmental certification schemes

Aquaculture Stewardship Council (ASC)

Forest Stewardship Council (FSC)

Marine Stewardship Council (MSC)

Roundtable on Sustainable Palm Oil (RSPO)
Roundtable on Responsible Soy Association (RTRS)
Roundtable on Sustainable Biomaterials (RSB)
The Gold Standard

International science-based assessment reports on climate change

International Panel on Climate Change (IPCC)

