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Second Party Opinion

Nordic Investment Bank Environmental Bond Framework

Aug. 30, 2024

Location: Finland

Sector: Financial services

Alignment With Principles

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✗

✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)

See [Alignment Assessment](#) for more detail.

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Dark green

Activities that correspond to the long-term vision of a low-carbon climate resilient future.

Our [Shades of Green Analytical Approach](#) >

Strengths

Nordic Investment Bank (NIB) has an explicit mandate to finance environmental improvements. Key areas of focus include climate transition and marine protection.

NIB has set 2030 reduction targets for its most exposed sectors, which accounted for 67% of its financed emissions in 2022. These comprise power and heat generation and consumer retail, among others. When setting sector-level targets, the bank considers externally recognized target setting methodologies, including the International Energy Agency's (IEA's) New Policies Scenario. These targets also include cement, steel, and aluminum, despite together only accounting for 2% of the bank's financed emissions in 2022. This is part of its ambition to support the transition of hard-to-abate sectors.

NIB has a strong and comprehensive due diligence process for selecting financed projects. It assesses environmental and social risks throughout the value chain of counterparties and projects before approval and upon completion, and determines alignment its mandate.

Weaknesses

No weaknesses to report.

Areas to watch

The criteria description for the sustainable technology innovation category is vague, resulting in uncertainty regarding the climate risks associated with eligible projects. The bank's robust project selection process, and the fact that eligible projects need to comply with its sustainability policy compensates these risks, in our view. NIB's financed projects will solely be used to enable the framework's remaining categories' objectives. NIB aims to finance projects such as research and development (R&D) in energy storage and bioenergy with carbon capture and storage (CCS).

Only 9% of NIB's lending portfolio has high transition risk, according to its internal assessment of the transition risk of its lending and treasury portfolios. Sectors considered high risk include oil and gas and automobiles. The bank's exposure may change as a result of its commitment to support the decarbonization of hard-to-abate sectors.

Eligible Green Projects Assessment Summary

Eligible projects under the issuer's green finance framework are assessed based on their environmental benefits and risks, using the Shades of Green methodology.

Renewable energy

 Dark green

The provision of financing for:

- Electricity generation (and heating/cooling where relevant) from wind turbines (onshore and offshore), solar (photovoltaics; PV) and concentrated solar power (CSP), ocean energy, and hydropower plants.
- Electricity or heat generation from geothermal installations.
- Electricity or heat generation based on advanced bioenergy feedstock.
- Heat generation based on green or waste heat (heat pumps, integration of waste heat, and seawater cooling system).
- Electricity transmission, distribution and storage, expansion, or upgrades.
- District heating and cooling networks, including storage.

Sustainable fuel production and infrastructure

  Dark to Medium green

Production of green hydrogen and green anhydrous ammonia and its infrastructure.

Production or processing of biofuels and biogas based on advanced feedstock.

Clean transportation

 Dark green

The provision of financing for vehicles with zero direct (tailpipe) carbon dioxide emissions, such as electric or hydrogen vehicles, electric ferries, green ammonia vessels, and electric rolling stock.

The provision of financing for zero direct (tailpipe) carbon dioxide emissions infrastructure, such as electrified rail, charging stations, green fuel distribution, and bicycle and pedestrian infrastructure.


Green buildings

  Medium to Light green

The provision of financing for construction of new buildings certified LEED Platinum or BREEAM Excellent or Outstanding and aligned with EU Taxonomy's Technical Screening Criteria (TSC) and Do No Significant Harm (DNSH) criteria.

The provision of financing for the refurbishment of existing buildings leading to an improvement of two Energy Performance Certificate (EPC) levels to at least EPC B.

Sustainable water and wastewater management

 Medium green

The provision of financing for wastewater collection and treatment to reduce discharges into water.

The provision of financing for projects that protect water resources.

Climate change adaptation

 **Dark green**

Improvements of stormwater and flood protection systems.

Projects that strengthen resilience and adaptation to climate change within the defined project categories in this framework.

Sustainable technology innovation, sustainable manufacturing, and CCS

 **Dark to Medium green**

Investments in research, development, design, and manufacturing of technologies needed to meet the category objectives in this framework or NIB's climate targets.

CCS, with geological permanent storage (reservoir or fixation) and its infrastructure.

See [Analysis Of Eligible Projects](#) for more detail.

Issuer Sustainability Context

This section provides an analysis of the issuer's sustainability management and the embeddedness of the financing framework within its overall strategy.

Company Description

The Nordic Investment Bank (NIB), with headquarters in Helsinki, was established in 1975 and is a regional multilateral financial institution owned by eight member countries who are also its shareholders: Sweden (34.6% of share ownership), Norway (21.5%), Denmark (21.1%), Finland (17.7%), Lithuania (2%), Latvia (1.3%), Iceland (0.9%), and Estonia (0.9%). NIB has no private sector shareholders. NIB is a mission-driven financial entity, focused on financing projects that improve productivity and benefit the environment in the Nordic and Baltic regions. As of December 2023, NIB's loan portfolio amounted to €21.9 billion. NIB finances projects in the public and private sectors, predominantly in its member countries. Sweden accounted for 31% of purpose-related exposures (gross disbursed loans, securities held in lieu of loans, equity investments, and guarantees) in 2023, followed by Norway (21%), Finland (19%), Denmark (13%), and Estonia (4%).

Material Sustainability Factors

Climate transition risk

International Financial Institutions (IFIs) are exposed to climate transition risk through their financing of economic activities which affect the environment. The direct environmental impact of IFIs is small compared to financed emissions and stems mainly from power consumption (e.g. data centers). Policies and rules to reduce emissions could raise credit, legal, and reputational risks for lending institutions with large exposures to high-emitting sectors. These medium- to long-term risks are significant and will be proportional to the impact of climate change on the economy. Positively, financing the climate transition offers a growth avenue for IFIs through lending activities. The Nordic countries have set climate neutrality targets for the period between 2030 and 2050, while the Baltic countries aim to reach it by 2050. To achieve these targets, these countries are stepping up transport electrification, investing in renewables, and minimizing real estate carbon footprint, among other environmental measures relevant to many of the public and private sector entities that NIB provides financing to.

Physical climate risk

Physical climate risks will affect many economic activities as climate change will increase the frequency and severity of extreme weather events. IFIs finance a wide array of industries that are exposed to physical climate risks. However, while climate change is a global issue, weather-related events are typically localized, so the magnitude of IFIs' exposure is linked to the geographical location of the activities and assets they finance. Banks may contribute to mitigate the effects of physical climate risks by financing adaptation projects and climate-resilient infrastructure, as well as by investing in solutions that support business continuity in exposed geographies. While exposed to risks such as flooding due to changes in precipitation patterns or rising sea levels, the Nordic region faces relatively limited exposure to climate change physical risks. This is because of its geographic and social-economic profile. Nonetheless, the Nordic region may face transboundary climate risks due to its dependency on inputs from other regions, such as agriculture crops for the food industry, or semiconductors for the manufacturing of cars and electronic devices. Key physical risks for the Baltic region include changes in temperature and precipitation patterns and rising sea levels.

Other environmental factors

Institutions financing the public and private sectors play a key role in protecting biodiversity and containing land, air, and water pollution. Economic development goals may exert considerable pressure on natural ecosystems, both locally and for trading partners. Environmental factors including climate transition and physical climate risks are intertwined. Industrial operations, infrastructure development, and other human-made activities have increased NIB's lending exposure to pollution risks and biodiversity loss.

The EU Biodiversity Strategy has set a target of reaching 30% protected area coverage--land and sea--by 2030. As of 2022, the land area percentage was below the EU average of 26% in several Nordic and Baltic countries, including Sweden (15%), Denmark (15%), Latvia (18%), and Estonia (21%). Regarding plastic pollution, the EU Plastic Strategy has set several targets, one of which is to ensure that by 2030, more than half of plastics waste generated in the EU is recycled. Several Nordic countries have set targets to reduce plastic use. Sweden aims to achieve a 50% reduction in the consumption of single-use plastic cups and food containers and increase reusable packaging by 20%. Norway's strategy includes specific targets to increase recycling to 65% of household waste by 2035 and increase plastic packaging recycling to 55% in 2030.

Social factors

Institutions financing the public and private sector play a crucial role in socioeconomic development.

Nordic and Baltic countries have relatively high-income economies and strong Human Development Index (HDI) rankings, reflecting their advanced living standards. Nordic countries have lower, albeit increasing in the case of Norway and Sweden, Gini coefficients, which indicates a more equal income distribution compared to both the EU average and Baltic countries. The Baltic states, particularly Latvia and Lithuania, show higher levels of income inequality than the EU and Nordic countries. Although Norway and Iceland are not EU members, both countries are in the European Economic Area (EEA) and therefore must comply with EEA regulations, including those related to social policy.

Issuer And Context Analysis

The project categories in the green bond framework address climate transition risk, climate physical risk, and other environmental risks, which are key sustainability factors for NIB.

Renewable energy, sustainable fuel production and infrastructure, clean transportation, green buildings and sustainable technology innovation, sustainable manufacturing, and carbon capture storage address climate transition risk. Climate change adaptation addresses physical climate risks, while water management and protection address risks linked to water pollution and the conservation of water resources.

NIB has a robust and comprehensive due diligence process and assesses all its projects using its Ex-Post Mandate Rating Framework. This translates into a cautious approach based on avoiding the lock-in of fossil fuels, consistently assessing risks in the project supply chain, and analyzing the broader climate strategies of counterparties. The main elements in this process are the exclusion list defined in the Sustainability Policy, the identification of the most material environmental and social risks, and the ESG performance assessment relative to industry standards and peers. As part of this, NIB checks regulatory compliance, undertakes on-site visits, and engages with counterparties through dialogue. The outcome is included in the credit proposal and can be used to reject a loan application.

In addition, NIB has an explicit mandate: to provide lending that benefits the environment. This includes supporting initiatives linked to the climate transition, and/or productivity improvements in the Nordic and Baltic regions. NIB conducts a thorough assessment of the potential environmental and productivity effects of all projects proposed for financing, rating them on a six-level scale ranging from “negative” to “excellent”. The environment component considers environmental benefits, such as pollution control and resource efficiency, while the productivity component measures the economy’s production efficiency, such as capital and labor. In 2023, 99.8% of the total amount of loans disbursed (excluding labeled bonds) originated from mandate-rated projects that achieved a “good” or “excellent”, which exceeds NIB’s target of 95%.

NIB published its climate strategy in 2023 and has committed to becoming a net-zero lending institution by 2050. NIB has set 2030 reduction targets in line with the 1.5-degree scenario for its highest emitting sectors, which cover 67% of its financed emissions. In 2022 (target baseline) the power and heat sector accounted for the largest share of emissions at 53%, while the industrial sector (chemicals, forestry) was the most carbon intensive. When developing these targets it used externally recognized methodologies, such as the IEA New Policies Scenario. NIB aims to obtain Science Based Targets initiative (SBTi) validation for each and start reporting in 2025.

To support the decarbonization of hard-to-abate sectors, it has also set scope 1 and 2 targets for cement, steel, and aluminum by 2030, despite their combined 2022 financed emissions being 2%. NIB has set targets to achieve emission intensity levels linked to the cement sector at 0.46 tCO₂e/ton, linked to the steel sector at 0.87 tCO₂e/ton, and linked to the aluminum sector at 2.99 tCO₂e/ton. It has also assessed the transition risk of its lending and treasury portfolios using internal and sector expertise and risk heatmap methodologies. The results indicate that its 2022 and 2023 lending portfolio had relatively low transition risk, with 9% categorized as high (oil and gas and automobiles), 20% as moderate, and 49% as low. We note that its exposure may change because of increased lending to hard-to-abate sectors, and that financed emissions may temporarily increase. However, the issuer’s aim is that these financed emissions gradually decrease, in line with its climate targets. The remaining 22% accounts for financial institutions and the public sector, which are currently not assessed due to a lack of available data.

NIB assesses the physical climate risks of financed projects as part of the credit decision process and aims to evaluate its portfolio from 2025. It has set up a physical risk working group to assess counterparties with operations in sectors and locations most sensitive to physical risk. Moreover, NIB screens financed projects for alignment with EU Taxonomy’s Technical Screening Criteria, which includes physical risks. NIB is also in the process of identifying a vendor to strengthen its approach by using location-specific data.

NIB has started to assess the biodiversity impacts of its lending portfolio based on Science Based Targets Network (SBTN) recommendations, though it is yet to set nature-related targets. The mitigation of such risks is included in its NIB’s Sustainability Policy and ESG Lending Guidelines, among others. NIB specifically focuses on the protection of the Baltic Sea and the Arctic region.

Alignment Assessment

This section provides an analysis of the framework's alignment to Green Bond principles.

Alignment With Principles

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✗

✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)

✓ Use of proceeds

We assess all the framework's green project categories as having a green shade. The issuer commits to allocating an amount equal to the net proceeds from instruments issued under its Environmental Bond Framework (NEB) to finance loans that will support the transition toward low-carbon and climate resilient development, in line with its Mandate Rating Framework. We understand the issuer is only mandated to finance new projects, meaning those that have not been commissioned more than one year before its project review. Eligible activities include green buildings, sustainable fuel production and infrastructure, clean transportation, renewable energy, water management and protection, climate change adaptation, and sustainable manufacturing and carbon capture storage. Please refer to the Analysis of Eligible Projects section for more information on our analysis of the environmental benefits of the expected use of proceeds.

✓ Process for project evaluation and selection

NIB's Sustainability and Mandate unit (SUM) is responsible for selecting eligible loans to be included in NIB's Green Loan Portfolio as well as the framework's criteria definition. In addition to assessing projects through its Mandate Rating Assessment, NIB will also screen the projects through its Sustainability Policy, which contains an exclusion list. Furthermore, NEB loans will only be allocated to projects in NIB member or EU countries that have been commissioned less than one year before the review, have passed NIB's ESG review with no major risks identified, have necessary permits, use EU-defined best available techniques if applicable, comply with substantial contribution criteria for at least one environmental objective eligible under the EU Taxonomy, and do not pose a significant risk of fossil fuel lock-in or emission-intensive practices. Eligible 'green buildings' projects are required to be fully in line with the EU Taxonomy's DNSH and TSC criteria. For other project categories, NIB will screen against the DNSH-criteria, but due to limitations in data availability, this will not result in the exclusion of projects.

✓ Management of proceeds

NIB commits to allocating the net proceeds from instruments issued under its environmental bond framework to finance its green loan portfolio. NIB allocates the proceeds to the NEB Fund Pool, which is separate from general funding and managed on an aggregated basis to match eligible projects. Unallocated proceeds are managed within NIB's asset and liability management, according to the liquidity and Sustainability Policy. The framework outlines how the NEB Fund Pool is managed within its overall financing process. If the proceeds are used to finance eligible projects, NIB Environmental Bonds can be increased or re-purchased using funds from its general liquidity pool. When loans mature or are repaid early, the proceeds are included in the general liquidity pool, which is also used for final redemption payments. Within three years, projects undergo an ex-post evaluation to ensure compliance with NIB's Sustainability Policy. If the SUM unit finds significant deviations, they report to the Mandate and Credit Committee, which may result in the loan being removed from the NEB Loan Pool.

✓ Reporting

The bank commits to annually disclosing the allocation and impact of proceeds in its annual online report on its website, until full allocation is achieved. NIB will also report project-level impact data and methodology details on its website. For projects with

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extended construction periods funded through multiple tranches, NIB will allocate and measure the impact solely for the portion of the loan financed by proceeds issued under this framework, ensuring no double counting. We positively note the bank's impact reporting will align with ICMA's Harmonized Framework for Impact Reporting.

Analysis Of Eligible Projects

This section provides details of our analysis of eligible projects, based on their environmental benefits and risks, using the Shades of Green methodology.

Over the three years following issuance of the financing, NIB expects to allocate 55% of proceeds to the Renewable Energy project category, 20% to Clean Transportation, 15% to Green Buildings, 10% to Water Management and Protection, and less than 5% to each of the remaining categories.

NIB defines a “new project” as one that has not been commissioned more than one year prior to NIB’s project review. Based on this definition, no refinancing will be conducted under the framework.

Overall Shades of Green assessment

Based on the project category shades of green detailed below and consideration of environmental ambitions reflected in NIB’s Environmental Bond Framework, we assess the framework as Dark green.

Dark green

Activities that correspond to the long-term vision of a low-carbon climate resilient future.

Our [Shades of Green Analytical Approach](#) >

Green project categories

Renewable energy

Assessment

 **Dark green**

Description

- Electricity generation (and heating/cooling where relevant) from wind turbines (onshore and offshore), solar (PV) and CSP, ocean energy, and hydropower plants.
- Electricity or heat generation from geothermal installations.
- Electricity or heat generation based on advanced bioenergy feedstock (as defined in Part A of Annex IX the EU RED, including feedstock from (a) to (p) but excluding (g) related to palm oil).
- Heat generation based on green or waste heat (heat pumps, integration of waste heat, seawater cooling system).
- Electricity transmission, distribution, and storage, expansion, or upgrades.
- District heating and cooling networks, including storages.


Analytical considerations

- We expect most of this category's allocated proceeds will be dedicated to electricity transmission, distribution, and storage projects, followed by electricity generation from wind, solar, ocean and hydropower. Other activities will receive no more than 5% of the proceeds. Renewable energy generated from solar, wind, ocean, hydropower, and geothermal sources, as well as its supporting transmission, distribution, storage, and district network, are key to limiting global warming to well below two degrees Celsius, provided impacts on the local environment are sufficiently mitigated. Bioenergy can play a role in the transition from fossil-based energy but risks and impacts (lifecycle emissions), depend on the type of feedstock used. Therefore, we assign the category Dark green since activities consistent with this shade are expected to receive most of the proceeds.
- We assign Dark green to the financing of renewable energy generation from solar, wind, geothermal, waste heat, hydropower, and ocean sources. Most hydropower projects eligible for financing will be for the refurbishment of existing plants. Any new hydropower installations will be required to comply with the EU Taxonomy substantial contribution criteria, which specify that plants must either be run-of-the-river with no artificial reservoirs, have a power density above 5 watts per square meter (W/m²), or have lifecycle emissions lower than 100gCO₂e/kWh. While NIB does not have any such projects in its pipeline, wave or tidal projects that align with the EU Taxonomy substantial contribution criteria may be eligible for financing. The implementation of

electricity generation projects may result in environmental impacts (biodiversity) and lifecycle risks in their supply chains, which are somewhat addressed by NIBs due diligence, as outlined below.

- We positively view that NIB will only finance bioenergy generation projects that use waste- and residue-based feedstocks defined in the EU 2018/2001 Renewable Energy Directive (RED II) and that it has excluded palm oil mill effluent, and empty palm fruit bunches, and other ligno-cellulosic material except saw logs and veneer logs. Although biomass feedstocks are exposed to supply chain risks, such as biodiversity and land use change, this is somewhat mitigated by the requirement that projects comply with the RED II and RED III (2023/2413) sustainability and emissions savings criteria as well as NIB's environmental due diligence process (outlined below). This is because they require that biomass not be sourced from high biodiversity and carbon stock value areas. That said, we note that eligible installations may be powered by animal manure, which we consider a feedstock not fully aligned with a low carbon future due to the environmental risks associated with livestock. As such, we assign a shade of Dark to Medium green to financing for bioenergy projects to reflect the use of feedstocks with different exposures. Since they have and are expected to continue to receive a minor share of the proceeds, this shading has not negatively affected that of the overall category.
- The carbon intensity of transmission and distribution systems depends on their reliance on fossil fuels. Through its lending activities, NIB seeks to avoid financing projects that could lead to fossil fuel emissions lock-in and therefore has limited eligibility to projects that comply with the EU Taxonomy substantial contribution criteria. This means that electricity grids are required to be part of the interconnected European system or ensure that 67% of newly generated capacity or the average system grid emissions factor be below 100 gCO_{2e}/kWh. According to 2022 data from the International Energy Agency. (IEA), renewables constituted the largest electricity generation share for most NIB members (Norway: ~98%; Iceland: 100%; Latvia: ~76%; Lithuania: ~72%). In Sweden and Finland, renewables and nuclear combined accounted for most of the electricity generation (Sweden: ~96.2%; Finland: ~88.8%), while in Estonia, fossil fuels--mostly coal--accounted for the largest share (~67%). We note that exposure to fossil fuels may decrease as countries work toward renewable energy targets, such as Estonia's 2030 commitment for 100% renewable electricity. We therefore assign Dark green to the provision of financing for transmission and distribution projects. Despite Estonia's significant exposure to coal, this has not affected the shade of the activity because to date it has accounted for only 2% of NEB Fund Pool.
- NIB also has limited eligibility to district heating and cooling networks that meet the EU Taxonomy substantial contribution criteria, which require networks to be powered partially or wholly by renewable energy and/or waste heat. Although the issuer does not finance networks directly connected to fossil-based activities, a project's benefits heavily depend on its energy inputs, which may be associated with significant emissions and varying sustainability credentials. According to IEA data in 2022, all NIB members are exposed to fossil fuels, such as coal, natural gas, and oil in their energy grids. Estonia and Lithuania use the most, surpassing 70%, then Finland, Latvia, and Norway range between 35% and more than 50%, and Sweden and Iceland use the least at 23% and ~13%, respectively. Additional lifecycle emissions may be derived from the use of waste and biomass, such as hard to recycle plastics. We assign a shade of Light green to the financing of district heating and cooling networks to reflect this fossil fuel exposure. Since these projects represent a minority share of the overall category's proceeds, this shade does not materially affect that of the overall category.
- We assess NIB's provision of financing for electricity storage technologies as Dark green. Nevertheless, there are significant supply chain exposures related to the metals (aluminum) and materials (lithium, cobalt) used in batteries, as well as end-of-life pollution risks associated with using hazardous chemicals. These risks may be addressed by regulatory requirements for lifecycle emissions and circular management of battery components, such as the EU Batteries Regulation (2023/1542).
- NIB has a comprehensive and advanced process to assess supply chain and environmental risks associated with financed projects in its credit decision procedure. In addition, it has strengthened its due diligence for high-risk supply chains (solar panels, batteries) to assess its clients' critical components suppliers. We positively view NIB's 2030 target to reduce financed emissions in the power and heat sector by 53% and its commitment not to finance fossil fuel generation.
- Projects financed under this category may face physical climate risk due to the fixed nature of the assets as well as in the supply of renewable feedstocks for energy generation. NIB takes this into account in its environmental and social counterparty risk assessment and by checking that individual projects comply with DNSH criteria for climate change adaptation, if applicable. It is also developing a risk-based methodology to assess the transition and physical climate risks of its counterparties. It aims to assess its portfolio as of 2025, starting with those operating in sectors and locations that are most exposed, such as electricity transmissions, distribution, and storage projects. We positively view NIB's finance resilience measures for other eligible activities in this framework.


Sustainable fuel production and infrastructure

Assessment	Description
 Dark to Medium green	<ul style="list-style-type: none"> - Production of green hydrogen and green anhydrous ammonia and its infrastructure - Production or processing of biofuels and biogas based on advanced feedstock

Analytical considerations

- Green hydrogen is part of a 2050 solution due to its applications in industrial processes, transportation, and energy storage, as well as being a lower emissions energy source. Anhydrous ammonia is primarily used mostly as input for fertilizer production, with the remainder used for industrial processes including plastic and synthetic fibers manufacturing. Green anhydrous ammonia is a solution that contributes to a low-carbon, climate-resilient future by helping industries to reduce their carbon footprint linked to this key input. Biofuels and biogas can enable the transition from fossil-based energy sources, although they can be linked to environmental risks and impacts, depending on the type of feedstock used.
- We consider it a strength that the production of green hydrogen and anhydrous ammonia will comply with the EU taxonomy substantial contribution criteria. For hydrogen, this translates to lifecycle GHG emissions saving of 73.4%, resulting in a total lower than 3tCO₂e/tH₂. For anhydrous ammonia, the EU Taxonomy substantial contribution criteria indicates that it should either be produced from hydrogen that meet the EU's criteria for hydrogen manufacturing or be recovered from wastewater. We view the activities linked to green hydrogen and anhydrous ammonia production as Dark green within the eligible project category.
- We consider it a strength that NIB will only finance the production or processing of biofuels and biogas based on advanced feedstock, defined in RED II. However, it does not exclude feedstock derived from animal manure, to which we assign Medium green.
- Although NIB does not yet have full visibility regarding the green hydrogen and ammonia-financed end users, it expects to focus on industrial applications such as green steels or the shipping industry. We consider it a strength that NIB will exclude projects with a risk of lock-in emissions.
- When assessing counterparties, NIB considers the leakage risk associated with hydrogen production facilities, transportation, and storage. This includes reviewing leakage rates, technologies used, and measures taken to prevent leaks. NIB will not finance projects that do not meet adequate standards. Furthermore, leak detection is evaluated by environmental and safety permits granted by national authorities.
- Physical climate risks linked to this project category will be tackled in line with the requirements of the EU Taxonomy and NIB will conduct a further check. NIB also aims to mitigate these risks with projects included in the framework's climate change adaptation category.

Clean transportation

Assessment	Description
 Dark green	<p>Zero carbon emission vehicles and supporting infrastructure:</p> <ul style="list-style-type: none"> - Zero carbon emission vehicles. Vehicles with zero direct (tailpipe) carbon dioxide emissions, such as electric or hydrogen vehicles, electric ferries, green ammonia vessels, and electric rolling stock. - Infrastructure for zero direct (tailpipe) carbon dioxide emissions, such as electrified rail, charging stations, green fuel distribution, and bicycle and pedestrian infrastructure.

Analytical considerations

- Zero-emissions vehicles and their supporting infrastructure are essential for the transport industry's shift to a low carbon future. This is because electric and green hydrogen and ammonia vehicles can result in decreased lifecycle emissions compared

to internal combustion vehicles. Therefore, we assign Dark green to this category to reflect its role in reducing fossil fuel powered vehicle use and transport-related emissions in NIB and EU member countries.

- We assess NIB's loans for electric vehicles, ferries, electrified rail infrastructure, charging stations, and bicycle and pedestrian facilities as Dark green. We note that lifecycle emissions depend on the proportion of renewable and low-carbon energy in the grids powering charging stations. We note that most NIB member countries' electricity grids are largely powered by renewables, except for Estonia, which has higher grid emissions from the use of fossil fuels.
- Electric vehicle battery packs are exposed to supply chain risks related to mining minerals and metals, namely nickel, iron, aluminum, lithium, and cobalt. The extraction of these materials has been linked to environmental degradation, freshwater contamination, forced and child labor, and conflicts with local communities. To manage these risks, counterparties must comply with the Procurement Guidelines for Projects Financed by NIB as well as its Sustainability Policy. NIB has implemented a systematic due diligence process for projects with high-risk supply chains. This includes verifying the carbon footprint of the batteries intended to be purchased, although no specific emissions thresholds have been set.
- We assign Dark green to NIB's financing of green hydrogen vehicles and green ammonia vessels since they play an important role in supporting the decarbonization of hard-to-abate transport sectors, such as marine shipping. To avoid fossil fuel lock-in, NIB will only finance vessels that are intended to use 100% low-carbon fuels, with fossil fuels allowed only as back-up sources in cases of emergency. Although it aims to ensure this by including it as a specification in its loan agreements, we note that this does not eliminate fossil fuel-related emissions exposure.
- NIB assesses value chain environmental and social risks of its financed projects, during the credit decision process and upon project completion, as outlined in its Sustainability Policy and ESG Lending Guidelines. The Sustainability Policy excludes transportation infrastructure for oil and natural gas that does not contribute to the transition to low-carbon gases, or if most of the counterparty's activities entail the transport of coal, peat, or oil, which we regard positively.
- Given that vehicles are not fixed assets, their exposure to physical climate risk is less material. However, infrastructure may face such risks. NIB considers the physical climate risks of its counterparties in its environmental and social assessment, and at project level by screening for DNSH compliance. NIB aims to mitigate these risks with projects in the framework's climate change adaption category.

Green buildings

Assessment

 **Medium to Light green**

Description

- Construction of new buildings: Green buildings certified according to LEED Platinum or BREEAM Excellent or Outstanding and aligned with EU Taxonomy's TSC and DNSH criteria (including LCA analysis) and passive houses.
- Major renovations: Refurbishment of buildings leading to an improvement of two EPC levels, at least to EPC B (improvements of two EPC classes indicate 40%-60% energy improvement).

Analytical considerations

- In new construction and renovation projects, improving energy performance and reducing embodied emissions associated with building materials are important elements in the transition to a low-carbon economy. For all buildings, adapting to physical climate risks is key to improving climate resilience, whilst renovating existing buildings can result in significant emissions savings. We assess this as Medium to Light green since it contains projects with different environmental and climate exposures.
- We assess NIB's financing for new buildings as Light green. NIB will only finance buildings that comply with EU Taxonomy Technical Screening and DNSH criteria, which aim to address the environmental and climate impacts of buildings. The criteria require that the PED be at least 10% lower than NZEB standards defined by national regulations and that the Global Warming Potential be calculated for each lifecycle stage. Buildings larger than 5,000 m² must undergo testing for airtightness (air leaks) and thermal integrity (heat retention). For NIB to achieve its sector-based carbon intensity target, buildings powered by fossil fuels are not eligible for financing under this framework.
- Constructing new buildings entails significant climate impacts, in particular in terms of embodied emissions from materials. DNSH criteria do not currently include thresholds for these emissions, stipulating only that at least 70% by weight of non-

hazardous construction and demolition waste be repurposed. The framework also does not include such requirements. However, we view positively that NIB has included passive houses in its eligibility criteria, as they entail designing buildings to reduce heat losses and reduce the need for heating, resulting in substantial energy savings.

- EU taxonomy criteria include specifications for water appliances, the safety of building components, and land protection for areas with high soil fertility and biodiversity value. The framework’s criteria complement this by requiring that buildings obtain environmental certifications LEED Platinum or BREEAM Excellent or Outstanding. These cover multiple climate and environmental considerations such as water, energy, and material procurement. However, point-based systems and LCA analysis required by the EU Taxonomy criteria do not guarantee that a building will be low-carbon.
- The renovation of existing buildings supports the transition to a low carbon society because it may result in building stocks with improved performance without the risks and impacts associated with new construction developments. The framework criterion requires an energy performance improvement of 40%-60% demonstrated by at least a two-level EPC upgrade and to a minimum of EPC B. We assign Medium green to this activity, which is supported by NIB’s commitment to preventing fossil-based emissions lock-in, its exclusion of fossil fuel technology efficiency improvements, such as boilers, and its real estate carbon intensity target.
- NIB identifies the environmental and social value chain risks of projects during the credit decision process and upon project completion, as outlined in its Sustainability policy and ESG Lending Guidelines. It also requires projects to comply with its Procurement Guidelines for Projects Financed by NIB, which includes environmental and social considerations.
- NIB identifies the physical climate risks of its counterparties through environmental and social assessments, as well as at project-level by screening for DNSH alignment. In addition, it is developing a risk-based methodology to determine the transition and physical climate risks of its counterparties which it aims to launch in 2025. NIB will also seek to mitigate these risks with projects included in the framework’s climate change adaption category.

Water management and protection

Assessment

 **Medium green**

Description

- Wastewater collection and treatment to reduce discharges into water (this is intended for public applications only. NEB will not finance water treatment systems specifically for industrial applications or fossil-based transport infrastructure).
- Protection of water resources with the aim of minimizing groundwater extraction and contamination and improving the replenishment of aquifers.

Analytical considerations

- Financing the development of wastewater collection and treatment systems can result in environmental benefits, such as reduced water pollution, and are needed to achieve the 2050 Paris Agreement objectives. Protecting water resources can have substantial environmental benefits, in particular water security and reduced pollution, as long as risks associated with infrastructure construction are mitigated. We therefore assign a Medium green shade to this category.
- With proceeds issued under this framework NIB will finance projects related to the expansion or new construction of wastewater collection and treatment facilities. NIB has limited eligibility to infrastructure with public applications, which is a positive since this prevents facilities being connected to fossil-fuel based or emissions-intensive activities. NIB assesses the environmental and social risks of counterparties and financed projects in the credit decision process and upon project completion. Projects must comply with national and international regulations and standards, which include waste management with best available techniques as defined by EU regulations. It also screens EU Taxonomy activities for DNSH criteria alignment and if water stress is identified. NIB requires counterparties reuse water.
- That said, wastewater infrastructure expansion or development can result in negative climate and environmental impacts in terms of energy use, waste, and embodied emissions from the materials used. The framework does not include quantitative thresholds to address potential issues, namely leakage rates, energy efficiency, or the use of chemicals. We therefore assign Medium green to the financing of these projects.
- Although we understand that to date NIB has not financed many projects for the protection of water resources, we view positively that they have been included in the scope of this framework. Investments under its Nordic-Baltic Blue Bonds, whereby

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the bank will finance projects aimed at the protection and restorations of marine ecosystems such as wetlands, rivers and lakes, coastal areas, and open sea zones, are also incorporated.

- The physical climate risks of NIB's counterparties are identified in its environmental and social assessment and at project level by screening for DNSH alignment. In addition, NIB is developing a risk-based methodology to determine the transition and physical climate risks, which it aims to launch in 2025. NIB aims to mitigate these risks with projects included in the climate change adaptation category in the framework.

Climate change adaptation

Assessment

 **Dark green**

Description

- Improvements of stormwater and flood protection system.
- Projects that strengthen resilience and adaptation to climate change within the defined project categories in this framework.

Analytical considerations

- Climate scientists have emphasized that even in the most optimistic scenarios, some level of climate change is taking place. It is therefore crucial to plan and mitigate potential risks to reduce the potential financial and environmental impact of such events. Implementing adaptation solutions can also reduce resources and emissions linked to rebuilding damaged assets.
- Overall, we assess this category as Dark green, reflecting the need for increased resilience and adaptation measures amid the increasing frequency of physical climate risks. For Nordic and Baltic countries expected changes are heavier rain and more flooding, among others. Planning for and mitigating such risks is pivotal to reducing their financial and environmental effects. We note that projects under this category will always focus on improving climate change resilience and adaptation. The issuer has shared that in the case of new construction, embodied emissions are considered within its environmental mandate rating, which we view favorably.
- We view as a strength that NIB assesses the environmental and climate impact of projects, including lifecycle assessments through its mandate assessment, when relevant. Moreover, NIB will assess eligible projects' compliance with the EU Taxonomy's substantial contribution criteria. The entity has also shared that its borrowers must provide evidence of compliance with EU Taxonomy criteria, specifically regarding the timeframes used to assess physical risks, which will vary depending on the financed asset's lifetime.
- According to NIB, new construction that supports stormwater and flood protection systems can be included in this category's eligible activities. Embodied emissions will be considered in NIB's environmental mandate rating through which the lending entity quantifies a project's environmental effects and engages with the client or project, to minimize them. NIB has shared that for many projects there is limited data available on embedded emissions, which means they are estimated and not publicly disclosed.
- NIB ensures that maladaptation risk is adequately assessed for all projects through the vulnerability and risk assessments, which are needed to comply with the EU Taxonomy substantial contribution criteria for adaptation. Projects must also follow NIB's Sustainability Policy and ESG Lending Guidelines, which include the evaluation of a project's environmental and social value chain risks during the credit decision process and upon project completion.

Sustainable technology innovation, sustainable manufacturing, and CCS

Assessment

 **Dark to Medium green**













Description

- Investments in research, development, design, and manufacturing of technologies essential to meet the objective of the categories in this framework or NIB's climate targets.
- CCS, with geological permanent storage (reservoir or fixation) and its infrastructure.

Analytical considerations

- We consider CCS (carbon capture and storage) to be a critical component in an LCCR future, noting the importance of adequate leak monitoring and detection systems, and a comprehensive assessment of projects' lifecycle emissions. We assess NIB's CCS projects as Dark green, considering its careful assessment of lock-in risks and exclusion of CCS applied to fossil-based power generating assets or oil and gas applications.
- Financed projects will comply with the EU Taxonomy substantial contribution criteria, which include provisions on leakage control for underground storage. Moreover, such requirements are also included in the specifications of permits obtained from national authorities, which cover both injection and storage activities. We view favorably that the EU Taxonomy technical screening criteria, which will apply to eligible CCS projects, also includes lifecycle GHG emissions requirements.
- NIB has shared that examples of eligible CCS projects would relate to carbon dioxide capture from biogas and possibly industrial applications.
- This project category includes investment in research, development, design, and manufacturing of technologies, which, according to NIB, will be used to reach the framework's objectives in the remaining categories, as well as NIB's climate targets. Financed projects could include research and development in energy storage or bioenergy with CSS. In line with the remaining projects under the framework, NIB has a process to assess such projects, which we view as positive. However, given the uncertainty as to what type of projects could qualify in the future, we assign Medium green.
- NIB identifies a project's physical climate risks in its environmental and social assessment, and at project level by screening for DNSH alignment. NIB is developing a risk-based methodology to determine the transition and physical climate risks of its counterparties, which it aims to launch in 2025.

S&P Global Ratings' Shades of Green

Assessments					
 Dark green	 Medium green	 Light green	 Yellow	 Orange	 Red
Description					
Activities that correspond to the long-term vision of an LCCR future.	Activities that represent significant steps toward an LCCR future but will require further improvements to be long-term LCCR solutions.	Activities representing transition steps in the near-term that avoid emissions lock-in but do not represent long-term LCCR solutions.	Activities that do not have a material impact on the transition to an LCCR future, or, Activities that have some potential inconsistency with the transition to an LCCR future, albeit tempered by existing transition measures.	Activities that are not currently consistent with the transition to an LCCR future. These include activities with moderate potential for emissions lock-in and risk of stranded assets.	Activities that are inconsistent with, and likely to impede, the transition required to achieve the long-term LCCR future. These activities have the highest emissions intensity, with the most potential for emissions lock-in and risk of stranded assets.
Example projects					
 Solar power plants	 Energy efficient buildings	 Hybrid road vehicles	 Health care services	 Conventional steel production	 New oil exploration

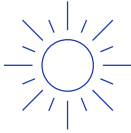

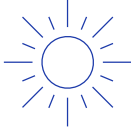



Note: For us to consider use of proceeds aligned with ICMA Principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.

LCCR--Low-carbon climate resilient. An LCCR future is a future aligned with the Paris Agreement; where the global average temperature increase is held below 2 degrees Celsius (2 C), with efforts to limit it to 1.5 C, above pre-industrial levels, while building resilience to the adverse impact of climate change and achieving sustainable outcomes across both climate and non-climate environmental objectives. Long term and near term--For the purpose of this analysis, we consider the long term to be beyond the middle of the 21st century and the near term to be within the next decade. Emissions lock-in--Where an activity delays or prevents the transition to low-carbon alternatives by perpetuating assets or processes (often fossil fuel use and its corresponding greenhouse gas emissions) that are not aligned with, or cannot adapt to, an LCCR future. Stranded assets--Assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities (as defined by the University of Oxford).

Mapping To The U.N.'s Sustainable Development Goals

Where the Financing documentation references the Sustainable Development Goals (SDGs), we consider which SDGs it contributes to. We compare the activities funded by the Financing to the International Capital Markets Association (ICMA) SDG mapping and outline the intended linkages within our SPO analysis. Our assessment of SDG mapping does not impact our alignment opinion.

This framework intends to contribute to the following SDGs:

Use of proceeds	SDGs
Renewable energy	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>7. Affordable and clean energy*</p> </div> <div style="text-align: center;">  <p>13. Climate action</p> </div> </div>
Sustainable fuel production and infrastructure (renewable energy)	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>7. Affordable and clean energy*</p> </div> <div style="text-align: center;">  <p>13. Climate action</p> </div> </div>
Clean transportation	<div style="text-align: center;">  <p>11. Sustainable cities and communities*</p> </div>
Green buildings	<div style="text-align: center;">  <p>11. Sustainable cities and communities*</p> </div>

Sustainable water and wastewater management



6. Clean water and sanitation*



11. Sustainable cities and communities*



12. Responsible consumption and production*

Climate change adaptation



13. Climate action*

Pollution prevention and control



13. Climate action

*The eligible project categories link to these SDGs in the ICMA mapping.

Related Research

- [Analytical Approach: Second Party Opinions: Use of Proceeds](#), July 27, 2023
- [FAQ: Applying Our Integrated Analytical Approach for Use-of-Proceeds Second Party Opinions](#), July 27, 2023
- [Analytical Approach: Shades of Green Assessments](#), July 27, 2023
- [S&P Global Ratings ESG Materiality Maps](#), July 20, 2022

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