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Second Party Opinion

NCC's Green Finance Framework

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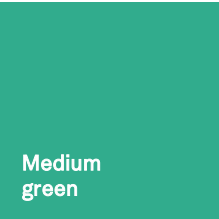
Location: Sweden	Sector: Construction
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Alignment Summary

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✕

- ✓ Green Bond Principles, ICMA, 2025
- ✓ Green Loan Principles, LMA/LSTA/APLMA, 2025

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



Activities that represent significant steps towards a low-carbon climate resilient future but will require further improvements to be long-term low-carbon climate resilient solutions.

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

Strengths

The framework's eligible categories support NCC's comprehensive efforts to reduce carbon emissions in its operations and value chain. Eligible projects address the most material source of emissions for the issuer: the climate impact of construction materials in green buildings and emissions from asphalt production.

Eligibility criteria for the different project categories consider environmental and climate objectives. Energy efficiency and embodied emissions thresholds for green buildings are ambitious, while biodiversity risks are reduced by the exclusion of construction on arable, crop, greenfield, or forest land. Financed asphalt recycling and machine sand production will not involve fossil fuels directly.

Weaknesses

No weaknesses to report.

Areas to watch

Bitumen, the key component of asphalt, is a petroleum-based product. Asphalt production is therefore inherently dependent on fossil fuels. The application of asphalt in road construction also ties the activity to significant transport emissions, until electric vehicle adoption becomes more prevalent.

New construction is associated with high greenhouse gas emissions. NCC's inclusion of specific embodied emission thresholds for new constructions is a positive step. However, the methodologies and knowledge base for effectively reducing these emissions are still evolving.

Shades of Green Projects Assessment Summary

Over the three years following the issuance of the financing, NCC expects to allocate at least 90% of proceeds to the green buildings project category.

The issuer expects most proceeds to be allocated to finance new projects, while a small portion of proceeds will be directed to refinancing projects.

Based on the project categories Shades of Green detailed below, the expected allocation of proceeds, and a consideration of environmental ambitions reflected in NCC’s green finance framework, we assess the framework as Medium green.

Green buildings	Medium green
Development of properties:	
- Financing of property development after 2020, with a primary energy demand (PED) that is, or will be, at least 25% lower than the threshold set by local building regulation in Sweden and at least 10% lower than in Denmark and Finland. The energy performance is or will be certified using a valid energy performance certificate. - NCC will perform material physical climate risk and vulnerability assessments of the properties and their expected lifespan. Based on this assessment, NCC will, if needed, take actions to make the asset climate resilient against flood risks and to make them resilient for people and financial values. - Upon completion, the properties will undergo testing for airtightness and thermal integrity. The life-cycle global warming potential (GWP), allowing for a maximum amount of embodied carbon of 275 kg CO₂e /gross floor area (GFA) covering module A1-A5. - NCC will take the waste hierarchy into account and safeguard preparation for re-use or recycling of at least 80% (by weight) of all non-hazardous construction and demolition waste generated at the construction site. - NCC will also ensure the properties are not built on arable, crop, greenfield, or forest land. - In addition, these properties will at least have or receive a design stage, post construction, or in-use certification from either BREEAM SE Excellent or Outstanding, Miljöbyggnad Silver, Svanen, DGNB Gold, or an equivalent environmental scheme.	
Major renovation of properties:	
- Financing of major renovations of existing properties that lead to a reduction in PED of at least 30%, or renovations that comply with the applicable requirements for major renovations. - NCC will perform material physical climate risk and vulnerability assessments of the properties and their expected lifespan. Based on this assessment, NCC will, if needed, take actions to make the asset climate resilient against flood risks and to make them resilient for people and financial values. - Upon completion, the properties will undergo testing for airtightness and thermal integrity. The life-cycle Global Warming Potential (GWP), allowing for a maximum amount of embodied carbon of 150 kg CO₂e /GFA covering module A1-A5. - NCC will take the waste hierarchy into account and safeguard preparation for re-use or recycling of at least 80% (by weight) of all non-hazardous construction and demolition waste generated at the construction site. - In addition, these properties will at least have or receive a design stage, post construction, or in-use certification from either BREEAM SE Excellent or Outstanding, Miljöbyggnad Silver, Svanen, DGNB Gold, or an equivalent environmental scheme.	
Renewable energy	Medium green

Renewable energy for asphalt production:

- Financing of conversion of asphalt plants from fossil to renewable energy sources, such as wood oil from pine trees, wood pellets, and biogas reducing CO₂ per kilowatt hour (kWh) by at least 90% compared to fossil alternatives.

Renewable energy for aggregates production:

- Financing of electrification of aggregate production such as machinery and equipment able to run on electricity, as well as enabling infrastructure for electrification, including transformer stations and high-, medium-, and low-voltage cables reducing CO₂ per kWh by at least 90% compared to fossil fuel alternatives.

Energy efficiency

 Medium green

Financing of energy efficiency projects and initiatives in asphalt production, including measures to reduce moisture content in ingoing material and reducing energy required to reach working temperatures, reducing energy consumption by at least 7.5% per produced ton. This figure is based on estimated average reclaimed asphalt use in the company's own production, moisture reduction in Stockpiles by George H. Simmons, Jr. Technical Paper T-129, and the resulting energy savings.

Environmentally sustainable management of living natural resources and land use

 Dark to Medium green

Preservation and restoration of biodiversity and sustainable ecosystems:

- Financing of investments in operations such as quarries and gravel pits to promote biodiversity, for example in accordance with NCC's Kielo methodology, a concept built upon the mitigation hierarchy to promote biodiversity and sustainable ecosystems ensuring clean water, responsible resource use, and thriving species. These investments include creating suitable conditions for endangered birds, insects, amphibians, and plants that depend on infertile soil or specialized habitats for survival and reproduction.

Preserving natural sand and ecosystems:

- Financing of investments in facilities for machine sand production to replace natural sand as a building material. Natural sand plays a crucial role in preserving water quality in society, and transitioning to machine sand supports environmental conservation while ensuring responsible resource management.

Circular economy adapted products, production technologies and processes

 Dark green

Increasing the use of reclaimed asphalt in asphalt production:

- Financing of investments in equipment for recycling of reclaimed asphalt in accordance with the waste hierarchy. The CO₂ reduction per invested Swedish krona (SEK) 1 should be at least 0.75 in accordance with Naturvårdsverkets report 7133 (Klimatklivet) for cost-effective emission reductions.

Recycling of reclaimed asphalt, concrete, bricks, and excavated masses:

- Financing of investments in machinery and equipment for recycling reclaimed asphalt, concrete, bricks, and excavated masses in accordance with the waste hierarchy. The given investment enables production of secondary products able to substitute virgin products.

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

Sweden-based NCC AB is a construction company operating in Sweden, Norway, Denmark, and Finland. In 2024, NCC's sales amount to SEK61 billion (€5.49 billion). The company operates through six business areas: infrastructure, building Sweden, building Nordics, industry, property development, and green industry transformation. It constructs residential buildings and offices, as well as schools, hospitals, stores, and warehouses. The company also designs, constructs, produces, and maintains infrastructure projects, such as tunnels, roads, and railways. In addition, it produces stone materials, asphalt, and paving products. NCC develops and sells commercial properties in metropolitan regions. NCC's largest shareholders include OBOS BBL (10.05% of total share capital), Forsta AP-fonden (4.99%), and Carnegie Founder (4.81%).

Material Sustainability Factors

Climate transition risk

Construction projects contribute to climate change largely via embodied carbon emissions in key materials such as steel and concrete, as well as greenhouse gases emitted during the operational phase of building. The Nordic countries have set climate neutrality targets of between 2030 and 2050. Minimizing the carbon footprint of real estate is key to achieving these targets. Sweden, Denmark, and Finland, as members of the EU, are implementing EU rules on the energy efficiency of buildings. We consider that the Nordic countries have more advanced regulations on embodied emissions than most European peers. In addition, several large cities are introducing requirements for fossil-free construction sites.

Physical climate risk

The geographically fixed nature of real estate assets exposes them to physical climate risks, which translates into potential damage to assets and disruptions to stakeholders and operations. The severity of physical risks varies by region. However, chronic risks such as changes in temperature and precipitation patterns and acute risks such as flooding and heat waves need to be addressed during the design and construction phases of buildings. Severe weather events can also pose risks during the construction phases. In the Nordics region, the most severe physical impacts will likely come from increased flooding, snow loads, and urban overflow, as well as a higher incidence of storms and extreme weather.

Biodiversity and resource use

Construction faces significant resource-use issues. Resource-intensive materials and practices pose risks to finite resources and biodiversity. Addressing these problems through resource-efficient design, alternative materials, and resource management will help reduce the industry's environmental impact. New buildings require land, creating biodiversity and climate risks relating to site selection. In the Nordics, countries mandate assessments of such risks for new construction, but risks relating to conversion of natural habitats, such as forests and bogs, remain.

Workforce health and safety

Construction sites can expose workers to heightened safety risks from the use of heavy machinery, falls, hazardous chemicals, and other potentially dangerous situations, translating into higher fatality and injury rates than in other sectors. In 2023, 24% of

all fatal work accidents in the EU happened in the construction sector, according to Eurostat. A reliance on temporary employees and subcontractors also poses risks, because safety protocols can be lax compared with larger companies that typically have more satisfactory training, policies, and standards, particularly in developed markets.

Issuer And Context Analysis

The framework's eligible projects address climate transition and physical risks, which we consider to be the most material sustainability factors for NCC. Potential concerns related to NCC's impact on biodiversity and the use of resource-intensive raw materials are addressed by considerations around materials and the management of natural resources. The eligible projects may result in safety risks for workers or contractors. To address these risks, NCC has established a comprehensive set of workplace health and safety policies and measures, in accordance with the ISO 45001 standard for occupational health and safety.

NCC prioritizes climate within its sustainability strategy, and it has specified targets and actions to decarbonize its operations and value chain. It aims for net zero by 2045 and a reduction in intensity-based scope 1 and 2 emissions by 75% by 2030, from a 2015 baseline. NCC also aims to reduce intensity-based scope 3 emissions within the same timeframe. Scope 3 emissions represent the bulk of NCC's carbon footprint (about 75% of total reported emissions in 2024). The company has identified three priority areas: reducing the climate impact of its construction materials (concrete, steel, asphalt) and transportation, increasing energy efficiency and electrification, and reducing reliance on fossil-based energy sources. NCC has set a target to purchase only fossil-free electricity and primarily, renewable energy. As of 2023, 95% of its total energy consumption originated from renewable sources, calculated using a market-based approach.

NCC has made progress in reducing its scope 1 and 2 emissions and it has enhanced scope 3 emissions reporting. From 2015 to 2024, NCC reduced its direct intensity-based emissions by 64%, largely driven by the switch from fossil fuels to biofuel at its asphalt plants. NCC also expanded the scope of its scope 3 emissions reporting, meaning that higher scope 3 emissions in 2024 are not necessarily linked to an increase in actual emissions.

To mitigate physical climate risks, the company undertakes scenario analysis and reports in accordance with Taskforce on Climate-Related Financial Disclosures guidance. The company has referred to the SSP5-8.5 scenario, which forecasts an average global temperature increase of 4.4 C by 2100, for its physical risks assessments. Key risks identified for NCC's business include delays in project deliveries or severe damage to materials, sites, or infrastructure, due to extreme weather events. To manage these risks, NCC follows construction norms so that structures resist extreme weather events and promotes access to technical expertise and standards in the organization. Physical climate risks also present NCC with opportunities linked to increased demand for certain products and projects, such as urban embankments, flood barriers, and storm tunnels.

NCC considers the biodiversity impact of its direct activities as well as upstream in the value chain, since the primary goods it procures are dependent on raw materials such as soil, limestone, and iron. The company considers the location of projects and production sites and has internal procedures and policies to address local biodiversity risks. NCC is also currently exploring the possibility of establishing metrics and targets to measure its biodiversity impact.

The nature of NCC's business can create risks for its workforce, which the company addresses through a comprehensive set of policies, programs, and targets. NCC aims to achieve an accident frequency rate for LTIF4 (work-related accidents resulting in more than four calendar days of absence per million hours worked) that is less than or equal to 2.0 in 2026. As of 2024, the rate was 2.5. To improve safety, NCC is consistently monitoring its own and contractor's safety metrics, providing training and awareness programs, and analyzing all incidents with the intention of preventing recurrence.

Alignment Assessment

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

Alignment Summary

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✗

✓ Green Bond Principles, ICMA, 2025

✓ Green Loan Principles, LMA/LSTA/APLMA, 2025

✓ Use of proceeds

We assess all the framework's green project categories as having a Green shade, and the issuer commits to allocating the net proceeds issued under the framework exclusively to eligible green projects. 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.

The proceeds raised through the green framework could go toward financing or refinancing capital expenditure, assets, research and development, and select operating expenditure that increases the lifespan of the assets. The issuer will disclose the share of financing and refinancing in the annual green finance report. NCC has set a maximum look-back period of 12 months.

✓ Process for project evaluation and selection

NCC clearly identifies the objective for each project category. The framework's green buildings, renewable energy, and energy efficiency projects aim to address climate change mitigation, while the remaining projects address biodiversity conservation.

Eligible projects or assets are reviewed and selected by the green finance committee, composed of members from several areas including management, treasury, and sustainability reporting. The committee may consult other internal and external stakeholders when necessary. The selection of eligible projects or assets is based on a consensus decision between treasury and the sustainability functions in the business areas. NCC identifies and manages potential environmental and social risks associated with the financed projects, and is guided by its code of conduct, sustainability framework, sustainability policy, environmental policy, and related guidelines available on its website. The issuer also applies an exclusion list to its financing, to ensure that funds are not being used to finance to any harmful activities such as the use of fossil fuels.

✓ Management of proceeds

NCC maintains a green bond register to monitor the use of proceeds from its green finance instruments on a portfolio basis. This register will serve as the foundation for NCC's impact and allocation reporting. The committee regularly reviews projects to ensure continued eligibility, and NCC commits to maintaining a register of eligible green projects equal to or exceeding the outstanding net proceeds throughout the life of its green finance instruments. Temporary unallocated proceeds will be held in liquidity reserves, taking the exclusion criteria into account. NCC confirms it will not issue loan facilities with mixed green and non-green tranches under this framework.

✓ Reporting

NCC will annually publish a green finance report on its website, detailing the allocation and environmental impact of its green finance instruments, until all proceeds are allocated. The report will cover investment breakdowns, project descriptions, the share of new financing and refinancing, and unallocated proceeds. NCC aims to report on environmental impacts such as properties' energy performance and certificate level, or metric tons of recycled waste. In instances where the actual impact of an eligible asset or project cannot be systematically measured and reported, NCC will detail the project's goals, estimated positive impact, and expected outcomes, while acknowledging the limitations in quantifying actual results. We view positively

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that NCC will seek to align its reporting with the International Capital Market Association (ICMA)'s Harmonised Framework for Impact Reporting (June 2024) where appropriate.

Analysis Of Eligible Projects

This section provides details of our analysis of eligible projects, based on their environmental benefits and risks, using the "[Analytical Approach: Shades Of Green Assessments](#)".

Overall Shades of Green assessment

Based on the project category Shades of Green detailed below, the expected allocation of proceeds, and a consideration of environmental ambitions reflected in NCC's Green Finance Framework, we assess the framework as Medium green.

Medium green

Activities that represent significant steps towards a low-carbon climate resilient future but will require further improvements to be long-term low-carbon climate resilient solutions.

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

Green project categories

Green buildings	
Assessment	Description
Medium green	Development of properties: - Financing of property development after 2020, with a PED that is, or will be, at least 25% lower than the threshold set by the local building regulation in Sweden and at least 10% lower than in Denmark and Finland. The energy performance is or will be certified using a valid energy performance certificate. - NCC will perform material physical climate risk and vulnerability assessments of the properties and their expected lifespan. Based on this assessment, NCC will, if needed, take actions to make the asset climate resilient against flood risks and to make them resilient for people and financial values. - Upon completion, the properties will undergo testing for airtightness and thermal integrity. The life-cycle GWP, allowing for a maximum amount of embodied carbon of 275 kg CO₂e /GFA covering module A1-A5. - NCC will take the waste hierarchy into account and safeguard preparation for re-use or recycling of at least 80% (by weight) of all non-hazardous construction and demolition waste generated at the construction site. - NCC will also ensure the properties are not built on arable, crop, greenfield, or forest land. In addition, these properties will at least have or receive a design stage, post construction, or in-use certification from either BREEAM SE Excellent or Outstanding, Miljöbyggnad Silver, Svanen, DGNB Gold, or an equivalent environmental scheme. Major renovation of properties: - Financing of major renovations of existing properties that lead to a reduction in the PED of at least 30%, or renovations that comply with the applicable requirements for major renovations.

- NCC will perform material physical climate risk and vulnerability assessments of the properties and their expected lifespan. Based on this assessment, NCC will, if needed, take actions to make the asset climate resilient against flood risks and to make them resilient for people and financial values.
- Upon completion, the properties will undergo testing for airtightness and thermal integrity. The life cycle GWP, allowing for a maximum amount of embodied carbon of 150 kg CO₂ /GFA covering module A1-A5.
- NCC will take the waste hierarchy into account and safeguard preparation for re-use or recycling of at least 80% (by weight) of all non-hazardous construction and demolition waste generated at the construction site.

In addition, these properties will at least have or receive a design stage, post construction, or in-use certification from either BREEAM SE Excellent or Outstanding, Miljöbyggnad Silver, Svanen, DGNB Gold, or an equivalent environmental scheme.

Analytical considerations

- The International Energy Agency emphasizes that achieving net-zero emissions in buildings demands major progress on energy efficiency and the phase-out of fossil fuels. All properties must achieve high energy performance. New properties should also cut emissions from building materials and construction. Addressing physical climate risks is key to strengthening climate resilience across all buildings.
- NCC anticipates that 90% of the project category's proceeds will be allocated to the development of new properties and 10% to renovations. We assign a shade of Medium green to both the development of new properties and renovations. The Medium green shade reflects the inclusion of energy efficiency and embodied emission thresholds, physical climate risk assessments, and green building certifications. The Medium green shade also considers that NCC will not finance new or existing buildings with direct fossil fuel heating.
- Most financed properties will be in Sweden (about 70%), with the rest in Finland (20%), and Denmark (10%). We believe the threshold of 275 kg CO₂e per square meter for embodied carbon--from raw material extraction to installation--is sufficiently ambitious to help reduce emissions compared with business-as-usual in these countries. In Sweden and Finland, reporting on embodied emissions is mandatory, and while there are no current embodied emission limits, regulations on this are expected soon. The 275 kg threshold is lower than existing market benchmarks, such as Sweden's BREEAM-SE v6.0 certification. In Denmark, there is already a regulation that will become gradually stricter over time. We think the 275 kg threshold is lower than the national average and aligns with the ambition set in low emission class buildings, which are optional standards in Denmark's building code.
- We consider the requirement of a 30% lower PED for renovated properties, combined with an embodied emissions threshold of 150 kg CO₂e /GFA, to be ambitious.
- We view it as positive that all buildings will have recognized green building certifications. When combined with other framework criteria, the use of these certifications facilitates a systematic approach to addressing key sustainability topics. The list of eligible green building certifications includes many that are tailored to the Nordic context and that partly mitigate the climate and environmental impacts of buildings, including by addressing energy efficiency, embodied carbon, biodiversity, and waste and water management. The robustness and ambition of the certifications will however depend on the version used and the points obtained during the process.
- Circularity and biodiversity risks are addressed within this project category, through considerations of the waste hierarchy and specific targets for waste re-use and recycling. For instance, NCC will ensure preparation for re-use or recycling of at least 80% of all non-hazardous construction and demolition waste.
- Under the framework, NCC refrains from building on arable, crop, greenfield, or forest land. Buildings in scope for financing mainly include offices, residential buildings, schools, and logistics centers. NCC has confirmed that it will not finance buildings where the building itself is designed to serve the oil industry, but it recognizes that it lacks control over the type of tenant that will use the buildings.
- The geographically fixed nature of real estate assets exposes them to physical climate risks. NCC conducts physical climate risk and vulnerability assessments, considering the expected lifespan of assets, and takes

mitigation measures accordingly. NCC's climate risk evaluation method is based on the SSP5-8.5 scenario, which forecasts an average global temperature increase of 4.4 C by 2100.

Renewable energy	
Assessment	Description
Medium green	Renewable energy for asphalt production: - Financing of the conversion of asphalt plants from fossil to renewable energy sources, such as wood oil from pine trees, wood pellets, and biogas reducing CO₂ per kWh by at least 90% compared to fossil alternatives. Renewable energy for aggregates production: - Financing of electrification of aggregate production such as machinery and equipment able to run on electricity as well as enabling infrastructure for electrification including transformer stations and high-, medium-, and low-voltage cables reducing CO₂ per kWh of at least 90% compared to fossil fuel alternatives.

Analytical considerations

- Bioenergy derived from sustainably produced feedstocks can provide a lower-emissions alternative to fossil fuels and a decarbonization pathway when electrification is not possible. At the same time, land use change and biodiversity risks related to feedstock production, transportation, and processing emissions, as well as local pollution at combustion, can undermine the climate and environmental benefits of bioenergy. Electrification projects that represent a move from direct fossil fuel energy are also supportive of a low-carbon economy.
- We assign a shade of Medium green to this project category to reflect the climate benefits renewable energy use in asphalt production, while acknowledging that the main component of asphalt, bitumen, is a petroleum product. This makes the production of asphalt dependent on fossil fuel supply chains, which come with inherent climate and environmental risks, including pollution and biodiversity loss. Moreover, the end use of asphalt for road construction ties this activity to high transportation emissions.
- Transitioning from carbon-intensive fossil fuels at the asphalt plant to low-carbon alternatives plays a key role in reducing the overall carbon footprint of asphalt production. Asphalt is the source of 28% of emissions linked to road construction, while concrete accounts for 18%. Asphalt's manufacturing processes account for about 38% of its life cycle emissions. Switching to renewable energy sources and electrifying machinery and equipment enables a reduction in carbon emissions linked to production processes.
- Renewable energy would be sourced from wood oil from pine trees and wood pellet. NCC purchases the wood pellet as leftover raw materials, and its suppliers are required to have sustainability declarations (hallbarhetsbesked) for these bioenergy sources that demonstrate compliance with the EU Renewable Energy Directive and other applicable regulations. These requirements for suppliers mitigates the risk of land use change emission and ensures they meet the life cycle emissions thresholds set by the regulation.
- Aggregates are a component needed for asphalt production. Aggregate production involves sourcing from quarries or gravel pits, crushing the raw materials and sorting them according to properties and size. Electrifying the machinery necessary for aggregate production represents a shift away from direct fossil fuel energy. NCC has informed us that the equipment to be electrified would be solely located in Sweden, Denmark, Finland, and possibly Norway, all of which have relatively clean electricity grids.
- Aspects of the stone crushing process not eligible under the framework due to NCC's exclusion of fossil fuels may involve some fossil fuel elements, such as the use of diesel for heavy machinery during stone mining.

Energy efficiency

Assessment

 **Medium green**

Description

Financing of energy efficiency projects and initiatives in asphalt production, including measures to reduce moisture content in ingoing materials and reducing the energy required to reach working temperature, reducing energy consumption by at least 7.5% per produced ton. The figure is based on estimated average reclaimed asphalt usage in NCC's own production, moisture reduction in STOCKPILES by George H. Simmons, Jr. Technical Paper T-129, and the resulting energy savings.

Analytical considerations

- Energy efficiency measures are necessary to transition to a low-carbon economy, but their climate benefits and risks vary. Exposure to climate risks arise, for example, when these activities take place in high-emitting sectors such as construction result in the lock in of high-energy processes or fossil fuel use.
- We assess the project category as Medium green. The shade reflects the reduction in emissions from energy efficiency measures in asphalt production and the actions already taken by NCC to replace fossil fuels in asphalt production, while considering that the main component material in asphalt, bitumen, is a petroleum product, and that end use of asphalt for road construction is also associated with high transportation emissions.
- The framework outlines that these measures would reduce energy consumption by at least 7.5% per produced ton. This threshold was established based on scientific studies, which showcase that reducing moisture in reclaimed asphalt can lead to a 25% reduction in energy consumption.
- Asphalt manufacturing involves heating aggregates and bitumen to high temperatures, resulting in significant energy consumption. Asphalt's manufacturing processes account for about 38% of its life cycle emissions, reflecting the importance of making the process more energy efficient.

Environmentally sustainable management of living natural resources and land use

Assessment

 **Dark to Medium green**

Description

Preservation and restoration of biodiversity and sustainable ecosystems:

- Financing of investments in operations such as quarries and gravel pits to promote biodiversity, for example in accordance with NCC's Kiello methodology, a concept built upon the mitigation hierarchy to promote biodiversity and sustainable ecosystems ensuring clean water, responsible resource use, and thriving species. These investments include creating suitable conditions for endangered birds, insects, amphibians, and plants that depend on infertile soil or specialized habitats for survival and reproduction.

Preserving natural sand and ecosystems:

- Financing of investments in facilities for machine sand production to replace natural sand as a building material. Natural sand plays a crucial role in preserving water quality in society, and transitioning to machine sand supports environmental conservation while ensuring responsible resource management.

Analytical considerations

- Healthy ecosystems and biodiversity are an important part of a low carbon, climate resilient future, providing natural resources, water and soil management, and pollination services. Protecting or restoring biodiversity also often creates climate co-benefits, such as carbon sequestration or adaptation solutions. Well-designed projects can reduce threats such as unsustainable resource extraction, climate change risks, land use change, pollution, and invasive species.

- Proceeds under this category will be used new finance new and existing capital expenditure, assets, research and development, and select operating expenditure that protects the biological value of ecosystems. Because of the range of environmental risks of financed projects, we assign an overall shade of Medium to Dark green.
- This project category will have a focus on biodiversity restoration, mainly the financing of investments in quarries and gravel pits. We view positively that these activities will be conducted in accordance with NCC's Kielo methodology, which lays out how these biodiversity initiatives are conducted. NCC's Kielo process involves comprehensive area mapping, including an assessment of the local habitat and species characteristics. Sites then need to outline the specific actions and overall objectives to achieve in the area. Subsequently, an action plan is implemented, with regular progress evaluations--at least every three years for gravel pits and every five years for quarries. Once restored, the area will be dedicated to conservation going forward. We assign a shade of Dark green to the projects related to the preservation and restoration of biodiversity and sustainable ecosystems, to reflect the clear and specific criteria to restore biodiversity.
- Proceeds under this project category can also be spent on facilities for machine sand production to replace natural sand as a building material. Because natural sand mining poses environmental risks--including erosion, wetland damage, and impacts on water quality and fisheries--machine sand often represents a preferable option from an environmental and biodiversity standpoint. However, sand production is an energy intensive activity and has its own biodiversity risks, particularly during the development and operation of quarries and gravel pits. We view positively that NCC's sand production machinery will run on electricity, somewhat reducing the climate impact of this activity. Considering these factors, we assign a shade of Medium green to these projects.

Circular economy adapted products, production technologies, and processes

Assessment

 Dark green

Description

Increasing the use of reclaimed asphalt in asphalt production:

- Financing of investments in equipment for the recycling of reclaimed asphalt in accordance with the waste hierarchy. The CO₂ reduction per invested SEK1 should be at least 0.75 in accordance with Naturvårdsverkets report 7133 (Klimatklivet) for cost effective emission reductions.

Recycling of reclaimed asphalt, concrete, bricks, and excavated masses:

- Financing of investments in machinery and equipment for recycling reclaimed asphalt, concrete, bricks, and excavated masses in accordance with the waste hierarchy. The given investment enables production of secondary products able to substitute virgin products.

Analytical considerations

- Circular economy services are a key part of a low-carbon future because they can contribute to reduced resource use and waste. Waste prevention and reuse solutions are the preferred solutions under the waste management hierarchy because they have the least negative environmental impact among waste management options, followed by recycling, energy recovery, and disposal. Recycling, if done properly, increases the useful life of materials, thereby reducing carbon and other air pollutants' emissions, energy, and natural-resource use.
- We assess the project category as Dark green to reflect the environmental benefits from using reclaimed asphalt in asphalt production. Reclaimed asphalt in asphalt production can replace new materials including petroleum products, reduce the cradle to gate climate impact (from the extraction of raw materials to the factory gate) of the final asphalt product, and prevent the generation of waste. Furthermore, the recycling does not create any significant emissions and reduces the dependence on new bitumen. As of 2024, the proportion of reclaimed asphalt in production was about 30%, compared to 26% in 2022, and the issuer aims to increase reclaimed asphalt use by 1% per year.
- Asphalt recycling equipment that relies on light fuel oil is not eligible under the framework as part of the fossil fuel exclusion. Some equipment relies on wood pellets or tall oil pitch, a biooil. Sweden requires sustainability declarations (hallbarhetsbesked) for these bioenergy sources that demonstrate compliance with the EU Renewable Energy Directive and

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other applicable regulations, mitigating the risk of direct and indirect land use change emissions from biofuel feedstock supply chains.

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

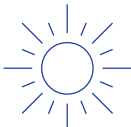
Note: For us to consider use of proceeds aligned with ICMA Principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.

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 ICMA SDG mapping and outline the intended linkages within our SPO analysis. Our assessment of SDG mapping does not affect our alignment opinion.

This framework intends to contribute to the following SDGs:

Use of proceeds	SDGs					
Green buildings						
	3. Good health and well-being	7. Affordable and clean energy	11. Sustainable cities and communities*	12. Responsible consumption and production	13. Climate action	15. Life on land
Renewable energy						
	7. Affordable and clean energy*					
Energy efficiency						
	7. Affordable and clean energy*					
Environmentally sustainable management of living natural resources and land use						
	12. Responsible consumption and production*		13. Climate action			

Circular economy adapted
products, production
technologies, and processes



**12. Responsible
consumption and
production**



**13. Climate
action**

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

Related Research

- [Behind the Shades: Real Estate](#), March 31, 2025
- [ESG Materiality Map: Real Estate](#), July 20, 2022
- [ESG Materiality Map: Building Materials](#), May 18, 2022
- [Analytical Approach: Second Party Opinions](#), March 6, 2025
- [FAQ: Applying Our Integrated Analytical Approach For Second Party Opinions](#), March 6, 2025
- [Analytical Approach: Shades Of Green Assessments](#), July 27, 2023

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Second Party Opinion: NCC's Green Finance Framework

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