

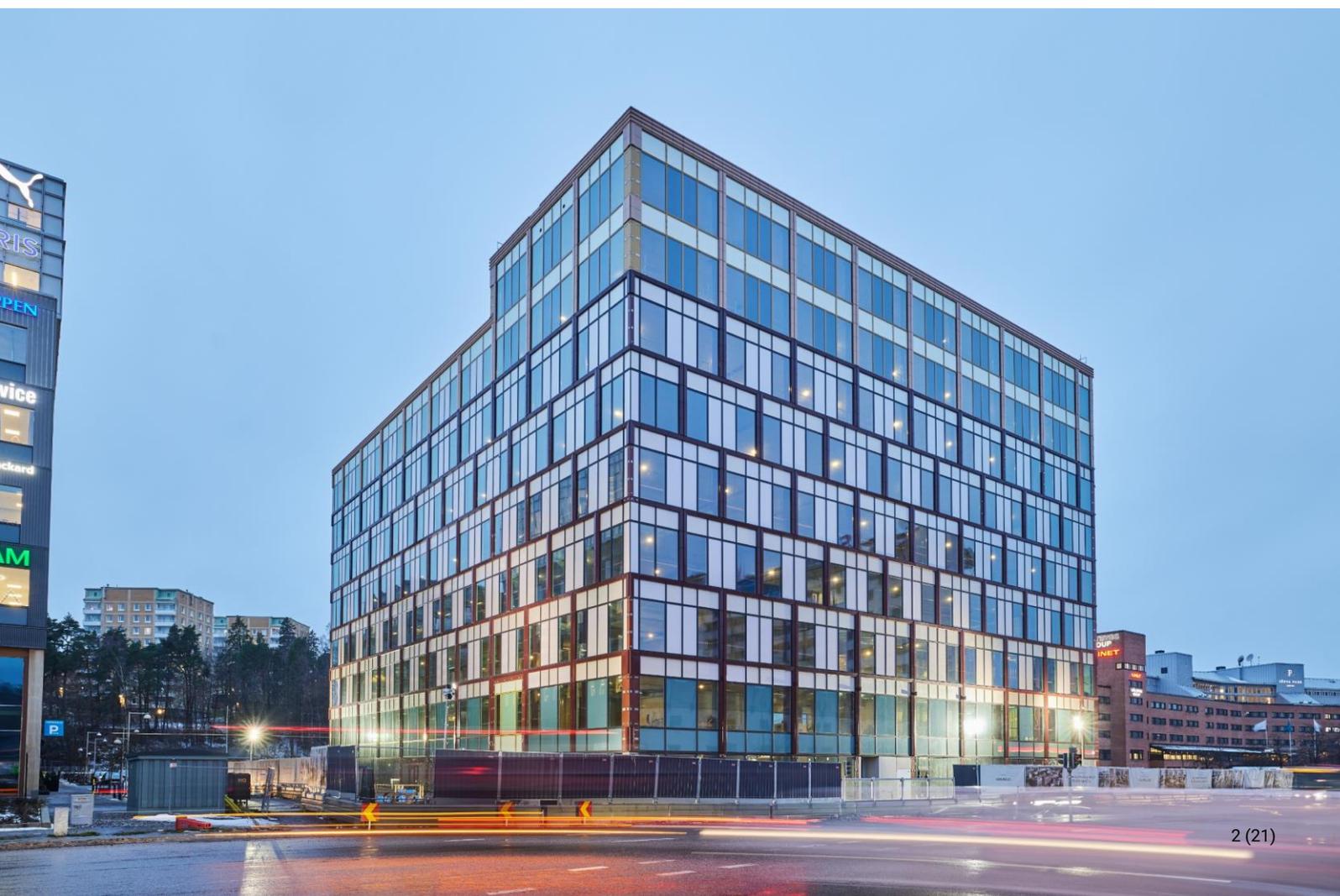
Green Bond Investor report

1 January – 31 December 2022



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Background

NCC is one of the leading construction companies in the Nordics. Based on its expertise in managing complex construction processes, NCC contributes to a positive impact of construction for its customers and society. Operations include commercial property development, building and infrastructure project contracting, and asphalt and stone materials production. In 2022 NCC had a turnover of SEK 54 bn and approximately 12,500 employees.

To fund climate investments and other relevant environmental initiatives that support our sustainability targets, and our customers demand NCC published a Green Bond Framework and issued its first Green Bond in September 2019. The Green Bond Framework was updated and renamed to Green Financing Framework, to open up for more types of financing, in 2022. Working with sustainability is integrated in the businesses and operations. Our priority areas are described in the NCC sustainability framework.

About the Investor Report

The Investor Report comprises brief information about NCC's sustainability work, the Green Financing Framework, and the green bonds, as well as the sustainability work performed for property development and the industrial production at asphalt plants and quarries. It also contains results and outcomes linked to the green bonds.

NCC has a portfolio of commercial properties that comply with the framework. These projects are designed and constructed to at least meet BREEAM Excellent or DGNB Gold. In this report, we present four representative projects, all of which fulfil the criteria of NCC's Green Financing Framework, and describe their climate impact, environmental impact, and smart technical solutions.

Significant investments have been made in fuel conversion from fossil to renewable energy, energy efficiency measures and recycling at our asphalt plants. Investments comprise all historic conversions, including the past year, investments in these types of measures in all the Nordic countries. Energy efficiency measures and recycling started in 2009. Conversion from fossil to renewable fuels started in the asphalt business in Sweden in 2012 but has only recently started in the other Nordic countries. The initiatives taken at the plants include investments to increase

energy efficiency and raise the amount of reclaimed asphalt pavement (RAP) reused in our asphalt products. Since RAP goes into our ordinary asphalt production it reduces the cradle-to-gate climate impact of the asphalt product.

Reported investments in renewable energy in NCC's quarries consist of two parts: (1) electrification of sites owned by NCC and (2) mobile diesel-electric stone crushers owned by NCC for use in any electrified site. Both investments are required to make the transition from diesel-driven to electric crushing. The switch from diesel-driven to electric crushing is also associated with a significant reduction in energy consumption. Data on electrification and investment in diesel-electric crushers and the associated energy efficiency in the crushers includes all historic and present investments in Sweden. Conversion started in 2019 and is currently ongoing.

Reported investments contributing to preserve biodiversity and sustainable ecosystems also consist of two parts; (1) initiatives to protect and secure biodiversity in our active quarries and gravel pits in accordance with the NCC Kielo method, and (2) investments in facilities to produce NCC Machine Sand, a product which enables our customers to reduce their consumption of natural sand.

This report covers the period January 1, 2022, to December 31, 2022.

NCC sustainability framework

NCC's sustainability framework provides the foundation for the Group's sustainability work. In 2021, NCC updated its sustainability framework to better illustrate which areas and topics are most important for NCC to focus on, as well as the topics that have the greatest impact. The framework is divided into eight impact areas: Data and expertise, Natural resources and biodiversity, Materials and circularity, Climate and energy, Health and safety, People and team, Ethics and compliance and Economic performance.

For each area within the framework, NCC has long-term commitments that serve as guidance within the area of sustainability.

The foundation for NCC's sustainability work consists of the Group's shared values and behaviors, Star behaviors. NCC works to make a positive contribution to and reduce the negative impact on achieving the UN Sustainable Development Goals. This is also clarified through the Group's sustainability framework.



Green Financing Framework

The NCC Group will exclusively apply the net proceeds from the issuance of Green Bonds to finance a portfolio of “Eligible Projects”, promoting the transition to a low-carbon and climate resilient society.

For more information about NCC’s Green Financing Framework, please see: Green Financing framework.

Second opinion

NCC Green Financing Framework has been reviewed by CICERO, an independent climate and environmental research institute, and has been awarded the highest grade EXCELLENT regarding governance procedures and MEDIUM GREEN as the overall rating.

Green Bond Committee

NCC has established a Green Finance Committee to ensure that NCC has utilized the net proceeds from the issuance of Green Bonds to finance a portfolio of eligible projects, in accordance with NCCs Green Financing Framework.. In this report, NCC gives examples of projects that accurately represent the larger portfolio and for asphalt plants, the total climate and environmental impact made during the investments.

The projects have invested in aspects with a long-term effect in terms of lowering climate impact and improving environmental values in our products and offerings. More categories are listed in our framework and can be actualized. For more details, please refer to our Green Financing Framework.

SHADES OF GREEN
CICERO Green finds the NCC green bond framework to be in line with the Green Bond Principles. Based on our review, we rate the NCC’s green bond framework **CICERO Medium Green**.

Included in the overall shading is an assessment of the governance structure of the green bond framework. CICERO Shades of Green finds the governance procedures in NCC’s framework to be **Excellent**.



Property development

To take a holistic approach to sustainable property development, NCC aims to certify all office projects at least at the BREEAM level excellent or the DGNB level Gold. This ensures that the focus is kept on the relevant sustainability issues and that improvements are made continuously in multiple areas. Certification includes an independent third-party review, which ensures that measures are implemented, and that a robust follow-up is carried out.

Real estate accounts for nearly 40 percent of energy use in Sweden. It is therefore important to minimize energy use in properties being developed. All buildings are required to use at least 20 percent less energy compared with local codes. We are also working to provide buildings with renewable energy to a large extent and to focus on using energy with a low climate impact, this is for example solar energy and district heating from biofuels.

Reducing climate impact from used materials and the construction process is a major focus area. We focus on resource-efficient construction and materials with low climate impact. The ambition is to reduce climate impact from materials with 50 percent by 2030. Large amounts of waste are generated in construction projects and a large part of that waste is currently sent to incineration or landfill. The EU waste hierarchy controls our way of working and the goal is to minimize waste and sort the waste generated into reusable clean fractions.

Impact from the four example projects

200 ton expected annual
CO₂e reduction and **1,882**
MWh expected annual energy
saving



Asphalt plants and quarries

Asphalt plants

Production of asphalt mixtures consumes large amounts of basic material and energy. NCC produces aggregates in various sizes, from blasted rock to finely crushed materials below a nominal size of a millimetre. The products are mainly used in construction and civil engineering projects, including as aggregates in asphalt mixtures.

The sustainability work conducted in this area essentially concerns NCC's production of asphalt (rather than paving) which comprises the following, essentially interlinked aspects:

- Energy conversions: Replacing fossil fuel oils and gases at the plants with wood pellets or bio-oil
- Increasing recycling of input materials: aggregates, reclaimed asphalt pavement (RAP)
- Energy efficiency: reducing production temperature by covering, insulating & ventilating to reduce moisture in components and production units etc.

Although not immediately affecting energy type or consumption, increasing aggregate and asphalt recycling contributes to achieving a circular economy and indirectly affects the carbon footprint within Scope 3.

The main components in asphalt mixtures, besides mineral rock aggregates, are bitumen and smaller amounts of adhesives and cellulose fibres. In addition, reclaimed asphalt pavement (RAP) is usually added to asphalt mixtures, thereby replacing virgin aggregate and virgin bitumen. Content declarations of individual products provide content ranges depending on recipe and type. Asphalt production requires energy as the material is heated to a temperature of approximately 120-180 °C (hot-mix asphalt). The fuel used for asphalt production has historically constituted fossil energy, typically fuel oil or gas, while during the last decade NCC has emphasized increased use of renewable energy such as wood pellets which are milled to powder, or the bio-oil tall-oil pitch, TOP. The direct energy usage in asphalt production derives from heating the asphalt mixture and removing moisture from aggregates and RAP. Therefore, investments to reduce production temperature and to protect stored raw materials from precipitation are also covered by the green investments and associated bonds.

The timing of a given investment at each asphalt plant depends on current plant status, need of maintenance/replacement and site-specific conditions such as local fuel availability, transport distances and plant configuration. For example, efficient use of biofuels often needs additional preparations and adjustments, such as milling of pellets or preheating of bio-oils, which normally limits annual consumption below 100 percent. Consequently, the present target for individual converted plants is typically to reach 90 percent non-fossil fuels, a number that has been increased over the years by successive accumulation of experience.

Reduction of CO₂e in NCC's asphalt plants¹

233,192 ton total CO₂e reduction 2015 -2022

Quarries and gravel pits

Production of aggregates, gravel and sand in quarries and pits consumes large amounts of basic material and energy. NCC produces aggregates in various sizes, from blasted rock to finely crushed stones with different sizes. The products are mainly used in construction and civil engineering projects, including bulk material in asphalt mixtures and concrete.

The mobile aggregate crushing production units in Sweden are working with:

- Energy efficiency: Replacing fossil diesel with electricity
- Energy conversion: Replacing fossil diesel with electricity
- Energy for the mobile crushing production process has historically constituted of fossil energy, typically 100 percent fossil diesel. During recent years, NCC has advocated increased use of renewable energy in the form of electricity from renewable sources (hydropower)

The timing of a given investment depends on current crusher or screen status, need of maintenance/replacement and site-specific conditions, such as local electricity and effect (power output) availability, and crusher configuration.

¹ The calculation method changed since the investor report 2021- The number here includes the accumulated total reduction for the production all years since 2015, compared to a scenario of using only fossil fuels. The number in the

investor report 2021 only showed the total reduction for the production year 2021 compared to 2015, and was not compared to a scenario of using only fossil fuels

Reduction of CO₂e in NCC's mobile crushers²

6,864 ton total CO₂e
reduction 2019 -2022

There are two categories of investments for electrification of mobile crushing:

- Electrification of sites (transformers and cables)
- Mobile crushers and screens that are diesel-electric instead of diesel-hydraulic

There are two categories of investments also for contributing to preserving biodiversity and sustainable ecosystems:

- Initiatives to protect and secure biodiversity in our active quarries and gravel pits in for example in accordance with the NCC Kielo method
- Investments in facilities to produce NCC Machine Sand, a product which enables our customers to reduce their consumption of natural sand

Concerning the biodiversity work within NCC we believe we can make a difference. In selected sites we work aligned with our developed method, NCC Kielo. NCC Kielo helps us to implement solutions to maintain and promote biodiversity in our active quarries and pits, during operation and as a part of the rehabilitation. To become a NCC Kielo site there are several criteria that must be met, including an investigation of habitat types to note characteristic species in the area, set targets, and describe planned measures to create desirable conditions for biodiversity at the specific site.

- NCC invests in facilities to produce NCC Machine Sand at some of our quarries. NCC Machine Sand is based on rocks that are crushed, sieved, and refined to meet customers' requirements in various applications. NCC Machine Sand can replace natural sand or gravel in concrete production, asphalt production, sports and recreational infrastructure and civil engineering projects. Reducing the exploitation of natural sand and gravel protects water resources, keeping biodiversity and delivering ecosystem services, since natural sand is the second most exploited natural resource in the world after water and plays a strategic role in delivering ecosystem services and maintaining biodiversity according to UNEP³.

² The calculation method changed since the investor report 2021- The number here includes the accumulated total reduction for the production all years since 2015, compared to a scenario of using only fossil fuels. The number in the investor report 2021 only showed the total reduction for the production year 2021 compared to 2015, and was not compared to a scenario of using only fossil fuels

³ Sand and Sustainability: 10 Strategic Recommendations to Avert a Crisis (<https://www.unep.org/resources/report/sand-and-sustainability-10-strategic-recommendations-avert-crisis>)

Issuance of Green Bonds

NCC reports in Swedish kronor (SEK) and the reporting period ended on December 31, 2022. NCC has outstanding Green Bonds amounting to SEK 1,750 M of which SEK 750 M matures on September 30, 2024, and SEK 1,000 M matures on September 08, 2025.

NCC also has SEK 100 M in a private placement that matures on October 24, 2023, and 500 M in a private placement that matures June 30 2027.

The proceeds from the bonds have all been used to re-finance investments that are in alignment with the NCC Green Financing Framework. Activated eligible green assets amounted to SEK 2 350 M on December 31, 2022.

Summary of key results

Dispersed and allocated bonds

SEK M	Dispersed green bonds	Allocated volume	Carrying amount ⁴	Available volume
Green buildings	2 274	2 274	7,300 ⁵	5 026
			Total investment	Estimated available volumes ⁶
Asphalt plants	80	80	133.9	53.9
Quarries			97.5	97.5
Total	2,354	2,354		

Information about the calculation approach can be found in appendix.

NCC Treasury had as per December 31, 2022, Green Bonds outstanding amounting to 2.35 billion SEK (including 600 million SEK in private placement). The internal Green lending were at the same time amounting to 2,354 billion SEK. The reason behind the discrepancy was fluctuation in currencies leading to different amounts in the bookkeeping.

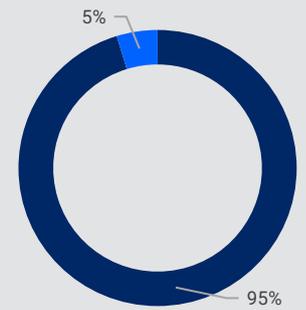
⁴ Portfolio December 2022

⁵ Differences against the NCC Group's book value on ongoing property projects may occur. These differences mainly consist of eliminations of internal profits and Joint venture projects.

⁶ Estimated residual value Dec 2022 with Sep 2022 as base

Distribution of green assets

Distribution of green assets



■ Green buildings ■ Asphalt plants and Quarries

Environmental impact

Green buildings ⁷	Expected reduction of emissions (ton CO ₂ e)	Expected annual energy savings (MWh)	Recycled waste (%)
<i>Annual savings</i>	200	1882	70-93
Asphalt plants ⁸	Fossil Scope 1 emissions saving in 2022 compared with 2015 (kg fossil CO ₂ e/ton asphalt and %)	Fossil energy saving in 2022 compared with 2015 (fossil kWh/ton asphalt and %)	Increase in renewable share of Scope 1 energy mix from 2015 to 2022 (%)
<i>Saving 2015-2022</i>	4.4 (35%)	16 (29%)	From 22% to 46%
Mobile crushers in quarries	Fossil Scope 1 & 2 emission saving in 2022 compared to 2019 (kg fossil CO ₂ e/ton aggregates and %)	Fossil energy saving in 2022 compared with 2019 (fossil MWh/ton aggregates and %)	Increase in renewable share of energy mix from 2019 to 2022 (%)
<i>Saving 2019-2022</i>	0.22 (27%)	0.87 (27%)	From 1 to 28%

During 2022 NCC continued to show an improvement in carbon reduction and introduced further biofuels into the fuel-mix. Biofuels in the fuel mix has more than doubled and our carbon intensity has been reduced by 52 percent since 2015. For more information on NCC's climate work, see the Annual and Sustainability report.

⁷ Calculated reduction as described in text and impact summarization of the four project examples. These are annual savings during building lifetime. Savings are for the four projects only, not entire project portfolio.

⁸ NCC Industry Asphalt in Finland was divested on Dec 31, 2021, and the environmental impact from asphalt plants in Finland for all the years is therefore not included in the investor report for 2022.

Information on NCC's Green Bond investments

Property development

Portfolio of ongoing green property development projects per Dec 31, 2022

Project	City	Segment	Lettable area, sqm	Construction start	Sold, expected time for profit recognition	Environmental certification
Kontorværket 1	Copenhagen	Office	15,900	Q4 2020	Q1 2023	DGNB - Gold
Kulma21	Helsinki	Office	7,700	Q2 2021		BREEAM - Excellent
We Land	Helsinki	Office	21,300	Q3 2020		BREEAM - Outstanding
Bromma Blocks	Stockholm	Office	51,900	Q4 2018		BREEAM – Excellent/Outstanding
Brick Studios	Gothenburg	Office	16,200	Q4 2019		BREEAM - Excellent
Våghuset	Gothenburg	Office	11,100	Q4 2019		BREEAM - Excellent
MIMO	Gothenburg	Office	31,800	Q2 2021	Q4 2024	BREEAM - Excellent
Nova	Stockholm	Office	9,800	Q3 2021		BREEAM - Excellent
Habitat 7	Gothenburg	Office	8,100	Q2 2022		BREEAM - Excellent
Flow	Malmö	Office	10,200	Q3 2022		BREEAM - Excellent
Albatross	Gothenburg	Logistics	34,000	Q2 2022	Q1 2024	BREEAM - Excellent

Environmental impact

Four projects have been selected to represent the portfolio and they are described in detail below. These are MiMO and Nova projects in Sweden, Kulma 21 and We Land project in Finland. Kulma 21 is a renovation project and the other three are new construction projects.

The energy used in the two Swedish projects are to great extent renewable with low CO₂-emissions. The avoided CO₂-emissions due to reduced energy use are thereby very low compared to Finnish projects since in Finland used energy have larger CO₂-emissions. CO₂ savings are about 27 percent of total annual climate impact.

Actual or expected environmental impact from the four example projects.

Project	Energy performance ^A (kWh/m ² , year)	Energy-savings (%)	CO ₂ e-savings (CO ₂ e/m ² , year)		Renewable energy ^B (%)	Waste ^C (%)
			Impact	Avoided		
MiMO	49	36	4	2	91	83
Nova	54	37	1	0	80	93
Kulma 21	112	7	43	3	39	76
We Land	77	23	22	5	52	70

^AAccording to local building code

^BFrom energy usage

^CAs described in NCC's annual report

^DAvoided CO₂ impact from reduced energy use, compared to local code

MiMO

Project facts

City: Gothenburg
 Type: Office building
 Scheme: BREEAM-SE 2017 New Construction
 Level: Excellent
 Status: Design Stage ongoing

Sustainability highlights

- Energy**
- Energy-smart installations with presence controlled low air flow and high heat recovery in ventilation. Presence and daylight control of lighting. Water saving faucets. 100 percent renewable district heating and cooling.
- Other**
- Må bra – office that focus on building users wellbeing
 - Sustainable rental agreement that for example state that tenants should use renewable energy and use sustainable furniture's etc.
 - Green roofs and large terrace for building users
 - Bicycle rooms and changing rooms
 - Proximity to public transport and services
 - Sustainable construction site with for example 100 percent renewable district heating, improved waste handling and presence controlled lighting
 - Reduced CO₂-impact from materials by for example climate improved concrete and ventilation ducts without steel



Kulma 21

Project facts

City: Helsinki
 Type: Office building
 Scheme: BREEAM International Non-Domestic Refurbishment 2015, Excellent, Design Stage
 Level: Excellent
 Status: Post construction ongoing

Sustainability highlights

- Energy**
- Use of renewable energy sources, 36 kWp solar panel system onsite
 - Presence and daylight control of lighting
- Modifiable**
- Project enhances the site ecology with plants, bird nests and insect hotels. Site landscape and habitat management plan will be produced for the building owner which covers at least first five years after project completion. Landscape and habitat management plan will cover management of protected features on site and management of any new, existing, or enhanced habitats.
- Other**
- Easy and safe access to the public transport: 150 meters to bus stops, 250 meters to tram stop and 300 meters to metro station
 - Helsinki's main cycling route passes right next to the building. 134 bicycle parking spots, electric bicycle charging points available for 30 bikes. High quality cycling related facilities, including a bike service station, e-bike charging stations and changing facilities
- Health and wellbeing is considered in the design:
- Glare controls
 - Enough daylight to the relevant spaces
 - 95 percent of the workstations have a view outside
 - Classification M1 or relevant required for products
 - Thermal comfort simulation of the building has been carried out, considered the climate change effect and fulfilling the required PMV and PPD values



Nova

Project facts

City:	Stockholm
Type:	Office building
Scheme:	BREEAM-SE 2017 New Construction
Level:	Excellent
Status:	Post construction ongoing

Sustainability highlights

Technical	<ul style="list-style-type: none"> - Solar panel system 117 kWp - Heat recovery from electric station
Other	<ul style="list-style-type: none"> - Green roofs and large terrace for building users - Each floor layout is modifiable from single to multi-tenant use and floor levels can be connected with open staircases, underfloor system for installations - Concrete with reduced climate impact - Bicycle rooms and changing rooms - Proximity to public transport and services



We Land

Project facts

City:	Helsinki
Type:	Office building
Scheme:	BREEAM-International New Construction
Level:	Outstanding
Status:	Design stage ongoing

Sustainability highlights

Energy	<ul style="list-style-type: none"> - Use of renewable energy sources, 26 kWp solar panel system onsite - Presence and daylight control of lighting - District heating and cooling, highest energy efficiency level A2018 - During construction period, consumption of electricity and CO₂ emissions from transportation and fuels are monitored. The building site uses renewable energy
Modifiable	<ul style="list-style-type: none"> - Adaptability to climate change - Each floor layout is modifiable from single to multi-tenant use and floor levels can be connected with open staircases, underfloor system for installations
Other	<ul style="list-style-type: none"> - Reservation of electric car charging points available for 100 percent of parking places - 450 indoor bicycle parking places, electric bicycle charging points available for 30 percent of spaces - During office hours, 15 percent of parking facilities will be used for public parking and after office hours, 100 percent for public parking - Easy access to public transport, 30 meters to bus stop, 80 meters to tram stop, 400 meters to metro station - Western Helsinki's main bicycle route passes by the building and its cycling related facilities are of high quality, including a bicycle washing facility - Green roofs with bird houses, accessible terrace - Facade cobber material is made of 100 percent recycled cobber and can be fully recycled after use - Procurement process takes account reused material and building products



Asphalt plants

Between 2012 and 2022, all the 29 asphalt plants in Sweden and 2 out of 16 plants in Norway have been converted from fossil fuels to biofuels. Instead of traditional fossil light fuel oil (LFO), renewable wood pellets/powder or bio-oil (tall oil pitch, TOP) is now used.

Other measures to reduce CO₂e emissions include increasing the share of recycled input materials; aggregates and reclaimed asphalt pavement (RAP), and increasing energy efficiency; reducing production temperature by covering, insulating & ventilating to reduce moisture in components and production units etc.

The distribution of investments and residual values as of December 2022 and the total share to reduced CO₂e emissions since 2012 are shown below.

Distribution of investments and residual value as of December 2022

	Energy conversion %,	Energy efficiency (%)	Recycling (%)	Summarized value
Distribution of investments ⁹	57.0	26.9	16.1	SEK 299.2 M
Distribution of residual value ¹⁰	40.3	37.7	22.0	SEK 133.9 M

Location of asphalt plants



⁹ Investment for the decade

¹⁰ Estimated as of Dec. 2022

Investments by year and investment category.

Location	Country	Year	Investment category		
			Energy efficiency	Energy conversion	Recycling
Gävle	Sweden	2009–2019	X	X	X
Säter	Sweden	2009–2021	X		X
Hudiksvall	Sweden	2010–2022	X	X	X
Gothenburg	Sweden	2010–2020	X	X	X
Ålesund	Norway	2011–2015	X		
Bollnäs	Sweden	2011–2020	X	X	X
Rugsland	Norway	2011–2022	X	X	X
Trige	Denmark	2012–2018	X		X
Brejning	Denmark	2012–2020	X		
Maribo	Denmark	2012–2021	X		X
Eskilstuna	Sweden	2013–2019	X	X	X
Tau	Norway	2013–2019	X		
Eikefjord	Norway	2014	X		
Gammelrand	Denmark	2014	X		
Grinda	Norway	2014	X		
Rådal	Norway	2014			X
Lierskogen	Norway	2014–2015	X		X
Uddevalla	Sweden	2014–2016	X	X	X
Västerås	Sweden	2014–2016	X	X	X
Etne	Norway	2014–2017	X		
Halmstad	Sweden	2014–2018	X	X	X
Jönköping	Sweden	2014–2018	X	X	X
Karlstad	Sweden	2014–2019	X	X	X
Norrköping	Sweden	2014–2019		X	
Borås	Sweden	2014–2020	X	X	X
Stockholm, north	Sweden	2014–2020	X	X	X
Umeå	Sweden	2014–2020	X	X	
Kolding	Denmark	2015	X		
Piteå	Sweden	2015–2022	X	X	X
Odense	Denmark	2015–2022	X		X
Kiruna	Sweden	2015–2019	X	X	X
Lidalen	Norway	2015–2021	X		X
Klodeborg	Norway	2016	X		
Mobil 4	Norway	2016–2018	X		X
Hjallerup	Denmark	2016–2018	X		X
Astec DB	Sweden	2016–2019		X	X
Bondkall	Norway	2016–2019	X		X
Lund	Sweden	2016–2019	X	X	
Kalmar	Sweden	2016–2022	X	X	X
Mora	Sweden	2016–2020	X	X	X
Östersund	Sweden	2016–2021	X	X	X
Lia	Norway	2016–2022	X	X	X
Stockholm, south	Sweden	2017–2020	X	X	X
Klippan	Sweden	2018–2019	X	X	X
Örebro	Sweden	2018–2019	X	X	
Sundsvall	Sweden	2018–2019	X	X	
Skellefteå	Sweden	2018–2022	X	X	X
Mobil 5	Norway	2019			X
Steinskogen	Norway	2019–2021		X	X
Astec Six-pack	Sweden	2019–2022		X	X
Ejby	Denmark	2021	X		X
Astec XHR	Sweden	2021		X	X

Environmental impact asphalt plants

Emissions of greenhouse gases (expressed by Global Warming Potential, GWP) for asphalt production mainly depend on the quantity and type of fuel used to heat the product and the quantities of resources, such as aggregates and virgin bitumen, used. The diagram (A) illustrates the combined effect of the fuel type used and the amount of recycling for a typical asphalt type. As indicated, converting from fossil LFO to biofuel combined with increased amounts of recycling (RAP) yields a substantial decrease in GWP for the asphalt. The effect of each percent of increased recycling is approximately a reduction of 0.13 kg CO₂e/ton asphalt.

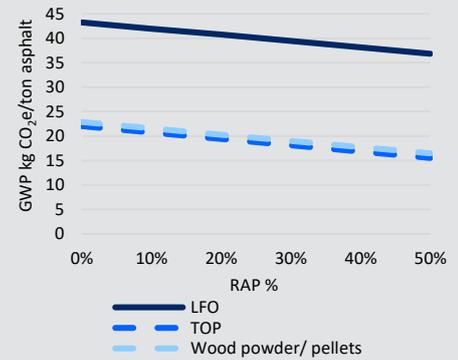
The reduction of scope 1 fossil CO₂e emissions is presented in diagram B showing the effect of the investments made in energy conversion and energy efficiency measures during 2015-2022 in all of NCC Industry's asphalt plants. There was initially a slight increase from 2015 until 2017, because the use of fish oil as a biofuel in Norway stopped after 2015. The Scope 1 fossil CO₂e emission per ton of produced asphalt in all plants of NCC Industry was reduced by 35 percent, from 12.8 to 8.3 kg CO₂e/ton, from 2015 until 2022. This is equivalent to a reduction of ~21,150 tons of CO₂e for the total asphalt production in 2022.

When converting to biofuels, fossil CO₂e emissions per energy unit consumed in production will drop. The Scope 1 fossil CO₂e emissions per MWh was reduced by ~36 percent in all NCC Industry's asphalt plants, from 179 to 114 kg CO₂e/MWh, from 2015 until 2022 (diagram D).

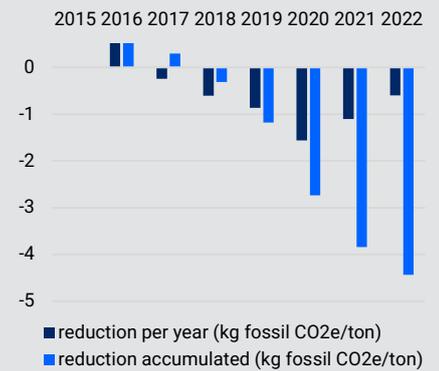
Using reclaimed asphalt pavement also gives a pronounced effect on the cradle-to-gate emissions of asphalt. Over the years NCC Industry has successively increased the amount of recycling and in 2022 the amount of RAP in asphalt mixtures averaged 26 percent in all the asphalt plants (diagram D).

By combining a higher share of biofuels, energy efficiency measures (lower humidity in the raw material and lower temperature in production) and a larger proportion of RAP, the climate impact of asphalt mixtures from NCC will successively be reduced.

A. Effect of fuel type and amount of recycling on cradle-to-gate GWP for asphalt



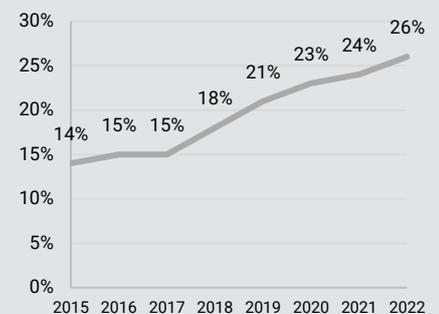
B. Reduction of Scope 1 fossil CO₂e emissions per ton produced asphalt at all NCC Industry's asphalt plants during 2015-2022, kg CO₂e/ton



C. Scope 1 fossil CO₂e emission per MWh consumed in all NCC Industry's asphalt plants during 2015-2022, kg CO₂e/MWh



D. Proportion of RAP in asphalt mixtures 2015-2022 (average value)



NCC's quarries

Between 2019 and 2022, six sites were electrified to enable electrically powered mobile crushing. Investments were also made in five mobile crushers and eight mobile screens, which can be used in any electrified site.

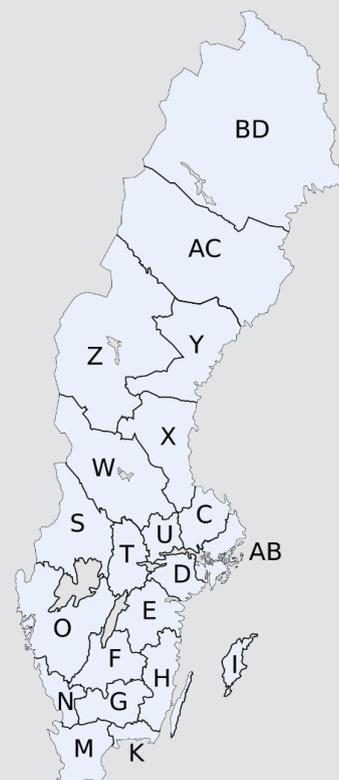
Investments and residual values as of December 2022 are shown here and the total investments by site and crusher/screen (incl. geographical location), year and investment category are shown below.

	Total
Investments ¹¹	SEK 66.2 M
Residual value	SEK 61.3 M

Investments and residual values for electrification of mobile crushing as of December 2022

Location (county)	Year	Category	
		Energy efficiency	Energy conversion
<i>Sites:</i>			
Arlanda (AB)	2019	x	x
Vetlanda (F)	2020	x	x
Rydbo (C)	2021	x	x
Skärlunda (E)	2021	x	x
Gökhem (O)	2022	x	x
Stjärnarp (N)	2022	x	x
<i>Crushers and screens:</i>			
Screen JS1818/3W (AB, C)	2021	x	x
Screen JS1836/3W (AB, C)	2021	x	x
Crusher GP550 (AB, C)	2021	x	x
Screen JS1632/3W (AB, C)	2021	x	x
Screen JS1214/3 (AB, C)	2021	x	x
Crusher L5500 (F)	2021	x	x
Crusher GP550 (O)	2022	x	x
Screen JS1214/3 (O)	2022	x	x
Screen JS1632/3W (O)	2022	x	x
Crusher CH660 (D, T, U)	2022	x	x
Screen JF1632/3 (D, T, U)	2022	x	x
Screen JF1214/3 (D, T, U)	2022	x	x
Crusher C120 (AB, C)	2022	x	x

Geographical location (county) and year when site was electrified or invested in diesel-electric mobile crusher or screen.



¹¹ Investment for the decade

Investments in facilities for production of NCC Machine Sand have been made in NCCs quarries since 2018. The total investments, residual values and total investments by site (incl. geographical location), year and investment category are shown below.

Investments and residual values for facilities for production of NCC Machine Sand as of December 2022

	Total
Investments ¹²	SEK 63.8 M
Residual value	SEK 36.1 M

Geographical location and year when site invested in facility for production of NCC Machine Sand

Location (county)	Year	Category
		Maintaining biodiversity and delivering ecosystem services

Sites:

Arna, Bergen (Norway)	2018, 2022	x
Hedrum, Larvik (Norway)	2019–2020	x
Skien (Norway)	2018, 2020	x

Environmental impact quarries

Emissions of greenhouse gases from aggregate production largely depend on the energy type consumed during production. Converting from 100 percent fossil diesel to green electricity results in a substantial reduction in fossil CO₂e emissions (the average cradle-to-gate emissions from mobile crushed material using 100 percent fossil diesel is 3-4 kg fossil CO₂e/ton aggregates) (diagram E).

This table presents the effect of the investments made on electrification during 2019-2022. It shows the CO₂ reduction and the reduction in energy consumption obtained from using green electricity with guarantees of origin instead of 100 percent fossil diesel.

Total reduction in CO₂e emissions and energy consumption in mobile crushing due to electrification between 2019 and 2022.

CO ₂ emissions reduction (ton CO ₂ e)	Energy consumption reduction (MWh)
6,864	16,034

The total CO₂e emissions were reduced by 16 percent for the production from 2019 until 2022, which is equivalent to 6,864 tons CO₂e. The total energy consumption was reduced by 10 percent from 2019 to 2022, which is equivalent to 16,034 MWh.

E. Average effect of green electricity share in mobile crushing on cradle-to-gate kg CO₂e emissions per ton aggregates



¹² Investment for the decade



Auditor's Limited Assurance Report of Investor Report Green Bonds

To NCC AB (publ), Corporate identification number 556034-5174

Introduction and Scope

We have been engaged by the Executive Team of NCC AB ("NCC") to perform limited assurance of NCC's Investor Report Green Bonds ("the Report") for 2022. The scope of our work is limited to assurance of pages 9-11 in the Report.

Responsibilities of the Executive Team

The Executive Team is responsible for preparing the Report in accordance with applicable criteria. The criteria is described in *NCC Green Financing Framework* ("the Framework") dated June 2022 (page 13-14, section 4) that is available on NCC's website, that is applicable to the Report, as well as the accounting and calculation principles that the company has developed. This responsibility also includes the internal control which is deemed necessary to establish an impact report that does not contain material misstatement, whether due to fraud or error.

Responsibilities of the Auditor

Our responsibility is to express a limited assurance conclusion on the selected information specified above based on the procedures we have performed and the evidence we have obtained.

We have conducted our limited assurance engagement in accordance with ISAE 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information* issued by IAASB. A limited assurance engagement consists of making inquiries, primarily of persons responsible for the preparation of the selected information in the Report, and applying analytical and other limited assurance procedures. The procedures performed in a limited assurance engagement vary in nature from, and are less in extent than for, a reasonable assurance engagement conducted in accordance with IAASB's Standards on Auditing and other generally accepted auditing standards.

The procedures performed consequently do not enable us to obtain assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance conclusion.

The firm applies ISQM 1 (International Standard on Quality Management) and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. We are independent towards NCC in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

Our procedures are based on the criteria defined by the Executive Team as described above. We consider these criteria suitable for the preparation of the Report.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion below.

Conclusion

Based on the limited assurance procedures we have performed, nothing has come to our attention that causes us to believe that the selected information disclosed in the Report has not been prepared, in all material respects, in accordance with the reporting criteria.

Stockholm, the date of our electronic signatures

PricewaterhouseCoopers AB

Ann-Christine Hägglund

Authorized Public Accountant

Partner in charge

Moa Gomersson

Sustainability Expert member of FAR

Appendix - Calculation approach

NCC follows the Greenhouse Gas Protocol. The Scope 1 emission factors used for fuels are supplied by DEFRA and are, when relevant, country specific (cf. Swedish environmental protection agency). For project-specific emissions from property development projects NCC uses the local supplier's emission factor (district heating and cooling) and the Nordic residual mix for electricity. Regarding emissions from electricity used at asphalt plants and mobile stone crushers (Scope 2), NCC adopts the market-based approach using the country-specific residual mix emission factor for electricity without certificates of Guarantee of Origin, and an emission factor of zero for electricity with certificates of Guarantee of Origin.

Both reduced and avoided CO_{2e} is generated from the investments. Avoided CO_{2e} occurs when the energy usage in our products is lowered, and reduced CO_{2e} when the energy is switched to renewable origin.

Scope 1 and 2 emissions generated from asphalt plants are calculated based on production volume, type and amounts of fuels invoiced. The reduction in Global Warming Potential (GWP) for asphalt production from the use of RAP (Reclaimed Asphalt Pavement) is established based on nominal resource use (aggregates, bitumen, and RAP) and corresponding emission factors from the Life Cycle Assessment (LCA) software GaBi Professional, for the production of a standard asphalt type. Calculations are made according to the requirements specified in EN 15804 and Product Category Rules 2019:14, version 1.2.4 of September 7, 2022.

Scope 1 and 2 emissions generated from mobile stone crushers are calculated based on production quantities and on measured energy consumption per produced ton at sites in the Stockholm area.



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