



2023

Green Bond Impact Report

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Green Bond Impact Report 2023

A long history of committing to the future

Region Stockholm leads the way to a green and sustainable future, with a goal to halve its total climate impact by 2030 and reach climate neutrality by the year 2035 at the latest. Green financing is an important part in realising the vision and accounts for the majority of Region Stockholm's debt portfolio. During 2023, 15,100 tonnes of CO₂ equivalents were avoided through the green bonds issued during the year, and between 2019 and 2023, 57,900 tonnes have been avoided in total.

Region Stockholm's longstanding commitment to reduce impact from its operations, procurement, and investments has led to the successful accomplishment of its latest Environmental Programme in December 2021. This included a reduction of green-house gas emissions by more than 50 per cent since 2011, and by over 70 per cent since 1990. On January 1st 2022 Region Stockholm's Sustainability Policy and Sustainability Strategy entered into force.



Photo: Anna Melander

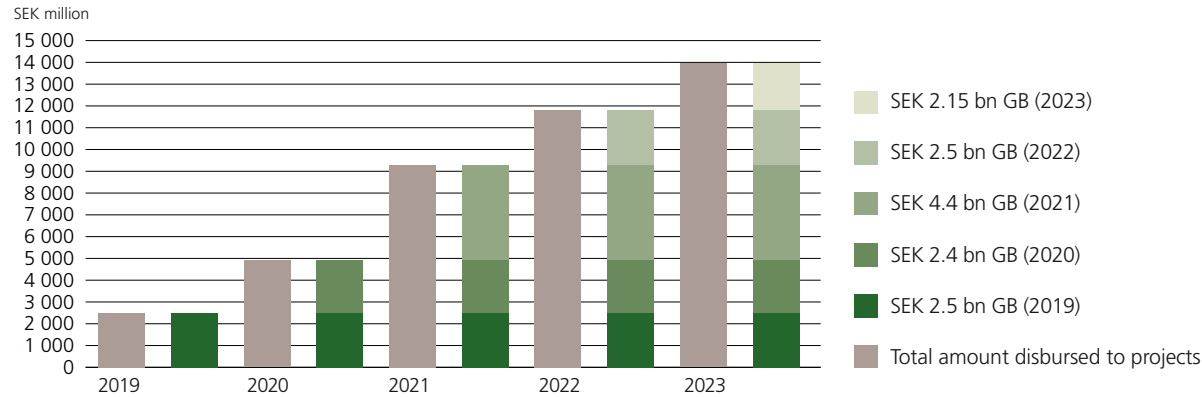
“Region Stockholm will lead the way in climate change through an active and ambitious sustainability agenda, and green bonds are an important tool on our journey. We are now accelerating our green bond efforts so we can achieve a 100 percent green financing portfolio in the long-term. It promotes both economic and ecological sustainability.”

AIDA HADŽIALIĆ
REGIONAL CHAIR FOR FINANCE

Executive Summary

Region Stockholm reports its Green Bonds impact in accordance with the Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting. Any deviations from the Position Paper recommendations will be indicated in our reports.

Green Bond issuance and Green Bond project portfolio



2023 – Green bond CO₂ impact, based on disbursed amounts to green bonds

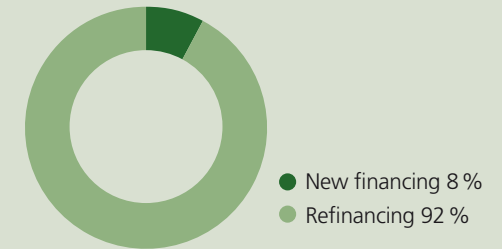
Project category	GHG emissions reduced/avoided (tonnes CO ₂ e)		Disbursed amounts to projects, SEK M	Impact CO ₂ e / SEK M	
	2023	Accumulated ¹ (5 years rolling)		2023	Accumulated ¹ (5 years rolling)
Clean and Sustainable Transportation	13,350	45,950	8,212	1,6	5,6
Green and Energy Efficient Buildings	1,750	11,950	5,738	0,3	2,1
<i>of which Renewable Energy</i>	205	2,455	–	–	–
Total (Disbursed amounts with CO₂ impact SEK M)	15,100	57,900	13,950	1,1	4,2
Annual renewable energy generation, GWh	2,8	GWh			
Annual energy savings, GWh²	5,0	GWh			

¹The accumulated amount covers year 2019 to 2023.

²Compared to national building requirements, rounded per 0,1 GWh



Foto: Ulf Huett Nilsson



Distribution between new financing and refinancing

Region Stockholm's green bonds can finance both new and existing projects. New financing is defined as green projects financed during the reporting year. Refinancing is defined as green projects financed before the reporting year.

Region Stockholm's Sustainability Strategy and Policy

The purpose of Region Stockholm's Sustainability Policy and Sustainability Strategy 2022–2027 is to set the ambitions for the organization's sustainability work and to enable an integrated approach covering social, economic, and environmental sustainability.

This approach will reduce the organization's environmental impact, increase social sustainability, and contribute to reducing risk and costs.

The Sustainability Policy establishes the guiding principles of how Region Stockholm's entities shall work in a sustainable way and lays the foundation for the sustainability strategy.

The Sustainability Strategy aims to provide a platform for joint management and development of Region Stockholm's sustainability work and sets the priorities for 2022–2027 needed to reach the long-term goals.

Actions carried out shall be in accordance with the Sustainability Strategy and contribute to the UN Development goals, the Paris agreement and the Regional development plan for Stockholm, RUFS 2050.

The long-term goals cover all of Region Stockholm's operations. One of the most important goal is that by 2030, Region Stockholm has halved its total climate impact compared to 2019. The long-term goal also includes a larger scope than previous climate targets. Other goals include reduction of harmful substances, creating circular flows within Region Stockholm's operations and creating a resilient organization.

Region Stockholm shall also contribute to improved public health for all and ensure that Region Stockholm is accessible for all with equal treatment.

In December 2023, Region Stockholm's first carbon dioxide budget for its own operations was established. The aim is to clarify what rate of reduction is required to reach the goal of climate neutrality by the year 2035 at the latest. The carbon dioxide budget sets a general eight percent emission reduction rate annually until the year 2035.

Region Stockholm reports, on a voluntary basis, on a selection of Principal Adverse Impact (PAI) indicators according to the Sustainable Finance Disclosure Regulation (SFDR). The PAI reporting can be found on Region Stockholm's [Investor Relations website](#).

“ In December 2023, Region Stockholm's first carbon dioxide budget for its own operations was established.



Goal: Halved total climate impact compared to 2019

2030

Goal: Climate neutrality

2035


100%
accessible with
equal treatment

Region Stockholm's Green Bond framework 2022 – Dark green with Excellent governance

Region Stockholm's green financing operations are set up according to its framework for green bonds released on January 25th, 2022. The framework is based on the EU Taxonomy and Region Stockholm's sustainability policy and strategy.

Region Stockholm's green bonds may finance investments undertaken by Region Stockholm or its subsidiaries that promote the transition towards a low-carbon, climate change resilient and environmentally sustainable society. The framework is focused on Region Stockholm's core investment areas Clean and Sustainable Transportation, Green and Energy Efficient Buildings and Renewable energy. Climate change adaptation measures may also be financed under the framework, within each of the three core areas.

Region Stockholm's framework achieved the highest possible environmental rating, Dark green, by the independent and research based second opinion provider CICERO Shades of Green. The framework also received the highest score, Excellent, for its governance processes. The framework stipulates how the selection process of green projects needs to be conducted, how the proceeds must be managed in separate accounts and how the communication and reporting of the projects will ensure transparency for investors. Any financing raised by Region Stockholm within the green bond framework is earmarked for environmental



projects and is held in a separate traceable account that is allocated for investments that meet specific environmental criterias.

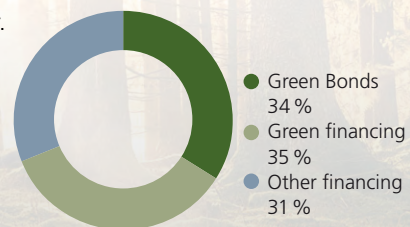
The eligible projects are selected jointly by Region Stockholm's Treasury Department and the Sustainability Department. The projects are then approved by a Steering Group for green bonds consisting of executive managers from Region Stockholm's local bodies.

The criteria of the Region Stockholm's green bond framework have been developed according to the current

version of the EU taxonomy, to the best of Region Stockholm's knowledge, on the basis of significant contribution to mitigation of climate change, adhering to minimum safeguards and do no significant harm (DNSH) criteria achieved by implementing and following Region Stockholm's general policies and guidelines as well as implementing and fulfilling Region Stockholm's companies' particular building and transportation construction guidelines, in addition to national regulations.

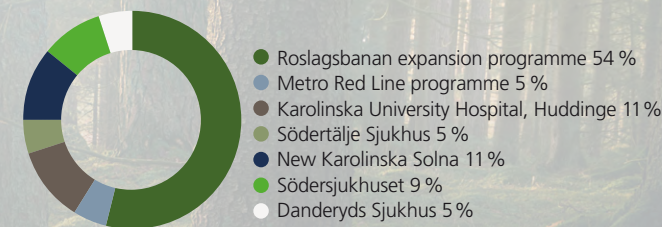
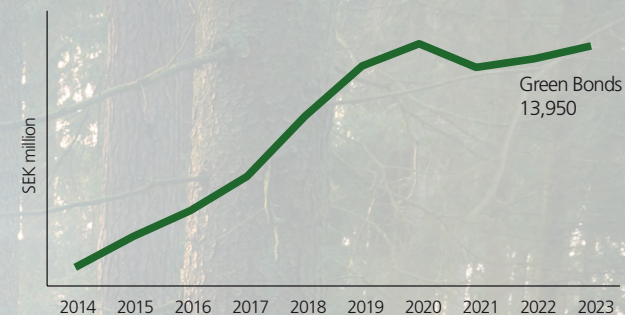
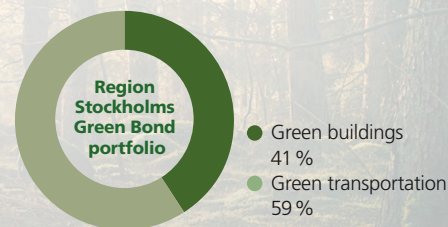
Key procedural aspects

- Each project is selected according to Region Stockholm's green bond framework.
- The current green bond framework was released January 25th of 2022 and all green bonds from that point are issued under this framework.
- Region Stockholm reports on project basis, and in Swedish kronor (SEK).
- For this document, the reporting period ends on 31st of December.



Key reporting methodology

- Impact is based on outstanding disbursed amounts to projects financed through green bonds in Region Stockholm by end of 2023.
- Impact is principally reported on expected impact (ex ante), unless clearly stated as ex post.

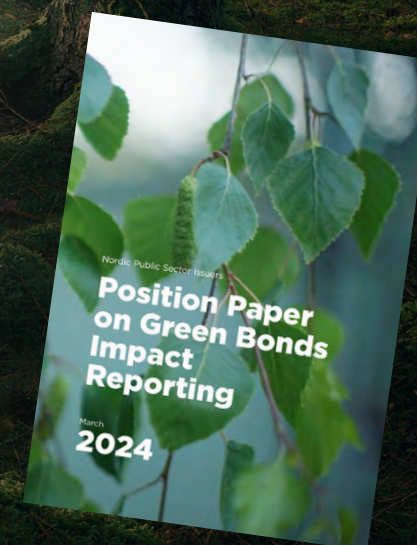


Collaboration within Green Bonds

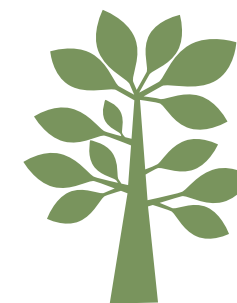
Region Stockholm has cooperated with other Nordic public issuers of green bonds since 2016 and developed a common approach to impact reporting. The cooperation resulted in a joint reporting standard for the Nordic issuers published in 2017 as well as valuable insights for other green bond issuers and the investor market. The group continually shares experiences and expertise on methodology and reporting. The objective of the Nordic group was to develop a transparent, harmonized, and relevant approach to reporting the impact of green bonds. During 2023 the focus has been on updating the Nordic Position Paper. The focus has been on

updating the baseline emission factor for electricity and amendments and additions to reflect changes in the EU Taxonomy. The latest version of the Nordic Position Paper for Green Bonds Impact Reporting was updated in March 2024.

Signatories are: City of Göteborg (Sweden), Kommunalbanken (Norway), Kommuninvest (Sweden), Municipality Finance (Finland), Norrköping Municipality (Sweden), Örebro Municipality (Sweden), Svensk Exportkredit (Sweden), Municipality of Lund (Sweden), Region Skåne (Sweden), Municipality of Linköping (Sweden), Kommunekredit (Denmark) and Region Stockholm (Sweden).



Green bonds overview



The first green bond by Region Stockholm was issued in May 2014 and by the end of 2023, 18 green bonds were outstanding with a total amount of SEK 13.95 billion. More information about the investments financed through green bonds can be found from page 10.

The table below shows Region Stockholm's green investment expenditures. All green bonds issued since 2022 are issued under the latest green bond framework. The green bonds issued during 2019–2021 are issued under the previous green bond framework.

Issue date		SEK million	Expansion of Roslags banan	Red Line programme	Södertälje Sjukhus	New Karolinska Solna	Karolinska Huddinge, Chopin	Söder sjukhuset	Danderyds Sjukhus	Maturity year
Total investment according to budget (of which total disbursed) (whereof green bonds disbursed)			10,446 (9,425) (7,512)	10,710 (8,543) (700)	1,219 (1,219) (738)	18,500 (18,500) (1,500)	1,649 (1,649) (1,500)	2,394 (2,394) (1,250)	1,886 (1,886) (750)	
2023	ISIN: XS2689943608	700		700						2028
2023	ISIN: XS2623619777	950	950							2027
2023	ISIN: XS2597959829	500	500							2028
2022	ISIN: XS2526836668	850	850							2024
2022	ISIN: XS2526838870	650	650							2024
2022	ISIN: XS2477812932	400	400							2028
2022	ISIN: XS2477812858	600	600							2028
2021	ISIN: XS2382244031	600			85	290	225			2026
2021	ISIN: XS2382242092	1,400			195	680	525			2026
2021	ISIN: XS2337109461	400	120		80	200				2031
2021	ISIN: XS2337108810	1,000	460		210	330				2027
2021	ISIN: XS2291915358	1,000						250	750	2028
2020	ISIN: XS2251312018	1,000						1,000		2027
2020	ISIN: XS2228369729	1,000	832		168					2030
2020	ISIN: XS2106644169	400	400							2027
2019	ISIN: XS2084871594	500	350				150			2026
2019	ISIN: XS2004887761	1,000	700				300			2026
2019	ISIN: XS2004887415	1,000	700				300			2025

Investor Relations

Region Stockholm works actively to provide transparency for investors. Except from this impact report another example is the yearly investor meeting Region Stockholm organizes where investors and bank counterparties are invited to one green bond project on-site for a deeper and more concrete understanding of that project. During 2023 a very much appreciated and well attended site visit was made at the investment project Roslagsbanan. Examples of projects visited earlier years are the Karolinska University Hospital Solna, extended metro and the electric boat shuttle routes in Saltsjön.



**Providing transparency
for investors**



To enable a safer crossing for all this new level crossing was completed 2023 in Frescati under the project Roslagsbanan.

Region Stockholm's projects for green investments

Region Stockholm's green bond program has currently invested almost 60 percent of its funds into the **Clean and Sustainable Transportation category**. Roslagsbanan expansion program is the key transportation project with more than 7,5 billion SEK in outstanding green bonds. Roslagsbanan and the Metro Red Line programme have been avoiding 13,350 tons of CO₂e emissions year 2023. The outlook for the coming years is that the Clean and Sustainable Transportation category will continue to grow in accordance with Region Stockholm's investment plan.

In the **Green and Energy Efficient Buildings category** five state of the art hospital buildings have been funded, with Karolinska University Hospital Solna and Huddinge as the two largest investments followed by Södersjukhuset.

The table below provides an overview of Region Stockholm's Green Project categories. The Green Project categories have been mapped to the SDGs in accordance with the High-Level Mapping to the Sustainable Development Goals published by ICMA in June 2020 and the SDG-mapping in the 2024 version of the Position Paper on Green Bonds Impact Reporting developed by Nordic public sector issuers.

“ Roslagsbanan expansion program is the key transportation project with more than 7,5 billion SEK in outstanding green bonds.

Green Project categories	EU Taxonomy Environmental objectives	SDG
Clean and Sustainable Transportation	Climate change mitigation	9, 11 and 13
Green and Energy Efficient buildings	Climate change mitigation	7, 11, 12 and 13
Renewable Energy	Climate change mitigation	7 and 13



EU taxonomy alignment assessment

Following the EU taxonomy adoption in Region Stockholm's latest green bond framework published in January 2022 Region Stockholm has conducted a screening of all underlying green projects to assess their alignment with the EU taxonomy.

The screening has been conducted in three steps; i) alignment with the Technical Screening Criteria (TSC) for substantial contribution (SC) to one of EU's environmental objectives (i.e. climate change mitigation), ii) alignment with the Do No Significant Harm (DNSH) criteria and iii) compliance with the minimum safeguards criteria requirements regarding social sustainability and governance (minimum safeguards). The assessment valuation is done within Region Stockholm's own operation on a best effort basis.

Region Stockholm may revise or update the results to reflect any future changes to the EU Taxonomy. The underlying green projects fulfill the TSC for climate change mitigation as well as the DNSH criteria and minimum safeguards. Consequently, the underlying green projects are assessed to be aligned with the EU taxonomy. The allocation of net proceeds during 2023 to green bonds projects related to project Roslagsbanan expansion programme and Metro Red Line, have been post issuance reviewed by an independent external party (see attachment in the end of this document).

Clean public transportation

100 percent of the green bonds issued by Region Stockholm under its current green bond framework is aligned with the EU taxonomy. All green bond proceeds from 2022 have been allocated to two projects within the clean public transportation category, Roslagsbanan expansion programme and Metro Red Line programme. Those two projects are assessed to be aligned with the TSC for SC to climate change mitigation as well as the DNSH criteria and minimum safeguards. The underlying green projects have been reviewed by an independent external party.

Green buildings

From 2022, no green bond proceeds have been allocated to the green building category under the current green bond framework. However, Region Stockholm has outstanding green bonds issued under old versions



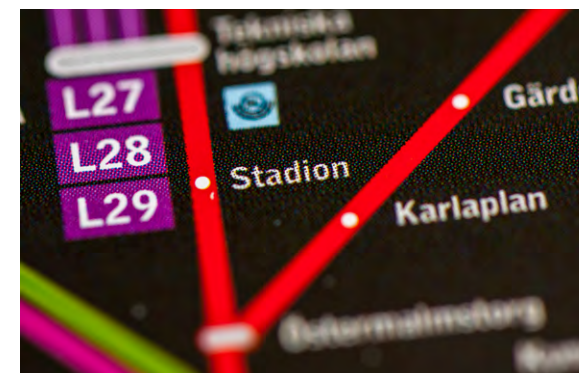
EU taxonomy alignment
(green project alignment for green bonds issued under current framework)

of the framework where proceeds have been allocated to the green building category.

In terms of EU taxonomy alignment, Region Stockholm has five green building projects with outstanding green bonds. These buildings were built before 2021 and they have been assessed if the building has at least an Energy Performance Certificate (EPC) class A or if the building is within the top 15 % in terms of energy efficiency according to available independent study¹. Södersjukhuset and Danderyds Sjukhus are aligned with the TSC for SC to climate change mitigation. Karolinska Huddinge have not been assessed since they have not received their EPC before publication of this Impact Report. Södertälje Sjukhus and New Karolinska Solna are not aligned with the TSC for SC.

Further, to make sure the DNSH criteria is fulfilled, an overarching climate risk and vulnerability assessment is conducted on a recurring basis. Based on the outcome of the assessment an adaption plan is drawn-up to identify, prioritize, and implement different measures to help minimize the risk of operational disturbances and thereby improving the building's climate-resiliency. Region Stockholm will continue to develop and refine the climate risk and vulnerability assessment along with evolving market standards and practices. The DNSH assessment is further done on a best effort basis and to the extent possible.

All green projects take place in Stockholm, and they are all subject to the comprehensive European and national laws and regulations for working and social



“ All green bond proceeds from 2022 have been allocated to two projects within the clean public transportation category, Roslagsbanan expansion programme and Metro Red Line programme.

EU taxonomy alignment assessment on green bond projects

	% of green bond portfolio	TSC	DNSH	Minimum Safeguards
EU taxonomy aligned projects				
Roslagsbanan expansion programme	54 %	●	●	●
Metro Red Line programme	5 %	●	●	●
Södersjukhuset	9 %	●	●	●
Danderyds Sjukhus	5 %	●	●	●
EU taxonomy not aligned projects				
Södertälje Sjukhus	5 %	●	●	●
New Karolinska Solna	11 %	●	●	●
Karolinska Huddinge	11 %	●	●	●

● Aligned ● Not aligned ● Not assessed

conditions. The environmental work is governed through Region Stockholm's management processes. Environmental work is secured, followed up and reviewed at the regional level through Region Stockholm's budget and reporting processes and through external and internal audits. Financial, social and environmental implications are fully integrated in the investment decision process. On a best effort basis Region Stockholm find it to be compliant with the minimum safeguards criteria.

No independent external party has reviewed the DNSH criteria or the minimum safeguards as the green building category has not been allocated to since the last framework update in 2022 which was when Region Stockholm aligned the framework to the EU taxonomy.

¹ Report from the Swedish Property Federation (Sw. Fastighetsägarna) dated December 2022.

PROJECTS

Clean and Sustainable Transportation



Roslagsbanan expansion programme

All projects selected by Region Stockholm for Clean and Sustainable transportation are fully aligned with the EU Taxonomy criteria and have zero tailpipe emissions.

The Roslagsbanan expansion program is designed to develop and strengthen the capacity of a historical railway line that is of great importance for public transport in the north-eastern sector of the Stockholm Region, creating the opportunity for more people to travel by train which is more climate smart than driving a car. The overall effect of the expansion is:

- Increased capacity to meet increasing travelling needs
- Allowing eight trains per hour service for the most frequently visited stations
- Reduced sensitivity to traffic disruption
- Confining with noise limits indicated in the Government's Infrastructure Bill² for railways
- Adapting stations and existing carriages for increased accessibility
- Improved safety in the rail system regarding the rail operation, as well as safety improvements along the tracks and for the passengers travelling with Roslagsbanan.

In addition to promoting climate efficient travelling, the program includes many environmental and social initiatives. There is a large focus on reduced environmental impact in the building process and in the

² Proposition 1996/97:53 https://www.riksdagen.se/sv/dokument-lagar/dokument/proposition/infrastruktur-inriktning-for-framtida-transporter_GK0353

Roslagsbanan

Category	Project	Indicators	Unit	Baseline /remarks
Clean transportation	Expansion of Roslagsbanan local train	Net avoided emissions from cars and other vehicles	15,300 tonnes	146 grammes CO ₂ e/pkm, 1,15 passengers per car
		– <i>Attributable to Green Bond</i>	12,250 tonnes	
		Number of people in new means of transportation	5,000 passengers/travel/day	Fifty percent median value for increased travelling, fifty per cent estimated car replacement (modal shift)
		– <i>Attributable to Green Bond</i>	4,000 passengers/travel/day	
		Estimated reduction in car kilometers the project will replace	60,700,000 km	40 km car kilometers/person/day based on geographic average distance (20 km*2 trips)
		– <i>Attributable to Green Bond</i>	48,560,000 km	
Environmental management	Wildlife preservation	<i>Examples of activities and investments in wildlife preservation that have been carried out so far (accumulated)</i> <ul style="list-style-type: none"> • A preserved and protected woodland, key habitat for rare and endangered species • Approximately 12 fauna passages under the railway • One playroom for sea trout • Approximately 400–500 evacuation pipes in cable wells • One hotel for salamanders • Several culverts demolished to create open ditches • Many stems saved as insect hotels • Relocation of ten trees to avoid logging • Two nature passages • Two fauna depots 		



processes for designing and manufacturing trains. Reduced climate-impact has also been a result due to criteria applied in the supply chain and through measures to reduce transport by storing and reusing shaft masses.

“ Arninge – the 39th station of Roslagsbanan – have become a central hub for public transport in the northeast.

Since the start of the project in 2016, great achievements have been made. The new station Arninge which is the 39th station of Roslagsbanan have become a central hub for public transport in the northeast. The new double track on the Kårsta line between Täby Kyrkby and Kragstalund enables passengers to travel from Stockholm Östra in central Stockholm to Vallentuna in the far north on double tracks for a more stable, frequent, and safe traffic.

Region Stockholm is now investigating how Roslagsbanan can be extended through a tunnel from station Universitetet to T-Centralen. The expansion enables shorter travel times to and from the north-eastern part of Stockholm and relieves the metro. The aim is to create a more efficient and climate-smart public transport, for all passengers.



Metro Red Line programme – new C30 vehicles

The upgrade of the Metro’s Red Line creates a possibility for more people to travel by public transportation, which is one of Region Stockholm’s main tools of reducing negative environmental impact in the Region.

The upgrade of the Metro’s Red Line aims to develop and strengthen capacity and thereby contribute to a more resilient and sustainable public transportation. To achieve this goal investments are being made in the following areas:

- Upgrade of two depots, Hammarby and Nyboda
- Upgrade of two stations, Norsborg and Hallunda
- Building of a new depot in Norsborg
- The new vehicle, C30, have a more energy efficient propulsion system and is also expected in overall to achieve less energy usage than the older ones even when energy for the new implemented AC-systems in the trains are included.

In addition to developing and strengthen the capacity of the red line, travelers will be able to ride with improved accessibility, more comfortably and safer than before.

One of the biggest investments on the Red Line programme is the new C30 vehicles. 96 new vehicles will be taken into traffic, with full effect year 2025. The new vehicles have well-thought-out design, high operational reliability, new technology, increased capacity and are prepared for future fully automatic operation. The new furnishings reduce perceived crowding and creates better passenger flow, more doors and seats along the sides provide wider aisles, more space for standing passengers and spaces especially intended for prams and wheelchairs.

Metro Red Line programme

Category	Project	Indicators	Unit	Baseline /remarks
Clean transportation	Metro Red Line programme	Net avoided emissions from cars and other vehicles	13,850 tonnes	146 grammes CO ₂ e/pkm, 1,15 passengers per car
		– <i>Attributable to Green Bond</i>	1,100 tonnes	
		Number of people in new means of transportation	6,800 passengers/ travelday	Fifty percent median value for increased travelling, fifty per cent estimated car replacement (modal shift)
		– <i>Attributable to Green Bond</i>	544 passengers/ travelday	
		Estimated reduction in car kilometers the project will replace	28,400,000 km	40 km car kilometers/person/ day based on geographic average distance (20 km*2 trips)
		– <i>Attributable to Green Bond</i>	2,272,000 km	

To store and service the new vehicles, depots have been built and upgraded.

When Region Stockholm procures new vehicles, 98 percent of the material must be recyclable. This forces development at the companies manufacturing the vehicles. One example is that the supplier from which Region Stockholm purchases the new C30 vehicles had to develop its manufacturing site to meet Region Stockholm’s requirements for, among other things, non-toxic and non-allergenic materials in the vehicles.



98 %
recyclable material
in new vehicles

KAROLINSKA
Universitetssjukhuset

Green and Energy Efficient buildings

Karolinska University Hospital, Huddinge

The O-building, which is part of Karolinska University Hospital, Huddinge hospital area, is a state-of-the-art building designed for advanced healthcare with the latest medical technology.

The hospital, which is located in the south of Stockholm, has been modernized according to Region Stockholm’s plan to accommodate for future health and medical care demand. The 29,000 sqm building, contains cutting edge technology and equipment for advanced surgery with 23 operating theaters and a capacity of 18,000 surgeries per year. The building also hosts radiology and a sterile processing department. The design of the building is based on the requirement that surgery needs to have close access to intervention facilities and advanced image diagnostics.

The construction of the surgery building started in 2015 and was completed in 2020. The building was constructed in accordance with Miljöbyggnad 2.2 and the project has received an overall rating level of Gold, where 13 of 15 indicators have been preliminary certified at Gold level and two at Silver level. The verification process, which starts when the building is completed and lasts for about two years, is currently in progress.

The calculated energy use in the building is 75 kWh/sqm/year, being 35 per cent lower than the legal demands³. 100 per cent of the electricity used is from renewable sources and marked “good environmental choice”⁴.

³ Swedish National building code BBR21.

⁴ Certified with environmental label Bra Miljöval for 100 per cent of the electricity 2023.



The O-building has been awarded two prestigious awards during 2020 and 2021. The first award is the 2020 Acoustic Environment Award that was established by the Swedish Acoustic Society in 2018 to highlight efforts for a good sound environment in society. The motivation behind this award is that, with great personal commitment, continuity and good cooperation between all the construction parties involved, a functional hospital building has been created where every detail has been studied to create a good and safe sound environment for the benefit of both patients and employees. The second award is the 2021 Healthcare Construction Award in the category of larger healthcare construction projects. This award was established in 2003 by Forum vårdbyggnad with the aim of highlighting good examples of well-executed and innovative healthcare environments as well as good processes.



Photo: Olof Holmström/Locums arkiv

35%
lower energy use
than legal demands

Karolinska University Hospital, Huddinge O-building

Category	Project	Indicators	Unit ²	Baseline /remarks
Green buildings¹	New building standard exceeding building standard requirements	Annual energy avoided compared to the relevant building code	850 MWh	National building code BBR21
		– <i>Attributable to Green Bond</i>	750 MWh	
		Annual GHG emissions reduced/ avoided, compared to the relevant building code	100 tonnes	
		– <i>Attributable to Green Bond</i>	100 tonnes	
	Annual GHG emissions reduced/avoided using green energy	200 tonnes		
		– <i>Attributable to Green Bond</i>	200 tonnes	
	Environmentally friendly materials being used	Percentage of materials being used accepted in Byggarubedömningen ³	94 %	
Waste management	Resource preserving waste treatment (construction materials)	Material recovery rate	97 % incl. energy recovery.	97 % consists of: 21 % material reuse, 28 % material recovery, 47 % energy recovery. 3 % landfill. Benchmark: Waste Framework Directive 2008/98/EC.

¹ Calculations on avoided energy aligned with Nordic Position Paper 2024, Appendix B, combined margin for electricity. For calculations on energy efficiency local values are applied for district heating (SFAB, 2022) and cooling. For use of green energy national average is compared to local values for district heating (SFAB, 2022) and cooling.

² Rounded per 50 MWh / 50 tonnes

³ Only products covered by Locums policydocument R.24 "Riktlinje val av produkter" (Guideline for choosing products) and Miljöbyggnad manual 2.2 are reported.

Södertälje Sjukhus

Södertälje Sjukhus, situated about 30 km south of central Stockholm, was part of the extensive development of Region Stockholm’s health and medical care services.

Two treatment buildings at Södertälje Sjukhus were completed during 2017, including, among others, an intensive care facility, an emergency unit and a cesarean section. This allows 7,500 additional emergency visits, increasing the total to 42,500 visits/year and making it one of the most modern hospitals in Sweden.

The two buildings were constructed according to Miljöbyggnad 2.2 and the verification process was finalized during 2020. The hospital buildings have received the final certification, with an overall Gold rating (Miljöbyggnad 2.2).

The target energy use was 35 per cent lower than the legal demands⁵ and the result during 2021 achieved this target. Included in the project is the building of a geothermal cooling and heating system which is an environmentally conscious alternative to meet the hospital’s need for cooling and heating. All purchased electricity is 100 per cent renewable and certified with environmental label “Bra Miljöval”.⁶



Foto: Susanne Kronholm

“ The hospital buildings have received the final certification, with an overall Gold rating.

⁵ Swedish National building code BBR19.

⁶ Certified with environmental label Bra Miljöval for 100 per cent of the electricity 2023.



Södertälje Sjukhus

Category	Project	Indicators	Unit ²	Baseline /remarks
Renewable energy¹	Geothermal energy	Capacity of energy generation of plant Annual renewable energy generation – <i>Attributable to Green Bond</i> Annual GHG emissions reduced/ avoided – <i>Attributable to Green Bond</i>	150 MWh 150 MWh <i>100 MWh²</i> 8 tonnes CO ₂ e <i>5 tonnes CO₂e</i>	
Green buildings¹	New building standard exceeding building standard requirements	Annual energy avoided compared to the relevant building code – <i>Attributable to Green Bond</i> Annual energy avoided compared to the relevant building code – <i>Attributable to Green Bond</i> Annual GHG emissions reduced/avoided using green energy – <i>Attributable to Green Bond</i>	1,050 MWh <i>6,050 MWh</i> 200 tonnes <i>120 tonnes CO₂e</i> 250 tonnes CO ₂ e <i>150 tonnes CO₂e</i>	National building code BBR19
	Environmentally friendly materials being used	Percentage of materials being used accepted in Byggvarubedömningen ³	92 %	
Waste management	Resource preserving waste treatment (construction materials)	Material recovery rate	97 % recovery incl. energy	97 % consists of: 16 % material reuse, 29 % material recovery, 52 % energy recovery. 3 % landfill. Benchmark: Waste Framework Directive 2008/98/EC.

¹ Assumption on distribution between district heating and electricity in accordance with BBR19. Calculations on avoided energy aligned with Nordic Position Paper 2024, Appendix B, combined margin for electricity. For calculations on energy efficiency local values are applied for district heating. For use of green energy national average is compared to local values for district heating.

² Rounded per 50 MWh / 50 tonnes.

³ Only products covered by Locums policydocument R.24 "Riktlinje val av produkter" (Guideline for choosing products) and Miljöbyggnad manual 2.2 are reported.

Karolinska University Hospital, Solna

New Karolinska Solna (NKS) is one of the world’s most sustainable university hospitals both when it comes to facilities and to the environmental work regarding pharmaceuticals, textiles, patient meals and disposables in health care.

To achieve the exceptional environmental and sustainability goals that were set for NKS, the entire project has been carried out from a sustainability perspective, from the choice of materials to the design of the building. NKS was built to achieve the highest quality indoor environment, for example air quality, inflow of day light and temperature for the benefits of both patients and staff.

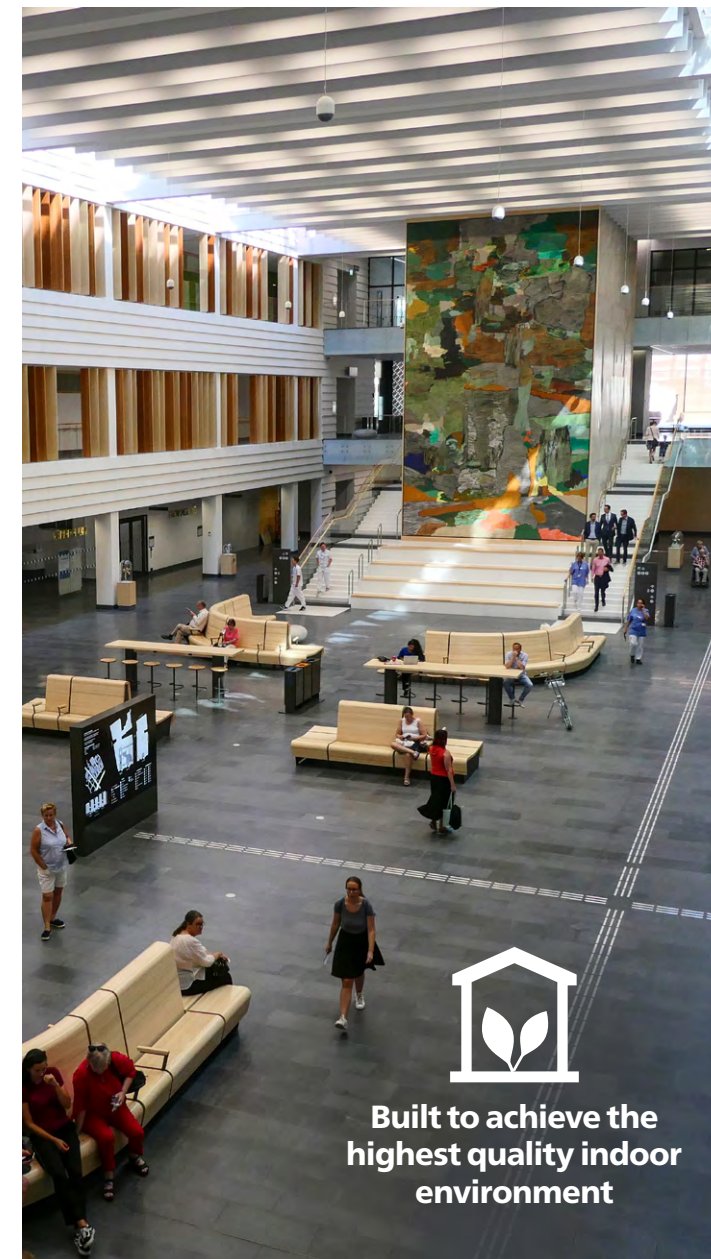
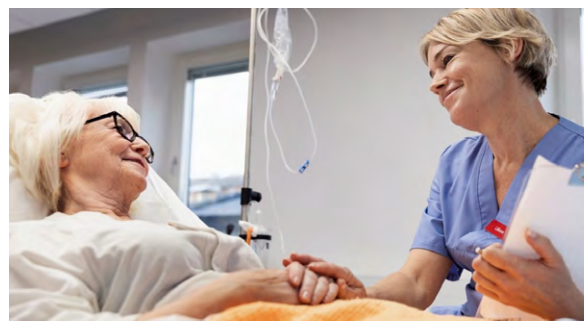
One of the tools used is environmental certification of the buildings. Two types of certification schemes have been used for NKS: Miljöbyggnad 2.0 issued by the Sweden Green Building Council, and LEED, an international green building rating system. NKS has obtained Gold level in both certification schemes; Miljöbyggnad Gold 2.0 was verified in 2021 and LEED Gold level was achieved in 2018.

NKS has been constructed for significantly reduced energy consumption, the target is 50 per cent below the requirements set by Sweden’s Building Regulations⁷.

This means substantial savings, both financial and environmental. By switching to renewable energy, emissions of greenhouse gases have been minimized. 100 per cent of the electricity comes from renewable sources⁸, and a large geothermal facility produces most of the buildings’ heating and cooling.

Another focus area has been to reduce the use of chemicals and hazardous substances. Thanks to the deliberate choice of flooring material, a significant reduction in the use of softeners with an adverse impact on health has been achieved (at least 70,000 kg compared with conventional construction), and this is only one of all the materials used in the construction.

In 2023, Karolinska University Hospital has been ranked the world’s sixth best hospital. The ranking means that Karolinska ranks highest of all European hospitals.



Built to achieve the highest quality indoor environment

⁷ Swedish National building code BBR16.

⁸ Certified with environmental label Bra Miljöval for 100 per cent of the electricity 2023.

Karolinska University Hospital, Solna

Category	Project	Indicators	Unit ⁴	Baseline /remarks
Renewable energy	Geothermal energy	Capacity of energy generation of plant	40,800 MWh ¹	
		Annual renewable energy generation	34,450 MWh ²	
		Used renewable energy	31,100 MWh ²	
		– <i>Attributable to Green Bond</i>	2,500 MWh ²	
		Annual GHG emissions reduced/avoided	2,600 tonnes CO ₂ e ³	
		– <i>Attributable to Green Bond</i>	200 tonnes CO ₂ e ³	
Green buildings	New building standard exceeding building standard requirements	Annual energy avoided compared to the relevant building code	17,500 MWh	Result is 43 % below Swedish national building code BBR16. The goal for the project was 35 % below BBR16.
		– <i>Attributable to Green Bond</i>	1,400 MWh	
		Annual GHG emissions reduced/ avoided, compared to the relevant building code	2,350 tonnes CO ₂ e ³	
		– <i>Attributable to Green Bond</i>	200 tonnes CO ₂ e ³	
	Annual GHG emissions reduced/avoided using green energy	3,700 tonnes CO ₂ e ³		
		– <i>Attributable to Green Bond</i>	300 tonnes CO ₂ e ⁵	
	Environmentally friendly materials being used	Percentage of materials being used accepted in Byggvarubedömningen	90 %	
Clean transportation	Infrastructure for electric vehicles	Percentage of parking spaces reserved for electric vehicles	10 %	No local/national legal requirements
		Total charges made	310 MWh	
		– <i>of which Green Bond</i>	25 MWh	
		Estimated savings in GHG emissions	70 tonnes CO ₂ e	
		– <i>of which Green Bond</i>	6 tonnes CO ₂ e	
Waste management	Resource-preserving waste treatment	Material recovery rate	95 % incl. energy recovery.	National average for the service provider contracted by NKS (SITA) was 92 % 2017.

¹ Total actual production 2023. The facility also recycles energy from the buildings.

² Annual renewable energy generation is defined as total renewable generation minus ingoing electricity. The facility also recycles energy from the buildings.

³ Calculated using baseline emission values from Appendix B (combined margin applied by nordic issuers) and Appendix E (the same baseline emission factor has been applied for district cooling as for district heating) compared with Region Stockholms actual electricity mix (100% renewable) and local mix of district heating and district cooling from Norrenergi 2023.

⁴ Rounded per 50 MWh / 50 tonnes.

Södersjukhuset

The new construction of Södersjukhuset (Framtidens Södersjukhus) was part of Region Stockholm’s future plan for health care. Södersjukhuset is an emergency hospital located in central Stockholm.

During the project Framtidens Södersjukhus, which was completed in 2020, Södersjukhuset has expanded by approximately 50,000 square meters.

The new construction includes a service area, an emergency department, a care building with single patient rooms and a treatment building with surgery rooms. All buildings were built at the same time, with maintained care capacity, where two of them, named 70 and 72, are financed with green bonds.

In addition, new streets and park areas were created to suit the new buildings and to make the local environment more attractive and increase the availability in the area for inhabitants of the city.

The buildings have been constructed in accordance with Miljöbyggnad 2.2 and the two buildings that are financed through green bonds received an overall preliminary rating level of Gold. One of the indicators from Miljöbyggnad linked to indoor environment is daylight that affects the healthcare professionals, patients and visitors. One example of adding daylight is the care building that holds an indoor courtyard that contributes to more rooms and increased climate comfort. One of the buildings won the award “Årets Miljöbyggnad” 2018 which is Sweden’s most prestigious price for sustainable construction. Below you can read an extract from the jury’s motivation.

Gold level on 14 of 15 indicators

Difficult challenges in a hospital building, such as daylight, ventilation, and thermal climate, have been solved through good collaborations and smart solutions. It is a well-executed and ambitious work, where the environmental benefits will benefit staff and patients for a long time to come.



50,000
new square meters



Foto: Anna Molander

Södersjukhuset

Category	Project	Indicators	Unit ²	Baseline /remarks
Green buildings¹	New building standard exceeding building standard requirements	Annual energy avoided compared to the relevant building code	2,950 MWh	The new construction consists of several buildings. Swedish national building code BBR21 was used for all buildings, whereas the energy requirements vary according to the use of each building.
		– <i>Attributable to Green Bond</i>	1,550 MWh	
		Annual GHG emissions reduced/avoided compared the relevant building code	300 tonnes	
		– <i>Attributable to Green Bond</i>	150 tonnes	
	Annual GHG emissions reduced/avoided using green energy	250 tonnes		
		– <i>Attributable to Green Bond</i>	150 tonnes	
	Environmentally friendly materials being used	Percentage of materials being used accepted in Byggarubedömningen ³	97 %	Building 70: 98 % approved materials, Building 72: 97 % approved materials. Total combined average is an estimate.
Waste management	Resource preserving waste treatment (construction materials)	Material recovery rate	94 % recovery incl. energy	Building 70: 15 % material reuse, 29 % material recycling, 51 % energy recycling. 5 % landfill. Building 72: 31 % material reuse, 21 % material recycling, 41 % energy recycling. 7 % landfill. Total combined average is an estimate. Benchmark: National average for the service provider contracted by NKS (SITA Sverige/Suez recycling) was 92 % for 2017.

¹ Assumptions on repartition between electricity, district heating and district cooling in relation to BBR21. Calculations on avoided energy aligned with Nordic Position Paper 2024, Appendix B, combined margin for electricity. For calculations on energy efficiency local values from Stockholm Exergi are applied for district heating and cooling. For calculations regarding use of green energy national average is compared to local values for district heating and cooling from Stockholm Exergi.

² Rounded per 50 MWh / 50 tonnes

³ Products reported are those covered by Locums policydocument R.24 "Riktlinje val av produkt – Bedömningskriterier" (Guideline for choosing products) and Miljöbyggnad manual 2.2.

Danderyds Sjukhus

Danderyds Sjukhus is located in the north part of Stockholm and is one of the largest emergency hospitals in Sweden. At this hospital, university healthcare is provided alongside education and research within the most common public diseases.

As a part of Region Stockholm’s future health plan, an emergency and treatment building at this hospital was completed by the end of 2019. The building is strategically located in the hospital area and connects with several buildings.

The building has been thoroughly planned with a people-centric approach together with the patient’s safety, efficient patient flows and the working environment. The people-centric approach includes the patient, the patient’s friends and family as well as the hospital staff. The layout of the building facilitates fast movements between floors, units and functions, which is critical in an emergency care building where every second can be of outmost importance to the patient.

The design of the building contributes to more convenient premises for the staff. The architecture is based on an evidence-based design with a clear logistic flow and easy orientation. The design gives corridors and rooms access to greenery. Balconies and slats form a protective layer against the solar heat. Indoor courtyards together with metal facades contribute to light entry as well also connect the indoor and outdoor environment. The building is constructed in accordance with Miljöbyggnad 2.2 and the project has received an overall rating level of Gold, where 14 of 15 indicators was preliminary certified with Gold level.

The verification process, which started when the building was completed was finally certified according to Miljöbyggnad Gold in 2023. The project was also one of three finalists for the award “Environmental Building of the Year” 2019. The project has focused on low energy use e.g. by using waste heat from the sterile plant to preheat tap water and by using heat from cooling machines to preheat the heating system.



Planned with a people-centric approach





1 of 3

finalists for the award
Environmental Building
of the Year 2019

Danderyds Sjukhus

Category	Project	Indicators	Unit ²	Baseline /remarks
Green buildings ¹	New building standard exceeding building standard requirements	Annual energy avoided compared to the relevant building code	1,800 MWh	National building code BBR20
		– <i>Attributable to Green Bond</i>	700 MWh	
		Annual GHG emissions reduced/avoided compared to the relevant building code	300 tonnes	
		– <i>Attributable to Green Bond</i>	100 tonnes	
Waste management	Resource preserving waste treatment (construction materials)	Annual GHG emissions reduced/ avoided using green energy	250 tonnes	97 % consists of: 20 % material reuse, 31 % material recovery, 46 % energy recovery, 3 % landfill. Benchmark: Waste Framework Directive 2008/98/EC.
		– <i>Attributable to Green Bond</i>	100 tonnes	
		Environmentally friendly materials being used	91 %	

¹ Calculations on avoided energy aligned with Nordic Position Paper 2024, Appendix B, combined margin for electricity. For calculations on energy efficiency local values from Norrenergi 2023 are applied for district heating and cooling. For calculations regarding use of green energy national average is compared to local values for district heating and cooling from Norrenergi 2023.

² Rounded per 50 MWh / 50 tonnes

³ Only products covered by Locums policydocument R.24 "Riktlinje val av produkter" (Guideline for choosing products) and Miljöbyggnad manual 2.2 are reported.

**Green Bond
Impact Report
2023**



Agreed-Upon Procedures Report on allocation of net proceeds from Green Bonds to Green Projects

To Region Stockholm, corporate ID: 232100-0016

Purpose of this Agreed-Upon Procedures Report

Our report is solely for the purpose of assisting Region Stockholm in presenting to investors, the use of net proceeds from Green Bonds issued during calendar year 2023 (hereafter "2023"), including allocation to Green Projects of Green Bonds issued during 2023, and may not be suitable for another purpose. Our procedures related to this document is limited to what is specified in this report.

Responsibilities of the Engaging Party

Region Stockholm (the responsible party) has acknowledged that the agreed-upon procedures are appropriate for the purpose of the engagement.

Region Stockholm is responsible for the subject matter on which the agreed-upon procedures are performed.

Practitioner's Responsibilities

We have conducted the agreed-upon procedures engagement in accordance with the International Standard on Related Services (ISRS) 4400 (Revised), *Agreed-Upon Procedures Engagements*.

An agreed-upon procedures engagement performed involves our performing the procedures that have been agreed with Region Stockholm, and reporting the findings, which are the factual results of the agreed-upon procedures performed. We make no representation regarding the appropriateness of the agreed-upon procedures.

This agreed-upon procedures engagement is not an assurance engagement. Accordingly, we do not express an opinion or an assurance conclusion.

Had we performed additional procedures, other matters might have come to our attention that would have been reported.

Professional Ethics and Quality Control

We have complied with the ethical requirements as stated in International Ethics Standards Board for Accountants' International Code of Ethics for Professional Accountants (including International Independence Standards) (IESBAs Code of Ethics) and independence requirements in section 4A of IESBAs Code of Ethics.

The firm applies International Standard on Quality Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. We are independent of Region Stockholm in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

Procedures and Findings

We have performed the procedures described below, which were agreed upon with Region Stockholm in the terms of engagement dated January 8, 2024, regarding that an amount equal to the Green Bond net proceeds has been allocated to Green Projects according to Region Stockholm's Green Bond Framework. The procedures performed are summarized as follows (see next page):




#	Procedures	Findings
1.	For each Green Bond issued during 2023, agree the loan amount committed and loan amount issued.	<p>We inspected pricing supplements for the three Green Bonds issued during 2023:</p> <ul style="list-style-type: none"> • ISIN: XS2689943608 700 million SEK • ISIN: XS2623619777 950 million SEK • ISIN: XS2597959829 500 million SEK <p>We found no deviation of loan amount committed and loan amount issued.</p>
2.	For each Green Bond issued during 2023, agree that an amount equal to the net proceed that is not allocated as of 2023-12-31 is credited to a separate bank account(s) and separate account(s) in the general ledger.	We found the procedure not applicable because all funds from Green Bonds issued 2023 as of 2023-12-31 had been allocated to the project "Roslagsbanan expansion programme" and to the project "Red Line programme"
3.	For each Green Project financed by Green Bonds issued during 2023, agree the accuracy of the used amount to the allocated proceed.	<p>We inspected supporting documentation related to criteria in Region Stockholm's Green Bond Framework, which includes technical screening criteria for significant contribution and do no significant harm and minimum safeguards in the EU taxonomy, for the project "Roslagsbanan expansion programme" and for "Red Line programme" as all Green Bonds issued during 2023 were allocated to this Green Projects. We inspected the outcome of accrued amounts for the project "Roslagsbanan expansion programme" which in total amounts to 9 425 million SEK and funds from Green Bonds allocated to project "Roslagsbanan expansion programme" amounts to 7 512 million SEK. We also inspected the outcome of accrued amounts for the project "Red Line programme" which in total amounts to 8 543 million SEK and funds from Green Bonds allocated to project "Red Line programme" amounts to 700 million SEK.</p> <p>We found no deviation between the Green Project for which funds from Green Bonds issued during 2023 were allocated and Region Stockholm's Green Bond Framework.</p>
4.	For each Green Project financed by Green Bonds issued during 2023, agree that the Green Project(s) has been approved by Region Stockholm Steering Group for Green Bonds.	<p>We inspected approval of the Green Project financed by Green Bonds issued during 2023 from Region Stockholm Steering Group for Green Bonds.</p> <p>We found no deviation in respect to approval of the Green Project and Region Stockholm's Green Bond Framework.</p>

Stockholm, 12th April 2024

KPMG AB

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 Johan Rasmusson
 Authorized Public Accountant

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