

2024

Annual Green Bond Report

Stockholm Exergi Holding AB (publ)



Impact reporting for the Green Bond Framework 2024

Stockholm Exergi is Stockholm’s energy provider. Using resource-efficient solutions, we ensure that the growing Stockholm region has access to electricity, heating, cooling and waste services. We provide heat to more than 800,000 Stockholmers and our 3,000-kilometre-long district heating network forms the basis for the societal benefits that we create together with our customers and partners. We are owned by the City of Stockholm and Ankhiale and our 800 employees work every day to reduce Stockholmers’ climate impact. By developing carbon dioxide capture technologies, we are committed to making zero emissions a reality.

Stockholm Exergi issued its first Green Bonds in 2015. In November 2023 Stockholm Exergi established a new Green Bond Framework to align with the ICMA’s* Green Bond Principles (as of 2021 with June 2022 Appendix 1). S&P Global Ratings has performed a Second-Party Opinion on the framework, verifying its credibility, impact and alignment with the ICMA Green Bond Principles. S&P Global Ratings has given

the Framework the assessment Dark Green. Both the Green Bond Framework and the Second Party Opinion from S&P Global Ratings can be found here (link). As per December 31, 2024 Stockholm Exergi had sixteen Green Bonds outstanding, with a nominal value of MSEK 10,990. This corresponds to 85% of the total outstanding bonds.

* International Capital Market Association

Sustainable production and distribution

Our efficient and flexible production processes meet Stockholm’s heating, electricity and cooling needs. Stockholm Exergi has around 30 production plants which, in co-ordination with each other and our partners’ facilities, process various energy sources to ensure that the Stockholm region is supplied with cost-effective and sustainable energy regardless of weather conditions and temperatures.

For the last decade, Stockholm Exergi has been involved in structured renewal of the distribution network. New networks have improved thermal insulation which reduces energy losses while repairs of leaks and increased capacity in the network improve operational efficiency. At present, about 97 per cent of the district heating we provide is produced from recovered or renewable energy.

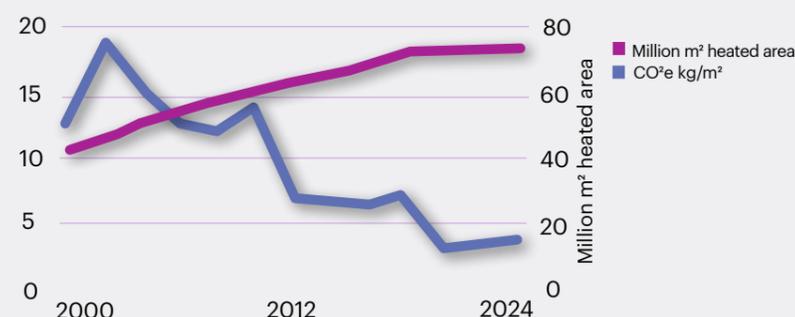
Our production is based on the following five sources:

- 1. Renewable fuels:** We use renewable biofuels in the form of residual material from forestry and industry, such as wood chips and bio-oils, to generate energy.
- 2. Waste treatment with energy recovery:** We produce electricity and heat by incinerating residual waste that remains when society has finished sorting it.
- 3. Residual heat:** We use the heat in Stockholm’s wastewater, residual heat from data centres and supermarkets, and heat created by district cooling.
- 4. Electricity** is required for operating heat pumps and other electricity consumed in production is based on origin-labeled electricity from non-fossil energy sources.
- 5. Fossil fuels:** We use a certain amount of fossil oils partly to start and stop plants and partly in plants that we mainly use during severe cold periods. Coal has been entirely phased out from our production. We also plan to phase out the remaining use of fossil oils.

77%
of the Company's energy production from renewable sources

75%
of the investments allocated to Green Bonds are aligned with the EU Taxonomy

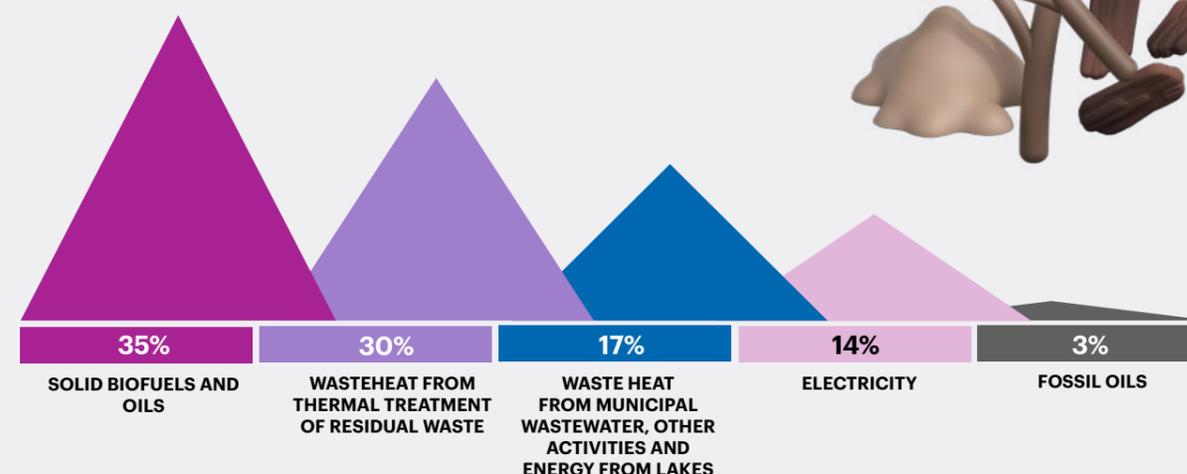
CO₂e emissions (district heating production) per heated property area



About district heating in Stockholm

Over the past 20 years, the heated area connected to district heating in Stockholm has more than doubled. At the same time, total emissions from district heating have decreased by more than 54 percent, meaning that the emissions per heated property area have decreased by more than 67 percent. This sharp decrease has been achieved together with property owners and businesses’ own energy efficiency improvements and replacements of fossil based heat production.

Solid biofuels and bio-oil account for 35 per cent of our supplied energy:



We demonstrate our sustainability impacts across the value chain

We are a society-critical business and have considerable responsibility to contribute to sustainable development. Therefore, we regularly analyse where our impact is greatest and which sustainability issues are most important to those affected by our operations.

This assessment is called a materiality analysis, and the most recent analysis was conducted in 2020. We confirmed that this materiality analysis is still relevant for us in 2024. The analysis is intended to help us understand who are affected by, and the effects of, our operations and thereby consider what we should focus on and what we can improve. This will form an important basis for our development and for our planning process. You can see the results of the analysis on this page and read more about it in the 2024 Annual Report. We also need to create economic value for our owners, customers, suppliers, employees and society in order to know that we can continue to operate long-term and so that we can afford to continue investing in the development of Stockholm's energy system.

Employees

Stockholm Exergi is Stockholm's energy company. Our employees have many different skills and tasks. Our shared aim is to reduce climate impacts. Our most important sustainability issue linked to employees is wellbeing and health, diversity and inclusion, and a safe working environment.

We contribute to the following UN SDGs:



Production

We meet Stockholm's electricity, heating and cooling needs through efficient and flexible energy production. We operate around 30 production plants that, in conjunction with each other and our partners' plants, ensure that greater Stockholm is supplied with cost-effective and sustainable energy regardless of weather or temperature. Our most important sustainability issues linked to our production are waste from operations, emissions to air and water, climate impact and disturbances to the local environment caused by our activities.

We contribute to the following UN SDGs:



Distribution

We pump hot water from our production plants into a network of pipes that serves thousands of properties all over greater Stockholm. Our plants and customers are connected in large and flexible networks, which enable us to optimise operations. Our most important sustainability issue linked to our distribution of district heating is disturbances to the local environment caused by our activities.

We contribute to the following UN SDGs:



Customers and society

Our customers have many different needs, but they all want district heating to be simple, affordable and sustainable to use. Our most important sustainability issues linked to customers and society are responsible actions based on Stockholm Exergi's position on the heating market, offering sustainable products and services, and offering employment to excluded groups.

We contribute to the following UN SDGs:



Society's waste products

We offer a community service that manages residual waste created when society has finished sorting – and we do this through the efficient use of resources. By incinerating residual waste, we produce electricity and heat from so-called energy recovery. Our most important issue related to society's residual products is waste treatment with energy recovery.

We contribute to the following UN SDGs:



Suppliers

Our choice of suppliers is vital to our efforts to establish sustainable value chains. We focus our monitoring activities where sustainability risks are greatest, and our ambition is to develop together with our suppliers. We take responsibility and manage risks in the value chain by imposing sustainability requirements on and auditing our suppliers. Our most important sustainability issues linked to suppliers include anti-corruption, renewable fuels, sustainable purchases and investments, transports, and the extraction of the Earth's resources.

We contribute to the following UN SDGs:



BECCS - Bio-Energy Carbon Capture and Storage project

Following an investment decision by the company’s Board of Directors, Stockholm Exergi will now move forward with building a world-class, full-scale BECCS (Bio-Energy Carbon Capture and Storage) facility at its existing biomass-based combined heat and power plant in the heart of Stockholm.

The BECCS process will capture the biogenic carbon dioxide from the renewable energy production that, for several years, has replaced the use of fossil fuels—thus adding a new climate benefit in the form of negative emissions.

The BECCS Stockholm project represents the largest planned bioenergy carbon capture initiative globally, targeting the removal of 800,000 tonnes of CO₂ annually, equivalent to approximately 8 million tonnes of gross removals over its first decade of operation. The project is a critical component of Stockholm Exergi’s climate strategy, the Swedish NECP, the EU’s decarbonisation objectives and the Strategic Energy Technology Plan (SET-Plan). The European Commission, IPCC, and ESABCC collectively highlight the necessity of large-scale BECCS deployment. Stockholm Exergi

has now established all the necessary links in the CCS value chain in Northern Europe.

The project is poised to become a cornerstone of Europe’s carbon removal market, providing high-integrity negative emissions. BECCS Stockholm will play a pivotal role in establishing Stockholm as a leader in carbon sequestration and negative emissions innovation. Stockholm Exergi assesses that the project will, going forward, also be eligible for financing through allocations within its green bond framework.



Projects financed under the 2024 Green Bond Framework

Under the Green Bond Framework, Stockholm Exergi issued green bonds with a total nominal value of MSEK 10,990. All of the proceeds have been allocated by the Green Bond Committee to the eligible projects presented in the table below.

The total investment amount for the chosen eligible projects amounts to MSEK 14,900.

Green Project Category	Project	Description	Total yearly impact for investment	Yearly impact for disbursed green bonds amounts
ICMA GBP categories, Renewable energy				
EU Taxonomy objective, Climate change Mitigation (CCM)				
Bioenergy CCM 4.20, 4.24	Biomass (CHP8) Värtan, completed 2016. Financing of new infrastructure projects associated with CHP8	Refinancing of new capacity for production of renewable energy. CHP8 has produced 1,660 GWh renewable heat and 320 GWh renewable electricity during 2024. Projects have been conducted to support and improve the production facility.	Actual savings: 61,200 tonnes CO ₂ e	Actual savings: 48,400 tonnes CO ₂ e
	CHP1 Värtan	Renovation of the CHP1 plant in Värtaverket including conversion to biofuels. A measure to secure sufficient electricity capacity in order to enable society’s necessary transformation from fossil fuel based road traffic to electric.	Expected emission reduction: 15,000 tonnes CO ₂ e	Expected emission reduction: 8,240 tonnes CO ₂ e
	G3 Värtan	Renovation of Gas turbine 3 in Värtaverket including conversion to biofuels. A measure to secure sufficient electricity capacity in order to enable society’s necessary transformation from fossil fuel based road traffic to electric road traffic.	Expected emission reduction: 3,340 tonnes CO ₂ e	Expected emission reduction: 2,580 tonnes CO ₂ e
	Projects enabling and improving bioenergy production	Modernisation and maintenance projects in Brista 1, Hammarby, Årsta and Orminge, that have together produced 700 GWh renewable heat and 60 GWh renewable electricity during 2024.	Actual savings: 25,600 tonnes CO ₂ e	Actual savings: 25,600 tonnes CO ₂ e
Waste heat CCM 4.25	CHP Brista2, completed 2014	CHP plant for waste incineration. Brista 2 has produced 490 GWh heat and 80 GWh electricity during 2024, thereby reducing the use of primary energy resources and emissions from landfill. Projects have been conducted to support and improve the production facility.	Actual savings: 68 GWh primary energy for heat production	Actual savings: 35 GWh primary energy for heat production
	P6 Högdalen	CHP plant for waste incineration in Högdalen. P6 has produced 380 GWh heat and 70 GWh electricity during 2024, thereby reducing the use of primary energy resources and emissions from landfill. Projects have been conducted to support and improve the production facility.	Actual savings: 70 GWh primary energy for heat production	Actual savings: 70 GWh primary energy for heat production
	P8 Högdalen, completed 2022	Construction of a new CHP plant for waste incineration in Högdalen, replacing boiler 1 and 2. Emission reductions are achieved by a new flue gas cleaning system. The plant is in operation since the beginning of 2021.	Actual emission reductions: - NOx 85 tonnes - NH ₃ 16 tonnes Estimated reduction of the use of ammoniac: 500 m ³	Actual emission reductions: - NOx 84 tonnes - NH ₃ 16 tonnes Estimated reduction of the use of ammoniac: 494 m ³ per year
	Rosersberg	Heat recovered from data center. 56 GWh waste heat was delivered to the district heating network during 2024.	Actual savings: 2,000 tonnes CO ₂ e	Actual savings: 2,000 tonnes CO ₂ e
	Lövsta	Project planning for the construction of a new CHP plant for waste incineration in Lövsta that will reduce reducing the use of primary energy resources.	N/A	N/A

Green Project Category	Project	Description	Total impact for investment	Impact for disbursed green bonds amounts
ICMA GBP categories, Energy efficiency EU Taxonomy objective, Climate change Mitigation (CCM) 				
Efficient district heating and cooling network CCM 4.15, 4.16	DH network connection to Nacka	New DH network connection to Nacka municipality will enable an increase of 200,000 MWh distributed heat per year.	Expected emission reduction: 39,800 tonnes CO ₂ e	Expected emission reduction: 2,620 tonnes CO ₂ e
	Sum of distribution projects enabling the connection of new end-users	These distribution projects have enabled an increase of 50 GWh distributed heat per year in average and an avoidance of 124,000 tonnes CO ₂ emissions in total since year 2019.	Actual savings: 1,700 tonnes CO ₂ e	Actual savings: 730 tonnes CO ₂ e
	Modernisation and maintenance of distribution projects	Modernisation and maintenance of DH network that enables DH distribution.	N/A	N/A
	Smart Buildings and Demand Side Management	Investments in hardware and infrastructure enabling reduced carbon emissions in production mix and enabling customers to reduce energy consumption further. This technology has reduced CO ₂ emissions with approximately 7,910 tonnes in total from year 2020 to 2024.	Actual savings: 400 tonnes CO ₂ e 9,760 MWh heat	Actual savings: 400 tonnes CO ₂ e 9,760 MWh heat
	DH Network connection	Project planning for the integration of the Northern and Central/South DH networks. The project will enable further development of the distribution system and thus allow an increase of environmental beneficial DH production.	N/A	N/A
Low carbon water transport infrastructure CCM 6.16	Energihamnen	Infrastructur maintenance of fuel storage enabling conversion to biofuels.	N/A	N/A

ICMA GBP categories, Pollution prevention and control EU Taxonomy objective, Climate change Mitigation (CCM) 				
Carbon Capture and Storage CCM 5.11, 5.12, 9.1	BECCS	Project for building Bio-carbon capture system at CHP8 in Värtaverket. The plant is planning to achieve a permanent removal of 800,000 tonnes of CO ₂ per year.	N/A	N/A

Outstanding Green Bonds

ISIN	Nominal amount (MSEK)	Issued	Maturity
SE0012193829	1600	2019	2026
SE0013101904	600	2020	2027
SE0013101912	1000	2020	2027
SE0013102241	250	2021	2028
SE0013102258	750	2021	2028
SE0016274468	400	2022	2026
SE0016274476	350	2022	2029
SE0016274484	750	2022	2029
SE0020356517	150	2023	2028
SE0020356525	300	2023	2028
SE0020356533	400	2023	2030
SE0020356541	750	2023	2030
SE0020356541	200	2023	2030
SE0020356749	1000	2024	2032
SE0021512985	1000	2024	2031
SE0020052744	500	2024	2032
NO0013415273	990	2024	2036
TOTAL	10,990		

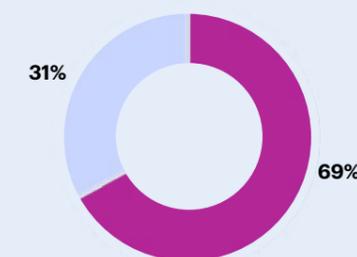
Total available Green Pool, MSEK 14,900
Outstanding Green Bonds, MSEK 10,990

Green Project Portfolio Distribution



Green Project Portfolio distribution based on total disbursed amounts:

- Bio energy
- Waste heat and Carbon Capture and Storage
- Efficient District Heating and Cooling network, Energy Storage and Low Carbon Water Transport Infrastructure



Distribution between new financing and refinancing based on disbursed amounts 2024:

- New projects
- Refinancing

Reporting methodology

Biomass (CHP8) Värtan, KVV1, G3, other bioenergy production projects, Rosersberg

Stockholm Exergi's green bond framework only covers investments in projects that maintain or develop the entire district heating system with regard to climate impact, share of renewable energy, resource efficiency or environmental impact. Individual projects are evaluated in terms of climate performance by comparing the performance of Stockholm Exergi's entire district heating system with a reference that corresponds to an average value for Swedish district heating. To calculate the actual annual avoided climate impact of the project for heat production, Stockholm Exergi district heating system with the completed project is compared to a baseline valid for Swedish district heating market. For electricity production, the impact is calculated based on Stockholm Exergi's average emissions for electricity production compared to a baseline for electricity production. The baseline used for heat production is estimated from national Swedish average for avoided alternative heating and from avoided alternative waste treatment, 84 g CO₂ per kWh according to NPSI Position Paper on Green Bonds Impact Reporting 2024. The baseline used for electricity is the European mainland mix including Norway, 191 g CO₂ per kWh according to NPSI Position Paper on Green Bonds Impact Reporting 2024.

Actual annual avoided climate impact (CO₂e) of the project = actual annual output of heating for the financed facility * (baseline emission factor for heat production - Stockholm Exergi's district heating system emission factor) + actual annual output of electricity for the financed facility * (baseline emissions factor for electricity - Stockholm Exergi's average emission factor for electricity production).

P8 Högdalen

To calculate the emission reductions related to the project, the expected improved performance of P8's new flue gas treatment system is compared to the emissions before project implementation. The same comparison is made concerning the use of ammoniac for NOx-reduction.

CHP Brista 2, CHP P6 Högdalen

Energy recovery from thermal incineration of residual waste results in a reduced need for primary energy resources to meet the current energy demand for a given year. The calculation is done counterfactually by assuming that the same volume of energy would instead have been produced with an energy mix that corresponds to the Swedish district heating energy mix. The Swedish district heating mix is assumed to reflect how alternative energy production would likely have been arranged. The difference in the need for primary energy between the actual energy production and the assumed production of the same energy volume with the Swedish district heating energy mix is the resource saving.

The reduced need of primary energy is calculated as follow: Actual annual reduced need of primary energy of the project = actual annual energy use for heat production in the financed facility * (primary energy factor for Swedish heat production - primary energy factor for actual heat production in facility).

Smart buildings

The CO₂ emissions savings regarding smart buildings and Demand Side Management are based on reduced customer energy consumption and Stockholm Exergi's district heating system annual environmental impact.

The annual environmental impact of optimized production is estimated to 1,1 tonnes CO₂ savings per customer which is itself based on how the production fuel mix is optimized.

Sum of distribution projects enabling the connection of new end-users, Nackaledning

To calculate the actual annual avoided climate impact of the projects, the sum of the completed projects is compared to a reference scenario in which the investment does not exist. The baseline emissions factor for heating is estimated from national Swedish average for avoided alternative heating and from avoided alternative waste treatment, 84 g CO₂ per kWh according to NPSI Position Paper on Green Bonds Impact Reporting 2024.

Actual annual avoided climate impact (CO₂e) of the projects = actual annual output of heating to new end users * (baseline emissions factor for heating - Stockholm Exergi's district heating system emission factor).

Auditor's Limited Assurance Report on Stockholm Exergi Holding AB (publ) Green Bond Report

To Stockholm Exergi Holding AB (publ) corporate identity number 556040-6034.

Introduction

We have been engaged by Group management at Stockholm Exergi Holding AB (publ) ("Stockholm Exergi") to undertake a limited assurance of the Impact reporting for the Green Bond Framework 2023 as set out on pages 2 and 7-10 in the Annual Green Bond Report for 2024 ("the Reporting").

Responsibilities of Group Management

The Group Management are responsible for the preparation of the the Reporting in accordance with applicable criteria. The criteria consist of Stockholm Exergi's Green Bond Framework dated November 2023, available on Stockholm Exergi's website as well as the accounting and calculation principles that the Company has developed. This responsibility also includes the internal controls deemed necessary to the preparation of the Reporting that is free from material misstatements, whether due to fraud or error.

Auditor's responsibility

Our responsibility is to express a conclusion on the Reporting based on our limited assurance procedures we have performed. Our engagement is limited to historical information and does not include future-oriented information.

We have conducted our limited assurance engagement in accordance with ISAE 3000 (revised) Assurance Engagements Other than Audits or Reviews of Historical Financial Information. A limited assurance engagement consists of making inquiries, primarily of persons responsible for the preparation of the Reporting, performing analytical procedures, and undertaking other limited assurance procedures. A limited assurance engagement has a different focus and considerably smaller scope compared to the focus and scope of an audit in accordance with International Standards on Auditing and generally accepted auditing standards in Sweden.

The audit firm applies ISQM 1 (International Standard on Quality Management), which requires the firm to design, implement, and manage a quality management system including policies or procedures concerning compliance with professional ethical requirements, professional standards, and applicable laws and regulations. We are independent in relation to Stockholm Exergi according to generally accepted auditing standards in Sweden and have fulfilled our professional ethics.

The procedures performed in a limited assurance engagement do not allow us to obtain such assurance that we become aware of all significant matters that could have been identified if an audit had been performed. The conclusion expressed based on a limited assurance engagement, therefore, does not provide the same level of assurance as a conclusion based on an audit has.

Our procedures are based on the criteria defined by Group Management, as described above. We consider these criteria suitable for the preparation of the Reporting.

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

Conclusion

Based on our limited assurance procedures we have performed, nothing has come to our attention that causes us to believe that the Reporting is not prepared, in all material respects, in accordance with the criteria, as explained in the Stockholm Exergi Green Bond Framework 2023.

Stockholm 14 May, 2025

Öhrlings PricewaterhouseCoopers AB

Camilla Samuelsson
Authorised Public Accountant

Stockholm Exergi in brief

Stockholm Exergi is Stockholm's energy provider. Using resource-efficient solutions, we ensure that the growing Stockholm region has access to electricity, heating, cooling and waste services. We provide heat to more than 800,000 Stockholmers and our 3,000-kilometre-long district heating network forms the basis for the societal benefits that we create together with our customers and partners. We are owned by the City of Stockholm and Ankhiale and our 800 employees work every day to reduce Stockholmers' climate impact. By developing carbon dioxide capture technologies, we are committed to making zero emissions a reality.

Links to related documents

- [Green Bond Framework 2023](#)
- [Second Party Opinion from S&P Global ratings](#)
- [Annual and Sustainability Report 2024](#)

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