



Stockholm Exergi Green Bond Framework

August 2019

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Stockholm Exergi Green Bonds

In 2015, we issued our inaugural green bond under our previous name AB Fortum Värme. In 2018, we changed our name to Stockholm Exergi AB.

The green bond market has evolved since 2015. This green bond framework ("Green Bond Framework" or "Framework") is therefore an update to the original framework, aligned with the latest market constructs like the Green Bond Principles updated in June 2018 by the International Capital Market Association. It is Stockholm Exergi's intention to follow best practices as new market standards develop. By setting up this new Green Bond Framework, Stockholm Exergi offer investors the opportunity to further support the transition towards a sustainable and low carbon energy system.

This Framework defines the projects and investments eligible for financing by green bonds issued by Stockholm Exergi ("Green Bonds"). In addition, the Framework outlines the processes used to identify, evaluate, select and report on eligible projects and the set-up for managing the Green Bond proceeds. The terms and conditions of the underlying documentation for each Green Bond shall provide a reference to this Framework.

CICERO Shades of Green has provided a second party opinion to the updated Green Bond Framework and Stockholm Exergi will assign an external auditor to annually provide a limited assurance of the management of proceeds and impact reporting.

August 22, 2019



Anders Egelrud
Chief Executive Officer



Kerstin Levin
Chief Financial Officer



Ulf Wikström
Chief Sustainability Officer

Background

Sustainability is a part of our business plan

In collaboration with customers and the local community, we develop the most efficient energy solutions for a sustainable and attractive city. Together, we integrate the city's systems for energy, waste management and sewage treatment, to recover energy and prevent toxic substances from polluting our common environment. Our services contribute to society through cleaner air, reduced transport and reduced carbon dioxide emissions. This is possible through efficient large-scale production, in-house operations and close cooperation with local players.

District heating has been of great importance to Stockholm. Since 1990, Stockholm's greenhouse gas emissions from heating have fallen to one-third – from 2.9 to 0.8 tonnes of carbon dioxide equivalent emissions per inhabitant and year. Our district heating has been crucial in this journey, but we are not done yet. By 2030, our energy production should be completely

climate neutral and this is at the heart of our entire business. Our sustainability goals govern everything we do and we also have policies, a code of conduct and purchasing requirements steering our operations and priorities to reach the goals.

In 2018, 86 percent of the heat we produced was based on renewable sources or recovered energy. To achieve the goal of 100 percent climate-neutral energy production by 2030, the last remaining coal in our operations must be phased out. This will be done in steps, starting in 2019 and by 2022, coal should be completely replaced by sustainable sources, including biomass from sustainable forestry, recovered energy from wastewater, energy from non-recyclable waste as well as excess heat from data centres and stores with refrigerated displays.



Who we are

Stockholm Exergi is the local energy company of Stockholm, owned by the City of Stockholm and Fortum. We have provided energy for the capital of Sweden since the 19th century.

Today, we provide heating for more than 800 000 people in metropolitan Stockholm and cooling for more than 400 properties, hospitals, data centres and other.

Stockholm Exergi's bonds are listed on Nasdaq Stockholm. At the end of 2018, Stockholm Exergi's total assets amounted to SEK 29.7 billion (EUR 2.9 billion) while revenue for the financial year 2018 was SEK 7.0 billion (EUR 0.7 billion).

Our 700 employees are working together with our customers and the local community to provide the city with simple, reliable and sustainable energy solutions.

District heating is crucial for Stockholm's contribution to mitigate climate change.

Exergi

Exergi, or “exergy” in English, refers to how useful a given source of energy is. This is the basis of our mission: not just to produce energy, but also to make the best possible use of available energy. This is why we build Combined Heat and Power (CHP) plants, rather than simply heat or power plants, and why we buy excess heat from data centres and recover energy from sewage water.

Our CHP is already much more efficient than traditional power plants. In 2018, Stockholm Exergi’s efficiency rate was 97 percent in heat production and 85 percent in electricity production. This is more than double the efficiency rate compared to coal fired thermal power plants. To this, CHP production is controllable, meaning that CHP can be used as a backstop to wind and solar power when the wind stops blowing or the sun is not shining. Stockholm Exergi is a force that, together with our partners, contribute to a more sustainable Stockholm.

Stockholm Exergi’s sustainability roadmap

Main characteristics of our sustainability roadmap

The roadmap is designed not to entail any emission lock-in technologies that prevent a development towards increased circularity or reduced climate impact.

Stockholm Exergi’s environmental targets

- The phasing out of coal is on-going and planned to be completed by the end of 2022.
- Climate- and resource-neutral energy production by 2030.

Stockholm Exergi’s road-map to achieving our environmental targets

- Phase-out of fossil fuels (at 2018 equivalent to about 17 percent of the energy input)
- Focus on high-efficiency co-production of heat and electricity in CHP plants, which, through advanced cleaning of emissions to air and water, contributes to reduced environmental impact.
- Use of biofuels from socially and ecologically sustainable sources and to ensure climate benefit in a holistic perspective with the help of Life Cycle Assessment (LCA), considering e.g. transports.
- Use of waste-based fuels, being residues in efficient waste-sorting concepts, predominantly from the Stockholm region but also from other parts of the country and Europe, which at the same time leads to reduced landfill and increased recycling and reuse of materials.
- Development of logistics solutions and technology for energy and climate-efficient transports, loading and off-loading.
- Recycling of waste heat from society (industries, wastewater treatment plants, data centers and other businesses).
- Recycling of finite resources or ecologically valuable substances from the company’s own residual products.
- Further develop the distribution networks for district heating and cooling.
- Implementation of technology for smart control of peak load and energy needs in properties, and introduction of fourth generation low-temperature district heating.
- Introduction of technology to create negative emissions through carbon sinks like Bio-energy with carbon capture and storage (BECCS) or production of biochar through pyrolysis of biomass.

Stockholm Exergi's roadmap towards resource-efficient and fossil-free district heating consists of many areas of actions and comes with extensive investments. Our district heating has in a decisive way contributed to the City of Stockholm's goals and action plan to reduce the climate impact per inhabitant in the municipality. The roadmap will continue to be of fundamental importance for the city's current and future climate goals as well as for achieving the national climate targets and Sweden's Nationally Determined Contributions under the United Nations Framework Convention on Climate Change.

The aim of the roadmap is to continue providing the growing Stockholm region with energy with a lower climate impact - without an increased need for primary energy sources. By 2030, our energy production should be completely climate neutral, and we are already working with solutions to reach even further and transform Stockholm into a carbon sink, absorbing the carbon dioxide of the atmosphere.

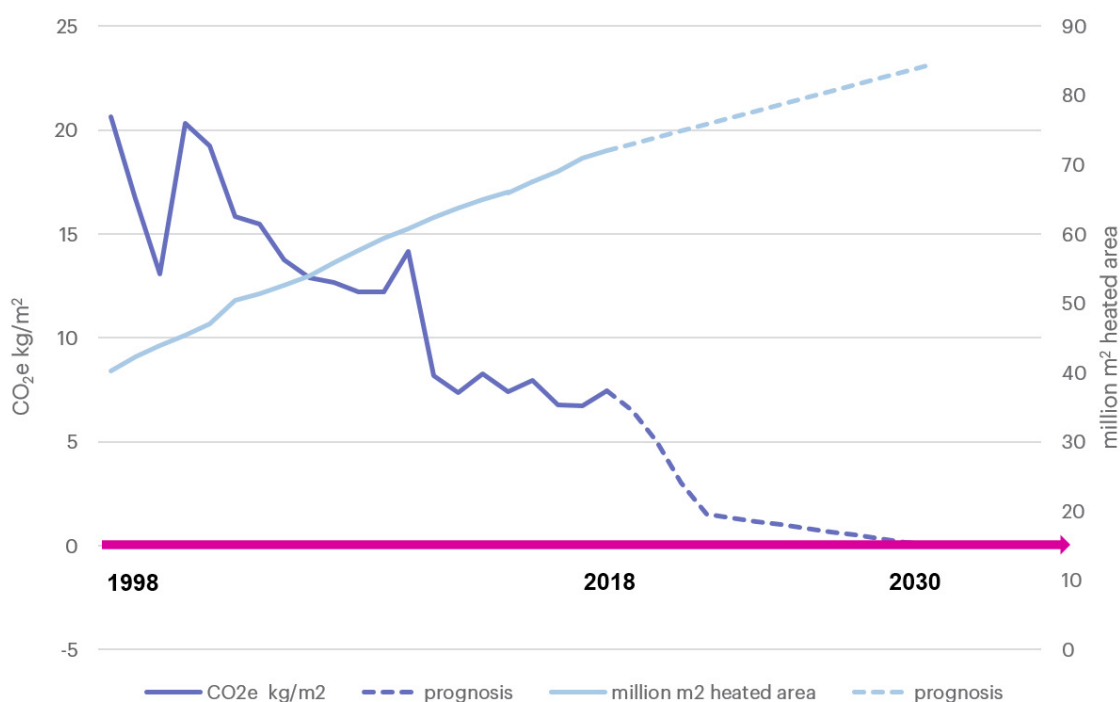
Indirect climate impact

Our operations require transport of fuels and chemicals as well as maintenance. Transport to and from the production sites requires the use of fossil fuels, which is currently difficult to avoid. Our total climate impact, including production, processing and transport is calculated and disclosed annually in our sustainability reporting. To the largest extent possible, we use trains or ships for transport

Sustainable biofuels

Our use of biofuels is extensive. Most of these biofuels come from the Nordic or the Baltic region. A minor part may also be purchased from outside the Nordic region and the EU in order to secure supply also in the event of scarcity in the nearby region.

All biofuels are purchased from sustainable sources. The climate impact – including transportation – is calculated from a life-cycle perspective.



Over the past 20 years, the heated area of properties connected to district heating in Stockholm has almost doubled. At the same time, total emissions from district heating have decreased by 35 percent, meaning that the emissions per heated property area have decreased by 64 percent. This sharp decrease has been achieved together with property owners and businesses' own energy efficiency improvements and replacements of fossil based heat production. In order to achieve net-zero CO₂-emissions, energy must be used efficiently, fossil fuels must be phased out, and the fossil content in the refuse derived fuels must be reduced.

Use of Proceeds

Allocation of net proceeds

An amount equal to the net proceeds of the Green Bonds will finance or refinance, in whole or in part, investments undertaken by Stockholm Exergi that promote the transition towards low-carbon and resource-efficient growth ("Green Projects"), in each case as determined by Stockholm Exergi in accordance with the Green Project categories as defined below. Green Projects form a portfolio of assets eligible for financing and refinancing by Green Bonds.

Financing and refinancing

Net proceeds can finance both existing and new Green Projects. New financing is defined as Green Projects under construction or Green Projects taken into operation less than 12 months prior to the approval by Stockholm Exergi's Green Bond Committee. Refinancing is defined as financing for Green Projects taken into operation more than 12 months prior to the Green Bond Committee's approval.

The distribution between new financing and refinancing will be reported on in Stockholm Exergi's annual reporting.

Exclusions

Green Bond net proceeds will not be allocated to projects focused on fossil energy generation, nuclear energy generation, potentially environmentally harmful resource extraction (such as rare-earth elements or fossil fuels).

Sustainable Development Goals

In 2015, the UN published the Sustainable Development Goals (SDGs) to serve as a blueprint to achieve a better and more sustainable future for all. Stockholm Exergi particularly focuses on 7 SDG's:

- No. 7 "Affordable and Clean Energy",
- No. 8 "Decent Work and Economic Growth"
- No. 11 "Sustainable Cities and Communities",
- No. 12 "Responsible Consumption and Production",
- No. 13 "Climate Action"
- No. 15 "Life On Land"
- No. 16 "Peace, Justice and strong institutions"

In this Framework, we have presented relevant SDG goals and targets for each Green Project category in accordance with the High-Level Mapping to the Sustainable Development Goals published by the International Capital Market Association ¹.

Sustainable Development Goals



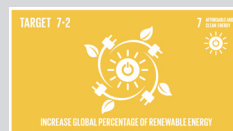
¹⁾ <https://www.icmagroup.org/green-social-and-sustainability-bonds/mapping-to-the-sustainable-development-goals/>

Green Project Categories

Renewable Energy

According to the IPCC, the energy supply sector is the largest contributor to global anthropogenic GHG emissions with a share of approximately 35%. Realising the transformation towards a 1.5° C world requires a major shift in investment patterns. In 1.5° C compliant pathways, renewable energy generates on average 60% of primary energy supply in 2050, compared to 15% in 2020².

The financing or refinancing for the production, appliances, establishment, acquisition, expansions and/or upgrades/modifications of renewable energy, as well as related Research and Development programmes and/or the associated infrastructure including loading, harbour and rail capacity.



Affordable and clean energy

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix.

Bio energy

- Facilities producing biofuel, biogas, biochar and/or biomass such as biofuel preparation, pre-treatment, bio-refinery and pyrolysis facilities.
- Facilities for electricity generation or district heating/cooling, as well as the combination (CHP), that use biofuel or biomass as fuel³. Facilities often use a mix of different sustainable energy sources such as biomass/fuel, waste⁴, water-thermal and recovered energy from data centres and wastewater treatment.
- Rail and shipping related infrastructure needed for the transport, loading, off-loading and storage of biomass to our production plants.

- In the evaluation of all bioenergy projects, the environmental and social impact of supply chain elements are taken into account. Biomass/fuel deriving from sources of high biodiversity that competes with food sources is excluded⁵.
- Sustainability of the supply chain is proven through Stockholm Exergi's own control system that ensures verification of sustainability requirements in line with certifications such as the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC).

Thermal energy

Water-thermal heating/cooling systems, including storage facilities in e.g. caverns.

²) IPCC Special Report on the impacts of global warming of 1.5°C, 2018.

³) Stockholm Exergi does not classify peat as a renewable energy source.

⁴) Less than 10 per cent fossil or plastic in the mix by energy.

⁵) Where applicable, compliant with Renewable Energy Directive.

Waste management and pollution prevention

Recycling materials and developing a circular economy requires advanced capabilities and organizational structures but have advantages in terms of cost, health, governance and environment. With a continuously increasing number of business ideas turning waste to profits, the Nordic region has proved that the circular economy is no longer just a theory. As a consequence, Sweden has less than 1 percent of municipal waste to landfill.

The financing or refinancing of the establishment, acquisition, expansion and/or upgrades of; waste management and waste to energy facilities, solutions contributing to reducing pollution generated in the operations, as well as the associated infrastructure and related Research and Development programmes.



Sustainable cities and communities

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.



Responsible consumption and production

12.2 By 2030, achieve the sustainable management and efficient use of natural resources.

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.



Waste management

Recycling facilities and related infrastructure, including treatment and processing of all types of waste, with the purpose to minimize the amount of waste to landfill and bring back valuable raw material to the market.

Waste to energy

Waste-based energy facilities, where energy recovery from waste follows a waste hierarchy to ensure that as much of the waste as possible is reused and recycled before being converted to energy. Life cycle aspects of waste transportation will also be considered.

Removal of Harmful Substances

Soil remediation and removal and replacement of harmful substances in products and materials.

Reduction of air and waste water pollutants

Investments in technologies and systems to reduce emissions to air, preventing pollutants to reach ground water and purification of waste water, and emissions of nitrogen oxides, flue gas, sulphur, particle pollution and other toxic pollutants.

Removal of Harmful Substances

Soil remediation and removal and replacement of harmful substances in products and materials.

Technologies to facilitate carbon sinks

Bio energy carbon capture and storage (BECCS) facilities to produce biochar or other carbon sinks.

Technologies to recover energy

Techniques and infrastructure to recover energy from e.g. data centres and wastewater treatment.

⁶⁾ IPCC report on Climate Change 2014

Transmission, distribution of renewable energy, energy recovery and energy storage

While individual clean energy technologies are the building blocks of clean energy transitions, it is also necessary to employ energy integration systems to maximise their impact. Energy integration technologies such as smart meters, energy storage and demand response play a crucial role in increasing the flexibility of energy systems⁷. The development of new district heating solutions such as advanced 4th generation district heating systems, increased involvement of end users, and growth in order to supply an increased building area, will be crucial in order to achieve higher efficiency and reduced emissions.

The financing or refinancing of the establishment, acquisition, expansion and upgrade of; district heating/cooling distribution, facilities for energy recovery and energy storage, technologies contributing to low-carbon and more efficient distribution systems, as well as the associated infrastructure and related Research and Development programmes.reduced emissions.



Affordable and clean energy

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix.

- Distribution systems connecting end-users with district heating/cooling or to enable change in operations.
- Smart distribution systems, storage facilities, metering systems, fourth generation district

heating networks based on lower temperature water distribution and a higher contribution from renewable energy and waste heat, and other intelligent energy systems managing the intermittency of renewable energy production.



⁷⁾ The International Energy Agency – Tracking Clean Energy Progress, Energy integration

Green Project Evaluation and Selection

Allocation of Green Bond proceeds

Stockholm Exergi's overall management of environmental, social, governance and financial risks is integrated in the corporate strategy and is therefore a core component of the decision processes.

Green Project evaluation and selection process

Green Projects shall comply with the eligibility criteria defined under the Green Project Categories. The process to evaluate, select and allocate Green Bond proceeds to eligible Green Projects comprise the following steps:

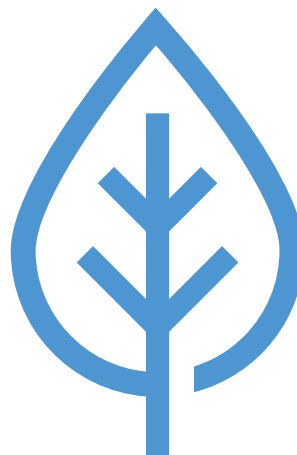
1. The responsible Project Manager evaluates the potential Green Project in cooperation with the Sustainability Department. If a project is eligible, it will be added to the **Green Project prospect pool**.
2. The Green Bond Committee prioritizes and approves potential Green Projects from the prospect pool based on adherence to the Green Bond Framework. If a project is approved, it will be added to the **Green Project pool for allocation**.
3. The Green Bond Committee allocates proceeds from the issuance of Green Bonds to projects from the Green Project Pool for allocation. Only projects which are chosen unanimously will be added to the **list of allocated Green Projects**.
4. Selection and allocation decisions are documented and filed.

Green Bond Committee

The Green Bond Committee is chaired by the Chief Financial Officer and comprises the following members:

- Chief Financial Officer
- Head of Sustainability
- Head of Treasury

For the avoidance of doubt, the Green Bond Committee holds the right to exclude any Green Project already funded by Green Bond net proceeds. If the Green Project is sold, or for other reasons loses its eligibility, funds will then follow the procedure under Management of Proceeds until reallocated to other eligible Green Projects.



Management of Proceeds

Tracking of Green Bond net proceeds

An amount equal to the Green Bond net proceeds will be credited to a “Special Account”. The Special Account ensure that Green Bond net proceeds only support Green Projects or to repay Green Bonds.

As long as the Green Bonds are outstanding and the Special Account has a positive balance, funds will be deducted when relevant or at least annually from the Special Account in an amount equal to all disbursements made during such year in respect of eligible Green Projects. All transfers from the Special Account will be documented to ensure a full audit trail and to simplify the Green Bond reporting.

Temporary Holdings

While any Green Bond net proceeds remain unallocated, Stockholm Exergi will temporarily place funds in the liquidity reserve and manage them accordingly. However, unallocated proceeds may not be invested in fossil fuel related assets. The maximum period that net proceeds may be unallocated is 12 months.

Reporting and Transparency

Stockholm Exergi will annually, and until maturity of the Green Bonds issued, provide to investors on stockholmexergi.se the following information:

- (i) A summary of Green Bond developments.
- (ii) The outstanding amount of issued Green Bonds.
- (iii) The balance of the Special Account (including any temporary investments and Green Bond repayments) and the available headroom in the value of the Green Projects (if any).
- (iv) The total proportion of Green Bond net proceeds used to finance new Green Projects (ongoing or taken into operation less than 12 months prior to the approval by Stockholm Exergi’s Green Bond Committee) and the proportion of Green Bond net proceeds used to refinance Green Projects finalized earlier than that.
- (v) The total aggregated proportion of Green Bond net proceeds used per Green Project Category.
- (vi) Impact reporting per project, as described below.



The reporting aims at disclosing the environmental impact of the investments in Green Projects made under this Framework, based on Stockholm Exergi's Green Bond financing share of each project. The impact assessment is provided with the reservation that not all related data can be covered and that calculations therefore will be on a best intention basis, e.g. if a Waste to Energy production facility is under construction but not yet operational, Stockholm Exergi will provide best estimates of future energy

production levels. Stockholm Exergi will, to the extent possible, make every effort to follow the impact reporting principles stated in the "Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting".

The impact assessment will, if applicable, be based on the Key Performance Indicators (KPIs) presented in the table below.

Green Project Category	Indicative Key Performance Indicators (KPI)
Renewable Energy	<ul style="list-style-type: none"> Renewable energy generation (MWh per year) Installed renewable energy capacity (MW) GHG savings (tonnes per year)
Waste Management and pollution prevention	<p>Waste management</p> <ul style="list-style-type: none"> Quantity of recycled material (tonnes per year) GHG savings (tonnes per year) <p>Reduction of air and waste water pollutants</p> <ul style="list-style-type: none"> Types and quantity of emissions and/or pollution reduction (tonnes per year) <p>Removal of Harmful Substances</p> <ul style="list-style-type: none"> Types and quantity of substances removed <p>Technologies to facilitate carbon sinks</p> <ul style="list-style-type: none"> Carbon dioxide captured (tonnes per year) <p>Technologies to recover energy</p> <ul style="list-style-type: none"> Quantity of recovered energy (MWh per year) GHG savings (tonnes per year) <p>Waste to energy</p> <ul style="list-style-type: none"> Energy generation (MWh per year) GHG savings (tonnes per year)
Transmission, distribution of renewable energy, energy recovery and energy storage	<ul style="list-style-type: none"> Distance of transmission (km) or distribution capacity (MW) Energy transmitted or distributed (MWh per year) Energy savings (MWh per year) Energy reused or recovered (MWh per year) GHG savings (tonnes per year)