



# Annual Green Bond Report 2020

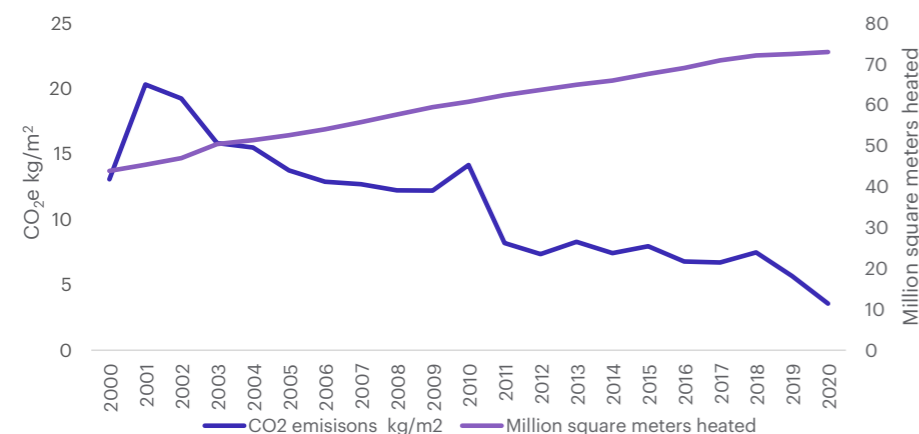
Stockholm Exergi

# We will be climate positive by 2025

The climate challenge is not waiting. It needs to be met here and now and we at Stockholm Exergi want to contribute. 2020 was therefore the year in which we sharpened our strategic climate goals considerably: by 2025, we will be climate positive. Our new goal can also contribute to making Stockholm the world's first climate-positive capital. It is an offensive goal; in just five years we will be there. And it is precisely the speed that is the point, we must act quickly to help reverse the negative development of the climate. It will require a lot from us as company, capability and determination must go hand in hand for us to succeed all the way. And we will, because there is no alternative if we are to succeed in achieving what we have

agreed in the Paris Agreement. It is primarily about reducing global carbon dioxide emissions, it is the most important and effective way to succeed in reaching the 1.5-degree goal. We all agree on that, but we must do more. The UN's climate panel IPCC has developed a variety of scenarios for how to succeed and the vast majority of these show that we need to do more than reduce carbon dioxide emissions - we also need to capture and store carbon dioxide from the atmosphere. We at Stockholm Exergi work on both fronts, both to reduce our emissions and to remove carbon dioxide. Issuing green bonds enables us to invest in sustainable projects which helps us achieving those ambitious goals.

## CO<sub>2</sub>-emissions from district heating per heated square meter



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 more than 54 percent, meaning that the emissions per heated property area have decreased by more than 72 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 CO<sub>2</sub>-emissions, energy must be used efficiently, fossil fuels must be phased out, and the fossil content in the refuse derived fuels must be reduced.

# Impact reporting for the Green Bond Framework 2019

In August 2019, Stockholm Exergi Holding AB (publ) updated its Green Bond Framework and received a second opinion from the Norwegian climate research institute CICERO Shades of Green. With a CICERO Dark Green shading and an excellent governance assessment the 2019 Green Bond Framework achieved the highest possible rating outcome. Both the Green Bond Framework and the second opinion from CICERO can be [found here](#).

In September 2019, Stockholm Exergi Holding AB (publ) issued its first green bonds under the updated framework and in September 2020, three additional green bonds with a total amount of 2 000 MSEK were issued. As per December 31st 2020, Stockholm Exergi had in total issued 5 green bonds with a total nominal amount of 4 000 MSEK and maturities between Sep 2023

and September 2027 under the 2019 Green Bond Framework.

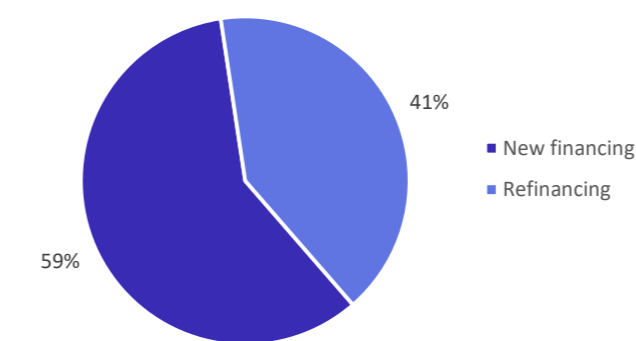
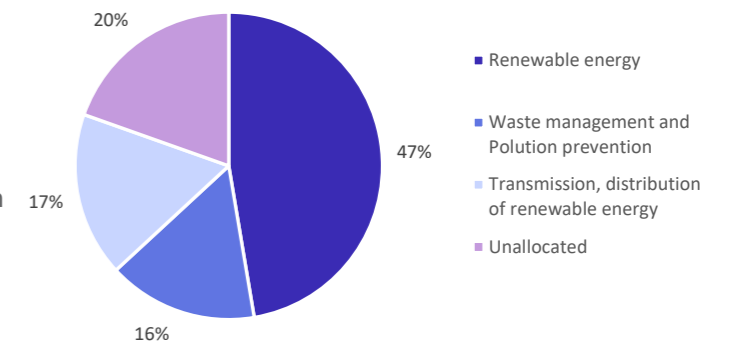
About 80% of the proceeds of 4 000 MSEK have been allocated by Stockholm Exergi's Green Bond Committee to the three different green project categories and thereof most of the proceeds (59%) were allocated to projects within the renewable energy category. More than half of the proceeds (59%) have been allocated to new projects instead of refinancing of older eligible projects.

The following charts illustrate the allocation of proceeds to the different green project categories and between new financing and refinancing. The use of proceeds from green bonds and allocation to eligible green investments outlined in this report is as per cut off date December, 31st 2020 and the impact reporting is based on calendar year 2020, where relevant.

## Green Project Portfolio distribution based on disbursed amounts

The proceeds of the Green Bonds will finance or refinance, in whole or in part, investments undertaken to promote the transition towards low-carbon and resource-efficient growth ("Green Projects") under the following categories:

- Renewable energy
- Waste management and Pollution prevention
- Transmission, distribution of renewable energy



## Distribution between new financing and refinancing based on disbursed amounts

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.

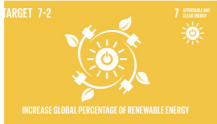
# Projects Financed under the 2019 Green Bond Framework

Under the 2019 Green Bond Framework, Stockholm Exergi issued green bonds with a total nominal value of SEK 4 billion in September 2019 and September 2020. Out of the total proceeds, 3 217 MSEK have been allocated by the Green Bond Committee to the eligible projects presented in the table below. The unallocated amount of 783 MSEK will be allocated during the first half of 2021.

The total investment amount for the chosen eligible projects amounts to over 7 500 MSEK and the share of the respective project that is financed by bonds under the 2019 Green Bond framework is stated in the "Outstanding disbursed green bond amounts" column. If not otherwise mentioned, all amounts refer to new financing:

Sustainability Performance Goal	Green Project Category	Project	Description	Total Investment MSEK	Total impact for investment	Outstanding disbursed green bond amounts allocated to project 2019-2020 MSEK	Impact for disbursed green bonds amounts	Impact tonnes CO <sub>2</sub> e per MSEK
 TARGET 7-2: INCREASE GLOBAL PERCENTAGE OF RENEWABLE ENERGY   TARGET 11-6: REDUCE THE ENVIRONMENTAL IMPACT OF CITIES	Renewable Energy	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 1 470 GWh renewable heat and 413 GWh renewable electricity during 2020. Infrastructure projects have been conducted to support and improve the production facility.	5 830	Actual savings: 246 700 tonnes CO <sub>2</sub> e	1 747  (of which 1330 MSEK is refinancing)	Actual savings: 73 925 tonnes CO <sub>2</sub> e	42
		CHP1 Värtan	Renovation of the CHP1 plant in Värtaverket including conversion to biofuels.	N/A	N/A	139	Expected emission reduction: 2 240 tonnes CO <sub>2</sub> e	N/A
		G3 Värtan	Renovation of Gas turbine 3 in Värtaverket including conversion to biofuels.	N/A	N/A	8	Expected emission reduction: 14 tonnes CO <sub>2</sub> e	N/A
 TARGET 12-2: SUSTAINABLE MANAGEMENT AND USE OF NATURAL RESOURCES	Waste management and pollution prevention	P8 Högdalen, under construction, completion 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 has been in pilot operation during 2020.	800	Expected emission reduction: - NO <sub>x</sub> 76 tonnes - NH <sub>3</sub> 8 tonnes  Expected reduction of the use of ammoniac: - 500 m <sup>3</sup> per year	622	Expected emission reduction: - NO <sub>x</sub> 59 tonnes - NH <sub>3</sub> 6 tonnes  Expected reduction of the use of ammoniac: - 389 m <sup>3</sup> per year	N/A
		Technologies to facilitate carbon sinks, BioCCS, pilot ongoing with start 2019.	Research project regarding Bio-carbon capture system technology that when built as a full-scale plant is estimated to achieve a reduction of 800 000 tonnes of CO <sub>2</sub> per year.	15	N/A	9	N/A	N/A

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 <p>TARGET 7-2 INCREASE GLOBAL PERCENTAGE OF RENEWABLE ENERGY</p>	Transmission, distribution of renewable energy, energy recovery and energy storage	Investments related to "Smarta Fastigheter" (Smart Buildings) and DSM (Demand Side Management). Ongoing with start 2019.	Investments in hardware and infrastructure enabling reduced carbon emissions in production mix and enabling customers to reduce energy consumption further.  This technology has the potential of reducing CO <sub>2</sub> emissions with approximately 15 000 tonnes in total until year 2025.	135	Actual savings: 180 tonnes CO <sub>2</sub> e 2050 MWh heat	135	Actual savings: 180 tonnes CO <sub>2</sub> e	1,3
		Sum of distribution projects enabling the connection of new end-users. Investments during 2020.	These distribution projects will enable an increase of 52 GWh distributed heat per year and an avoidance of 35 000 tonnes CO <sub>2</sub> emissions in total until year 2025.	566	Actual savings: 5 846 tonnes CO <sub>2</sub> e	430	Actual savings: 4 441 tonnes CO <sub>2</sub> e	24
		DH network connection to Nacka (Nackaledning)	New DH network connection to Nacka municipality will enable an increase of 200 000 MWh distributed heat per year.	215	Expected emission reduction: 135 600 tonnes CO <sub>2</sub> e	85	Expected emission reduction: 53 600 tonnes CO <sub>2</sub> e	N/A
		DH network connection (Sammanbindningsledning)	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		42		N/A
<b>TOTAL</b>						<b>3 217</b>		<b>24</b>

## Reporting methodology

### Biomass (CHP8) Värtan, KVV1, G3

To calculate the actual annual avoided climate impact of the project, the completed project is compared to a baseline in which the investment does not exist. The impact of heat and electricity production are added. The baseline used for heat production is Stockholm Exergi's district heating system's annual impact before project implementation. The baseline used for electricity is the European mainland mix including Norway, 315 g CO<sub>2</sub> per kWh according to Nordic Position Paper on Green Bonds Impact Reporting.

Actual annual avoided climate impact (CO<sub>2</sub>e) of the project = actual annual output of heating for the project \* (baseline emission factor for heat production - project emission factor) + actual annual output of electricity \* (baseline emissions factor for electricity - project emission factor).

### 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 ammonia for NOx-reduction.

### Smart buildings

The CO<sub>2</sub> 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 0,9 tonnes CO<sub>2</sub> 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, 158 g CO<sub>2</sub> per kWh according to Nordic Position Paper on Green Bonds Impact Reporting.

Actual annual avoided climate impact (CO<sub>2</sub>e) 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).

## Green Bond Framework 2015

In May 2015, Stockholm Exergi Holding AB (publ) issued its inaugural green bonds under the 2015 Green Bond Framework. Two bonds were issued with tenors of 6 and 7 years and by the time of issuance, this transaction was considered the largest green bond transaction in SEK ever.

All of the proceeds, 2 500 MSEK, have been allocated during 2015. 2 254 MSEK were allocated

to new projects and 246 MSEK to refinancing of older compliant projects. The projects in the portfolio are eligible based on Stockholm Exergi's Green Bond Framework from 2015, which has received a second opinion from the Norwegian climate research institute CICERO. The projects cover all areas of the framework – Renewable energy, Energy efficiency and Reduced environmental impact.

Project	Stockholm Exergi Green Bond Framework	Improvement	Total Investment SEK million	Disbursed green bond amounts SEK million
New waste incinerated CHP Brista 2	New capacity in waste to energy (WtE) solutions or change of energy source in existing production in order to reduce primary energy usage in society.	New capacity reduces the use of primary energy resources by approximately 45 GWh per year.	2 200	1 250
New biomass CHP Värtan (CHP8)	New capacity for production of renewable energy (new plants or production units, modification of existing facilities).	Reduces CO <sub>2</sub> -emissions in Stockholm by 345 000 tons per year.	5 800	812
New sales replacing old solutions	Investments in distribution systems that enable change in operations, or enable the connection of end users to the district heating network and thereby replacing local fossil supply.	Annual reduction of 8 600 tons of CO <sub>2</sub> .	85	85
Flue Gas Condensation Brista and Högdalen	Flue gas and waste water cleaning. Energy recovery measure at production site.	Water emissions well within scope of environmental permit. 536 GWh of annual energy recovery.	82	82
Heat recovery in Brista	Energy recovery measures at production site.	32 GWh of annual energy recovery.	25	25
Refinancing	Refinancing of existing eligible projects.			246
<b>Total</b>				<b>2 500</b>

# Auditor's Limited Assurance Report on Stockholm Exergi's Green Bond Report

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

## Introduction

We have been engaged by Stockholm Exergi Holding AB (publ) ("Stockholm Exergi") to undertake a limited assurance engagement of the the Impact reporting for the Green Bond Framework 2019 as of 31 December 2020 as set out on page 3-6 in this document ("the Reporting").

## Responsibilities of Management

Stockholm Exergi Management is responsible for the preparation of the Reporting in accordance with the applicable criteria, as explained in the Stockholm Exergi Green Bond Framework 2019 (available at <https://www.stockholmexergi.se/om-stockholm-exergi/finansiell-information/finansiering/>) as well as the accounting and calculation principles that the Company has developed. This responsibility also includes the internal control relevant to the preparation of the Reporting that is free from material misstatements, whether due to fraud or error.

## Responsibilities of the auditor

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

We conducted our limited assurance engagement in accordance with ISAE 3000 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, and applying analytical and other limited assurance procedures. The procedures performed in a limited assurance engagement vary in nature from, and are less in extent than for, a reasonable assurance engagement conducted in accordance with International Standards on Auditing and other generally accepted auditing standards in Sweden.

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

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

Our procedures are based on the criteria defined by Stockholm Exergi 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 conclusion below.

## Conclusion

Based on the limited assurance procedures we have performed, nothing has come to our attention that causes us to believe that the Reporting as of 31 December 2020, is not prepared, in all material respects, in accordance with the applicable criteria, as explained in the Stockholm Exergi Green Bond Framework 2019.

Stockholm 11 May 2021  
Deloitte AB

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Authorized Public  
Accountant

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Expert Member of FAR