



Annual Green Bond Report 2015

Fortum Värme

Green Bond Report

In May 2015, AB Fortum Värme Holding samägt med Stockholms stad (publ), made its first green bond issuance. Fortum Värme raised 2 500 MSEK in a dual tranche 6 and 7 years maturities and is still considered the largest ever green bond transaction in SEK.

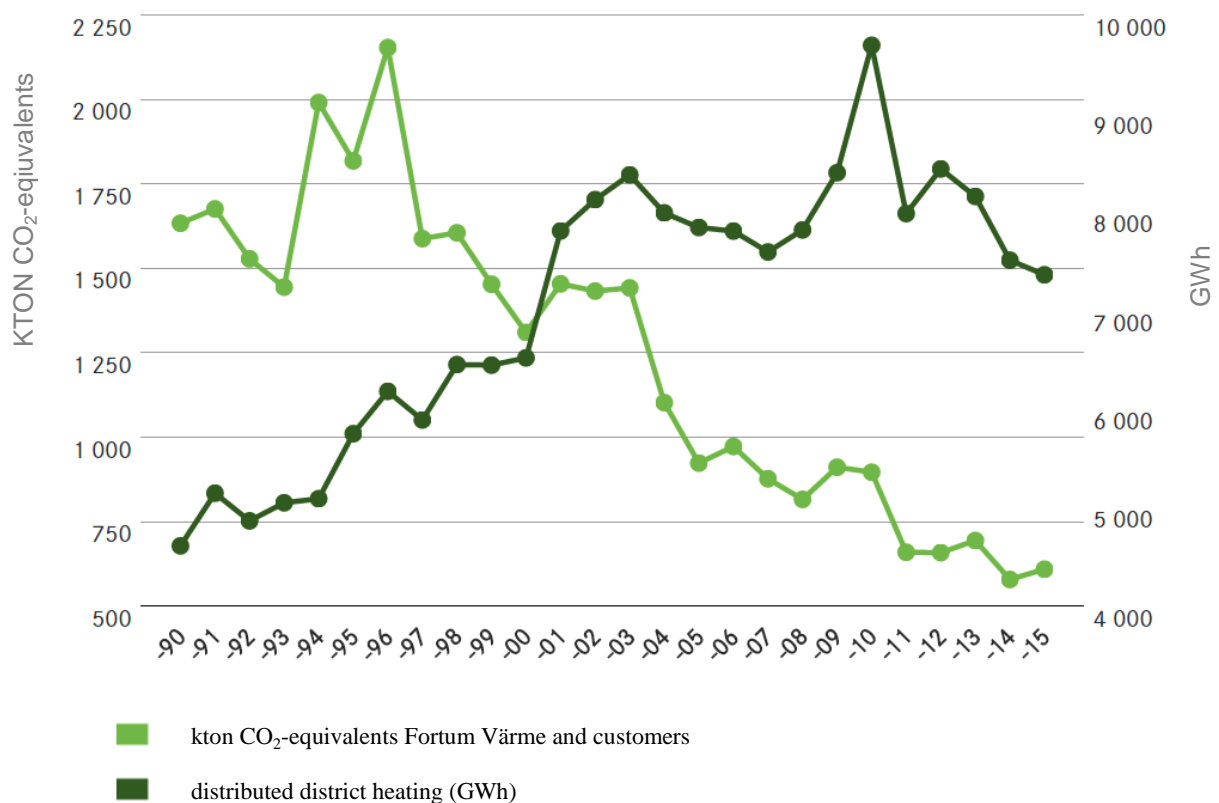
Issuing green bonds was a natural choice for Fortum Värme given the sustainable business and the ambitious investment in renewable energy production and carbon emission reductions.

During the last two years Fortum Värme have established a stand-alone funding where we are pleased to conclude that over 50% of the funding is conditioned by the environmental benefits of our business, green bonds represents approximately one third of that portion. For further information please visit [Fortum Värme's website](#).

Radically Reduced Emission of Greenhouse Gases from Heating of Stockholm Area

District heating has a long history of strong expansion. The supply doubled since the beginning of 1990's and now covers well over 80 % of overall heating demand in Stockholm.

As seen below a major part of the expansion is due to connection of existing properties. Through a combination of small oil boilers shut down, better environmental performance in the production, and energy efficiency in buildings, the overall climate impact due to heating of constructions in Stockholm, has been radically reduced.



Project's Financed With the Proceeds From the Green Bonds

All of the proceeds 2 500 MSEK have been utilized. 2 254 MSEK is allocated to new projects and 246 MSEK to refinancing of older projects meeting the criteria's of the green bond framework.

The projects in the portfolio are eligible based on Fortum Värme's green bond framework from 2015, which also have a second opinion from the Norwegian climate research institute CICERO. The projects cover all areas in the framework – Renewable energy, Energy efficiency and Reduced environmental impact.

Project	Fortum Värme Green Bond Framework	Improvement	Total Investment, MSEK	Allocated from Green Bonds, MSEK
New waste incinerated CHP in Sigtuna (Brista 2)	New capacity in waste to energy 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 130 GWh per year	~2 200	1 250
New bio incinerated CHP in Värtan (KVV8)	New capacity for production of renewable energy (new plants or production units, modification of existing facilities)	Reduces CO ₂ -emissions in Stockholm by 126 000 tons per year and within the EU by 650 000 tons per year	~5 000	812
New sales replacing old solutions	Investments in distribution systems that enables change in operations, or enables connecting end users with district heating and by that replacing local fossil supply	Annual reduction of over 11 000 tons of CO ₂ and over 50 % increased use of renewable or recovered energy	85	85
Flue Gas Condensation Brista and Högdalen	Flue gas and waste water cleaning	Reduction of emissions of ammonium and heavy metals	82	82
Heat recovery in Brista	Energy recovery measures at production site as well as locally at customer	Approximately 16 GWh of energy recovery from production process	25	25
Refinancing of old eligible projects				246
Total				2 500 MSEK

Examples of Projects

100% Renewable Energy in the New CHP Plant at Värtan, Stockholm



Investments and projects intended to increase new capacity for production of renewable energy in new plants or production units or modification of existing facilities.

1 700 GWh heat and 750 GWh electricity per year represents an annual heat demand in 190 000 apartments

Reduces CO₂-emissions in Stockholm by 126 000 tons per year and within the EU by 650 000 tons per year

Total investment ~ 5000 MSEK

Small Scale Energy Efficiency – Replacing Old Solutions with District Heating and Cooling



Investments to replace old solutions based on fossil oil, electricity and cooling machines by expansion of district heating and cooling grid, new capacity for district cooling and demand side management, will increase recovered and renewable energy.

The Annual new sales for Fortum Värme is 100-200 GWh of heat and 10-15 GWh of cooling. Fortum Värme have during May 2014 to December 2015 invested in replaced fossil oil and small scale chillers, leading to an annual reduction of over 11 000 tons of CO₂ and over 50 % increased use of renewable or recovered energy.

Total investment ~ 85 MSEK

Reducing Environmental Impact



Investments and project intended to decrease emissions (other than CO₂), waste management, re-use of flue gas, waste water management and biodiversity.

Flue Gas Condensate cleaning system reduces emissions of ammonium and heavy metals. Enabled construction of wetlands in Steningedalen nature park with additional water treatment and increased biodiversity.

Total investment ~ 82 MSEK



AB Fortum Värme samägt med Stockholms stad (Publ)

Fortum Värme produces district heating, district cooling and electricity. The company has contributed to Stockholm being counted among the world's cleanest capital cities and that Stockholm was designated by the EU in 2010 as the world's first environmental capital – Green Capital. Between the years 2010–2016, Fortum Värme invests SEK 7 billion in combined heat and power production in the Stockholm region. District heating in Stockholm will be entirely produced from renewable and recovered energy no later than 2030. The company has about 10,000 district heating and cooling customers. The fully owned gas business sells and distributes town and vehicle gas.