

Stockholm

- the future home of big data



Erik Rylander, Head of Open District Heating, +46-706-935-184

DCD London, November 19. 2015

Stockholm

- the future home of big data

- Stockholm (European Green Capital 2010) is a proven and business friendly environment for ICT-companies offering sustainable power at low cost.
- Open District Heating[®] allows data centers in Stockholm to turn costs for cooling into revenue from heat recovery.
- 2017 the specific tax on electricity for data centers in Sweden is predicted to be cut to 0,05 Euro cents per kWh. The revenue from heat recovery will then even out the data center's cost for electricity.
- Fortum will offer up to ten sites in Stockholm prepared for highly cost efficient green data centers.



Stockholm:

- Low cost sustainable electricity
- Proven business environment
- Strong engineering heritage
 - 4th city in the world with most billion \$ startups.
 - Per capita, Stockholm is 2nd in the world after Silicon Valley
- Extensive and robust infrastructure
- Stable climate and political situation
 - No natural disasters
 - No war since 1814



Open District
Heating™



An aerial photograph of a city, likely Copenhagen, showing a dense urban landscape with various buildings and a prominent church spire in the center. The sky is clear and blue.

Open District Heating[®] a market for recovered energy

- Open District Heating[®] is an offering allowing data centers to sell waste heat at market price
- Utilizing Fortum Värme's vast district heating system to transport waste heat from data centers into the city, sustainable data centers become an important part of the urban energy system

Fortum Värme's District Heating and Cooling Systems in Stockholm



Key Facts

- The city of Stockholm has a population of 900.000 and the greater metropolitan area a population of 2.2 million
- Fortum has an annual district heating supply of 8.2 TWh (2013) and a peak load of 3.7 GW
- Supply of district heating in the greater metropolitan area is 12 TWh p.a. corresponding to 70% of total demand
- Fortum's network comprises 2800 km of district heating pipelines and 250 km of district cooling pipelines

The future spells Stockholm

- With the Cool Village concept we are taking Open District Heating® to the international market of large scale data centers.
- 2017 the specific tax on electricity for data centers is predicted to be cut to 0,05 Euro cents per kWh. The revenue from heat recovery will then even out the data center's cost for electricity.
- We are preparing up to 10 sites in Stockholm for highly cost efficient green data centers.



Preparing the future of big data



- Stockholm has a strong ICT-heritage and an infrastructure in place allowing for technically robust heat recovery from data centers
- Open District Heating® provides an economic incentive for data centers to move from heat rejection to heat recovery.
- 2017 the predicted cut of the specific tax on electricity for data centers will make revenues from heat recovery even out the data center's cost for electrical power
- Fortum is now preparing up to ten sites in Stockholm for cost efficient sustainable data centers.



Don't Waste Your Energy!

More information: www.opendistrictheating.com