

New high-density data center heats 10,000 households in Stockholm

Borderlight AB, a leading supplier of advanced IT and Telecom services to the public sector and industry sectors, has decided to build a new data center with large scale heat reuse in cooperation with Europe's leading district heating operator Fortum Värme in Stockholm, Sweden. With full IT load, the implementation will run at more than 5 MW and heat some 10,000 modern residential apartments.

Borderlight's sister company GoGreenHost will provide the server blades and racks specifically optimized for heat recovery, with rack densities reaching up to 100 kW per 19" rack. The cooperation between Borderlight, GoGreenHost and Fortum Värme is a strong validation of Stockholm Data Parks' objective to attract and promote a data center industry where no heat is wasted.

The excess heat from the Datacenter will be captured, recovered and reused for heating of buildings in Stockholm. This is made possible by Fortum Värme's district heating network which connects more than 10,000 buildings, representing an aggregated heating demand of 12 TWh per year.

"Borderlight's and GoGreenHost's target is to become a leading supplier of advanced IT services coupled with efficient heat recovery from data centers that reach close to 100% recovery of consumed electrical power. GoGreenHost technology creates a new potent heat energy source with a very low carbon foot print. Our plan is to contract installation of 30 MW in new data center capacity 2017 and another 60 MW 2018 in sizes from 1-6 MW per site, all connected to a redundant high capacity fiber backbone. GoGreenHost's ramp up time to delivery of full heat capacity per new data center site is typically 6-12 months", says Sten Oscarsson, CEO of Borderlight and GoGreenHost AB.

GoGreenHost's solution uses new inventive heat recovery technology integrated directly in the server systems in combination with new heat pump design. Recovered heat energy is fed directly from the data center to the district heating network at the required temperature. Fortum Värme purchases this recovered heat from GoGreenHost.

"Borderlight and GoGreenHost will make a very significant contribution to Stockholm Data Parks' objective to reuse data center excess heat on a large scale. It's particularly exciting to see how the digitalization of our societies and GoGreenHost's high-density technology can enrich one another to the benefit of all parties as well as the environment", says Erik Rylander, Head of Stockholm Data Parks at Fortum Värme.

Close to ninety percent of all buildings in Stockholm are connected to the district heating network. The Swedish capital is one of the few cities in the world where large-scale heat reuse from major data centers is possible. The long-term objective is to meet ten percent of the city's heating needs through data center waste heat reuse.

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About Borderlight

Borderlight AB (www.borderlight.net) is a Telecom operator founded in 2001 focused on long term contracts in the public sector with Swedish government, regional hospitals and municipalities. Borderlight has been chosen as one of five suppliers in the Swedish Government procurement framework contract (www.avropa.se) that includes all government departments and approximately 50% of Sweden's municipalities and regional hospitals. Borderlight's revenue from public sector has reached over 500 million SEK (\$60M) since start. Borderlight's average annual revenue (including enterprise customers) the last years is 96 million SEK (\$11M) with an average EBITDA of ca 45% for the past 10 years.

About GoGreenHost

GoGreenHost AB develops, builds and manages large volume of distributed data centers in sizes from 1 – 30 MW per site that are interconnected with optical fiber and new technology for highly efficient heat recovery of close to all used electrical power. This creates a new energy source for district heating with zero burn of fuel and very high reliability, since data centers is built for 99,6 – 99,999% uptime 24x365. Customers spans from public sector with government, municipalities, regional hospitals, to enterprise customers and export of large scale computing capacity.

About Fortum and Fortum Värme

Fortum is a leading Nordic energy company with the vision to be the forerunner in clean energy. The company has around 8,000 employees in the countries along the Baltic rim, Russia and India. Ninety-three percent of Fortum's power generation in the EU is CO2-free. The Swedish associated company Fortum Värme, jointly owned with the City of Stockholm, is the Nordic leader in heat, cooling and heat recovery solutions. The company has more than 10,000 residential and real estate customers relying on its services in the Stockholm area.

About heat recovery and Stockholm Data Parks

Fortum Värme has been promoting heat recovery since 1979, with IBM's data center as the first supplier of excess heat. Starting 2012, the work was intensified and a heat recovery offering and market place named Open District Heating ("Öppen Fjärrvärme") was launched. In 2017, it was decided, in cooperation with the City of Stockholm, grid provider Ellevio and dark fiber operator Stokab, to launch Stockholm Data Parks to encourage major data center operators to locate in Stockholm with a view to performing heat recovery on a large scale. Examples of other data center operators already supplying excess heat to Fortum Värme are Interxion, Ericsson and Bahnhof. For more information, visit <https://stockholmdataparks.com>.