

Press release

Augsburg, 04 November 2025

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Everllence to Deliver Mega Heat Pump for Boston's District Energy Network

World's largest steam heat pump to provide climate-neutral steam to Boston's district heating utility

Everllence announced the commencement of a major industrial-scale heat pump project in partnership with private utility, Vicinity Energy. The landmark initiative will support the installation of the largest steam heat pump in the world at the Kendall Station facility in Cambridge, Massachusetts. With a thermal output of 35 MW, the installation will be capable of providing around 50 metric tons of steam per hour and serving an area of more than 70 million square feet of building space.

The new system, expected to be operational in 2028, will harness thermal energy from the Charles River and operate primarily on renewable electricity. The river water is continuously returned to its source. Branded as *eSteam™*, the decarbonized steam will be distributed to homes, businesses, as well as medical and educational institutions via Boston's existing district heating network, replacing natural-gas fired boilers, without the need for costly infrastructure modifications.

This flagship project is the first of a series of similar installations to serve the Boston-Cambridge area. It also highlights the broader role of large-scale heat pumps in addressing urban challenges such as grid stability, energy affordability, and natural gas dependence.

"Execution of this project makes Vicinity's vision of decarbonizing cities at scale a reality," said Kevin Hagerty, CEO at Vicinity Energy. "Powered by renewable electricity to safely and efficiently harvest energy from the Charles River, this represents rapid advancement in electrification for U.S. district energy systems demonstrating how proven heat pump technology can be deployed at scale to decarbonize cities. It enables immediate, scalable carbon reductions without the need for costly and time-intensive new electrical infrastructure in Greater Boston. We are establishing the blueprint of how to decarbonize a US city and will be installing similar innovative electrification technologies at our district energy systems across 12 U.S. cities."

"The heating sector still drives a major portion of global CO₂ emissions, and the energy transition simply cannot succeed without decarbonizing heat," stated Uwe Lauber, CEO at Everllence. "District heating remains one of the most efficient and sustainable ways to deliver thermal energy to commercial

and industrial users. With this latest agreement, we are taking a major step forward with Vicinity to bring our proven mega heat pump technology to the U.S. market. Together, we are demonstrating how district energy systems can shift away from fossil fuels while maintaining resilience and performance.”

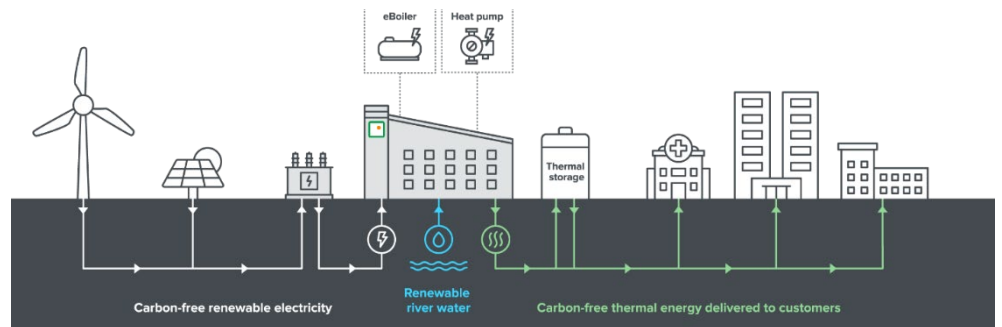
A model for urban steam decarbonization

Unlike Europe’s hot-water-based systems, most U.S. district energy networks operate on steam, creating both challenges and opportunities for decarbonization. Everllence’s solution integrates a vapor compression cycle (VCC) with steam compression, enabling the generation of high-pressure steam at up to 50 bar and over 300 °C. The system incorporates two high-efficiency, multi-shaft integrally geared compressors (IGC): type RG40-8 for refrigerant compression and type RG63-6 for steam compression.

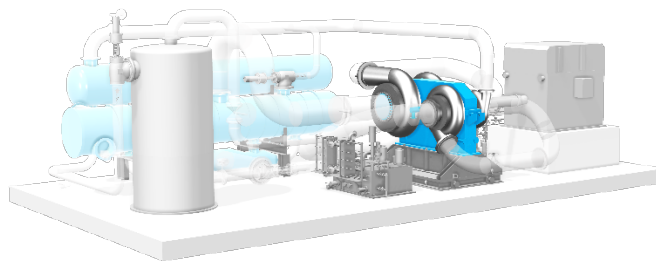
Mikael Adler, Head of Segment Heat Pumps at Everllence, added: “Our technology’s ability to deliver steam at high temperatures and pressures sets it apart in the market and opens a new chapter for district energy decarbonization. The Boston project is a perfect example of how innovation, engineering excellence, and strong partnerships can accelerate the shift to climate-neutral urban heating.”

The scope further includes a dynamic process simulation, enabling the entire heat pump process to be modeled and subjected to various transient operating scenarios in real time. In addition, Everllence has delivered an extensive digital twin of the system, allowing the compressor performance to be stress-tested already during the engineering phase. This ensures that the installation can be operated under optimal conditions from the very first hour of service.

In addition to VCC solutions for steam-based networks, Everllence also supplies transcritical compression cycle (TCC) mega heat pumps for modern hot-water-based district heating systems with high supply temperatures. Several TCC projects are currently underway; in Esbjerg, Denmark, a mega heat pump supplies climate-neutral heat to around 100,000 residents using seawater as the heat source.



How Vicinity Energy will decarbonize Boston's district energy supply – with Everllence's Mega Heat Pump at the core of the system. © Vicinity Energy



Everllence's Mega Heat Pump delivers climate-neutral steam to Boston's district energy network © Everllence

Everllence (formerly MAN Energy Solutions) is a leading provider of propulsion, decarbonization and efficiency solutions for shipping, the energy economy and industry. True to our motto – 'Moving big things to zero' – we help key industries in the global economy to reduce hard-to-abate emissions. Our technologies have a measurable impact on the success of the global energy transition. Headquartered in Germany, Everllence employs some 15,000 people at over 140 sites globally. Our after-sales brand, Everllence PrimeServ, also supports our customers through its worldwide service-center network.