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# Johnson Controls' Heat Pumps to Power City of Zürich Using Recycled Waste Heat

2 months ago


Johnson Controls, the leader in smart, healthy and sustainable buildings, has announced that it will provide green heat to the city of Zürich through a new waste incineration project spearheaded by the municipal utilities of Zürich ERZ (*Entsorgung & Recycling Zurich*).

The project entails the expansion of the plant with a third process line and heat recovery from the flue gases. As part of the project, Johnson Controls' heat pumps feed the recovered energy into the district heating network and provide additional heat to around 15,000 homes. Starting operations in 2027, the solution is one of the largest in Europe to use the zero Global Warming Potential (GWP) refrigerant ammonia in a heat pump application on this scale.

According to the European Heat Pump Association, heat accounts for more than 60% of energy use in European industries and there is significant potential to meet this need using freely available ambient or waste heat sources (estimates suggest that wasted heat in the EU could meet the bloc's entire energy demands for central heating and hot water). Heat pumps can harvest this heat– for example from land, water, air or industrial processes and are typically three to four times more efficient than conventional systems.

"As one of the largest untapped sources of energy, excess heat represents huge potential for businesses to reduce operating costs and become more resilient while meeting decarbonisation targets," said Richard Lek, Johnson Controls president, EMEA. "In 2024 alone, Johnson Controls helped cut customers' expenses by 53% and reduce emissions by 60% compared to conventional natural gas boilers. We are proud to be partnering with ERZ on this innovative project and highlight the tremendous opportunity of waste heat sources – paving the way toward more energy-efficient and sustainable urban environments."

For the city of Zürich, Johnson Controls will provide a custom-made heat pump solution with six high performance screw compressors, delivering a total system output of 42 MW. The heat pumps will extract low-temperature heat from the flue gas of a large waste-to-energy facility – raising the overall efficiency of the plant significantly. To maximise the waste heat extraction and further increase efficiency, the units will be applied as three pairs of heat pumps operating in series, reducing the lift required, and expected to boost efficiency by as much as 30%.

Furthermore, the operating conditions are ideal for the heat pumps as they are positioned first in a combination of multiple heat sources that raises the temperature before being supplied back to the grid. This ensures the optimum overall efficiency of the plant.

“The City of Zürich is actively committed to achieve net carbon neutrality by 2040 and a major part of this is the increase of carbon free supply of heat. By teaming up with Johnson Controls, we’re further driving momentum in the heat transition and paving the way toward a more sustainable future,” said Jürg Bruder, ERZ.

Johnson Controls was among the first providers of heat pumps and today offers one of the world’s most comprehensive portfolios for commercial, institutional and industrial organisations. Its industrial and commercial heat pumps are delivering competitive advantage to customers and partners across all industries – from global industrial and manufacturing organisations to hospitals, local municipalities, and utilities – while having a positive impact on the environment. The company is also helping to lead the transition to more sustainable refrigerants, offering heat pumps that use low and ultra-low global warming potential fluids.

Johnson Controls is working with a number of district municipalities to provide clean heating including Hamburg Energy, Stadtwerke Neustadt in Holstein, Energie Baden-Württemberg and Stadtwerke Rosenheim.