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## Press Release

November 6, 2024

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### **Sustainable heat from the sea: Bilfinger as solution partner for MAN Energy Solutions' heat pump in Aalborg**

- **Construction of fourth heat pump from MAN Energy Solutions in Aalborg started; world's largest plant of its kind uses renewable energies to transform seawater into sustainable heat source**
- **After integration of the first three units, Bilfinger is now also commissioned for engineering and integration of mechanical systems for fourth heat pump**
- **Overall plant will reduce CO<sub>2</sub> emissions by up to 210,000 tons per year compared to coal-based heat**

**Aalborg, Denmark.** The Danish utility company Aalborg Forsyning is aiming to completely replace its coal-fired power plant with climate-neutral district heating by 2028. In order to achieve this, the company is utilizing a total of four seawater heat pumps from MAN Energy Solutions. With an output of 44 megawatts each, it is the world's largest heat pump of its kind. In August, MAN Energy Solutions began integrating the fourth unit at Norbis Park by the Limfjord in collaboration with industrial services provider Bilfinger. The new unit will increase the plant's total heat output to 700,000 megawatt hours, which corresponds to one third of the heat production of Aalborg.

In Norbis Park by the Limfjord, the district heating utility company Aalborg Forsyning has commissioned the installation of a heat pump that will generate climate-neutral district heating for the future supply of the city. Its functionality is based on the conversion of electrical energy into thermal energy: Seawater with a temperature of between 1-15°C is extracted from the nearby fjord and heated to the district heating temperature of 90°C by using electricity from renewable energy sources. The heated water is then stored in connected district heating accumulators and later fed into the district heating grid to supply the city as required. Fluctuations in energy production from renewable sources can thus be balanced out: Energy surpluses can be efficiently captured, stored and made available as heat when needed.

The start-up of all four heat pump units is expected for 2027, resulting in the planned decommissioning of the city's existing coal-fired power plant. By shutting it down, the city of Aalborg will be able to significantly improve its environmental footprint: The switch from coal-



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based heat to the seawater heat pump will save up to 210,000 tons of CO<sub>2</sub> emissions every year.

Following the order of the first three heat pumps in September 2023, MAN Energy Solutions was contracted to supply the additional 44 MW heat pump in July this year. As their all-in-one solution partner for the integration of these heat pumps, Bilfinger Engineering & Maintenance DACH is continuing to carry out the project management, detailed engineering, procurement of the piping and the installation of the mechanical systems in the context of the recent follow-up order.

"Bilfinger has been a reliable partner at our side right from the start, bringing in special expertise in 3D modeling and assembly to allow for seamless integration. The follow-up order for the fourth heat pump is a testament to the success of our collaboration to date," says Philipp Frankenstein, Project Lead at MAN Energy Solutions. "Side by side and together with our client, we are making a valuable contribution to Aalborg's transition to climate-neutral district heating."

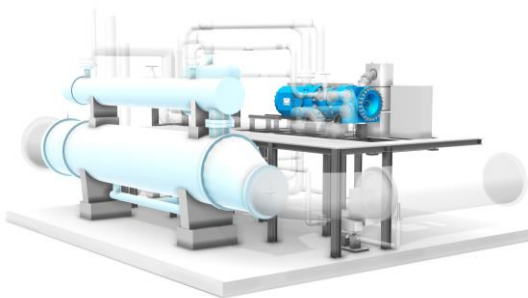
"The transformation to a sustainable district heating grid makes Aalborg an important pioneer in the energy supply of tomorrow," says Thomas Schulz, Bilfinger Group CEO. "We are pleased to expand our ongoing collaboration with MAN Energy Solutions. Together, we will ensure the efficient commissioning of the fourth heat pump, further increasing the heating capacity of this forward-looking plant."

Thanks to the use of a natural refrigerant, the MAN technology is particularly suitable for heat pump operation at very high district heating temperatures. While this is the plant's great advantage, it also places unique demands on the pump's assembly. In order to fulfill these special requirements and to ensure seamless integration, the Bilfinger engineering team is building on many years of experience from various projects for district heating customers in [Europe](#) as well as for the district heating accumulators in [Leipzig](#) and Duisburg, for example.

Further information on [Bilfinger Project Solutions](#) and the product portfolio in the field of [heat storage and distribution](#) can be found on the Bilfinger website.



*The future district-heating plant in Aalborg, Denmark, will house the world's largest seawater heat pump units by MAN Energy Solutions. © C.F. Møller Architects*



*MAN heat pump system featuring the hermetically-sealed HOFIM® compressor at its core. © MAN Energy Solutions*

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Bilfinger is an international industrial services provider. The aim of the Group's activities is to increase the efficiency and sustainability of customers in the process industry and to establish itself as the number one partner in the market for this purpose. Bilfinger's comprehensive portfolio covers the entire value chain from consulting, engineering, manufacturing, assembly, maintenance and plant expansion to turnarounds and digital applications.

The company delivers its services in two service lines: Engineering & Maintenance and Technologies. Bilfinger is primarily active in Europe, North America and the Middle East. Process industry customers come from sectors that include energy, chemicals & petrochemicals, pharma & biopharma and oil & gas. With its ~30,000 employees, Bilfinger upholds the highest standards of safety and quality and generated revenue of €4.5 billion in financial year 2023. To achieve its goals, Bilfinger has identified two strategic thrusts: repositioning itself as a leader in increasing efficiency and sustainability, and driving operational excellence to improve the organizational performance.

You can find additional information, photographs and videos at

