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Climate-neutral energy production at Westenergy

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Westenergy waste incineration plant in Finland with CO_2 capture system

Westenergy Ltd. is working on the construction of a state-of-the-art CO_2 capture plant in Mustasaari, Finland, which is scheduled to go into operation in 2027. The plant is one of the first large-scale CO_2 capture systems for waste incineration plants in the world and will be able to remove around 95% of the carbon dioxide from the Westenergy plant's exhaust gases.

The captured CO_2 will be used in particular for the production of synthetic, climate-neutral fuels at Koppö Energia's planned plant in Kristiinankaupunki, which will be operated by

CPC and Prime Capital. The main objectives of this project are:

- Significant reduction in emissions: Emissions from the chimney of the Westenergy plant are greatly reduced.

- Cross-industry CO_2 utilization: The captured CO_2 is reused as a valuable raw material in industrial processes.

- Contribution to the circular economy: In the long term, waste-to-energy plants should also sustainably return the carbon from waste to society.

The plant will liquefy around 150,000 tons of CO_2 per year, which will be used to produce synthetic fuels such as synthetic methane. This corresponds to the annual CO_2 emissions of around 20,000 people. In addition, Westenergy plans to provide over 30,000 tons of CO_2 annually for the manufacture of products that permanently store carbon.

The project was supported in December 2023 with an energy investment grant of 20 million euros from the Finnish Ministry of Employment and the Economy. Planning is already well advanced:

- March 2024: Ramboll was selected as project consultant.

- July 2024: Andritz was awarded the contract for the preliminary planning.

- Technical planning and approval procedures for CO_2 capture, liquefaction and safety solutions are currently underway.

- The final investment decision is to be made in mid-2025.

This project is an important step towards a sustainable circular economy in Finland and will help to further advance the technological development of clean industries.