The Rakkestad heating plant will be retrofitted with modular carbon capture technology | Photo source Geminor

MODULAR CARBON CAPTURE SYSTEM PLANNED FOR WASTE INCINERATION PLANT

SUSTAINABILITY

The modular system could be ideal for small sites that lack the facilities to develop their own carbon capture and storage technology

Spotted: A partnership in Norway recently announced plans to build the country's first full scale carbon capture facility for an existing heating plant. Renewable energy company Ostfold Energi, along with engineering companies Slaattland Mekaniske and KANFA, are retrofitting the Rakkestad waste incineration facility with a system that will capture up to 90 per cent of the plant's pollution.

The incineration plant is relatively small, providing steam and district heating for 50 customers – thus making it ideal as a pilot site. The build is planned to start in 2022 and finish in 2023 with a final annual capacity of 10,000 tonnes of carbon dioxide captured.

KANFA's system is modular, allowing for ease of construction in a way that minimises disruption to the site – allowing the new system to be installed directly alongside current processes. During the construction phase, captured carbon will be sold to growers in liquid form for use as a fertiliser. Once construction is complete, the recovered pollution will be fed back into the plant as an energy source. If successful, the modular system could be sold to other small facilities without the capacity to develop their own carbon capture and storage solutions.

International recycling company Geminor has also signed a deal to deliver 6,000 tonnes of refuse-derived fuel (RDF) per year to the plant as secondary fuel. The fuel is made from UK and Norwegian residual waste.

The pressure is on the world community to transition to sustainable energy sources. Springwise is spotting a number of innovations seeking to help make such change a reality, with the world's first commercial flight powered by cooking oil and plants recently landing in Chicago, and renewable energy farms consistently getting larger as processes and materials improve.

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Takeaway:

The International Energy Agency (IEA) reports that carbon capture's 'deployment remains woefully below the level required to reach net-zero emissions by 2050.' With fewer than 30 commercial projects in operation in large-scale industries, the opportunity for development is as great as the risk is of experiencing devastating climate change. Significant investment is needed to move a variety of concepts and pilots swiftly along to full deployment for meaningful volumes of capture. The significance of the modular system is that it could be a good solution for retrofitting smaller facilities that lack the resources of the largest industrial sites.