Hitachi Zosen INOVA

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Hitachi Zosen Inova to Build and Operate the UK's First Waste to Energy Carbon Capture Facility for enfinium

Hitachi Zosen Inova has signed a significant agreement with enfinium to design and build the UK's first small-scale waste-to-energy carbon capture pilot plant. The groundbreaking new facility will be built at the existing Ferrybridge 1 facility located in West Yorkshire, England.

Hitachi Zosen Inova, a global leader in waste-to-energy and renewable gas technologies, is partnering with enfinium to build and operate the UK's first carbon capture pilot plant at a Waste to Energy facility. Once operational in July 2024, the new scaled-down, containerised and mobile plant will enable enfinium for the first time to capture up to 1 tonne of carbon dioxide (CO_2) each day from its operations at the Ferrybridge 1 facility.

Ferrybridge, England. Hitachi Zosen Inova (HZI) has been chosen by enfinium to deliver pilot trials with a mobile, containerised plant for carbon capture (CC) at the existing Ferrybridge 1 waste-to-energy (WtE) facility in West Yorkshire. The CC plant will use HZI's amine-scrubbing technology, which has been designed to seamlessly interface with enfinium's onsite WtE operations.

The pilot plant being supplied by HZI will be a scaled-down version of the CC technology, which could be applied to WtE facilities on a commercial scale. The unit will capture up to one tonne of CO_2 per day from enfinium's operations at the Ferrybridge 1 site in West Yorkshire. The new facility will trial different amine-based solvents for at least 12 months and will be operational from July 2024.

This CC pilot plant will be the first of its kind in the UK's WtE sector and is a significant milestone for HZI. It not only builds on HZI's reputation as a world leader in WtE engineering and supplying technology, but it will also help its clients decarbonise their operational footprints over the long term. If the trial is successful, it will allow HZI to apply its CC technology on a commercial scale at this WtE facility and other plants around the world.

Using HZI's CC technology will allow the vital data gathered from testing to be analysed to demonstrate the future "scalability" of CO_2 removal technology across enfinium's fleet of WtE facilities. Simultaneously, enfinium will be able to utilise this pilot plant to optimise its long-term onsite operations by customising the testing and training programmes for its employees, while at the same time reducing future financial investment risks to decarbonise its long-term operations.

"It gives us tremendous pride to collaborate with enfinium on this important carbon capture project and together continue to move the dial on decarbonisation across the UK's waste management infrastructure," said HZI's Chief Executive Officer Bruno-Frédéric Baudouin.

"This initiative is evidence of HZI's move beyond waste to energy and into so-called 'waste to X', where outputs, including energy generation, now extend beyond maximising heat use and the recovery of more metals into vital CO_2 reduction and more. Projects such as this represent a crucial step in the journey towards enhanced decarbonisation, resource circularity and supply security, allowing us all to aim for a future free of 'wasted' waste," he added.

Mike Maudsley, CEO of enfinium, said: "Installing carbon capture technology at energy from waste facilities is the only way the UK can decarbonise its unrecyclable waste. It also offers benefits including creating durable carbon removals, or negative emissions, at scale and generating reliable homegrown power. This groundbreaking partnership with HZI will allow us to test multiple capture techniques that could in the future be deployed across our facilities at scale."

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Attachment: 1 image
WtE Plants Ferrybridge.jpg; caption: The Ferrybridge 1 waste-to-energy facility in the foreground, with Ferrybridge 2 in the background *(Picture credits: enfinium, 2024)*

Note to Editors

About Hitachi Zosen Inova:
Zurich-based green-tech company Hitachi Zosen Inova (HZI) is a global leader in solutions for energy transition and circular economy including Waste to Energy and Renewable Gas (RG), operating as part of the Hitachi Zosen Corporation Group. HZI acts as a project developer, technology supplier and engineering, procurement and construction (EPC) contractor delivering complete turnkey plants and system solutions for thermal and biological waste recovery. Its solutions are based on efficient and environmentally sound technologies, are thoroughly tested, and can be flexibly adapted to customer requirements. HZI's Service Solutions Group combines its own research and development with comprehensive manufacturing and erection capabilities to provide support throughout a plant's entire plant cycle. HZI works for customers ranging from established waste management companies to up-and-coming partners in new markets. Its innovative and reliable solutions have been part of more than 1,600 reference projects worldwide. Hitachi Zosen Inova Steinmüller GmbH, based in Gummersbach, is a subsidiary of Hitachi Zosen Inova and is universally famous for superior technology in thermal waste treatment and flue gas treatment. To find out more about HZI, please visit www.hz-inova.com.

About enfinium:
enfinium is a leading UK energy from waste operator with four operational sites in the UK, in West Yorkshire, Kent and Flintshire, and two in construction. enfinium diverts 2.3 million tonnes of unrecyclable waste from climate-damaging landfill, putting it to good use by turning it into home grown energy, enough to power 500,000 UK homes. enfinium's ambition is to transform its facilities into local "decarbonisation hubs" powered by the millions of tonnes of unrecyclable waste the UK will produce for decades to come. Using existing energy from waste infrastructure, enfinium could contribute to heat networks, produce electrolytic hydrogen or use carbon capture technology to provide durable, high-quality carbon removals which will be critical for the UK to achieve net zero by 2050. For more on enfinium, please visit www.enfinium.co.uk.

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