

Case study

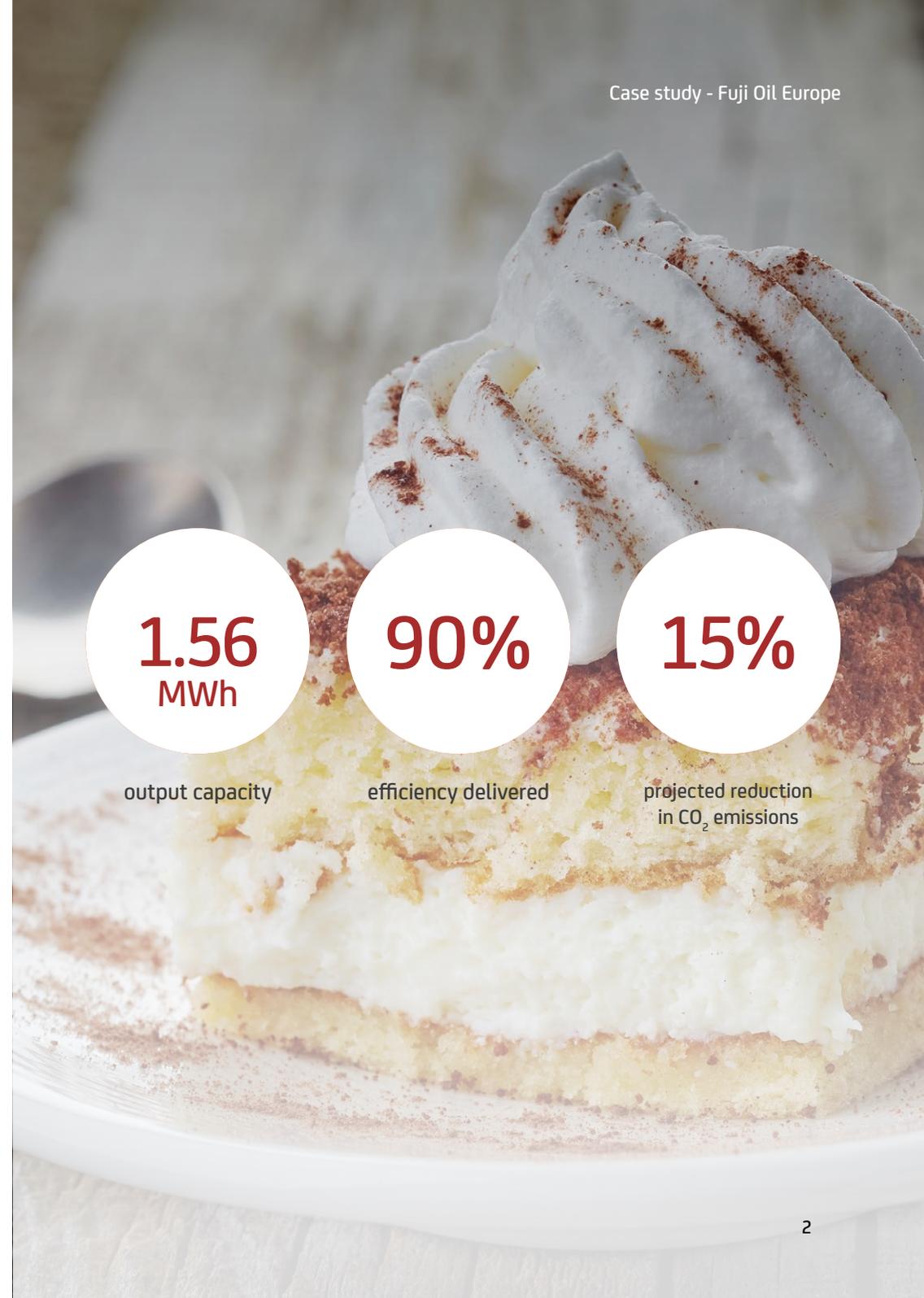
CHP fuels Belgian producer's efficiency ambitions



Fuji Oil's Ghent facility is set to reap rewards from a Centrica Business Solutions combined heat and power installation.

Founded in 1950 and headquartered in Osaka, Japan, Fuji Oil Group has evolved from a specialist producer of tropical oils and fats to become a world-leading supplier of vegetable food ingredients. Fuji Oil Europe's facility in Ghent, Belgium focuses on the development, production and sale of vegetable oils and fats, and industrial chocolate, using a variety of process technologies.

Fuji Oil Europe strives for high energy efficiency with minimal environmental impact. As part of this wider sustainability strategy, the business set out an ambition to bolster their heat recovery network and reduce overall energy consumption and carbon emissions. In particular, they looked at how to achieve an optimal return, and how the installation would fit in with their production process.



1.56
MWh

output capacity

90%

efficiency delivered

15%

projected reduction
in CO₂ emissions

Solution

Fuji Oil Europe and Centrica Business Solutions signed an agreement to construct a combined heat and power (CHP) installation that produces decentralised electricity, hot water and high-pressure steam. With a capacity of 1.56MW, it also helps support the Belgian electricity grid. While CHP output is not always optimal, the customised solution leads to efficiency of at least 90%.

Tom Franssens, Project Manager, Engineer and Energy Coordinator at Fuji Oil Europe, says: “In Centrica Business Solutions we have found the desired partner because they not only provide energy solutions on location but have continuously advised us on the best possible solution.”

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Technical overview

The CHP will be able to supply most of the Ghent site with electricity, resulting in significant cost savings. The engine cooling water system heat and residual heat from exhaust gases are used to produce central heating water at around 93°C. By using a steam generator, exhaust gases with a temperature of approximately 450°C can be used to produce more than one tonne of steam per hour at a pressure of 11 bar. Both central heating water and steam are used in the production process. Centrica Business Solutions will also manage corrective and preventive maintenance for the installation for the next 10 years.

“We are incorporating the CHP into a so-called virtual power plant controlled by Centrica’s innovative software platform. Our technology intelligently pools CHPs, batteries, and industrial machines together, ensuring that we balance the electricity grid in a financially attractive and environmentally friendly manner.”

Arno van Mourik, General Director, Centrica Business Solutions Benelux

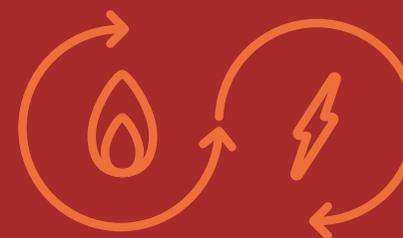
Customer results

Fuji Oil Europe expects the project to deliver savings of 17% on their primary energy consumption and a 9% reduction in CO₂ emissions. Even with the expansion of a new chocolate line, up to 91% of their electricity consumption will be covered.

The CHP will connect to Fuji Oil's existing heat recovery network, fill the current shortage and make it possible to switch more consumers in the Ghent factory from steam to hot water. With these extra investments, Fuji Oil is aiming for a 15% reduction in CO₂ emissions.

Arno van Mourik, General Director at Centrica Business Solutions Benelux, indicates another key aspect of the installation: "We are incorporating the CHP into a so-called virtual power plant controlled by Centrica's innovative software platform. Our technology intelligently pools CHPs, batteries and industrial machines together, ensuring that we balance the electricity grid in a financially attractive and environmentally friendly manner."

In the event of a grid overload, the Fuji Oil installation will provide short-term downward control power in near real time to help rebalance the frequency on the grid. For making this flexible capacity available, the company earns additional income from grid operator Elia. This demand flexibility technique also reduces environmental impact, as no additional CO₂ is emitted.



For more information, please contact:
centricabusinesssolutions.UK@centrica.com