

Global Nutrition Provider



Overview

Drying is an energy-intensive process crucial to many products consumed. Spray drying and concentration are responsible for 25% of the total energy consumption in the dairy industry. An estimated 60% to 80% of the energy consumed in a typical dairy is available in the exhaust, presenting an excellent opportunity for heat recovery.

As the company continues to drive positive impact throughout its operations, the technology is being reviewed by other key factories in a further four countries.

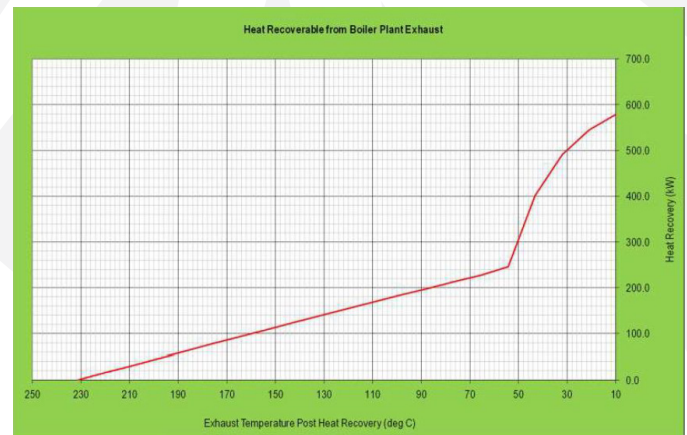
“Thanks to our partnership with Thermal Energy International, and the global and local teams working together to continue to reduce the environmental impact of our supply chain,” said the Chief Operations Officer.

Impact

- ▶ Total energy savings: 3,138 MWh/year
- ▶ CO₂ savings: 581 tonnes, resulting in 17% reduction in greenhouse gas emissions
- ▶ Return on investment: < 2.5 years
- ▶ 50% to 90% emission reduction of particulate matter and acid gases.

Solution

This project follows the successful implementation of Thermal Energy’s FLU-ACE technology at a different site in Europe that reduced energy consumption by 12%. This application was repeated at this site to recover waste energy from the spray dryer burner exhaust and use it to preheat loads upstream of their respective existing heaters.



As a result, the system;

- ▶ Recovers up to 600 kW from the burner exhaust, with flue gas temperature of 230°C.
- ▶ Indirect contact exchanger loop will produce 7 m³/hr of hot water at 81°C from 61°C. This will displace 163 kW of heating to boost 27 m³/hr of recuperation water from 60°C to 65°C.
- ▶ FLU-ACE recovery loop will produce, on average, 7.7 m³/hr of hot water at 57°C. This will be used to preheat incoming air to the dryer to a maximum of 30°C. This will displace 323 kW of energy, which will vary throughout the year with ambient temperature.

The company said, “This unlocks the potential of the plant to reduce its energy consumption by a further 7%.” They went on to explain how the project is part of their energy efficiency and decarbonisation programme, which will enable the company to “improve energy efficiency by 30% by 2025 and reduce CO₂ emissions in line with evidence-based climate goals.”

The Net Zero Carbon Director remarked on the “significant energy reduction” achieved through heat recovery and praised the efforts of teams in specialised nutrition.

