Arla achieves 481,800 kWh energy savings in critical water supply systems

Arla Foods, one of the leading players in the international dairy market, has embarked on a journey towards their 2050 target of carbon net zero emissions. The first step, however, is achieving efficiency targets of lowering carbon emissions by 63 % at 60 dairies worldwide by 2030. Grundfos is an essential part of these plans.

Recently, Grundfos supplied and installed new intelligent pumps at the Arla Westbury dairy in the United Kingdom. Based on proven and validated energy measurements, Grundfos helped the site achieve savings per year of 481,800 kWh energy and 194 tons CO_2 for their ice and chilled water systems, with a return on investment (ROI) of less than two years.

"Our Westbury facility has proven to be a great place to start with the drive towards our 2030 efficiency targets, which is part of implementing our global sustainability agenda. Here, the documented successes leading to substantial reductions in energy use, emissions and costs, and improved operation can be used at new sites," explains Mia Bredal, Director, Supply chain sustainability PMO at Arla Foods.

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grundfos.com/about-us/cases/Arla

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Possibility in every drop

The situation

Arla employs 250 people at the Westbury site. Typical production figures per year are 45,000 tonnes of skim milk powder and up to 80,000 tonnes of butter under the Anchor and Arla brands.

Arla's Westbury site has pumps installed for chilled and iced water applications, process water feed and steam boiler feed. Towards the end of 2020, Westbury contacted Grundfos to help optimise their chilled and ice water applications.

The Grundfos solution

Grundfos performed energy assessments to find the actual energy consumption in the system, which involved the placing of sensors in the system to get real data from the existing setup.

The result was a detailed report that showed how optimisation and downsizing of the existing system would generate energy savings and process improvements through better control and operational modes.

"I think the fact that the report was based on actual measurements is also a real positive for us, because it was an illustration of the way Grundfos went about the survey. It was done properly and was a real positive!" says George Nicholls, Project Manager at Arla Foods.

The outcome

For the chilled water system three new NB 80-200 37 kW pumps including frequency converters and for the ice water system three new TPE 200-70 7.5 kW pumps with built-in frequency converters were installed and running within a 12-hour window.

"Grundfos clearly understood the nature of our business and the need for our continuity of running. They took the time to come and find out the preparation work required. So, work proceeded with the minimal impact onsite. For us, it was good to see as a first experience of working with them," says George Nicholls.

The new chilled water NB pumps

George Nicholls, Arla Foods, and the new TPE pumps for the ice water system

Documented energy and cost savings

CO_2 saved per year is 194 tons*
Energy savings of 481,800 kWh per year

OPEX savings of EUR 55,817 per year*
ROI of less than two years

**These figures are calculated according to Arla Westbury's actual kWh price (0.10 GBP) and country CO_2 rates.*

Operation and production benefits

- Cost, sustainability and engineering benefits
- Plant room is easier to maintain, improving work environment
- Fewer stock items to service the pumps, saving costs for maintenance and materials onsite

Products and services supplied

- Energy Check Advanced
- Three NB 80-200 37 kW pumps including frequency converters
- Three TPE 200-70 7.5 kW pumps with built-in frequency converters
- Turnkey end-to-end system including installation, piping and commissioning

Partnership

Arla Foods is bringing together a global sustainability strategy with their supply chain management, to implement their 2030 efficiency targets and journey towards their 2050 target of carbon net zero emissions and improved water efficiency for better water management.

The onsite sustainability programs now ramping up at 60 sites globally, for example at Arla Westbury, are therefore not about simply swapping pumps; they are about creating a program to find energy optimisation measures and meet the 2030 efficiency targets of saving 63 % of carbon emissions.

"Arla and Grundfos have a true partnership, as the energy assessments are a collaboration between Arla's experts on site and Grundfos technicians and specialists. Other facilities will soon meet Grundfos for the first time when they turn up for the energy assessment process. Grundfos helps with tools and systems to ensure that the process is replicable, and the data comparable," concludes Mia Bredal.

"Grundfos is highly relevant to Arla for this approach worldwide, because they are selling more than pumps and can help us meet our energy reduction targets."

Mia Bredal,
Director, Supply Chain Sustainability PMO, Arla Foods

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