

ENERGY OPTIMISATION CASE STORY

SOFT DRINK MANUFACTURER LOWERS ENERGY COSTS BY 45%



An onsite Energy Audit led to a solution that boosted system performance by 70% for the leading UK soft drink manufacturer Britvic and lowered the energy costs by 45%. Britvic will save an estimated EUR 69,500 annually and achieve ROI in less than two years.

THE SITUATION:

When Britvic needed to upgrade the water supply at its factory in Rugby, United Kingdom, a solution was needed that would deliver the correct, varying amounts of water at the right pressure and also reduce energy costs and carbon emissions. In addition, Britvic required remote system access, and the new solution had to come pre-assembled in a container to minimise production disruptions.

THE GRUNDFOS SOLUTION:

Britvic contacted Grundfos, and a solution was soon found. First, Grundfos energy optimisation experts carried out an Energy Audit at the Britvic facility to identify opportunities for improving energy efficiency. Grundfos then designed and built a containerised solution that includes a booster system with 5 Grundfos CR XL 22kW multistage pumps in addition to a dosing and disinfection system for the water holding tanks and full, SCADA-compatible PLC control with remote access features.

The CR XL pumps deliver a flow rate of 290m³/h at a reduced pressure of 2.5bar. The built-in frequency drives continuously control pump speed,

running each pump as efficiently as possible. The fully automated system ensures that the current production demand is met at all times with the lowest possible energy expenditure.

"Not only have we seen an immediately improved water supply with stable and constant pressure; we have been able to monitor and trend the flows, enabling continuous improvements on our processes."

Calvin Winch

Engineer, Operations Development GB & I, Britvic Soft Drinks Ltd

The solution was tested at the Grundfos factory before being mounted in a container and shipped to Rugby in Sunderland where it was craned into place in a matter of hours. Britvic worked closely with Grundfos to mitigate risk and facilitate a precise swap-over.



THE OUTCOME:

With the customised Grundfos solution, Britvic has met all of its targets: Water flow has increased by 70% while reducing energy costs by 45%. The energy savings amount to EUR 69,500 annually; as a result, Britvic will achieve ROI in less than two years. The close partnership between Britvic and Grundfos ensured that no production time was lost during the project.

The efficient pumping system is helping Britvic meet its energy targets and is ready for future growth as it can deliver flows of more than 400m³/h. Britvic is considering replicating the solution at other sites in the UK and Ireland.

“The Grundfos booster pump system provided to Britvic has proved to be a great success even in the short time it’s been in operation,” says engineer Calvin Winch of Britvic. “Not only have we seen an immediately improved water supply with stable and constant pressure; we have been able to monitor and trend the flows, enabling continuous improvements on our processes. Working with the Grundfos team went as well as we could wish, and to lose no production time is a credit to everyone involved. Well done!”

NEW SYSTEM

- Grundfos booster system with 5 CR XL 22kW multistage pumps
- Grundfos dosing and disinfection system for holding tanks
- PLC control with SCADA integration and remote access

KEY FEATURES

- Flow rate 290m³/hr at reduced pressure of 2.5bar under fully automated control
- Variable frequency controlled pumps capable of adjusting to water demand
- System self-cleaning without interrupting production
- Remote monitoring and data trending
- Designed with expansion in mind: capable of flows above 400m³/h
- Containerised solution installed in a matter of hours

KEY BENEFITS

- › Energy costs reduced by 45%
- › Cost savings of around EUR 69,500 per year on energy
- › ROI In less than two years
- › No production time lost during swap-over
- › Local UK engineering and production capabilities