

The Ribena fruit drink concentrate is one of the UK's most iconic brands, along with Lucozade sports drink. These and other related products are produced at the Lucozade Ribena Suntory GB facility in Coleford, UK.



Grundfos Case Story: Suntory Beverage & Food GB&I

Suntory Beverage & Food GB&I finds 40-60% energy savings in pump system retrofits

THE SITUATION

Suntory Beverage & Food GB&I's only UK-based factory was on a mission. The producer of some of the UK's most iconic soft drinks such as Ribena and Lucozade had pledged to reduce its carbon emissions by 50% by 2030 and to achieve net zero by 2050, using a 2015 baseline.

As a company with a mission to create harmony with people and nature, Suntory Beverage & Food GB&I is committed to doing everything possible to protect the environment for future generations by reducing its carbon footprint and water usage. Other commitments to reduce greenhouse gas emissions include removing fossil-fuel-based plastics in favour of recycled plastic and transitioning logistics and commercial vehicles to lower carbon alternatives.

At the same time as these sustainability commitments, the factory was having multiple issues with its older pump systems – constant breakdowns, poor performance, system imbalances and more. The company's Energy and Sustainability Manager Daniel Gray also knew the pumps were wasting energy. Maybe a pump retrofit would not only improve processes at the plant, but maybe it could also help to save some of those CO2 emissions.

“The pumps were manually operated, and the reliability wasn't there,” says Daniel Gray. “The first time we'd know of any problems on site, we'd be getting a phone call from a production team saying that their water pressure was down, or the quality was down. We were being reactive rather than proactive.”

Gray's department got in touch with Grundfos to monitor the equipment, check the efficiencies and suggest a solution. “Obviously as a factory, we're always trying to improve and move forward. So if we can make the slightest, even 1% adjustment, that's something we'll always look for,” he says. “But the key driver was reliability and availability of all of our equipment and the utility network – so the utilities are always ready on demand when the factory is at its peak. And this is where we were lacking.”

The factory's management agreed with Grundfos to test a retrofit of the pump systems in four applications: towns water, treated water, primary chilled water and central chilled pumping systems – part of the backbone of the location's utilities.

GRUNDFOS 

Possibility in every drop



Suntory Beverage & Food GB&I's production facility in Coleford, UK, at the Forest of Dean.

THE SOLUTION

Grundfos proposed highly efficient, electronically controlled E-pumps. They have built-in variable speed drives that operate on demand with pressure control and temperature control, meaning the pumps only run when the system needs them. In addition to digital controls, the pumps would all use Grundfos iSOLUTIONS digital cloud connectivity, offering a major opportunity for energy and carbon savings that could also benefit the overall system performance.

“So in our treated water plant previously, we had four 37 kilowatt pumps and a standby duty pump. During peak production, all four would be running because the pressure control was very basic,” says Daniel Gray. “But now we’ve moved to the Grundfos solution with a controller and 22 kilowatt pumps, which are ramped down to the best efficiency point. And just generally now, I don’t think we ever see more than 24 kilowatts being used at any given time. So instead of it being 120 kilowatts, for example, we’re only using 24. And that’s utilizing savings that we would never have seen before. And it just makes everyone’s life simpler.”

THE OUTCOME

He says the factory was “ultra-cautious” with the first project, not downsizing the pumps as much as Grundfos recommended. “But as the projects have progressed, we’ve gone fully with

the Grundfos suggestions,” he says. “In the current market where energy prices are fluctuating up and down, this has been paying off no end. Some of the projects range from like a 40 to 60% reduction in energy, depending on how much they utilised. If you’re offering a percentage reduction of 30 to 40% in manufacturing facilities, they’ll always be happy with that. Obviously, if we’re offering 40 to 60% on every project that we’re going for, then all the projects are being approved as quick as they’re suggested. I don’t think we’ve had one where the payback has been more than two years so far.”



A series of 14 dual pump Grundfos NBE systems with 11 kW premium-efficient IE5 motors run on constant pressure control for Lucozade's Central Chilled application.

GRUNDFOS 

Possibility in every drop



The treated water facility at Suntory Beverage & Food's GB&I factory



Daniel Gray, Energy and Sustainability Manager at Suntory Beverage & Food GB&I's facility in Coleford, UK.

“With 40 to 60% energy savings on every project that we’re going for, then all the projects are being approved as quick as they’re suggested.”

Daniel Gray,
Energy and Sustainability Manager, Suntory Beverage & Food GB&I

Other benefits have been the remote monitoring of the pump systems, plus the smaller pumps are easier to handle – and quieter. “You don’t have to wear the ear protection anymore in the area. It’s a safe working environment now.”

But overall, the energy savings of the first retrofit projects have shown the company the overall sustainability potential from Grundfos E-pumps. He estimates that so far, the five or six Grundfos projects brought about an overall 4% reduction of the factory’s emissions.

“Sustainability is a massive part of our business and has been deeply ingrained

in our company culture since it was founded. It’s involved in every key decision that we are making. These here are all the key savings that are helping me on our sustainability journey,” says Daniel Gray. He adds that it also contributes to the company’s Growing for Good vision – which is based on an understanding that “the bigger we are the greater our positive impact can be.”

He says, “Moving forwards, the savings look endless when it comes to some of the bigger equipment that we have on site.

We know we’ve just scratched the surface. We’ve been looking at a job for next year that we’re going to try and bring forward to this year because the savings are that attractive – that it’ll be a year missed if we don’t do it. So we need to take the chance now while we can.”



The town's water facility at Suntory Beverage & Food's GB&I factory



Possibility in every drop

Topic: Energy optimisation
Location: Coleford, UK
Customer: Suntory Beverage & Food GB&I



Grundfos Sales Engineer Adam Howe (right) checks the MPC-E control boxes at the Central Chilled pump system with Daniel Gray of Suntory Beverage & Food GB&I's facility.

SOURCES

The facts in this story come from an interview on site at Suntory Beverage & Food GB&I's factory in Coleford, UK, on 22 September 2021.

GRUNDFOS SUPPLIED:

Grundfos first supplied an Energy Check Advanced to the Suntory Beverage & Food GB&I factory, in which service technicians analyse the current pump performance and suggest ways to help find potential

energy savings in the facility's pumps. For the three projects mentioned in this story – the company's towns water, treated water, primary chilled water and central chilled pump systems – Grundfos supplied groups of NBE end suction, close-coupled E-pumps with highly efficient IE3 or IE5 motors, along with MPC-E controls and Grundfos Remote Management. Everything is part of the Grundfos digital iSOLUTIONS universe to optimise the entire system.



Grundfos NBE pumps for Suntory Beverage & Food's chilled water system.

The UK's only factory for producing Ribena and Lucozade drinks sought to resolve a number of issues with its manually controlled pump systems to help improve energy savings. "The first time we'd know of any problems was when we'd get a phone call from a production team saying that their water pressure was down or the quality was down," says the company's Energy and Sustainability Manager Daniel Gray. A Grundfos E-pump retrofit program is not only improving control and reliability across the site, but it is also saving 40-60% energy in each application, helping the business move towards its global target of net zero emissions across whole value chain by 2050.

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