



Department for
Energy Security
& Net Zero

British Sugar Industrial Heat Recovery Support Case Study

Industrial Heat Recovery Support (IHRS)
Programme

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Context

British Sugar is an agricultural business that supplies 1 to 1.25 million tonnes of sugar from local farmers and businesses to the UK market every year. As processing sugar beet requires optimal heat efficiency for evaporating excess water, British Sugar investigated heat recovery options when replacing obsolete heat exchangers. This identified a significant energy recovery project and further optimisations to help reduce carbon emissions.

How IHRS has supported the project

The IHRS funding was instrumental in the energy reduction configured project being internally approved. The application process was very thorough, and the Department for Business, Energy and Industrial Strategy (BEIS) provided support and guidance at each stage of our application, helping us meet the investment criteria.

They also assisted in identifying replacement heat exchanger equipment that met the required specifications and would provide a viable reduction in energy usage despite needing a larger investment.

Additionally, we agreed a semi-automated chemical cleaning system would ensure optimum performance of this plant and help minimise high-risk intrusive maintenance activities during our operations.

Benefits and added value

The IHRS programme funding towards capital costs ensured we had a good financial case that allowed us to secure the required additional funds internally to complete the project.

By replacing nine shell and tube heaters with eight new and one uprated plate heat exchangers, the additional surface area allows us to extract more heat from waste condensate.

This has the potential for a 20-year lifetime benefit of over 190K MWh of energy saved, over 52K tonnes of CO2 mitigated, and £265K per year of operational costs reduced. Plus, the added chemical cleaning system will minimise high risk invasive maintenance work on the heat exchanger packs.

Lessons learned

Our main challenges came from delivering the project during the COVID pandemic, with the resulting delays having both a technical and financial impact. Once we had committed to starting the main construction works, it needed to be complete in time for our next beet processing period.

Accessing external funding sources for projects like this is relatively new to us – so finding support that transforms potential projects into definite investment opportunities is eye-opening.

The positive experience and results have encouraged us to continue with the replacement of the remaining Beet End heaters as a phase 2 project.

“This project is a step change on our roadmap to a more reliable and energy efficient future. The help and support throughout the process from the IHRS has helped considerably in making this project a success.” (Andrew Caldwell, Project Manager)”



Pictures showing New Plate Heat Exchangers installation



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