



Department for
Energy Security
& Net Zero

Smart Systems Paint Lines Industrial Heat Recovery Support Case Study

Industrial Heat Recovery Support (IHRS)
Programme

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Context

Established over 40 years ago, Smart Systems is the UK's leading supplier of architectural aluminium systems, with a reputation for quality, innovation and technical expertise. Recently, they identified a potential opportunity to install heat recovery equipment in their manufacturing process and approached IHRS to explore their options.

How IHRS has supported the project

All our aluminium systems are manufactured from start to finish in our state-of-the-art plant in the South West of England. As part of the manufacturing process, the aluminium is pre-treated in boiling water before being powder-coated and cured in large gas-fire ovens. We wanted to see if it was possible to recover waste heat from the curing ovens to heat the treatment water.

With the help of the IHRS programme, we were able to secure the funding we needed to meet company returns criteria and get the project underway. Supported by their highly experienced delivery team, we carried out a feasibility study to ascertain whether installing heat recovery equipment in our plant was a realistic option.

Benefits and added value

The feasibility study identified key areas for heat recovery and reuse, which would enable us to cut emissions, save money and support ESG. This gave us the confidence to progress to preliminary engineering and begin looking into budget and equipment costs. The structure and rigour of the application process facilitated by IHRS also provided additional insights that could be applied elsewhere in the business, helping us to further reduce our carbon footprint.

Lessons learned

Thanks to IHRS, we were able to prove that recovering waste heat from the ovens to heat the treatment water, was a viable, energy-saving solution. Furthermore, we were able to clarify that focusing on production processes rather than factory space heating was the best, most cost-effective investment. We've since put together a heat recovery proposal and requested quotes from reputable suppliers, with a view to seeking capital approval for implementation and moving onto phase 2 of the IHRS programme.

“This project has shown that challenging industry assumptions, seeking transferrable technologies and exploring technical solutions can provide investment opportunities that would otherwise be dismissed. IHRS has made an important contribution to enabling this project at a time when decarbonising industry and optimising energy use is a national and global imperative. Smart Systems is proud to be an industry leader and we look forward to implementing Phase 2 across our downstream operations.”

(Tony Ward, Hub Maintenance Manager, Smart Systems)



Paint Oven, the heat source



Process water heater, the heat user



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