



Department for
Business, Energy
& Industrial Strategy

Advance Tapes Heat Recovery Project

Industrial Heat Recovery Support (IHRS)
Programme Case Study

Context

Advance Tapes is a medium sized, specialist manufacturer of pressure sensitive adhesive tapes, with over 50 years' experience of producing a variety of tapes for industrial, professional markets from the Thurmaston area of Leicester, UK. A key part of the manufacturing process resides in the coating facility, where solvent and water-based adhesives and coatings are applied.

The Solvent Abatement and Heat Recovery Opportunities project came about due to our ongoing commitment to eliminate wasteful practices and minimise the environmental impact of our business. Advance Tapes recognised that the established solvent abatement infrastructure, in the form of an ageing recuperative thermal oxidiser, needed to be replaced and no longer represented the Best Available Technology, a feasibility study was planned with the purpose of determining the best technological solution in terms of waste energy utilisation. Advance Tapes anticipated a significant opportunity from the heat recovery from thermal oxidiser emissions through the exhaust stack (or elsewhere in the process) and re-used in the main manufacturing process.

How the IHRS supported the project

The Department for Business, Energy and Industrial Strategy's (BEIS) Industrial Heat Recovery Support (IHRS) programme has enabled Advance Tapes to conduct a much more comprehensive evaluation of the available technology than would otherwise have been possible – without the funding assistance Advance Tapes would have been bound to replicate the design philosophy of the previous generation. A feasibility study conducted with the same ambition and without IHRS funding, would have taken money away from the implementation. The feasibility study uncovered significant environmental benefits, far beyond expectations and aspirations at the outset. The results of the feasibility study showed a technical direction that wasn't within the initial thinking. Advance tapes noted they were only able to realise this scale of opportunity as a result of the IHRS funding assistance.

Benefits and Added Value

At the outset of the project, it was expected that the existing equipment would be replaced with a more modern thermal oxidiser, which would be coupled with a heat recovery solution, evaluated through this feasibility project. As work proceeded, it has become apparent that an alternate technology, namely solvent recovery equipment driven by a small-scale Combined Heat and Power plant, has the potential to further reduce our environmental footprint and provide an improved commercial proposition compared to all of the thermal oxidiser/heat recovery options. Such potential could not be ignored and so, alongside Regenerative Thermal Oxidation and heat capture, we have evaluated the technology in parallel and it has become our anticipated preferred option at the conclusion of the feasibility study.

Tangible benefits of the IHRS programme have been realised primarily in the capacity to assign more engineering resource to the project. The traditional resource enabled the commission of surveys of the existing systems for drying and chilling on the site, produce a capacity model to assess the required capacity of any proposed abatement system and

consequently the potential surplus heat available. The feasibility study reviewed the currently available solvent abatement and heat recovery technologies in substantial depth and follow up on the most viable options through site visits and supplier meetings

Lessons Learned

The dialogue that we entered into with the BEIS delivery partner ICF was appreciated, as they were very direct and clear with us about what we needed to do and when in the application process. The clear questions in the application work book helped us refine our project thinking right at the outset, and the process of writing a detailed project proposal itself was useful as we would not have put that much thought and preparation into the 'project brief' stage had it only been for internal use. To the project's advantage, our internal project management has been all the more rigorous because we had the additional need for external reporting. It's helped us keep focussed on the goals and encouraged us to ensure the project sticks to planned timescale.

*"Our business has had a really positive experience with the IHRS programme. We have been able to execute a project of considerably wider technological scope than we would have otherwise envisaged. It has created the platform for us to invest in additional Engineering resource for the period of the project, and now as we look forward to the implementation phase there is a clear business justification for the continued investment in the resource – the business case is now well researched and tangible, without the IHRS we would still be looking at a theoretical. It has been to the benefit of the project that the business has had regular reporting requirements. Internally we run many projects and quite often projects like this one will slip from their planned timescales as the 'day job' gets in the way. The milestones and reporting plans we've developed together have helped keep us focussed on a timely delivery, so as Operations Director – really the customer for the outcome of the feasibility study - I am delighted to have some great, well developed options available for our board to review on time."
(Operations Director)*



Rolls of Tapes produced by Advance Tapes.

This publication is available from: www.gov.uk/government/publications/industrial-heat-recovery-support-programme-successful-applicants

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