Department for Energy Security & Net Zero

David Nieper Ltd Industrial Heat Recovery Support Case Study

Industrial Heat Recovery Support (IHRS) Programme

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Context

David Nieper Ltd is a UK clothing manufacturer which employs 290 staff in manufacturing high end fashion. Their process involves the washing, dyeing and printing of fabrics which uses both hot and cold water within a variety of techniques. They contacted BEM Services to assist them in their aim of reducing their carbon footprint and energy usage by optimising the processes across all 5 of their factories.

How IHRS has supported the project

Through IHRS funding, we were able to apply for funding that halved the fees to assess energy efficiency across the business. Starting with the main building of their newest facility, BEM Services reviewed existing energy usage and wastewater temperatures to assess potential for heat extraction measures.

From this, we liaised with heat pump manufacturers to examine whether extraction could be done using a range of equipment – including air to air and water to air heat pumps – before drawing up provisional schematics. We also explored solar panels and using excess heat to heat office spaces as additional cost saving measures.

We then calculated the possible energy savings, carbon reductions, payback periods and total financial costs of each option, which we examined through a series of meetings to find a viable solution.

Benefits and added value

Although the idea of extracting heat from the gas flue was rejected due to capital cost, we were able to implement heat extraction from wastewater – which was being pumped from the building at 40°C.

By using a heat exchanger and series of air source heat pumps, we implemented a process that preheats the process water for fabrics. This was fully costed and supported by BEM Services and IHRS, with installation specifications and an equipment schedule being provided.

The final design reduced the carbon footprint by 50% under current shift patterns and this would be further improved if additional shift patterns were added. The energy cost reductions were over 40%, giving a payback period of around 7 years.

Lessons learned

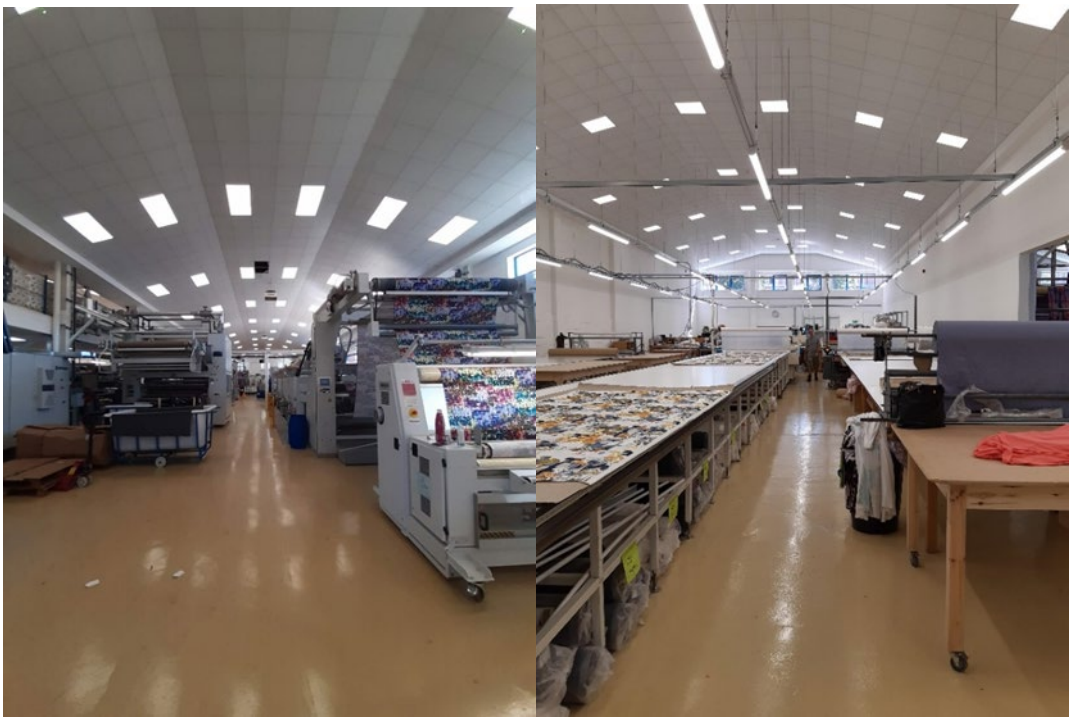
This project reinforced David Nieper Ltd’s commitment to sustainability, providing us with another avenue to drive efficiency and lower emissions. Before completing this project, we

installed 372 solar panels on the main building to further provide over 111,000Kwh of electrical energy for the building.

Our company is a leader in its sector for environmental responsibility and recently won an award for sustainable development, with all its factories benefitting from solar voltaic panels that provide a green uplift.

Through the efforts of IHRS, we were able to expand our knowledge of how much greener clothing manufacturing processes can be and fuel our future endeavours - both in heat recovery and greater energy efficiency.

"This project has enabled David Nieper Ltd to have a full understanding of the potential energy saving options open to them. Having reviewed all possible solutions the final design is a comprehensive, costed design which also provides all carbon footprint and payback details. This information is vital to the management team and enables them to take the business forward in a more sustainable direction."



Part of the factory showing fabric manufactured