Department for
Business, Energy
& Industrial Strategy

Wienerberger (Kingsbury) Heat Recovery Project

Industrial Heat Recovery Support (IHRS) Programme Case Study

October 2020

Context

Wienerberger Ltd owns and operates the Kingsbury Brick manufacturing plant near Tamworth.

The Kinsgbury Plant is one of only a few brick production facilities in the UK with the capability of producing Blue Engineering bricks. Tunnel Kiln 3 was commissioned in 2001 and uniquely designed for reduced oxygen levels in the firing zone, an operating condition for the manufacturing blue bricks. With a capacity to produce over 130,000 tonnes of product per year, the process combusts a large amount of natural gas to generate the high temperatures required in the firing zone. To drive the mechanical loads in the process the site also consumes significant electricity from the grid..

The process is designed to recover the required amount of surplus heat from the Tunnel Kiln cooling zone, to dry the bricks after the moulding process. The management team at Wienerberger UK were aware of the potential to recover the additional amount of heat from the cooling zone for other preheating processes and its potential use to generate on site electricity with Organic Rankine Cycle technology.

The project

With a constraint on internal resources to investigate the best available heat recovery solutions and quantify the maximum amount of additional heat available for recovery, the Wienerberger UK management team applied for Phase 1 Feasibility Study and Preliminary Engineering funding to the Department for Business, Energy and Industrial Strategy's (BEIS) Industrial Heat Recovery Support (IHRS) programme.

The application for the Phase 1 scheme required early stage estimations of heat available for recovery, against the potential savings and costs of project implementation. Wienerberger UK were successful with their application for match funding and the funds were applied to use the external resource of Heatcatcher Ltd to work with the site operational team to deliver the Feasibility Study.

The Feasibility Study findings quantified the surplus heat available after its use in the dryer and the costs of implementing heat recovery systems to preheat the combustion air and product.

With the potential to reduce the sites natural gas load by 11 % and associated CO2e savings of 1,927 Tonnes per year, Wienerberger intend to progress to the next stage of Preliminary Engineering with the continued support under the IHRS scheme.

" We have successfully secured Government funding in the first round of the Industrial Recovery Support programme. The funding is covering in stage one, a feasibility study to produce a heat stream map of the Kingsbury's factory. The report has identified some potential residual heat which is not currently being recovered and I am looking forward to the second stage of the project which is investigating technologies and engineering design solutions to optimise the use of this thermal energy back into the production process."

D. Eadon, Works Manager, Kingsbury

The Kingsbury Factory

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