

Industry Case Study

Steel



Case Studies:

Waste Heat Recovery-Based Power Plant in
Europe

condensing steam turbine generator installed in
Seoul, South Korea



The project is driven by 30 MWe extraction condensing steam turbine with an inlet steam pressure of 65 Bar and inlet temperature of 490 Deg C

Project Highlights: The customer is based in Poland, is a significant producer of blast furnace and industrial-heating coke for the European market. The company produces forged products on hydraulic presses, classified according to the PKD 'Polish Classification of Activities' in section 28.40, as forging and pressing of metals. Their production includes bars, forged rings, discs, metallurgical rolls, flanged shafts and other shaped forgings.

Challenge: The Company produces various forged products to satisfy the demand for the European and American markets. The steel production volumes and capacities vary, amplifying the need to design and operate a steam turbine from as low as 3 MW to 30 MW, due to the varied load requirements and the availability of steam. Another challenge is to meet the specification of the European Standards & Polish Grid Code requirement.

Solution: Triveni Turbines successfully designed a 30 MW extraction condensing steam turbine, with an inlet steam pressure of 65 Bar and inlet temperature of 490 Deg C and associated control system, to meet the varying power and steam demand and conforming to Polish Grid Codes. The Alternator & Electrical systems were designed to be suitable for Polish grid conditions and SIL Rated PLC & SCADA systems were utilised with redundancy for safe operation and to cater to steam demand.

Benefits: The customer is now able to operate with lower power output to full load.



The project is driven by 23.9 MWe condensing steam turbine generator installed in Seoul, South Korea

Project Highlights:

The customer is one of the world's producers of Zinc with a production capacity of 1.14 million tons a year

Challenge:

- The delivery time for the turbine was 7.5 Months FOB basis
- Operate steam turbine in both superheated (45 bar, 450 Deg C, 100 TPH) and saturation steam (40 bar, 250 Deg C, 100 TPH) which have inlet from 3 different sources.

Solution:

The final stage blades are constructed to endure wet steam conditions, and arrangements have been made to eliminate moisture by incorporating water pockets in the last stages, particularly for instances of saturated operation.

Benefits:

The team at Triveni Turbines engineered and supplied highly efficient impulse-reaction steam turbines that are poised to enhance overall plant efficiency.

Thank you.

