Case Study

Hydro Polymers, Newton Aycliffe, UK

Hydro Polymers production plant in the UK is located at Newton Aycliffe in County Durham, in the north-east of England. The plant has been in place for over 50 years and is currently owned by Norsk Hydro. The Aycliffe plant is one of only two plants producing Poly Vinyl Chloride (PVC) in the UK, housing Europe's largest single site compounding operation.

The operation is one of the most modern and progressive PVC plants in the world, employing 400 people and generating an annual turnover of €200 million.

Historically the plant met the high energy demand for both process steam and electrical power using conventional coal-fired boilers and the local electrical power utility, resulting in an unclean environment and a major and rapidly increasing percentage of their total production costs.

A Siemens Combined Heat and Power (CHP) scheme was installed in 1995 and, due to an increased power demand, a second unit was added in 1998. Together they provide the facility with 22 tonnes per hour of steam.

By investing in the CHP schemes, Hydro Polymers has significantly reduced and stabilized its energy costs and has recovered its initial capital investment through savings in both fuel and operating costs in the four years since the CHP plant was installed.

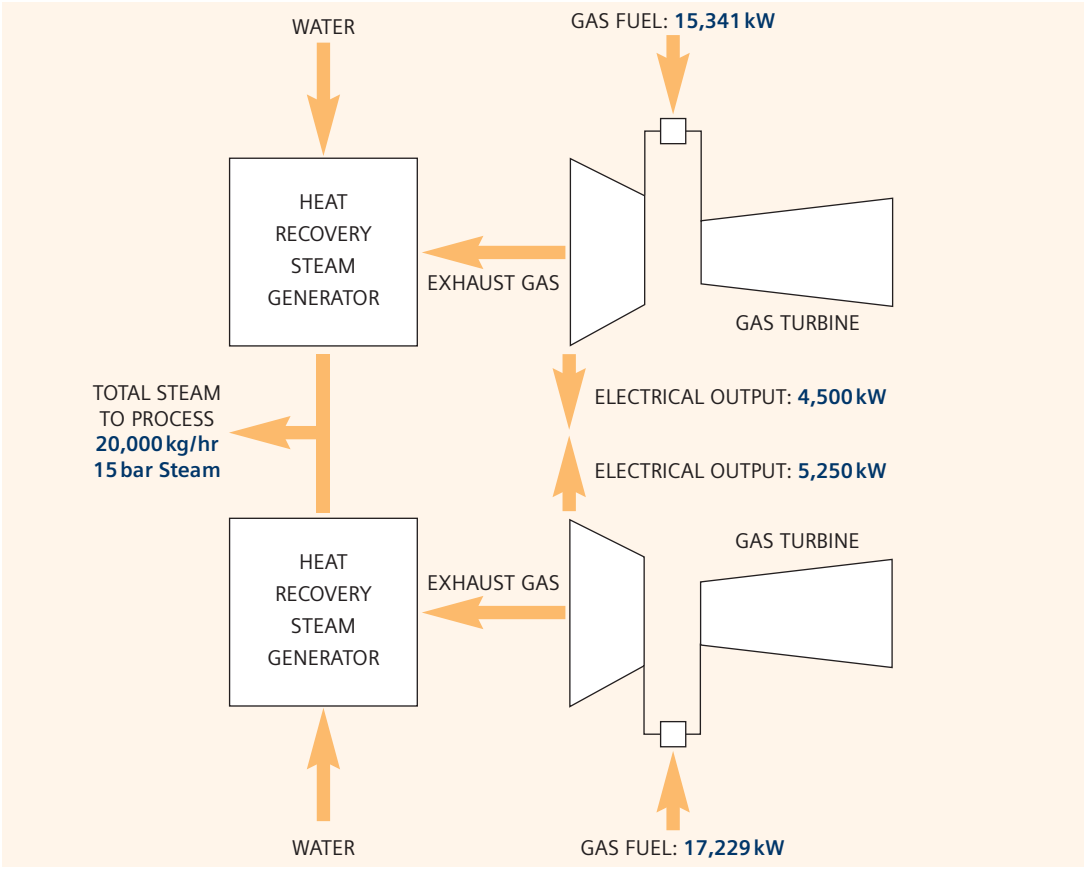
As an additional benefit, the high efficiency of the CHP scheme entitles Hydro Polymers to a rebate on the Climate Change Levy, a UK industry tax which promotes the reduction of greenhouse gas emissions, one of today's most pressing environmental challenges.

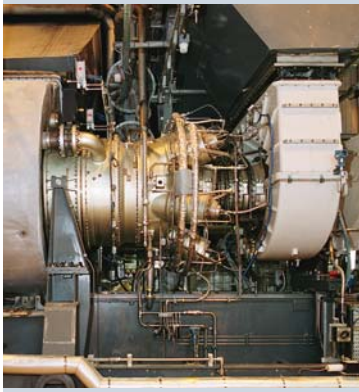
SGT-100 industrial gas turbine
Hydro Polymers, Newton Aycliffe

Project history
Installed in 1995 and 1998, the two SGT-100 gas turbine units have now accumulated over 124,000 running hours and the plant has a CHP efficiency in excess of 80%

Operating regime
The CHP plant operates 24 hours a day, 7 days a week for a total of 50 weeks per year, with an annual shutdown which allows Siemens to carry out maintenance. A long-term maintenance contract covers the gas turbine generator packages.

Emissions
The SGT-100 5.25MW gas turbine is fitted with a Siemens Dry Low Emissions (DLE) system, resulting in less than 25ppmV NO_x and 25ppmV CO.





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