Lausward power plant to break three world records

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The SGT5-8000H gas turbine developed by Siemens forms the heart of the highly efficient combined cycle power plant with district heat extraction in Düsseldorf, Germany. With an electrical unit output of around 595 megawatts (MW) and a net .

Siemens is to build a combined cycle gas turbine power plant with an electrical output of 595 megawatts at the Lausward location in Düsseldorf. That's a new world record for a single combined cycle block.

The net energy conversion efficiency will add up to more than 61 percent. That's also a world record, surpassing the previous record of 60.75 percent achieved at the combined cycle power plant in Irsching. A third world record will be achieved through the extraction of energy for district heating. Never before has it been possible to extract 300 megawatts of thermal energy from a single gas turbine power plant block in combined cycle operation. In this way, the overall efficiency of

natural gas as a fuel climbs to 85 percent. The contract for building the plant is valued at almost half a billion euros.

The SGT5-8000H gas turbine, which has been proving itself in commercial service in Irsching for more than a year, will be installed in Lausward. The SGT5-8000H was developed in cooperation with universities and research institutes in about ten years. The project involved approximately 750 employees working at Siemens locations in Erlangen, Berlin, Mühlheim, and Orlando in the U.S. state of Florida. Twelve gas turbines from the SGT-8000H series are currently on order for energy supply utilities in Germany, South Korea, and the USA. Additional orders are already on the way. In combined cycle operation, a single SGT5-8000H gas turbine can supply electrical power to all of the private households in a major city like Berlin with 3.5 million residents.

High efficiency combined cycle power plants are an ideal compliment to renewable energy sources like wind and solar, which are subject to fluctuations in their power outputs. Combined cycle power plants can quickly and flexibly balance out these fluctuations. They make a considerable contribution to the security of the power supply and the stabilization of the power grid and play an important role in Germany's transition to alternative energy sources. The new generation of Siemens combined cycle power plants also consumes around one-third less natural gas per generated kilowatt-hour of energy compared to the average consumption of combined cycle facilities installed worldwide. In addition to lowering fuel costs, this technology also helps to protect the climate by significantly reducing CO2 emissions. Highly efficient combined cycle power plants are part of the Siemens Environmental Portfolio, with which the company generated about €30 billion in sales in the fiscal year 2011.

Provided by Siemens