

Siemens sets new efficiency world record at Düsseldorf power plant

- **Electrical efficiency of around 61.5 percent and a record power generating capacity of 603.8 MW during test run**
- **Plant can also supply around 300 MW of heat for district heating**
- **Handover to customer 19 days ahead of schedule**

On January 22, 2016, Siemens handed over the combined cycle power plant at the Lausward location in the Düsseldorf (Germany) harbor area to the customer and operator, the utility company Stadtwerke Düsseldorf AG. The turnkey plant sets three new records in a world-wide comparison. During the test run before acceptance, unit "Fortuna" achieved a maximum electrical output of 603.8 megawatts (MW), which is a new record for a combined cycle plant of this type. A new world record of around 61.5 percent for net power generating efficiency was also achieved, enabling Siemens to beat its own efficiency record of 60.75 percent set in May 2011 at the Ulrich Hartmann power plant located in Irsching in the south of Germany. The high efficiency level makes the power plant especially environmentally friendly. In addition, unit "Fortuna" can also deliver up to around 300 MW for the district heating system in the city of Düsseldorf – a further international peak value for a power plant equipped with only one gas and steam turbine.

The increase in the capacity and efficiency levels is the result of consistent ongoing developments, for example in the design of components, in the materials used, in the overall construction of the plant and in the perfect interworking of all plant components. "We optimized the power plant to enable it to be ideally positioned in one of the world's most demanding power markets. Together with the Stadtwerke Düsseldorf we are therefore very pleased that this plant set the new efficiency world

record,” stated Willi Meixner, CEO of the Power and Gas Division within Siemens AG. Unit “Fortuna” is highly flexible when it comes to power generation. It can quickly respond to growing fluctuations in demand on the German electricity market. This flexibility supports the operator in efforts to achieve economical operations in a challenging environment for conventional power plants. With the cogeneration of district heat, fuel utilization for the plant is boosted up to 85 percent, while CO₂ emissions are reduced to a mere 230 grams per kilowatt-hour.

Unit “Fortuna” was handed over to the customer 19 days ahead of the date set in the contract. The project on the bank of the Rhine was additionally a huge success with regard to occupational safety for everyone involved. More than two million hours of work in total were performed without a single accident.

To date Siemens has 76 H-class gas turbines under contract worldwide. With 17 units in commercial operation, the SGT-8000H fleet has already reached more than 195,000 hours of operation.

What an efficiency level of 61.5 percent means for the climate

In terms of the average emissions of power generation for all coal-fired power plants throughout the European Union, a natural-gas-fired combined cycle power plant such as this one, with an electrical efficiency of 61.5 percent, theoretically saves approximately 2.5 million tons of carbon dioxide (CO₂) annually. This corresponds to the amount of CO₂ emitted by 1.25 million passenger cars, each driving 15,000 kilometers a year. Cleansing this amount of CO₂ from of the atmosphere would require a forest with an area of 250,000 hectares (roughly the size of Luxembourg).

This press release and press pictures are available at

www.siemens.com/press/PR2016010135PGEN

The press feature on the power plant Lausward at

www.siemens.com/press/fortuna

For further information on the record-breaking power plant at

www.siemens.com/fortuna

For further information on Siemens gas turbine SGT5-8000H, please see www.energy.siemens.com/hq/en/fossil-power-generation/gas-turbines/sgt5-8000h.htm

For further information on Division Power and Gas, please see www.siemens.com/about/en/businesses/power-and-gas.htm

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