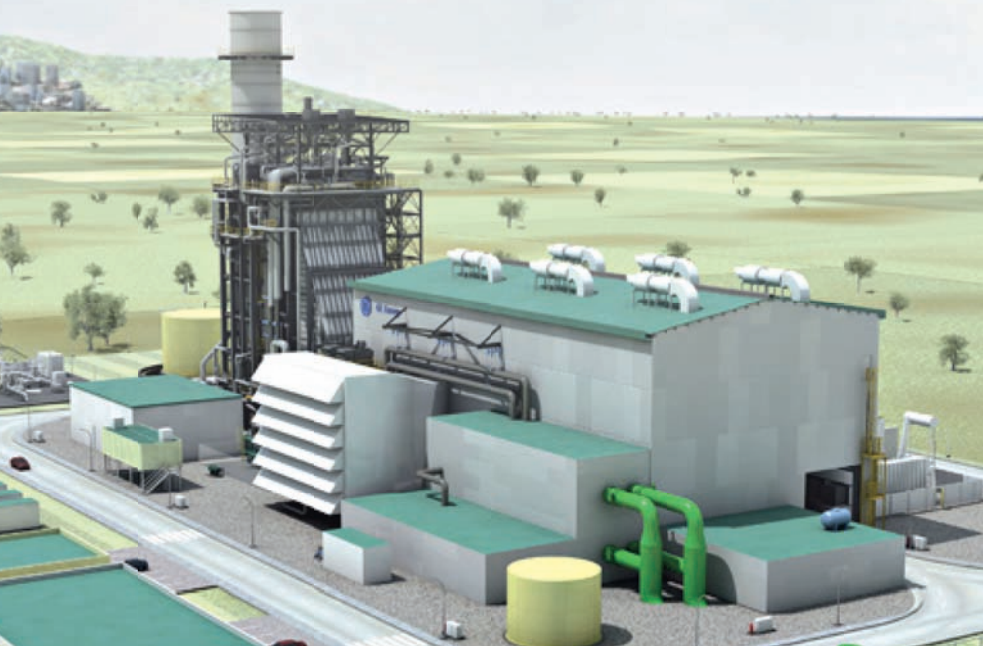


# State-of-the-art combined cycle gas

Energy efficiency is a strong focus at EDF, which is adapting and upgrading its industrial facilities to reduce CO<sub>2</sub> emissions. It has therefore invested in building a state-of-the-art combined cycle gas turbine in the northern French city of Bouchain. The high-efficiency plant will emit 60% less CO<sub>2</sub> than the former cold-fired plant it will replace in the summer of 2016.



Developed by General Electric (GE), the plant will have 575 MW installed capacity. Its advantages include record efficiency of 61%, compared with 58% for a conventional combined cycle gas turbine plant and 37% for a conventional coal-fired plant; maximum power – 575 MW – reached in only 30 minutes, which is twice as fast as a conventional combined cycle gas turbine plant; and very low atmospheric emissions, in particular 60% less CO<sub>2</sub> than a conventional coal-fired plant. The facility's great flexibility will enable it to cope efficiently with demand fluctuations in the grid.



#### KEY FIGURES

**61%** efficiency achieved in less than 30 minutes

**575 MW** installed capacity, enough to supply 680,000 households for one year

**Most powerful gas turbine** ever developed by General Electric, the 9HA

#### INTERESTING FACTS

### A state-of-the-art power plant

A combined cycle gas turbine power plant fires natural gas to generate electricity while also harnessing the steam produced to generate electricity as well. A new generation of combined cycle gas turbine plants is currently being developed.



#### ENVIRONMENTAL IMPACTS

- 60% reduction in CO<sub>2</sub> emissions
- Two-thirds reduction in sulphur dioxide (SO<sub>2</sub>) emissions
- Nitrogen oxide (NO<sub>x</sub>) emissions reduced by a factor of 20

#### TIMELINE

##### 8 December 2011

Announcement of construction of state-of-the-art combined cycle gas turbine plant

##### 2012-2014

Civil engineering and mechanical assembly

##### 2015

Testing

##### Summer 2016

Industrial commissioning

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