

Toshiba Supplies A First-of-a-Kind Supercritical CO₂ Turbine to New Thermal Power Generation System Demonstration Plant Built in Texas, USA

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TOKYO

TOKYO--(BUSINESS WIRE [4])--Toshiba Corporation (TOKYO:6502) today announced that it will supply a first-of-a-kind supercritical CO₂ turbine to a demonstration plant being built in Texas, USA. The plant will be developed by NET Power, LLC, a U.S. venture, together with CB&I, the most complete energy infrastructure focused company in the world, Exelon Corporation, one of the leading competitive energy providers in the U.S., and 8 Rivers Capital, the inventor of the unique supercritical CO₂ power cycle that will be demonstrated by this plant. The turbine is an essential part of the system, and Toshiba will start delivering the key equipment in August 2016. The plant is expected to enter the commissioning stage later in 2016.

The new supercritical CO₂ power cycle system utilizes high temperature and high pressure gas at the turbine inlet. In order to cope with these conditions, Toshiba has utilized material specifically developed for use in high temperature steam turbines together with technology derived from its combustion and cooling technology used in gas turbines. The combustor has been designed by Toshiba to cope with a gas pressure of 300 bars, which is more than 10 times the gas pressure utilized in conventional gas turbines.

The system utilizes supercritical CO₂ as a working fluid to produce low-cost electricity while eliminating emissions of NO_x, CO₂, and other pollutants. CO₂ is collected at high-pressure without requiring additional carbon-capture equipment or processes, enabling full carbon-capture without increasing the cost of electricity.

Since 2012, Toshiba has been developing the new turbine and combustor for the system together with NET Power, CB&I, Exelon Corporation, and 8 Rivers Capital. The five companies have now completed major agreements to build a 25MW gross electric (50MWt) demonstration plant in Texas. Through the successful completion of operating tests, the demonstration plant is intended to provide the basis for the construction of the first 295MWe full-scale commercial plant.

Toshiba and its partners will promote sales of this new power system worldwide, with a special focus on the U.S. and the Middle East, where there is strong demand for EOR. Going forward, Toshiba will continue to contribute to the global environment by supplying highly efficient and environmentally friendly power generation systems.

About Toshiba

Toshiba Corporation, a Fortune Global 500 company, channels world-class capabilities in advanced electronic and electrical product and systems into five strategic business domains: Energy & Infrastructure, Community Solutions, Healthcare Systems & Services, Electronic Devices & Components, and Lifestyles Products & Services. Guided by the principles of The Basic Commitment of the Toshiba Group, "Committed to People, Committed to the Future", Toshiba promotes global operations towards securing "Growth Through Creativity and Innovation", and is contributing to the achievement of a world in which people everywhere live in safe, secure and comfortable society.

Founded in Tokyo in 1875, today's Toshiba is at the heart of a global network of over 590 consolidated companies employing over 200,000 people worldwide, with annual sales surpassing 6.5 trillion yen (US\$63 billion).

To find out more about Toshiba, visit www.toshiba.co.jp/index.htm [5].

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