

Toshiba to complete construction of carbon capture pilot plant

29 September 2009



Toshiba Corporation today announced that it has completed construction of a pilot plant to support development and validation of its carbon capture technology. Final commissioning testing prior to plant operation was completed and research and test operation will formally commence today. The pilot plant is located in Sigma Power Ariake Co. Ltd.'s Mikawa Power Plant, in Omuta City, Japan.

CO₂ separation and capture is an integral part of the [carbon capture](#) and storage (CCS) system. At the Mikawa pilot plant, [Toshiba](#) will deploy and validate its latest advances in separation and capture technology. The Mikawa pilot plant is designed to capture 10 tons of CO₂ a day from actual live flue gas of the boiler of the coal-fired thermal power plant. The pilot plant will be used to verify the performance and operation of the system when practically applied to thermal [power plants](#), including but not limited to the verification of the effects of flue gas contents on system operation. The knowledge and know-how acquired through

these tests will be effectively utilized towards the design of systems and equipment for utility-scale power plants, which will finally be optimally integrated with other power plant equipment, such as turbines and boilers.

Toshiba initiated its R&D into CCS in 2006, focusing on an amine based chemical absorption system that consumes less energy in the CO₂ separation and capture process, and has verified through small scale testing that its performance matches the leading levels in the industry. The company established a new CCS development and promotion organization last October, and will seek to further accelerate practical application and commercialization of this technology.

Toshiba is targeting application and installation of its system in demonstration plants around the world, making best use of its results and knowledge acquired through the validation tests at the Mikawa pilot plant. As a power plant manufacturer, Toshiba's goal is to meet emerging needs for commercial scale CCS systems for thermal power plants, an area where demand is expected to grow from around 2015. Toshiba will accelerate its research and development efforts to support early establishment of this business.

Thermal power accounts for two thirds of power generation worldwide, and is a central pillar of securing stable energy supply. However, more than half of all thermal power plants are coal fired, and these plants release more CO₂ for the same amount of electricity generated than plants that run on other fossil fuels, such as natural gas. Measures to reduce CO₂ emissions from thermal plants are seen as an urgent requirement for the environment, and new plants are becoming subject to CO₂ emission regulation, especially in leading industrialized countries. Given this, demand for a functional CCS system is expected to grow.

Toshiba's goal is to establish a business able to

meet emerging needs for commercial scale CCS systems for thermal power plants by 2015. The company targets net sales of 100 billion yen in FY2020 in CCS-related business.

Source: Toshiba

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