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Taiheiyo Cement Implements Demonstration Test of CO_2 Separation and Capture Targeting Cement Kiln Exhaust Gas for the First Time in Japan

Taiheiyo Cement Corporation (Head office: Minato-ku, Tokyo; President: Masafumi Fushihara; hereinafter the "Company") is pleased to announce its participation in the environmentally friendly CCS(*1) verification project hosted by the Ministry of the Environment. The Company has decided to install CO_2 separation and capture test equipment that uses a chemical absorption process targeting cement kiln exhaust gas in the Fujiwara Plant (Inabe-shi, Mie) for the first time in Japan . The Company will implement a demonstration test.

A large amount of carbon dioxide is produced in the process of cement manufacturing. The production process requires the high temperature of 1,450°C during the calcination process to decarbonate limestone(*2), a raw material, through a chemical reaction.

From the perspective of global environmental load reduction, the Company has launched a corporate cross-sectional organization that strategically reviews CO_2 reduction technologies. The Company has been working to conserve energy by installing energy-efficient equipment and improving the stability and efficiency of kiln operations. It has also been implementing measures to reduce CO_2 emissions, such as using waste- and biomass-derived energy sources to decrease the rate of use of fossil fuels.

In addition, the Company has also decided to develop technologies that capture CO_2 from cement kiln exhaust gas, aiming to greatly reduce the amount of CO_2. Participation in this environmentally friendly CCS verification project hosted by the Ministry of the Environment and the development of CO_2 reduction technologies for the future will generate revolutionary initiatives in the cement industry.

In this demonstration test, the Company will install CO_2 separation and capture test equipment using a chemical absorption process in the Fujiwara Plant and verify the applicability to cement manufacturing plants using actual cement kiln exhaust gas.

Although the chemical absorption process has been introduced at incineration plants and other locations, this will be Japan's first* trial targeting cement kiln exhaust gas. Because cement kiln exhaust gas contains acidic gases and other ingredients that should be managed when the chemical absorption process is applied, the Company will evaluate the impact in detail and consider countermeasures.

The Company plans to complete installation of the equipment and start the demonstration test in January 2019.

Taking into account the scale-up of the demonstration equipment and looking toward the practical realization of CO_2 separation and capture, the Company will conduct the CO_2 separation and capture demonstration test with cement kiln exhaust gas to verify the possibility of more aggressive CO_2 emission reduction.

(* Investigated by the Company)

*1 CCS: A technology for Carbon dioxide separation, Capture, and Storage for exhaust gas emitted at heat power plants and other establishments. The environmentally friendly CCS verification project will be implemented from 2016 to 2020 to obtain and publish information on the operability of the capture equipment, aiming to facilitate the introduction of CCS in Japan. The Company has participated since 2018.

* 2 Method of decarbonating limestone: $CaCO_3 \rightarrow CaO + CO_2$