

## Launch of "Carbon Neutral Model Plant" concept study

Taiheiyo Cement Corporation (Headquartered in Bunkyo-ku, Tokyo, President and Representative Director, Masafumi Fushihara) has commenced studying the concept of a "Carbon Neutral Model Plant" (hereinafter referred to as "CN Model Plant") at the Kawasaki Plant of DC CO., LTD. towards achieving carbon neutrality in our supply chain.

We are currently working on the development of various technologies to achieve carbon neutrality in the supply chain by 2050 and are now at the stage to study the concept of a "CN Model Plant" that incorporates such technologies scaled up from experimental level to plant demonstration level. We have therefore decided to conduct the study at the Kawasaki Plant of DC CO., LTD.

Kawasaki Plant of DC CO., LTD. is an urban bayfront cement plant and is in the Kawasaki waterfront area, one of the leading industrial districts in Japan, which is advantageous both for the shipment of liquefied CO<sub>2</sub> from the carbon capture project and the potential to form various alliances with neighboring companies in the future. Therefore, we have evaluated the site as suitable for the concept of a "CN Model Plant".

< Study points of the "CN Model Plant" >

- 1) Actual plant demonstration of "CO<sub>2</sub>-Capture Technology for the Cement Production Process (C2SP Kiln<sup>®</sup>)", one of the Green Innovation Fund Projects.  
Technology development through actual plant testing of the C2SP Kiln<sup>®</sup>, our original, world-first cement production process, which enables efficient CO<sub>2</sub>-capture in a compact facility.
- 2) "Feasibility Study on the Implementation of Advanced CCS Projects", publicly offered by JOGMEC, Japan Organization for Metals and Energy Security.  
A feasibility study with process design and cost estimation for purification, liquefaction and transportation of CO<sub>2</sub> recovered from the C2SP Kiln<sup>®</sup>.
- 3) Study of the concept of a "CN Model Plant".  
Design of the basic plan for the concept of a CN Model Plant with CO<sub>2</sub>-capture, utilization (carbonation, methanation, etc.) and storage.



Figure 1: Conceptual image of a CN Model Plant

In the "2023 Mid-Term Management Plan" published in May 2021, we announced a "Carbon Neutral Strategy 2050" to achieve carbon neutrality in the entire supply chain by 2050, and in March 2022 we formulated a "Technology Development Roadmap" and a "2030 Interim Target", including specific measures toward carbon neutrality in 2050. The Technology Development Roadmap calls for the completion of "Innovative Technology Development (CO<sub>2</sub>-capture and utilization)" by 2030 and the sequential deployment of innovative technologies in our operations towards 2050.

In FY2020-2021, the New Energy and Industrial Technology Development Organization (NEDO) publicly invited us to participate in the "Development of Carbon Circulation Technology for the Cement Industry," a project subsidized by NEDO, and we had worked on CO<sub>2</sub>-capture technology using chemical absorption methods and CO<sub>2</sub> fixation (carbonation) technology using cement and concrete-based materials. In addition, since FY2021, we have been working on a CO<sub>2</sub>-capture process for cement production (C2SP Kiln®) and a methanation process suitable for cement manufacturing under the NEDO Green Innovation Fund Project "Development of CO<sub>2</sub>-Capture Technology for the Cement Production Process".

Furthermore, in FY2023, we were selected by the Japan Organization for Metals and Energy Security (JOGMEC) for the "Feasibility Study on Implementation of Advanced CCS Projects", and we will start a feasibility study on the purification, liquefaction and transportation of CO<sub>2</sub> recovered from the cement manufacturing process. We will continue to develop CCUS technology that combines CO<sub>2</sub>-capture with both utilization and storage.

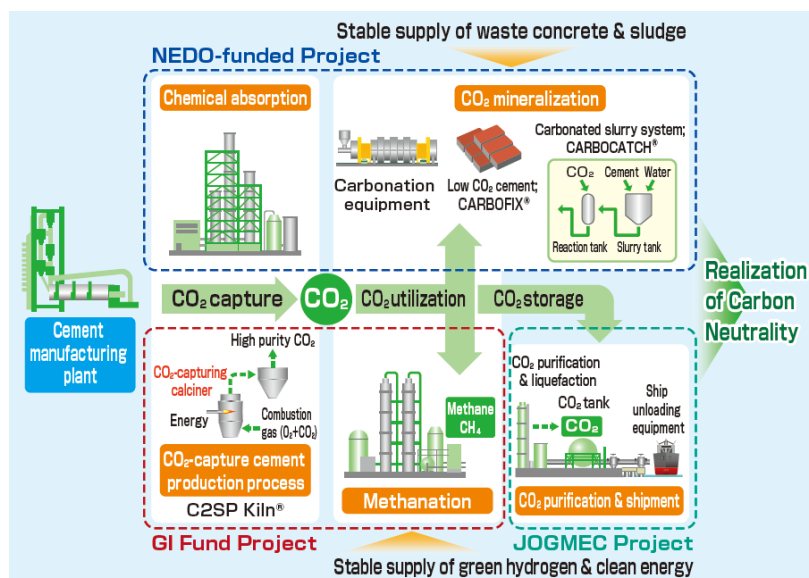


Figure 2: Overview of our Innovative Technology Initiatives to achieve carbon neutrality

Taiheiyo Cement Group will use the knowledge gained from these studies to develop a CN Model Plant with the aim of realizing carbon neutrality in the supply chain by 2050.

[Reference]

NEDO News Release

June 18, 2020, Start of the "Development of Carbon Circulation Technology for the Cement Industry"

[https://www.nedo.go.jp/news/press/AA5\\_101319.html](https://www.nedo.go.jp/news/press/AA5_101319.html) (in Japanese)

NEDO News Release

January 28, 2022, Green Innovation Fund Project, "Development of CO<sub>2</sub>-Capture Technology for the Cement Production Process"

[https://www.nedo.go.jp/news/press/AA5\\_101510.html](https://www.nedo.go.jp/news/press/AA5_101510.html) (in Japanese)

Our News Release

August 2, 2023, Seven Companies Announce to Conduct a Joint Study on Japanese Advanced CCS (Carbon Capture and Storage) Project

<https://www.taiheiyo-cement.co.jp/english/summary/pdf/230802.pdf>