

October 11, 2023
Japan Carbon Frontier Organization
Kawasaki Heavy Industries, Ltd.

Construction Completed for CO₂ Separation and Capture Technology Demonstration Test Facility for Use in Environmental Impact Assessment with Combustion Exhaust Gases at Coal-fired Power Plant in Wyoming, USA

On October 9, 2023, Japan Carbon Frontier Organization (“JCOAL”) held a ceremony together with Kawasaki Heavy Industries, Ltd. (“Kawasaki”) to commemorate the completion of construction of a CO₂ separation and capture technology demonstration test facility at the Integrated Test Center (“ITC”)* located adjacent to Dry Fork Station, a coal-fired power plant in the city of Gillette, Wyoming, USA.



The project is commissioned by the Ministry of the Environment, Government of Japan titled the “Development Project of Integrated Demonstration Facility and Supply Chain for Sustainable CCUS (CO₂ Capture Technology Demonstration with Solid Absorbent)”. The CO₂ separation and capture facility has been constructed at the ITC and will employ an amine-based material for separation and capture of CO₂ from Dry Fork Station exhaust gases and conduct environmental impact assessment testing.

The separation and capture technology entails the utilization of a proprietary solid amine absorbent developed by Kawasaki for CO₂ separation and capture, which enables the use of lower-temperature steam compared with the traditional method using a liquid amine absorbent and is thus expected to realize high energy savings.

Through this demonstration test, JCOAL and Kawasaki intend to strengthen their CO₂ separation and capture technologies and contribute toward the realization of a carbon-cycle society, with the ultimate goal of achieving carbon neutrality.

* The ITC is a technological development center that provides exhaust gases from actual power plant operations to assist researchers developing CO₂ separation and capture technologies. The construction completion ceremony was carried out jointly by JCOAL, Kawasaki and the ITC.

Supplementary Information

Project Overview

Project Name: Project for the Development of an Integrated Demonstration Facility and Supply Chain for Sustainable Carbon Dioxide Capture, Utilization, and Storage (Demonstration Test for CO₂ Separation and Capture Using a Solid Absorbent) by the Japanese Ministry of the Environment

Project Leader: Japan Carbon Frontier Organization
(project contact point, environmental impact assessment testing)

Joint Implementation Partner: Kawasaki Heavy Industries, Ltd.
(development and provision of the solid absorbent, test facility construction, joint implementation of environmental impact assessment testing)

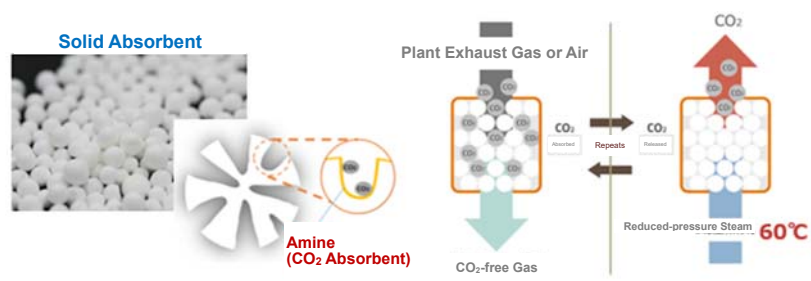
Cooperating Body: State of Wyoming

Project Site: Integrated Test Center in Wyoming, USA

CO₂ Separation and Capture Using a Solid Absorbent
KCC: Kawasaki CO₂ Capture

Development of the Solid Absorbent

- **Kawasaki CO₂ Capture (KCC) using a solid absorbent**
- **Possible to use low-temperature steam (60°C) for CO₂ capture**
- **Realizes more energy-efficient CO₂ separation and capture operations compared with the traditional method**



Project Implementation Framework

