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

ITOCHU Corporation
Nippon Steel Corporation
Taiheiyo Cement Corporation
Mitsubishi Heavy Industries, Ltd.
ITOCHU Oil Exploration Co., Ltd.
INPEX Corporation
Taisei Corporation

ITOCHU Corporation (headquartered in Minato-ku, Tokyo; Keita Ishii, President & COO; hereinafter "ITOCHU"), Nippon Steel Corporation (headquartered in Chiyoda-ku, Tokyo; Eiji Hashimoto, President; hereinafter "Nippon Steel"), Taiheiyo Cement Corporation (headquartered in Bunkyo-ku, Tokyo; Masafumi Fushihara, President; hereinafter "Taiheiyo Cement"), Mitsubishi Heavy Industries, Ltd. (headquartered in Chiyoda-ku, Tokyo; Seiji Izumisawa, President and CEO; hereinafter "MHI"), ITOCHU Oil Exploration Co., Ltd. (headquartered in Minato-ku, Tokyo; Takumi Hiraga, President & CEO; hereinafter "CIECO"), INPEX Corporation (headquartered in Minato-ku, Tokyo; Takayuki Ueda, President & CEO; hereinafter "INPEX"), and Taisei Corporation (headquartered in Shinjuku-ku, Tokyo; Yoshiro Aikawa, President and CEO; hereinafter "Taisei") announced today that the Tohoku Region West Coast CCS initiative (hereinafter "the Initiative"), that the seven companies jointly proposed, has been selected by the Japan Organization for Metals and Energy Security (hereinafter "JOGMEC") to conduct a feasibility study on Japanese Advanced CCS Project (hereinafter "Study")*1, a public offered project in FY2023. *2

Japan's Ministry of Economy, Trade and Industry set a goal of launching a public offering of CCS value chain operators, including carbon dioxide (hereinafter "CO₂") emitting companies, and a number of advanced CCS projects by 2030 for the social implementation of CCS, which is positioned as a means for decarbonization that should be fully harnessed, particularly in hard-to-abate industries*3, to achieve two targets of the Japanese government: carbon neutrality in 2050 and a 46% reduction in greenhouse gas emissions (from FY2013 level) in FY2030.

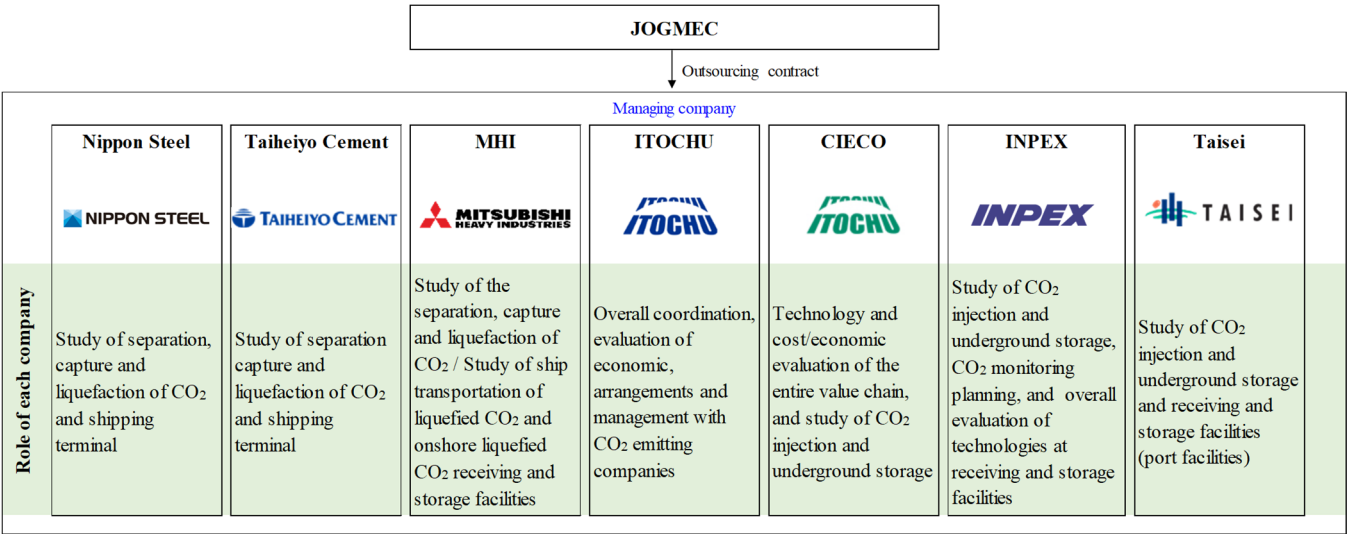
Given the above governmental policy and targets as the background, four companies, ITOCHU, MHI, INPEX and Taisei, announced on January 26 this year that they will jointly carry out a study for launching a joint project relating to the separation, capture, ship transportation and storage of CO₂ emitted particularly from hard-to-abate industries in Japan and conduct a process of selecting prospective sites for CO₂ storage in Japan. Subsequently, Nippon Steel and Taiheiyo Cement are participating in the Initiative as CO₂ emitting companies, and CIECO, a core operating subsidiary company in the oil and natural gas development business of the ITOCHU Group and being actively involved in CCS and other decarbonization projects, has also joined the seven companies in conducting the Study. In the Study, with a view to launching a concrete CCS value chain project by FY2030, the seven companies will identify technical issues in the entire CCS value chain as well as commercial and social acceptability issues, based on the overall concept of using ships to transport CO₂ separated and captured at specific plants of Nippon Steel and Taiheiyo Cement, to sites appropriate for CO₂ storage.

Nippon Steel announced Carbon Neutral Vision 2050 in its medium- to long-term management plan in March 2021. The vision says that the company aims to reduce CO₂ emissions 30% by 2030 from the 2013 level and achieve carbon neutrality in 2050. Nippon Steel positions CCS as one of the most important key technologies to achieve these targets along with high-grade steel production in large-sized electric arc furnaces, hydrogen injection into blast furnaces (Super-COURSE50) and hydrogen direct reduction of iron.

Taiheiyō Cement announced Carbon Neutral Strategy 2050 in its medium-term management plan in May 2021. The company also announced a 2030 Interim Target, a 20% or more reduction in CO₂ emission intensity in the entire supply chain from 2000 level in March 2022. Positioning the achievement of carbon neutrality in 2050 as one of the top priority issues, Taiheiyō Cement is accelerating the implementation of its carbon neutrality initiatives. While it is possible to reduce energy-derived CO₂ emissions to zero by converting to green energy sources, such as hydrogen, ammonia, and synthetic methane, CO₂ emissions from raw materials cannot be reduced to zero as long as limestone is used, which is a major challenge the cement industry is facing. To address the challenge, Taiheiyō Cement is primarily undertaking initiatives involving the development of innovative technologies, including the separation and capture of CO₂ in the course of cement production and CCS, and CCU technology that makes it possible to use CO₂ as a new resource.

The seven companies will cooperate with each other in the Study and actively work toward the early social implementation of CCS and the realization of a sustainable society in Japan.

Roles of each company in the Study

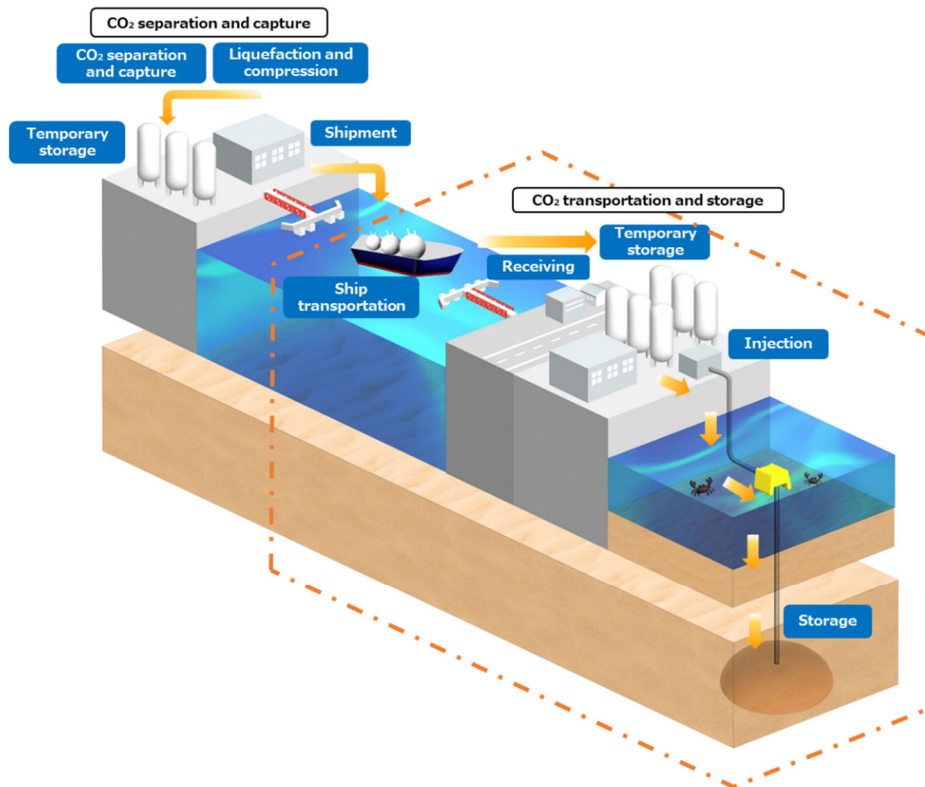


Schedule for the Initiative

Fiscal year			2023	2024	2025	2026	2027	2028	2029	2030	
Area	Separation and capture	Design	[Progress bar]								
		Facilities construction work					[Progress bar]				
	Transportation	Design	[Progress bar]								
		Facilities construction work					[Progress bar]				
		Procurement of ships and other transportation means					[Progress bar]				
	Storage	Identification of sites appropriate for CO ₂ storage, evaluation of storage capacity	[Progress bar]								
		Environmental impact assessment, test drills and evaluation		[Progress bar]							
		Design	[Progress bar]								
		Drilling					[Progress bar]				
		Facilities construction work					[Progress bar]				
	Relationships with local communities of Sites appropriate for CO ₂ storage, and others	Study of economics, development of business models	[Progress bar]								
		Local coordination	[Progress bar]								
		Development of commercial schemes					[Progress bar]				

Commencement of storage

Image of large-scale and wide-area CCS value chain project using ship transportation



- *1 For the purpose of supporting the diffusion and expansion of CCS projects, a study of separation and capture, transportation and storage of CO₂ in connection with Japanese Advanced CCS Project, which are designed to cluster CO₂ emission sources and create CO₂ storage hubs to achieve larger scale projects and reduce costs.
- *2 The Ministry of Economy, Trade and Industry and JOGMEC have each announced the selection of the Initiative as one of the candidate projects for the Study on June 13 this year.
- ✓ Full-scale Commencement of Japanese CCS Projects: JOGMEC Selects Projects as Japanese Advanced CCS Projects (announced by the Ministry of Economy, Trade and Industry)
https://www.meti.go.jp/english/press/2023/0613_001.html
 - ✓ First Step to Launch Japanese CCS Project: JOGMEC selected 7 projects, starting CO₂ storage by FY2030 (announced by JOGMEC)
https://www.jogmec.go.jp/english/news/release/news_10_00036.html
- *3 The materials industry that is expected to have difficulty achieving decarbonization merely by electrification, introduction of hydrogen and other means
- *4 Four Companies Announce Joint Feasibility Study of Large-Scale Wide-Area Carbon Capture and Storage (CCS) Value Chain Project Using Ship Transportation
<https://www.itochu.co.jp/en/news/press/2023/230126.html>