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FOR IMMEDIATE RELEASE **No. 3802**

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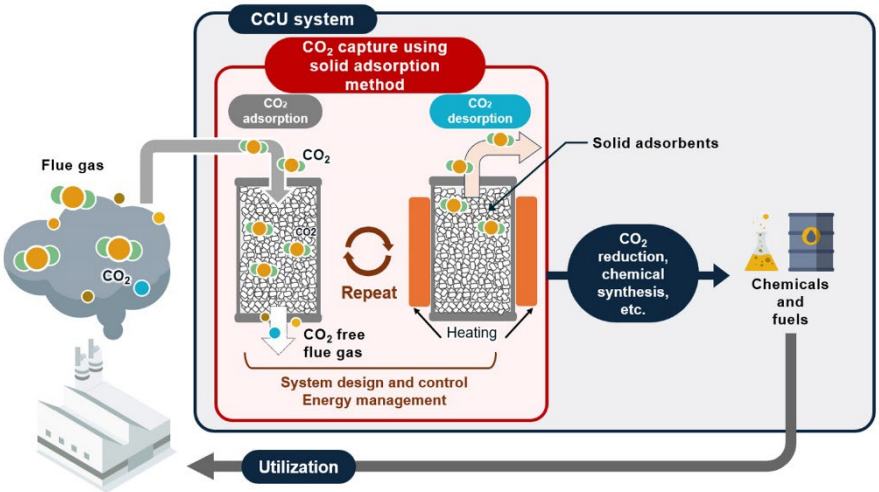
Mitsubishi Electric to Conduct Demonstration Using CO_2 Capture Machine Developed by ITRI in Taiwan

Highly efficient CO_2 capture expected to contribute to comprehensive CCU system for achieving carbon neutrality.



Demonstration of CCU system and CO_2 capture technology

TOKYO, June 9, 2025 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today that it will launch a demonstration of technology to capture CO_2 from flue gas, using a CO_2 capture machine developed by the Industrial Technology Research Institute (ITRI) in Taiwan and installed at Mitsubishi Electric's Advanced Technology R&D Center in Amagasaki, Hyogo Prefecture on June 9. The demonstration will last until September 2027.

In April 2024, Mitsubishi Electric and ITRI concluded a basic agreement to cooperate on research targeting sustainability technologies. Since then, they have been engaged in research and development aimed at mitigating climate change through carbon dioxide capture and utilization (CCU) technology. CCU separates and captures CO_2 emitted from power plants and factories and then uses the recovered CO_2 to produce fuel and chemical products.

In the demonstration, Mitsubishi Electric will connect the machine to a steam-generating boiler to test its effectiveness in capturing CO_2 contained in boiler's flue gas. The machine uses a solid adsorption method, whereby CO_2 is adsorbed onto a solid adsorbent, which is then heated to release and recover the CO_2 before CO_2 reduction and other processes. Conventionally, CO_2 from flue gas has been captured using liquid absorption. In this method, CO_2 is absorbed by an aqueous solution of amine, a chemical substance mainly composed of nitrogen atoms that can absorb CO_2 and release it when heated or decompressed. However, this method requires a large amount of energy to evaporate the aqueous solution, resulting in energy loss. The new solid adsorption method does not use this evaporation process, thereby reducing the energy required to capture CO_2.

In the demonstration, Mitsubishi Electric will also enhance the energy efficiency of its comprehensive CCU system with technologies for advanced system design, advanced system control, and energy management, cultivated over many years in fields such as air conditioning, refrigeration and industrial systems.

Mitsubishi Electric and ITRI will use the results of this demonstration to accelerate research and development with the aim of realizing and deploying an integrated CCU system—from CO_2 capture to utilization—in society at an early stage. Mitsubishi Electric will also combine this knowhow with its Energy & Facility (E&F) solutions to reduce CO_2 emissions at plants and facilities to achieve carbon neutrality.

Going forward, with the goal of realizing sustainability, Mitsubishi Electric will continue to accelerate its "Trade-On" activities to simultaneously address technical issues in modern society and achieve business growth.

CO_2 capture machine developed by ITRI

Feature Development

In addition to demonstrating new technology to improve the energy efficiency of CO_2 capture technology, Mitsubishi Electric will collaborate with other companies on applied research and co-creation to develop an advanced CCU system for commercialization by the fiscal year ending in March 2030, or later.

Industrial Technology Research Institute (ITRI)

ITRI is a non-profit organization headquartered in Hsinchu County, Taiwan. With approximately 6,000 researchers, it is one of the world's leading applied research institutions, focusing on scientific and technological research and development, promoting industrial development, creating economic value, and enhancing social welfare. For more details, please visit https://www.itri.org/eng.

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About Mitsubishi Electric Corporation

With more than 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its "Changes for the Better." The company recorded a revenue of 5,521.7 billion yen (U.S.$ 36.8 billion*) in the fiscal year ended March 31, 2025. For more information, please visit www.MitsubishiElectric.com

*U.S. dollar amounts are translated from yen at the rate of ¥150=U.S.$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2025