FACT SHEET

OILCHANGE INTERNATIONAL

FUNDING FAILURE:

Japan's $5.2 Billion Carbon Capture Plan to Derail Asia's Energy Transition

INTRODUCTION

This fact sheet reveals for the first time the extent of Japanese government financial support for carbon capture and storage (CCS) and fossil hydrogen. To date, the Japanese government has committed as much as USD 5.2 billion to these failing technologies with plans to export carbon waste across Southeast Asia and Australia, turning neighboring countries into carbon dumps at the expense of people and the climate.[a]

Despite its 50-year existence, carbon capture has failed to reduce emissions and is not a viable solution to the climate crisis. Even if they functioned as planned, the projects currently operating globally would only capture around 0.1% of global emissions.[1] The Intergovernmental Panel on Climate Change (IPCC) ranks CCS as one of the least effective, most expensive measures to reduce emissions.[2] Research shows that a complete transition to renewables would be eight times cheaper than resorting to carbon capture.[3]

Instead of embracing real, scientifically proven, and community-driven climate solutions, Japan promotes a dirty energy strategy that relies on CCS and other dangerous distractions across Asia, prioritizing corporate profits over people and the planet. Japan has limited geological space to store captured CO_2. Therefore, a key part of Japan's CCS roadmap is its overseas component: Japan is fostering a CCS market in Asia and advancing plans to export its captured carbon to countries like Australia and Malaysia.[4]

This factsheet shows how the Japanese government spends public money to support the fossil fuel industry's pursuit of the most expensive and least effective emission mitigation option available.[5] The fossil fuel industry harms communities, destroys ecosystems, and drives the climate crisis. The current wave of carbon capture projects and the government subsidies that support them only further entrench the fossil fuel industry and the damage it causes.

This factsheet draws from a unique global database compiled by Oil Change International that tracks government awards distributed to companies from 1984 to 2025 for CCS and fossil hydrogen research, development, and pilot and commercial projects.[b] Japanese government data has been provided with the assistance of Friends of the Earth Japan.

WHAT IS CCS?

Carbon capture, utilisation, and storage (CCS or CCUS) is a greenwashing tactic used by the fossil fuel industry to avoid phasing out fossil fuels.[6] Most carbon capture projects target CO_2-rich emissions from fossil gas processing.[7] Even if at scale, CCS would fail to address the root issue: fossil fuel production and consumption. Japan, while not a fossil fuel-producing country, is embracing CCS for the CO_2 emitted by its industrial hubs;[8] mainly targeting steel and chemical plants, oil refineries, and thermal power plants that rely heavily on fossil fuels. Mitsubishi Heavy Industries,[9] the Japan Petroleum Exploration Corporation (JAPEX),[10] and Inpex[11] are among the recipients of the public subsidies.

Carbon capture is used to expand fossil fuel production, which wastes taxpayer money and delays real solutions to the climate crisis. Carbon capture projects can pose health risks and endanger nearby communities.[12] [13] They are also linked to triggering earthquakes, which is a significant risk for seismic countries like Japan.[14] [15]

a Figures compiled by Oil Change International and Friends of the Earth Japan. For access to the database please email research@oilchange.org.
b For access to the database, please email research@oilchange.org.

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WHAT IS FOSSIL HYDROGEN?

Fossil, or "blue" hydrogen, is made by converting fossil gas to hydrogen and, ostensibly, capturing the emitted CO_2 from that process. Far from a clean fuel, blue hydrogen could emit 20% more greenhouse gases than burning gas for heat.[16] Blue hydrogen requires more gas to deliver the same amount of energy as burning gas alone. This is problematic because blue hydrogen is presented as a climate solution when, in reality, it merely perpetuates dependence on fossil gas. In addition, hydrogen is highly volatile, prone to leaks, and can cause explosions at refuelling centres.[17]

CCS SUBSIDIES: JAPAN'S FUNDING FAILURE

Despite their ineffectiveness, exorbitant costs, and impacts on surrounding communities, the Japanese government has committed $5.2 billion to carbon capture and fossil hydrogen projects since 2014, prolonging the country's reliance on fossil fuels.[c]

We have likely underestimated the above figure due to limited transparency in government data. We included subsidies clearly marked for carbon capture and fossil hydrogen projects, but we excluded subsidies for many projects described as "carbon emissions reduction" and "hydrogen," as the government data does not clearly specify the technology or type of hydrogen they will utilize.

Japan aims to start commercial CCS operations by 2030 and capture 120 to 240 million tons of CO_2 annually by 2050. Currently, Japan is monitoring its first full-chain project, the Tomakomai CCS Demonstration project, which captured 100,000 tons of CO_2 annually between 2016 and 2019.[18] Japan has already spent $364 million of public money on this project, and would need up to 2,400 Tomakomai projects to reach its goal.

AZEC: THE ULTIMATE FOSSIL FUEL EXPANSION TOOL

The Japanese government prioritizes corporate profits and prolonging the use of fossil fuels over supporting solutions to address the climate crisis. Japan drives this agenda in Asia through the Asia Zero Emission Community (AZEC).[19] Created in 2023, AZEC is a Japan-led platform that touts cooperation towards decarbonizing the Asia region, but in reality promotes Japan's expensive fossil fuel-based technologies, including LNG, fossil hydrogen, and CCS.

Out of 158 Memoranda of Understanding (MOUs) signed between March 2023 and October 2024 as part of the AZEC initiative, 35% involve fossil fuel-based technologies.[20] Out of these, CCS is the third largest category with 23 MOUs. This includes an agreement among the Japan Organization for Metals and Energy Security (JOGMEC), JAPEX, and Indonesia's Pertamina to conduct CO_2 injection tests in the Sukowati oil field in Indonesia, aiming to increase oil production. To support a just transition, AZEC must focus on the over 99% of solar and wind potential in Southeast Asia that remains untapped.[21]

JAPAN'S PLAN TO TURN THE REGION INTO ITS CARBON DUMPING GROUND

In 2024, the Japanese government passed the Act on Carbon Dioxide Storage Business to support Japanese companies in launching CCS business ventures.[22] To develop CCS business models, the government, through JOGMEC, selected nine priority projects. In 2024, JOGMEC allocated $23 million for an initial seven projects. In 2025, JOGMEC allocated $124 million for the same seven projects and an additional two.[23]

Among these nine projects, four are aimed at exporting CO_2 captured in Japan. One project will capture and transport CO_2 captured in Japan to Malaysia's offshore site in Sarawak. Japanese corporations involved in the project, including JAPEX and JGC Holdings Corporation, have signed an MOU with Malaysia's Petronas under the AZEC framework. Groups in Malaysia

c Figures compiled by Oil Change International and Friends of the Earth Japan. For access to the database please email research@oilchange.org.

Table 1. Japan's nine advanced CCS projects and their storage sites

Project	CO_2 storage volume (million metric tons per annum)	CO_2 storage site
Tomakomaki Area CCS	Approx. 1.5~2 Mtpa	Tomakomai, Hokkaido (Japan)
Tohoku Region West Coast CCS	Approx. 1.5~1.9 Mtpa	Tohoku region, west coast (Japan)
Higashi-Niigata Area CCS	Approx. 1.4 Mtpa	Niigata prefecture (Japan)
Metropolitan Area CCS	Approx. 1.4 Mtpa	East coast of Boso Peninsula, Chiba prefecture (Japan)
Offshore Western Kyushu CCS	Approx. 1.7 Mtpa	Offshore, western Kyushu (Japan)
Northern Offshore of Peninsular Malaysia CCS	Approx. 3 Mtpa	Offshore, North of Peninsular Malaysia
Offshore Sarawak CCS	Approx. 1.9~2.9 Mtpa	Offshore, Sarawak, Malaysia
Southern Offshore of Peninsular Malaysia CCS	Approx. 5 Mtpa	Offshore, East coast of Peninsular Malaysia
Oceania CCS	Approx. 2 Mtpa	Oceania

Note: The shaded rows are projects aimed at exporting CO_2 captured in Japan.
Source: Compiled by OCI based on information from JOGMEC https://www.jogmec.go.jp/content/300390539.pdf

have voiced concerns over its seas and land becoming a testing ground.[24] Ninety civil society organizations submitted a letter to the Japanese government, calling their plans to export carbon "waste colonialism."[25]

Under AZEC, Japan also plans to carry out feasibility studies for JOGMEC's projects in Australia. With Woodside as their partner, Japanese companies like Sumitomo Corporation aim to create value chains that capture CO_2 in Japan and inject it into Australian storage sites.[26] Such projects have historically been rejected due to the risk they pose to the environment and would further harm Indigenous communities already battling Woodside for its destructive fossil gas projects.[27] [28]

CONCLUSION

Japan is wasting precious time and resources on failed technologies, such as carbon capture, which delays the transition to renewable energy. As one of the world's wealthiest economies and one of the countries most responsible for the climate crisis, Japan has an obligation to phase out fossil fuels and support its neighboring countries in shifting rapidly to renewable energy.

Japan must stop prioritizing corporate interests over our communities and planet and stop pushing for policies that will prolong the life of fossil fuels and derail Asia's energy transition.

Recommendations:

- The Japanese government should eliminate subsidies for CCS and hydrogen projects, especially those that export carbon overseas.
- Japan should prioritize spending public finance on renewable projects both domestically and abroad, especially in communities and countries that need it most, and on key enabling infrastructure for a just energy transition.
- AZEC partner countries should consider the region's potential for renewable energy and prioritize the development of wind and solar instead of dangerous distractions like CCS and hydrogen.

Learn more at FossilFreeJapan.org

ENDNOTES

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Oil Change International is a research, communications, and advocacy organization focused on exposing the true costs of fossil fuels and facilitating the coming transition towards clean energy.

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