Dear Mr. Ken Saito, Minister of Trade, Economy and Industry in Japan

We are writing to express our deepest concerns over recent developments regarding plans to export Carbon Dioxide (CO₂) emissions from Japan to other countries.

The Japanese parliament is currently discussing the Carbon Capture and Storage (CCS) Business Bill to set a legal framework for CCS projects in Japan and overseas. Meanwhile, Japanese corporations are already recklessly pushing CCS projects in the region as they sign related agreements with oil and gas giants such as Petronas and ExxonMobil.

As of April 2024, there are at least 15 agreements signed by Japanese government entities and corporates to explore the feasibility of exporting carbon dioxide to be stored in Indonesia, Malaysia, Australia, and other unspecified countries in the region. Of these, Malaysia had the most agreements signed with Japanese companies (please see the table on page 3).

This practice not only exacerbates the climate crisis but is fundamentally against the principle of climate justice, particularly as it results in the dumping of CO₂ in Global South countries like Malaysia and Indonesia. CCS is a high-risk and high-cost¹ and proven failure that comes with long-term liabilities and risks. Relying on such a technology will only delay real climate action and harm our environment and society.

We call on the Japanese government as well as private companies who are promoting CCS to stop doing so and reduce the emissions at the source by phasing out fossil fuels such as coal, oil, and gas.

We also urge the governments of Malaysia, Indonesia, Australia, and other countries in the region to stop providing, extending, or channeling government support, including funding and subsidies for CCS/CCUS and related infrastructure. Public resources must be invested in sustainable infrastructure and community-based initiatives that serve the people, not polluters.

CCS has had a long history of problems – including significant technical and financial challenges.

Most CCS projects have had unique engineering challenges which resulted in underperformance and cost blow-outs, as happened to the Gorgon CCS project in Australia. Gorgon agreed to pay to offset its target shortfall of 5.23 million tonnes of carbon dioxide, which is estimated to cost between US$100 million and US$184 million².

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¹ Rupert Way et al. “Heavy dependence on Carbon Capture and Storage ‘highly economically damaging’, says Oxford report” 4 Dec 2023
Additionally, a CCS project in Algeria where CO₂ had been injected into depleted gas fields from 2004 was suspended in 2011 when movement was observed in the layers of the ground that was supposed to prevent CO₂ from leaking out, provoking concerns of leakage³. A similar event happened with Norway’s Sleipner CCS project, where CO₂ migrated upwards faster than expected.⁴

Second, environmental and health risks are an additional major concern, including the risk of CO₂ leakage⁵, increased water stress, ocean acidification, and the possibility of CCS projects inducing earthquakes as a result of ground injections.

While CCS technology has been developed since the 1970s, its use globally has mainly been confined to enhanced oil recovery (EOR), a process in which captured CO₂ is injected into oil fields to increase the amount of crude oil extracted. This promotes increased fossil fuel production, leading to additional carbon emissions. Over 80% of CCS projects are used for EOR, or for oil and gas production⁶.

Compressed CO₂ is highly hazardous upon release and can result in the asphyxiation of humans and animals.⁷ In 2020, a CO₂ transport pipeline that was part of an EOR project in Mississippi, USA was damaged, resulting in the evacuation of more than 200 people, and the hospitalisation of 45 people with carbon dioxide poisoning⁸.

Thirdly, exporting CO₂ emissions perpetuates energy inefficiency as there is a significant increase in energy consumption associated with certain phases of CCS.

The most energy-intensive part is for the capture and compression of carbon, with additional amounts needed for transportation and storage. CO₂ liquefaction is essential for efficient transportation and storage⁹. Capture and compression alone require 330–420 kWh per tonne of CO₂ captured. CCS projects increase the energy demand of the facility they capture carbon from by 15%–25% on average¹⁰.

The fourth challenge is the issue of ensuring permanent storage. For CCS to be a viable option for decarbonisation, it is important to make sure that carbon can be stored in a stable state permanently. IPCC uses the word “durably” to describe the storing of CO₂ in geological, terrestrial, or ocean reservoirs, or in products for Carbon Dioxide Removal (CDR). There is no clear definition for the length that “durably” entails, but some have suggested at least 200-300 years¹¹. A legal system that can guarantee the maintenance of sequestered carbon for such a long period is not

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³ MIT, *In Salah Fact Sheet: Carbon Dioxide Capture and Storage Project*, Last accessed February 2024.
⁴ IEEFA, “Norway’s Sleipner and Snøhvit CCS: Industry models or cautionary tales?” June 2023
⁶ Zero Carbon Analytics “A closer look at CCS: Problems and potential” 29 Feb 2024
⁷ Center for International Environmental Law “Carbon Capture and Storage” last accessed March 7th 2024
⁹ According to CCS proponents, CO₂ liquefaction reduces the volume of the gas, making it easier and more cost-effective to transport over long distances.
¹⁰ Angela Carter, Laura Cameron "Why Carbon Capture and Storage Is Not a Net-Zero Solution for Canada’s Oil and Gas Sector The Bottom Line: Unpacking the future of Canada’s oil & gas”, February 9, 2023,
¹¹ Information note, Removal activities under the Article 6.4 mechanism.
feasible in practice. After the monitoring period conducted by the utility company ends, the government is likely to take over that responsibility and finance the management of the large amount of carbon at the public's expense – leaving this problem for future generations to deal with.

Cross-border transport of CO₂ for permanent geological storage below the seabed is in practice a dumping of waste. Exporting CO₂ for a country like Japan that does not have sufficient suitable geological storage capacity, but still wishes to use CCS to reduce emissions domestically, is unjustifiable. The current bill does not pinpoint a clear entity to take responsibility for monitoring the CO₂ for any leaks that occur at the export destination, or during the overseas transfer. We need rich countries like Japan to undertake deep, rapid, and sustained emission reductions at home and at the source.

Dumping CO₂ elsewhere is irresponsible and a form of waste colonialism. There is no way to deploy CCS in a way that is compatible with the 1.5 degree target, without posing substantial risks to the environment and communities on the frontlines. To conclude, CCS is a dangerous distraction, a false climate solution, ineffective, exceptionally risky, and against the principles of climate justice.

Therefore, we, the undersigned organisations, urge the Japanese Government to recognise the grave consequences of exporting CO₂ emissions overseas and stop promoting CCS. Instead, Japan should undertake deep emission reductions at home by investing in renewable energy to stay in line with its international climate commitments. We also call on potential "recipient" countries to reject CCS projects and instead urge for collaboration on the region's vast renewable energy potential

List of CCS Projects involved with the export of CO₂ from Japan (From June 2022 to April 2024, non-exhaustive)

<table>
<thead>
<tr>
<th>Agreements</th>
<th>Signed</th>
<th>Companies</th>
<th>Sources of CO₂</th>
<th>Storage Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Joint Study Agreement with PETRONAS to Explore Feasibility of the Entire Carbon Capture and Storage Value Chain between Japan and Malaysia</td>
<td>April 2024</td>
<td>PETRONAS, JERA</td>
<td>CO₂ emitted by JERA in Japan</td>
<td>Malaysia</td>
</tr>
<tr>
<td>2  MOUs Concluded on Joint Studies with Mitsubishi UBE Cement and Resonac Concerning CCS Value Chain Development between Malaysia and Japan</td>
<td>April 2024</td>
<td>Mitsui &amp; Co., Ltd., Resonac's Oita, Ube Cement</td>
<td>CO₂ emitted at MUCC's Ube Cement Plant and Resonac's Oita Complex</td>
<td>Malaysia</td>
</tr>
<tr>
<td>3  Establishment of potential CCS value chains from CO₂ capture and accumulation in Tokyo Bay, shipping, and CO₂ storage in Malaysia</td>
<td>Mar 2024</td>
<td>Mitsubishi Corporation, JX Nippon, ENEOS, and PETRONAS</td>
<td>CO₂ emitted in Tokyo Bay</td>
<td>Malaysia</td>
</tr>
</tbody>
</table>

12 Carbon Brief “Wind and solar capacity in south-east Asia climbs 20% in just one year, report finds” 17 January 2024, Renewable Energy Institute “Renewable Energy: The Top-Priority for Southeast Asia to Fully Blossom” September 2023
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Date</th>
<th>Parties</th>
<th>CO₂ Source</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Evaluating the export of (CO₂) from Japan to (CCS) projects in Australia and other countries in Asia</td>
<td>Mar 2024</td>
<td>JX Nippon Oil &amp; Gas Exploration Corporation, Chevron New Energies</td>
<td>CO₂ emitted from industries in Japan</td>
<td>Australia, Asia (unspecificed)</td>
</tr>
<tr>
<td>5</td>
<td>Memorandum of Understanding with Chugoku Electric Power on the Creation of a CCS Value Chain between Malaysia and Japan</td>
<td>Feb 2024</td>
<td>Mitsui &amp; Co., Chugoku Electric Power Co.</td>
<td>CO₂ emitted by a coal-fired power plant operated by Chugoku Electric Power</td>
<td>Malaysia</td>
</tr>
<tr>
<td>6</td>
<td>Agreement to conduct a feasibility study covering on (1) CO₂ capture in Japan, (2) shipping the CO₂ to Australia, (3) production and storage of synthetic fuel (e-fuel) derived from the CO₂ in Australia, and (4) establishment of a comprehensive supply chain, including export of e-fuel from Australia</td>
<td>Feb 2024</td>
<td>ITOCHU, HIF Asia Pacific, Mitsui OSK, JFE Steel</td>
<td>CO₂ emitted in Japan</td>
<td>Australia</td>
</tr>
<tr>
<td>7</td>
<td>Establish a CCS value chain by capturing CO₂ emitted from industrial emitters in JP (incl Eneos refinery), transporting it by CO₂ carrier to the Port of Bonython in Australia, and injecting and storing it at a storage site</td>
<td>Feb 2024</td>
<td>JX Nippon Oil &amp; Gas Exploration Corporation, Mitsui OSK</td>
<td>CO₂ emitted from ENEOS refinery and nearby various industries in Japan</td>
<td>Australia</td>
</tr>
<tr>
<td>8</td>
<td>MoU for a joint feasibility study that will evaluate the potential to capture, transport and sequester emissions from Japan, supporting expansion of the Moomba CCS project in Australia</td>
<td>Dec 2023</td>
<td>Santos, JX Nippon Oil &amp; Gas Exploration Corporation and ENEOS Corporation</td>
<td>CO₂ emitted from Japan</td>
<td>Australia</td>
</tr>
<tr>
<td>9</td>
<td>MOU for Feasibility Study to Realize &quot;Setouchi / Shikoku CO₂ Hub Concept&quot;</td>
<td>Dec 2023</td>
<td>Sumitomo, JFE Steel, Sumitomo Osaka Cement, Kawasaki Kisen Kaisha, Woodside Energy</td>
<td>CO₂ emitted from the Setouchi and Shikoku regions</td>
<td>Australia</td>
</tr>
<tr>
<td>10</td>
<td>MoU to study cross boundary CCS projects between Japan and Malaysia</td>
<td>Oct 2023</td>
<td>METI, JOGMEC, Petronas</td>
<td>CO₂ emitted in Japan</td>
<td>Malaysia</td>
</tr>
<tr>
<td>11</td>
<td>MoU for feasibility study of an international CCUS value chain from Port of Nagoya, Japan, using CO₂ storage at the Tangguh* field in Indonesia</td>
<td>Sep 2023</td>
<td>Chubu, BP</td>
<td>CO₂ emitted from Port of Nagoya, Japan</td>
<td>Indonesia</td>
</tr>
<tr>
<td></td>
<td>MOU for Feasibility Study to Establish a Japan-Australia CCS Value Chain</td>
<td>Sep 2023</td>
<td>Sumitomo, Toho Gas, Kawasaki Kisen Kaisha, Woodside</td>
<td>CO₂ emitted from various industries and companies in the Chubu region, Japan</td>
<td>Australia</td>
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<tr>
<td>13</td>
<td>Mitsui, PETRONAS and TotalEnergies have selected offshore Peninsular Malaysia as the location of underground sequestration of CO₂. Under this collaborative framework, Mitsui, together with PETRONAS and TotalEnergies, will work together on technical evaluation and development concept of depleted field</td>
<td>June 2023</td>
<td>Mitsui &amp; Co, Petronas, TotalEnergies</td>
<td>Malaysia, Indonesia and Australia</td>
<td></td>
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<tr>
<td>14</td>
<td>MoU to Evaluate and establish CCS value chains in the Asia Pacific Region</td>
<td>Jan 2023</td>
<td>Nippon Steel, Mitsubishi Corporation, ExxonMobil</td>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>The three Japanese energy companies plan to store (CO₂) emitted during the production of liquefied natural gas (LNG) at projects in northern Australia and they also hope to eventually transport CO₂ from Japan by ship</td>
<td>Jun 2022</td>
<td>JERA, Tokyo Gas and INPEX, and Santos</td>
<td>Australia</td>
<td></td>
</tr>
</tbody>
</table>

CC:
Mr. Fumio Kishida, Prime Minister of Japan
Ms. Yoko Kawakami, Japanese Minister of Foreign Affairs
Ms. Shintaro Ito, Japanese Minister of Environment
Mr. Nobumitsu Hayashi, Governor of Japan Bank for International Cooperation (JBIC)
Mr. Ichiro Takahara, Chairman and CEO of Japan Organization for Metals and Energy Security
Mr. Atsuo Kuroda, Chairman and CEO of Nippon Export and Investment Insurance (NEXI)
Mr. Chris Bowen, Australian Minister for Climate Change and Energy
Ms. Penny Wong, Australian Minister for Foreign Affairs
Ms. Madeline King, Australian Minister for Resources
Mr. Ariffin Tasrif, Minister of Energy and Mineral Resources of Indonesia
Mr. Bahlil Lahadalia, Minister of Investment/Head of Indonesia Investment Coordinating Board
Mr. Luhut Binsar Pandjaitan, Coordinating Minister for Maritime and Investment Affairs of Indonesia
Dato' Seri Anwar bin Ibrahim, Prime Minister of Malaysia and Minister of Finance
Dato' Sri Haji Fadillah bin Haji Yusof, Ministry of Energy Transition and Water Transformation
Mr Nik Nazmi bin Nik Ahmad, Malaysian Minister of Natural Resources and Environmental Sustainability
Mr Mohd Rafizi bin Ramli, Malaysian Minister of Economy
Datuk Patinggi Tan Sri (Dr) Abang Haji Abdul Rahman Zohari Bin Tun Datuk Abang Haji Openg, Premier of Sarawak
Mr. Katsuya Nakanishi, Representative Director, President and CEO of Mitsubishi Corporation
Mr. Tomohide Miyata, Representative Director and Executive Vice President of ENEOS Corporation
Mr. Toshiya Nakahara, President and CEO of JX Nippon Oil & Gas Exploration Corporation
Mr. Kenichi Hori, Representative Director, President and Chief Executive Officer of Mitsui & Co.
Mr. Yukio Kani, Global CEO of JERA
Mr. Hayashi Kingo, President and Director of Chubu Electric Power Co.,
Mr. Ashitani Shigeru, Representative Director, Chairperson of the Board of The Chugoku Electric Power co.
Mr. Masahiro Kihara, Masahiro Kihara, President & Group CEO of Mizuho Financial Group, Inc.
Mr. Toru Nakashima, President and Group CEO of Sumitomo Mitsui Financial Group
Mr. Hironori Kamezawa, President & Group CEO of MUFG
Tan Sri Tengku Muhammad Taufik Tengku Kamadjaja Aziz, President & Group Chief Executive Officer, Executive Director of Petronas

Signatories (90 organizations from 26 countries)

Malaysia
1. Forum Kedaulatan Makanan Malaysia (FKMM)
2. Aliran
3. Gabungan Darurat Iklim Malaysia (GDIMY)
4. KAMY
5. RimbaWatch
6. Greenpeace Malaysia
7. Center to Combat Corruption and Cronyism (C4 Center)
8. Consumers' Association of Penang
9. SAVE Rivers
10. Jaringan Ekologi dan Iklim (JEDI)
11. Treat Every Environment Special Sdn Bhd
12. Climate Action Network Southeast Asia (CANSEA)
13. Gabungan Bertindak Malaysia (GBM)
14. Alliance Of River Three
15. Gerakan Belia Sepunjab Malaysia
16. Malaysian Youth Delegation (MYD)
17. Sahabat Alam Malaysia / Friends of the Earth Malaysia
18. Monitoring Sustainability of Globalisation
19. MYDCLIMATE

Indonesia
20. Wahana Lingkungan Hidup Indonesia (WALHI) / Friends of the Earth Indonesia
21. Kampoeng Tjibarani
22. World March of Women Indonesia
23. Yayasan PIKUL
24. KRuHA
25. AEER (Action for Ecology and People Emancipation)
26. TREND ASIA
27. Publish What You Pay (PWYP) Indonesia
28. greenpeace indonesia
29. Humanis (affiliated with Hivos)
30. Lembaga Bantuan Hukum Pijar Harapan Rakyat
31. WALHI East Java
32. WALHI Riau
33. Eksekutif Daerah WALHI Aceh
34. Jala PRT
35. WALHI Sulawesi Tengah
36. DEWAN MAHASISWA UNIVERSITAS ISLAM NUSANTARA
37. WALHI Papua

Australia
38. Solutions for Climate Australia
39. Friends of the Earth Australia
40. Australian Conservation Foundation

Japan
41. Kiko Network
42. Mekong Watch
43. Friends of the Earth Japan

Regional/International
44. Friends of the Earth International
45. Oil Change International
46. Hawkmoth
47. Senik Centre Asia
48. Asian People’s Movement on Debt and Development
49. SteelWatch

Bangladesh
50. Coastal Livelihood and Environmental Action Network (CLEAN)
51. Dhoritri Rokhhay Amra
52. Waterkeepers Bangladesh

Bosnia and Herzegovina
53. Center for Environment / FoE Bosnia and Herzegovina

Denmark
54. NOAH Friends of the Earth Denmark
55. Miljøforeningen Havnsø-Føllenslev
56. Fossil Free Future in Denmark

DR Congo
57. Congo Basin Conservation Society CBCS network DRC
58. Innovation pour le Développement et la Protection de l’Environnement

England Wales and Northern Ireland
59. Friends of the Earth England Wales and Northern Ireland

Finland
60. Friends of the Earth Finland
Germany
61. Bürgerinitiative gegen CO2-Endlager e.V.
62. Andy Gheorghiu Consulting

Ghana
63. AbibiNsroma Foundation

India
64. Integrated Rural Development Society

Italy
65. ReCommon

Kenya
66. WMW Kenya

Nepal
67. Forum for Protection of Public Interest (Pro Public)

Pakistan
68. Policy Research Institute for Equitable Development (PRIED), Pakistan
69. Indus Consortium
70. Pakistan Fisherfolk Forum

Papua New Guinea
71. Centre for Environmental Law and Community Rights Inc.

Philippines
72. 350 Pilipinas
73. Legal Rights and Natural Resources Center - Friends of the Earth Philippines
74. People of Asia for Climate Solutions
75. Youth for Climate Hope (Y4CH)

Korea
76. Citizens' Institute for Environmental Studies (CIES)

Scotland
77. Friends of the Earth Scotland

South Africa
78. South Durban Community Environmental Alliance
79. groundWork/ Friends of the Earth South Africa

Sri Lanka
80. Centre for Environmental Justice/ FoE Sri Lanka

Togo
81. Les Amis de la Terre-Togo

Uganda
82. Centre for Citizens Conserving Environment & Management (CECIC)

US
83. Friends of the Earth US
84. Indigenous peoples of the coastal bend
85. Ingleside on the Bay Coastal Watch Association
86. Texas Campaign for the Environment
87. Healthy Gulf
88. Center for International Environmental Law (CIEL)
89. Vessel Project of Louisiana
90. For a Better Bayou