

A. Summary of Past Events

The 4th Asia CCUS Network Forum

15 August 2024



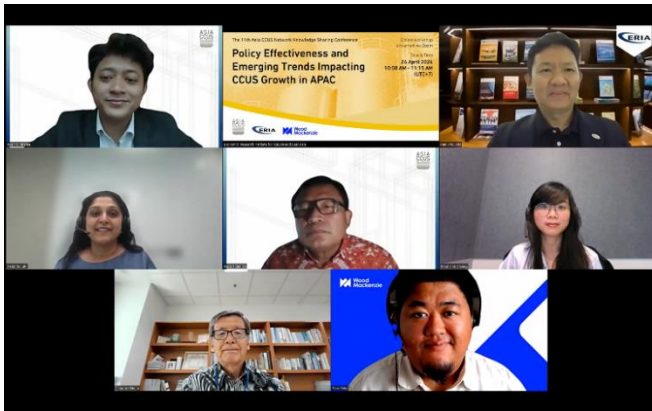
Bangkok, 15 August 2024: The Economic Research Institute for ASEAN and East Asia as the secretariat of the Asia CCUS Network held the 4th Asia CCUS Network Forum on 15 August 2024 in Bangkok. The event was co-hosted with the Ministry of Economy, Trade, and Industry (METI) Japan and the Institute of Energy Economics Japan (IEEJ) with the collaboration of Sustainable Energy Technology Asia (SETA) 2024 and the Ministry of Energy, Thailand.

The forum was started with a Joint opening session of SETA 2024 and ACNF4, which invites distinguished speakers, among others; Prof Dr Pisut Painmanakul, Chairman of SETA 2024; Dr Norkun Sitthiphong, Advisor to the Minister of Energy on behalf of the Minister of Energy, Thailand; HE Mr Otaka Masato, Ambassador Extraordinary and Plenipotentiary of Japan to Thailand; Mr Tsuruda Masanori, Deputy Commissioner for International Affairs, Agency for Natural Resources and Energy (ANRE), Ministry of Economy, Trade and Industry (METI), Japan; Mr. Shigeru Kimura, Senior Policy Fellow on Energy Affairs, Economic Research Institute for ASEAN and East Asia (ERIA); Prof Tatsuya Terazawa, Chairman and CEO, The Institute of Energy Economics, Japan (IEEJ).

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The 14th ACN Knowledge Sharing Conference

24 April 2024



ERIA and Wood Mackenzie Discuss Policy Readiness and Government Support on CCUS Deployment in Asia Pacific

Virtual Conference, 24 April 2024: As a major emitter of global industrial emission today, the Asia Pacific (APAC) region must explore a viable pathway towards achieving net zero. With population and economic growth expected to continue, the region anticipates a corresponding increase in energy demand to satisfy its growing need. Low-carbon technologies, such as Carbon, Capture, and Storage (CCS), as well as Carbon, Capture, Utilisation, and Storage (CCUS), serve as possible solutions for APAC to achieve carbon neutrality.

[CLICK HERE FOR THE FULL ARTICLE](#)

The 15th ACN Knowledge Sharing Conference

25 July 2024



ERIA and Sumitomo Corporation Talk Decarbonisation of Thermal Power Plants and CCUS Potential in Indonesia

Virtual Conference, 25 July 2024: Challenges in CCS deployment in Asia remain, comprising technology development, legal framework, and financing availability. Similarly, Indonesia faces these exact problems in its push to transform its energy system, especially its thermal power plants, as it moves ahead with its decarbonisation strategy. Sumitomo Corporation conducted a feasibility study from October 2023 to March 2024 on applying CCS to Indonesia's thermal power plants. The company strives to contribute to Indonesia's decarbonisation pathway, ensuring stable power supply and sustainable economic growth

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[ACN Call for Paper – Carbon Recycling](#)

29 August 2024

Carbon dioxide Capture and Utilization (Carbon recycling), which is the process of capturing and reusing emitted CO₂, is considered a key technology to realize a carbon-neutral society. From various researches has been done, four markets of carbon recycling technologies projected will grow in the close future:

1. Building material: concrete and carbonate aggregate
2. Intermediate chemicals with wide application in various end-use industry such as agriculture, pulp and paper, pharmaceuticals, and textile: methanol, formic acid, syngas
3. Fuels: liquid fuel and methane
4. Polymer: polyols (reduced-calorie, sugar-free bulk sweeteners) and polycarbonate (plastic)

Industry, Research Institution, and Government has developed Roadmap for Carbon Recycling Technologies. METI of Japan formulated Roadmap for Carbon Recycling Technologies in June 2019, revised in 2021, to accelerate innovation. However, achieving commercial scale remains a challenge, with cost reduction and regulation improvements required. Therefore, it is crucial to explore the socio-economic, governance, regulatory framework, regional collaboration scheme, and environmental aspects of the carbon recycling.

Call for Research Proposals

Asia CCUS Network (ACN), implemented by Economic Research Institute for ASEAN and East Asia (ERIA), is developing its report publication, focusing on the Carbon Recycling in ASEAN and East Asia. We invite researchers from various background to contribute to publication of research paper on, but not limited the socio-economic and environmental analysis of carbon recycling development and implementation. Contributions may highlight socio-economic, regulatory framework, regional collaboration scheme, governance, and environmental realm of carbon recycling. If the supporting members have interest to respond to this ERIA's request, please send proposals to ACN secretariat following conditions;

- The proposal should be 1-2 pages to contain purpose, contents (kind of carbon recycling), expected outcomes and policy recommendations.
- Submission deadline: 30 September 2024
- Research Team: Lead **by Mr. Shigeru Kimura**, ERIA
- Honorarium: US\$4,000-US\$9,000 for selected proposals (only successful candidates will be contacted).

For more details, kindly click the button below or if you have any additional questions, please contact Ms. Laksmi Dwi Hersaputri at laksmi.hersaputri@eria.org.

[CLICK HERE FOR MORE DETAILS](#)

B. Publications (Report, Journal & Article)

[CCS Cluster and Hub Development in Malaysia](#)

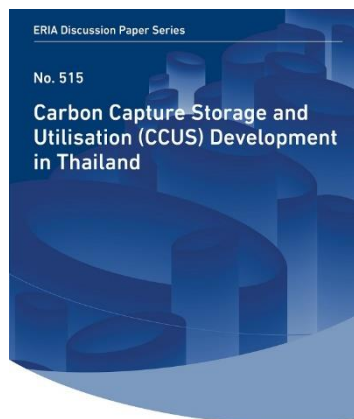
By I Gusti Suarnaya Sidemen (ERIA)

Malaysia takes the lead in Cluster and Hub Carbon Capture and Storage implementation in Asia. CCS is one of technologies that has been chosen as part of meeting Malaysia net zero emission by 2050. Malaysia plans to develop a cluster and hub that will take the benefit of collective transport and storage infrastructure to bring economies of scale in construction and operations, bring down the costs of carbon capture, and also reduce risk. Under Malaysia's National Energy Transition Roadmap issued in August 2023, the CCS hub will be implemented gradually. By 2030, three CCS hubs expected onstream, capable of storing 15 MTPA of CO₂. An additional of CCS hub will be developed by 2040 with a target to achieve a cumulative storage capacity of 40 MTPA. By 2050 additional two CCS hubs projected will be onstream making the accumulated storage capacity of CO₂ in the nation reach 80 MTPA.

Guided by the road map, the Governments of Malaysia, Petronas, and Petros developed detailed action plans. The first three CCS clusters and hubs to be developed in the first stage of hub development in the National Energy Transition Road are clusters and hubs near the main Ports of Kerteh, Kuantan, and Bintulu and its adjacent offshore permanent storage either depleted oil and gas reservoir or saline aquifer. [Read more....](#)

[Carbon Capture Storage and Utilisation \(CCUS\) Development in Thailand](#)

By Twarath Sutabutr (Office of Knowledge Management and Development, OKMD)



Thailand is a developing country with a growing economy, which has led to increased energy consumption and carbon emissions. To tackle this issue, the Royal Thai Government has implemented several policies and initiatives to reduce the country's carbon footprint and promote sustainable development. Carbon capture utilisation and storage (CCUS) has just become one of Thailand's policies to help push a low-carbon agenda and to enable net-zero emissions in 2065. [Read more....](#)

Twarath Sutabutr
President, Office of Knowledge Management and Development
(Public Organization, The Office of the Prime Minister,
Royal Thai Government)

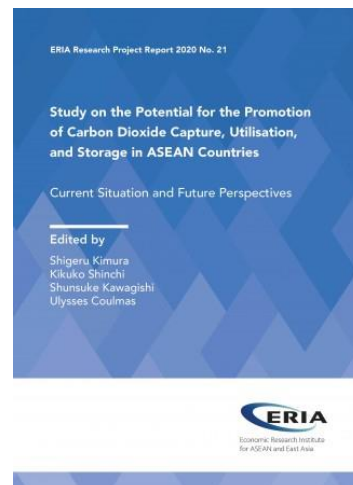


[DOWNLOAD PDF OF FULL REPORT](#)

[Study on the Potential for the Promotion of Carbon Dioxide Capture, Utilisation, and Storage in ASEAN Countries: Current Situation and Future Perspectives](#)

Edited by Shigeru Kimura (ERIA), Kikuko Shinchi (Mitsubishi Research Institute, MRI), Shunsuke Kawagishi (MRI), and Ulysses Coulmas (MRI)

This 'Study on the Potential for the Promotion of Carbon Dioxide Capture, Utilisation, and Storage in ASEAN', uses a multi-aspect survey approach. The study covers findings on recent trends in policies, technologies, and business development from countries with experience in Carbon Dioxide Capture, Utilisation, and Storage (CCUS). It also looks into the potential for CCUS development in the Association of Southeast Asian Nations (ASEAN) and the East Asia Region. Based on discussions held at the 3rd East Asia Energy Forum, the report reiterates the important role CCUS can play in the region to achieve both energy transition and decarbonisation objectives. It also explores the potential and benefits of a regional collaborative approach, which is proposed as the Asia CCUS Network to create an enabling environment for business cases of CCUS.



[DOWNLOAD PDF OF FULL REPORT](#)

[Study on the Potential for Promoting Carbon Dioxide Capture, Utilisation, and Storage \(CCUS\) in ASEAN Countries Vol. II](#)

Edited by Shigeru Kimura (ERIA), Kikuko Shinchi (Mitsubishi Research Institute, MRI), Ulysses Coulmas (MRI), and Ayami Saimura (MRI)



This report was prepared under the Asia CCUS Network umbrella and focuses on the cost of Carbon Capture and Storage (CCS) and the legal framework of CCUS. To analyse the cost of CCS, we use a model case in central Java, Indonesia with the following assumptions: a) capture of CO₂ emitted from a 500MW coal power plant (ultra- supercritical) applying chemical absorption using amine, b) transport of CO₂ to the storage site through a 50km long pipeline, and c) storage of CO₂ in sandstone formation of about 1000m. Costs of capture, transport, and storage – both capital and operation costs – are surveyed referring to existing publicly available literature. The cost of this model case is estimated at US\$60–US\$70 per CO₂ ton and 70% of the cost results from the capture of CO₂. The legal framework emphasises that deployment of CCUS will be implemented under appropriate regulations. Hence, surveys of the existing CCS regulations of European countries, Australia, and the United States are undertaken to come up with appropriate CCUS regulations for the Asia region. Finally, as an important regional policy framework, this report suggests an Asia Collective

CCUS Initiative to start design of a business model of the CCUS value chain in the Asia region.

[DOWNLOAD PDF OF FULL REPORT](#)

UPCOMING PUBLICATIONS

There are 2 research reports which will be published soon from ACN Research Study 2022–2023 conducted by ACN with the collaboration of the Research and Innovation Agency (BRIN), Indonesia, and the Global CCS Institute (GCCSI), will be published soon. Each topic is outlined here:

1. **Estimation of Basin-Scale CO₂ Storage in Indonesia** – ACN & BRIN
2. **Comprehensive CCUS Research Report: Storage, Value Chain, Policy & Regulation and Financing** – ACN & GCCSI

This publication includes chapters on:

- Estimation of CO₂ Storage Potential in ASEAN Region
 - Establishment of Asia CCS/CCUS Value Chain as a Collective Framework in Asia Region
 - Study on Legal & Policy Framework for Deployment of CCUS in Asia Region
 - Study on Financial Framework for Deployment of CCUS in Asia Region
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C. List of Registered Members (as of August 2024)

Advisory Members

- Department of Climate Change, Energy, the Environment and Water, Australia
- Ministry of Economy, Trade, and Industry, Japan
- Department of Energy, Philippines
- Ministry of Industry and Trade, Viet Nam
- Ministry of Mines and Energy, Cambodia
- Ministry of Energy and Mines, Lao PDR
- Ministry of Trade and Industry, Singapore
- Ministry of Energy and Mineral Resources, Indonesia
- Energy Commission of Malaysia, Malaysia
- Ministry of Energy, Thailand
- Ministry of Science and Technology, India
- Oil and Gas Planning Department, Ministry of Electricity and Energy, Myanmar
- Department of Energy, United States of America

Supporting Members

Academia/ Research Institute (54 members)

- Universitas Indonesia
- PARTIDO STATE UNIVERSITY
- Energy Studies Institute
- Pandit Deendayal Energy University
- Kyushu University
- Environmental Law Centre of Meiji University
- R & D Institute, Hokkaido Electric Power Co., Inc.
- [Read more.](#)

Finance – Banking (17 members)

- Sumitomo Mitsui Banking Corporation
- Japan Bank for International Cooperation (JBIC)
- Citigroup Global Markets Japan Inc.
- MUFG Bank, Ltd.
- SPARX Group Co., Ltd.

[Read more.](#)

Private – Public (229 members)

- Toyota Tsusho Corporation
- Eni
- Osaka gas

- Toyota Tsusho Corporation
- IHI Corporation
- IHS Markit
- JOGMEC
- PT. PERTAMINA (PERSERO)

[Read more.](#)

Regional/ International Organizations (35 members)

- International Finance Corporation
- International Association for Hydrogen Energy (IAHE)
- Oil and Gas Climate Initiative (OGCI)
- Clean Energy Ministerial (CEM) CCUS Initiative

[Read more.](#)

D. Recommended Links

1. IEA's Report on CCUS in Southeast Asia:
<https://www.iea.org/reports/carbon-capture-utilisation-and-storage-the-opportunity-in-southeast-asia>
2. JOGMEC's New Website 'CLEAN FUTURE ENERGY': <https://mirai.jogmec.go.jp/en/>
3. National Energy Technology Laboratory Training Resources:
<https://www.netl.doe.gov/LCA/co2u/Training>

E. Upcoming Events (Knowledge Sharing Conference, CCUS Workshop and Capacity Building)


The 17th Knowledge Sharing Conference, 27 September 2024 (online)


Topic: **Public Engagement Strategy for Public Acceptance and Social License to Operate CCUS Project** by **Dr. Farah Mulyasari**, University Pertamina and Expert at Risk Communication at National Center of Excellence of CCS/CCUS, and member of IEAGHG Communication Team.

[CLICK HERE TO REGISTER](#)

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