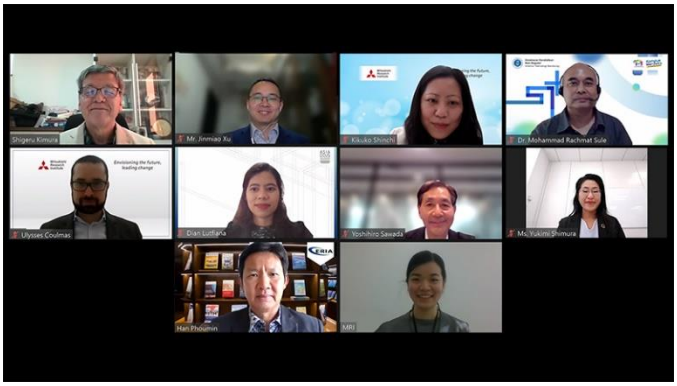
Volume 2, April 2022

Asia CCUS Network Newsletter

A. Summary of the Past Events

Cost Structure of CCUS and the Legal Framework Workshop

18 January 2022



Technology and Scaling-Up Measures Paramount for CCUS Deployment in Asia

As a crucial component in Asia's carbon-neutral aspiration, understanding the cost structure of Carbon, Capture, Utilisation, and Storage (CCUS) technology is essential for the region to realise its plans. Advancing towards a CCUS value chain in Asia will require a collective framework to successfully promote its deployment while also focusing on cost-reduction initiatives. A CCUS Workshop titled 'CCUS Model Case Study Workshop,' hosted by the Mitsubishi Research Institute (MRI) indicated that continuous technological development and scaling-up of CCUS volumes are equally important to make this technology affordable. The workshop brought together stakeholders from the Asia region to discuss the cost structure of an ASEAN-wide CCUS deployment and the legal framework to support the initiative.

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The 5th Knowledge Sharing Conference

28 February 2022

Australian Stakeholders Showcase CCUS Triumphs and Possibilities to Asian Region

The 5th Asia CCUS Network (ACN) Knowledge Sharing Conference the Australian Government is focused on accelerating large-scale deployment of CCUS under its Long-Term Emissions Reduction Plan through a range of measures and initiatives such as the National CCUS Technology Emissions Abatement Strategy (NCAS), the CCUS Development Fund and CCUS Hubs and Technologies programs. Underpinning these efforts is the technical and research work undertaken by key scientific and research organisations such as the CSIRO and Geoscience Australia. Australia is interested in working with like-minded countries on ways to deploy CCUS and values forums such as the Asia CCUS Network to share experiences and expertise.

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G20 Side Event Series

Making CCS/CCUS Affordable: Enabling CCUS Deployment in G20 and Beyond

Virtual Webinar, 13 April 2022

Affordability of Carbon Capture, Utilisation, and Storage Discussed Ahead of G20 Summit

Indonesia remains steadfast in trying to deploy carbon capture, utilisation, and storage (CCUS) technologies whilst ensuring their affordability. At the helm of the Group of Twenty (G20) 2022 Summit, Indonesia is making headway in carbon-neutral technologies, demonstrating the potential of emerging energy markets as Southeast Asia forges ahead to meet its net-zero emissions target.

The Economic Research Institute for ASEAN and East Asia (ERIA) co-hosted the G20 Side Event Series, Making CCS/CCUS Affordable: Enabling CCUS Deployment in G20 and Beyond, on 13 April 2022 in Jakarta. As the main host, the Directorate General of Oil and Gas of Indonesia's Ministry of Energy and Mineral Resources (MEMR) gathered a group of prominent industry leaders and policymakers to discuss the progress and future of CCUS in developing countries.

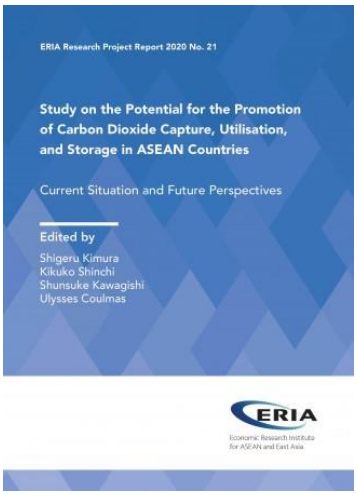
In his welcome address, Mr Yudo Dwinanda Priaadi, chairperson of the G20 Energy Transition Working Group, focused on the obstacles ASEAN faces in deploying carbon capture technology and the means to overcome them. The G20 members all agree that the priorities in energy transition are accessibility, technology, and financing, underscoring the importance of international cooperation. For the global community to meet the Paris Agreement goals, carbon dioxide (CO2) emissions must be reduced by 40 million tonnes (MT)–5.6 billion tonnes (BT) within the next 30 years, mainly through CCUS and carbon, capture, storage (CCS) applications in the iron, steel, chemicals, refineries, and power plant industries. ASEAN alone will require $1 billion per annum for CCUS investment by 2030. To meet CCUS deployment targets by 2030, research and innovation, combined with support from the government as well as public and private sectors, can establish the first steps towards commercialising CCUS.

CLICK HERE FOR THE FULL ARTICLE

B. Publications (Report, Journal & Article)

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)

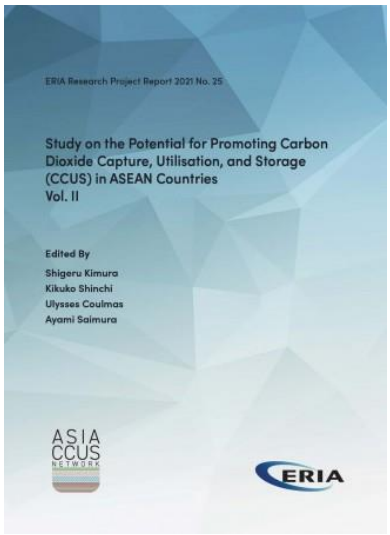


This 'Study on the Potential for the Promotion of Carbon Dioxide Capture, Utilisation, and Storage in ASEAN', uses a multi-aspect survey approach. The study covers findings on recent trends in policies, technologies, and business development from countries with experience in Carbon Dioxide Capture, Utilisation, 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

Indonesia Drafts Regulations on Carbon Capture and Storage and Carbon Capture Utilisation and Storage to Accelerate Project Execution

by **I Gusti Suarnaya Sidemen**, Expert Staff (Advisor), SKKMIGAS Indonesia (Special Task Force For Upstream Oil And Gas Business Activities Republic Of Indonesia)

Carbon capture and storage (CCS) and carbon capture, utilisation, and storage (CCUS), both tools for reducing greenhouse gas emissions, will contribute significantly to Indonesia's pathway to net-zero emission by 2060. The country has identified reservoirs of depleted oil and gas containing 2.09 gigatonnes of carbon dioxide (CO2) that can be used for CCS and CCUS. It has also identified an estimated 9.68 gigatonnes of CO2 from saline aquifers. The Government of Indonesia is drafting regulations to accelerate the implementation of CCS and CCUS projects, provide transparent mechanisms to ensure safety of operation, and promote sustainable CCS and CCUS projects.

The regulations of the Ministry of Energy and Mineral Resources (MEMR) on CCS and CCUS will mainly deal with the rights of contractors to implement CCS or CCUS in their work areas; mechanisms for approval and implementation of projects; economic incentives; monitoring, measurement, reporting, and verification requirements; health, safety, environmental, and social aspects; and decommissioning and transfer liability once a project is over. The regulations are expected to be promulgated before the end of 2022.

ACCESS TO THE WEB ARTICLE

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C. List of Registered Members (as of April 2022)

Advisory Members

- Department of Industry, Science, Energy and Resources, 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
- Energy Market Authority, 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 (50 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 (12 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 (158 members)

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

Read more.

Regional/ International Organizations (22 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 *(details to be announced)*

- **Two capacity building trainings** will be conducted throughout 2022-2023
- **ACN Knowledge Sharing Conference** *with various topics and speakers will be held on 2022-2023*

CLICK HERE FOR THE EVENT CALENDAR

F. Call for Proposal on CCUS Research Study

ERIA as a secretariat of Asia CCUS Network will launch a **Call for Proposal** with the aim to provide wide knowledge and ideas on CCUS development and implementation. In particular, there will be several research topics covering as follows:

- ✓ CO2 storage potential in Asian region
- ✓ Basic design on Asia CCUS value chain (or network) as a collective framework
- ✓ Legal and policy framework to deploy CCUS business
- ✓ Financial framework to deploy CCUS business
- ✓ Assessment on selected sites to initiate a CCUS demonstration project in ASEAN region

The secretariat will announce further details later.

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