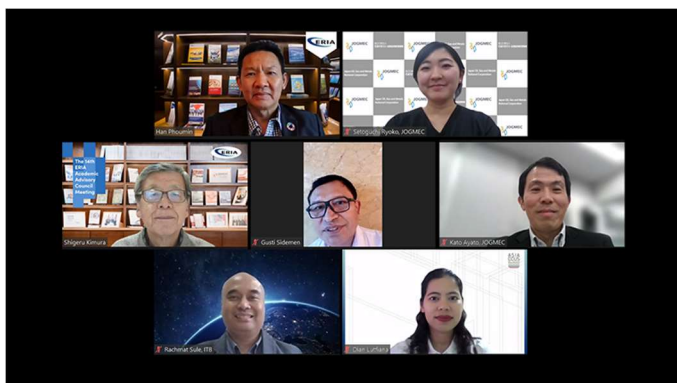


## A. Summary of Past Events

### The 7<sup>th</sup> ACN Knowledge Sharing Conference

16 February 2023



Japan's JOGMEC Shares Experience and Findings of Pioneering CCS Screening Methodology in Southeast Asia

**Virtual Conference, 16 February 2023:** Japan Organization for Metals and Energy Security (JOGMEC) shared the results of its groundbreaking study on Carbon Capture and Storage (CCS) screening in Southeast Asia. The significance of CCS technology within Asia's decarbonisation goals underscores the need to assess suitable carbon dioxide (CO<sub>2</sub>) storage sites swiftly and effectively. There are a multitude of obstacles in selecting storage sites on a regional scale including the lengthy process of collecting subsurface data as well as the lack of standardisation of the available subsurface data.

[CLICK HERE FOR THE FULL ARTICLE](#)

### The 8<sup>th</sup> ACN Knowledge Sharing Conference

13 April 2023



Pertamina and JOGMEC Give In-Depth Look at Huff and Puff EOR Project to Promote Decarbonisation Tech in Asia

**Virtual Conference, 13 April 2023:** Pertamina and the Japan Organisation for Metal and Energy Security (JOGMEC) presented the initial findings of their latest project on huff and puff carbon dioxide (CO<sub>2</sub>) enhanced oil recovery (EOR) in the Jatibarang field in Indonesia. This pioneering work aims to promote Carbon Capture and Storage (CCS) and Carbon Capture and Storage (CCUS) technologies in Southeast Asia amid increased efforts to achieve net-zero emissions. The primary objective of the project is to acquire data that would facilitate a future pilot study.

[CLICK HERE FOR THE FULL ARTICLE](#)

## [ERIA-GECF Joint Workshop](#)

# Prospects of a Natural Gas Market in the East Summit (EAS) Region Amidst Carbon Neutrality Pledges and Geopolitical Tensions

21 February 2023



**Jakarta, 21 February 2023:** Applying existing and affordable fuels and energy technologies to expand the use of natural gas is one way to reduce greenhouse gas emissions. That was the gist of the message delivered by Prof Hidetoshi Nishimura, President of the Economic Research Institute for ASEAN and East Asia (ERIA), at a workshop on Prospects of a Natural Gas Market in the East Summit (EAS) Region Amidst Carbon Neutrality Pledges and Geopolitical Tensions. Held at Fairmont Hotel in Jakarta, the workshop was sponsored by ERIA and the Gas Exporting Country Forum (GECF).

Prof Nishimura said that decarbonising energy systems requires the rapid scaling up of existing cleaner energy sources and technologies with essential support for policy, fiscal, and monetary incentives, and appropriate market design.

Delivering the workshop's opening remarks was H.E. Eng Mohamed Hamel, GECF's Secretary General, who forecast that in the ASEAN region, natural gas demand was expected to more than double, rising to more than 350 billion cubic metres by 2050.

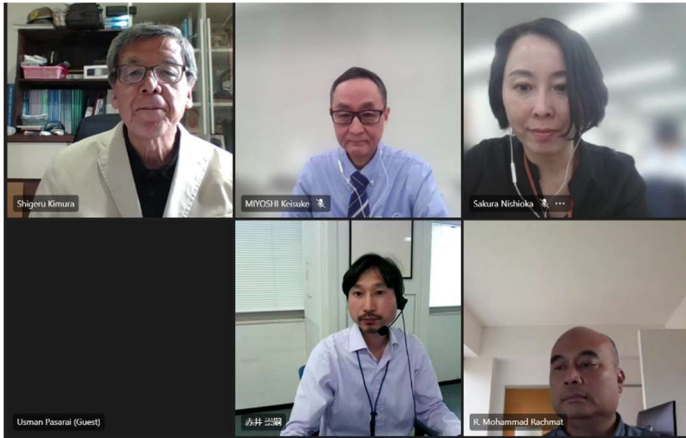
H.E. Mr Arifin Tasrif, Indonesia's Minister of Energy and Mineral Resources, citing the country's natural gas potential, said that the challenges are developing the infrastructure connecting the pipeline from western to eastern Indonesia, and creating a new policy framework to attract investment into the natural gas market. He mentioned that the use of natural gas has diversified into the fertiliser, petrochemical, and glass industries, amongst others.

[CLICK HERE FOR THE FULL ARTICLE](#)

## [ACN Workshop](#)

### **JOGMEC gained insights from CCUS experts for CO2 EOR guideline**

18 April 2023



**Virtual Workshop, 18 April 2023:** A workshop on CO2 EOR guideline prepared by Japan Organization for Metals and Energy Security (JOGMEC), with support from Asia CCUS Network (ACN) is held on Tuesday, 18 April 2023. The CO2 EOR guideline contained a detailed procedure and guides on developing a CO2 EOR project, especially in the ASEAN region. This guideline is purposed as a reference for ASEAN countries to develop a detailed standard operational procedure (SOP) to develop CO2 EOR projects in the respective country. The workshop is attended by experts, both from technical and policy sides, who have been involved in CCUS projects in the ASEAN region.

Mr Shigeru Kimura, Special Advisor to the President on Energy Affairs, ERIA conveyed the opening remarks by underlining the importance of CO2 EOR project development in the ASEAN region to reduce GHG emission and tackle climate change.

[CLICK HERE FOR THE FULL ARTICLE](#)

## [1st SEACA Workshop](#)

### **Accelerating the Deployment of CCS in ASEAN: ERIA Participated in the South East Asia CCS Accelerator**

15-16 May 2023



**Bangkok, 15-16 May 2023:** The Global CCS Institute (GCCSI) in cooperation with Ministry of Energy Thailand and ASEAN Centre for Energy (ACE), organised the first South East Asia CCS Accelerator (SEACA) workshop. To help the ASEAN create a transition to a low-carbon energy future and tackle climate change, SEACA aspires to accelerate commercial CCS deployment in the region.

SEACA is built on three pillars that are crucial to the development of CCS projects: CCS Regulation, Enabling Policy, and Geological Storage Resource Development. The Global CCS Institute launched the Southeast Asia CCS Accelerator (SEACA), a platform for collaboration between governments and the respective agencies, international organizations, private sectors, and governments of developed economies with an interest in CCS in ASEAN to achieve net-zero emission target by deploying CCS technology.

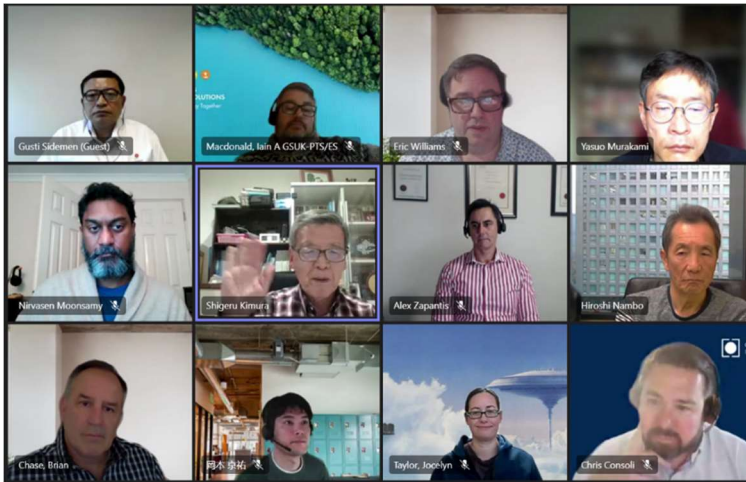
[CLICK HERE FOR THE FULL ARTICLE](#)



## ACN Advisory Group Member Meetings

### OGCI and GCCSI APAC CCUS White Paper Study

March 9th, 2023



**Virtual Meeting, 9 March 2023:** Oil and Gas Climate Initiative (OGCI) and Global CCS Institute (GCCSI) are conducting a study on APAC CCUS White Paper with the support of Asia CCUS Network (ACN). The meeting with ACN Advisory Group Members is conducted to gain comments and insights regarding the study to further enrich the white paper study in the future.

Iain Macdonald of OGCI briefly explained regarding the APAC CCUS white paper study which aims to conduct focused analysis on CCUS

value and CO<sub>2</sub> source concentrations assessments in the Asia Pacific Regions, as well as to map potential legal and regulatory challenges that could inhibit the development of CCUS in the region. Eric Williams from GCCSI explained on their study's scope of work on the potential deployment of CCS in APAC region through 2065 which generally includes: 1) policy/legal/regulatory analysis, 2) regional CO<sub>2</sub> atlas, and 3) energy/economic modelling. This study makes use of Global Economic Net Zero Optimization (GENZO) model which is GCCSI's in-house techno-economic optimization model.

### Preparation of JOGMEC CO<sub>2</sub>EOR Guideline

March 27th, 2023



**Virtual Meeting, 27 March 2023:** Japan Organization for Metals and Energy Security (JOGMEC) is currently preparing a guideline for CO<sub>2</sub> EOR Guideline, which contained a detailed technical procedure on developing a CO<sub>2</sub> EOR project, especially in the ASEAN region. JOGMEC invited ACN Advisory Group Members to give comments and insights on the development of this guideline.

Dr Takashi Akai, Reservoir Engineer/Director, Subsurface Division, Hydrogen and CCS Project Department, JOGMEC presented the materials on the introduction of CO<sub>2</sub> EOR and the key features, objectives, and general overview of the CO<sub>2</sub> EOR Guideline being developed by JOGMEC. This guideline is proposed to be publicly available, after gaining insights and comments from CCUS experts.

## B. Publications (Report, Journal & Article)

### [Indonesia Tabled CCS and CCUS in Net Zero Emission Road Map: Opening Possibilities for Cross-Border Carbon Trading/Storage](#)

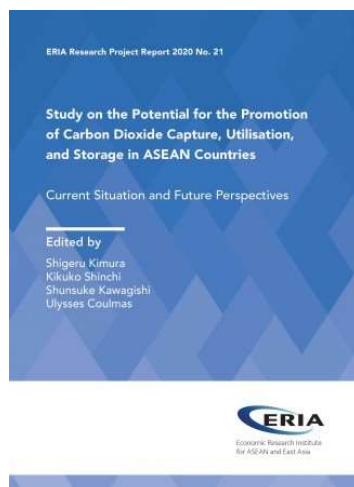
By **I Gusti Suarnaya Sidemen**, ERIA Expert on CCS/CCUS – ACN Advisory Member

Indonesia has announced to achieve Net Zero Emission (NZE) by 2060 in September 2022. Under the Announced Pledges Scenario (APS) to achieve NZE, Carbon Capture and Storage (CCS) and Carbon Capture, Utilization and Storage (CCUS) will play an important role in the energy transition pathway, which is targeted to start operating in Indonesia in 2026. Although CCS and CCUS have yet to be included in the APS, considering the current storage capacity assessment in Arun Field, East Kalimantan, and Sunda Asri Basin, CCS certainly will put Indonesia as one of the most significant parts in Regional CO<sub>2</sub> storage in Asia.

Storage assessments conducted by LEMIGAS in 2009, 2012 and 2015 concluded that Indonesia has CO<sub>2</sub> storage capacity potential of 12,2 billion tons; of which 2.5 billion tons of CO<sub>2</sub> capacity located in depleted oil and gas reservoirs and 9.7 billion tons located in saline aquifers. The CO<sub>2</sub> storage capacity is distributed regionally, in the South Sumatra region ( 924 Million Ton depleted oil and gas reservoir and 7,7 billion tons saline aquifer), East Kalimantan region ( 140 million ton depleted reservoir), Central-South Kalimantan (10 million ton depleted reservoir), Central Sulawesi (19 million depleted reservoir) Central Sumatra (229 million tons), West Java (402 million tons depleted reservoir and 2029 million tons saline aquifer, East Java (116 million ton depleted reservoir), Masela (depleted reservoir), and West Papua (551 million tons depleted reservoir). [Read more....](#)

### [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)



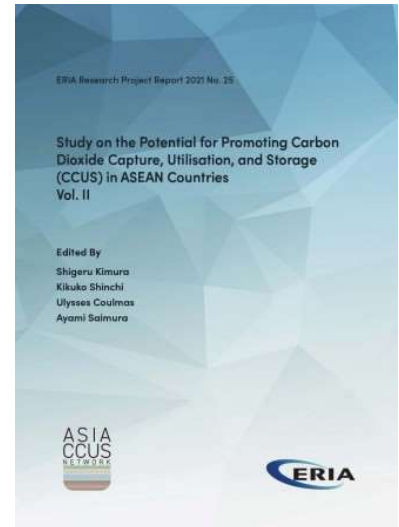
This 'Study on the Potential for the Promotion of Carbon Dioxide Capture, Utilisation, and Storage in ASEAN', uses a multi-aspect survey approach. The study covers findings on recent trends in policies, technologies, and business development from countries with experience in Carbon Dioxide Capture, Utilisation, 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 CO<sub>2</sub> emitted from a 500MW coal power plant (ultra- supercritical) applying chemical absorption using amine, b) transport of CO<sub>2</sub> to the storage site through a 50km long pipeline, and c) storage of CO<sub>2</sub> 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 CO<sub>2</sub> ton and 70% of the cost results from the capture of CO<sub>2</sub>. 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](#)

## C. List of Registered Members (as of May 2023)

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### 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 (47 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 (15 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 (215 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.](#)

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### 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)


*Further details will be announced later*

- **The 9<sup>th</sup> ACN Knowledge Sharing Conference** organized by ACN Secretariat in collaboration with Northern Territory Government, Australia, 30 June 2023
- **The 10<sup>th</sup> ACN Knowledge Sharing Conference** organized by ACN Secretariat in collaboration with Shell


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