

### A. Summary of the Past Events

# <u>USGS-ACN Joint Workshop on</u> <u>Estimation of CO2 Storage Capacity</u> 23 June 2022



USGS Introduces Geological Carbon
Sequestration Concepts and Assessment
Methods to Facilitate Climate Goals in Asia

USGS-ACN Joint Workshop, 23 June 2022: The United States Geological Survey (USGS) introduced its longstanding work on geological carbon dioxide (CO2) sequestration (or storage) capacity assessments and is inviting partnership with Asian countries for future geologic storage capacity assessment projects. The USGS together with the US Department of Energy is intensifying efforts to promote global geologic CO2 storage assessments, particularly in emerging economies. Through decades-long studies in geologic carbon sequestration, the USGS has the knowledge and expertise in this critical field which they would like to share with ASEAN and the Asia region.

lobal climate targets.

# The Global CCS Institute Holds the 10th Annual D.C. Forum

16 June 2022



Hybrid Event: 10th Annual D.C. Forum

#### The Global CCS Institute's 10th Annual D.C. Forum,

hosted on 16 June, brought together the carbon capture and storage industry to address the rapidly evolving interplays of policy, finance, technology, and justice. The Institute's CEO Jarad Daniels commenced the day-long conference by reminding the audience of the organisation's vision, that CCS is an integral part of the net-zero emissions future, and its mission, to accelerate the global deployment of CCS. Jarad emphasised the Institute's five-year plan with the objectives of fact-based influential advocacy, catalytic thought leadership, and authoritative knowledge sharing.

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# <u>Japan Oil, Gas and Metals National Corporation (JOGMEC) Published A</u> <u>Recommended CCS Projects' Guideline</u>

30 May 2022

**JOGMEC's CCS Project Guideline**: In May 2022, JOGMEC has published the first version of a "Recommended guideline for the implementation of Carbon dioxide Capture and Storage Projects (CCS guideline)". This guideline aims to promote CCS business and assert the view of JOGMEC on CCS business.

As the Asia CCUS Network members are aware, CCS solutions are critical for mitigating the catastrophic impacts of climate change. They reduce and compensate for emissions from hard-to-abate industries as they move to a net-zero. However, in order to reach the Paris Climate Agreement targets, CCS must be deployed more rapidly.

JOGMEC has developed an operator-friendly guideline to support CCS deployment that contains recommended workflows from project planning to project closure as well as standards for evaluating CO2 storage resources and the amount of greenhouse gas reduction. The next step will be to study methodologies to quantify the amount of CO2 storage through CO2-EOR (enhanced oil recovery by carbon dioxide injection).

Further info about this CCS Project Guideline, please visit the website: https://mirai.jogmec.go.jp/en/

Email to: jogmec-ccs-globalcoordination@jogmec.go.jp

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# ACN Call for Proposal Research Studies 2022-2023

Asia CCUS Network (ACN) Secretariat is inviting research proposal related to Carbon Capture Utilisation and Storage (CCUS) particularly in Asia region. CCUS development is now considering as a crucial technology to avhieve clean energy transition target. Deep understanding on CCUS from technical, financial and policy perspectives will be beneficial to accelerate its development.

ACN would like to invite research proposals to address CCUS issues related to technology, value chain, policy framework, financial and potential sites for CCUS project demonstration in ASEAN region. The study will cover five areas of studies:

- 1. **Estimation of CO2 storage potential in ASEAN region** and its study points are;
  - Review of existing publications of CO2 storage in ASEAN region
  - Potential storage of CO2-EOR/CO2-EGR for existing wells
  - Potential storage of oil and gas dry halls
  - Potential storage of saline aquifer
- 2. **Establishment of Asia CCS/CCUS value chain as a collective framework in Asia region** and its study points are;
  - Hub and spoke concept (Capture, Utilization, Transport and Storage)
  - Basic design of CCUS value chain (CO2 shipping sites, CO2 utilization sites, CO2 storage sites)
  - Regional legal and institutional framework
  - Basic concept of Asia CCS/CCUS value chain center
- 3. Study on legal and policy framework for deployment of CCUS in Asia Region and its study points are;
  - Review of energy, environment and economic polices of selected countries in Asia region
  - Review of exiting legal and policy framework referring to advanced countries regarding CCUS deployment
  - Necessary environmental and safety regulations
  - Appropriate legal and policy framework for countries in Asia region
- 4. Study on financial framework for deployment of CCUS in Asia Region and its study points are;
  - Rough forecast of necessary investment for development and deployment of CCS/CCUS
  - Roles of public and private finances
  - Identification of financial risk on private sector to invest CCS/CCUS business
  - Impact of carbon price market in Asia region
- 5. **Selection of appropriate sites for starting a CCS demonstration project in ASEAN region** and its study points are;
  - List up candidate sites of CCS demonstration project in ASEAN region
  - Assessment points to select a site for implementation of CCS demonstration project
  - The selection process
  - The selection result

#### Timeframe and administrative information

Proposal template is provided to prepate the proposal study. Together with the proposal, the lead researcher is expected to submit a brief CV. Proposal should be submitted to ACN Secretariat (<a href="mailto:energy@eria.org">energy@eria.org</a>) and Ms Dian Lutfiana@eria.org</a>) no later than **31 August 2022**. Early submission is encouraged.

ACN will fund approximately USD 70,000 for each area of study. Online meeting will be arranged as a working group meeting to guide the respective studies.

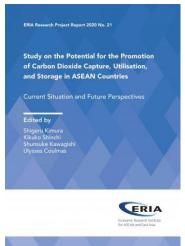
For further enquiry, please contact ACN Secretariat at energy@eria.org.

**DOWNLOAD PROPOSAL TEMPLATE** 

### 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.

# C. List of Registered Members (as of June 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 (41 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 (13 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 (175 members)

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

#### Read more.

# Regional/International Organizations (19 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-captureutilisation-and-storage-the-opportunity-in-southeastasia
- 2. JOGMEC's New Website 'CLEAN FUTURE ENERGY': <a href="https://mirai.jogmec.go.jp/en/">https://mirai.jogmec.go.jp/en/</a>
- National Energy Technology Laboratory Training Resources:

https://www.netl.doe.gov/LCA/co2u/Training

### E. Upcoming Events

• Second ACN Forum, 27 September 2022 Hybrid Forum, co-hosted by Economic Research Institute for ASEAN and East Asia (ERIA) and Ministry of Economy, Trade, and Industry (METI), Japan



**CLICK HERE FOR THE EVENT CALENDAR** 

#### Asia CCUS Network Secretariat

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