



Report on Asia CCUS Network Activities 2021-2023

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Mission statement of ACN

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2021/2022/2023

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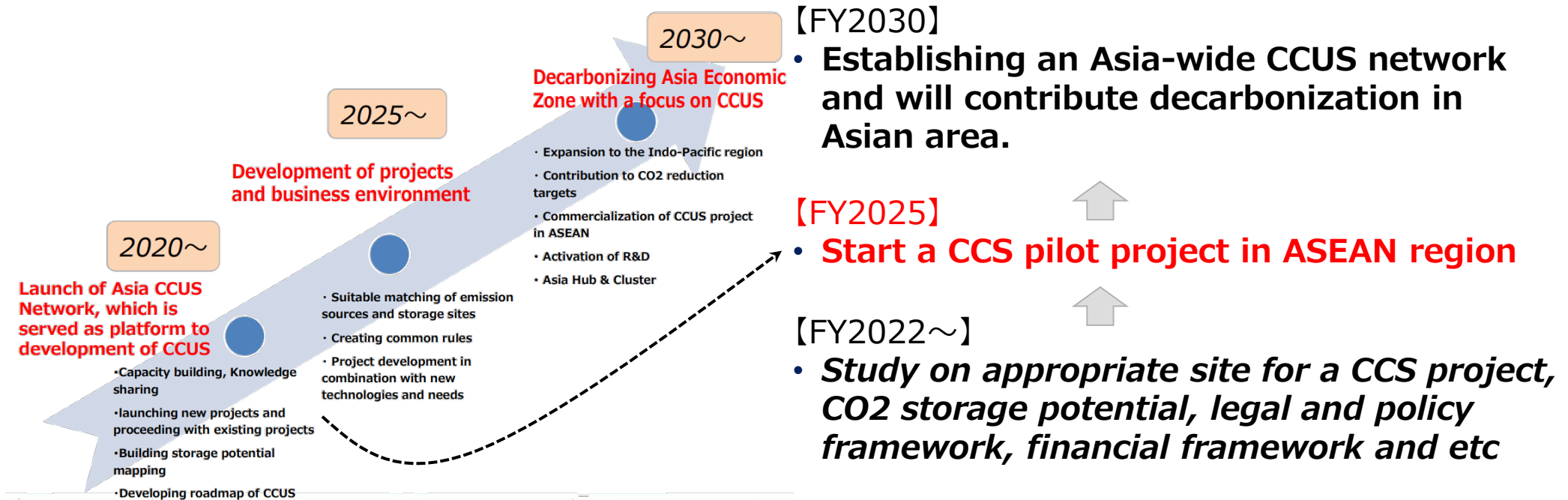
Publications

Vision and Mission

- Through collaboration and cooperation on development and deployment of CCUS in the Asia region, the Network will contribute to the decarbonization of the region
- "**Asia CCUS Network**" aims at **(1) knowledge and experiences sharing** regarding CCUS, conducting potential survey, **(2) creating common rules** and developing projects, and **(3) realizing storage network** throughout Asia.

Facilitate deployment of CCUS in the EAS region through the following activities:

- a. **Promote knowledge sharing** through holding an annual forum, conferences, workshops, and meetings.
- b. **Conduct research studies** on technical, economical, and legal standards of CCUS in the EAS region.
- c. Hold **capacity building** training workshops.



Report on ACN Activities 2021-22

Report on ACN Activities 2021 (Launch of ACN & Knowledge Sharing)

- **Launching Asia CCUS Network on 22–23 June 2021:** Prof Hidetoshi Nishimura, President of ERIA and Mr Hiroshi Kajiyama, former Japan's METI minister, announced the launch of ACN attended by Ministers and deputy Ministers from EAS and IEA, OGCI, and GCCSI.
- **1st KS conference on 26 July 2021:** ACN invited experts from IEA to share recent publication on "CCUS: The Opportunity in Southeast Asia".
- **2nd KS conference on 28 July 2021:** ACN invited experts from the US Department of Energy to share their insights and experiences on CCUS development in terms of project development, regulatory framework, and other policy environment under President Biden's administration.
- **3rd KS conference on 14 October 2021:** ACN invited experts from OGCI to provide introduction of OGCI's efforts on climate initiatives and the work on CO2 storage.
- **4th KS conference on 17 November 2021:** In collaboration with CEM (Clean Energy Ministerial) CCUS Initiative, ACN invited experts from CEM to provide introduction of CEM's activities.
- **5th KS conference 17 November 2021:** In collaboration with Department of Industry, Science, Energy, and Resource, Australia, ACN invited experts to share insight on CCUS policy and carbon recycling.

Capacity Building Workshops

Three Days CCUS Technical Workshop

5 – 7 October 2021

Technical Workshop Day 1: Technical Aspect of Carbon Capture Technology

Technical Workshop Day 2: Technical Aspect of Carbon Transportation & Storage Technology

Technical Workshop 3: Utilization of CO₂

Speakers

- Mrs. Kikuko Shinchi, Senior Researcher of MRI
- Dr. David Kearns, Principal Consultant-CCS technology, GCCSI
- Mr. Takashi Kamijo, Chief Engineering Manager/ Project Director Decarbonization Business Dept Mitsubishi Heavy Industries Engineering

Speakers

- Mrs. Kikuko Shinchi, Senior Researcher of MRI
- Mr. Ulysses Coulmas, Researcher, MRI
- Dr. Ziqiu Xue, Chief researcher, CO₂ Storage Technology Group, Research Institute for Innovative Technologies for the Earth (RITE)

Speakers

- Mrs. Kikuko Shinchi, Senior Researcher of MRI
- Ms. Dewi Mersitarini, Advisor CCUS, Pertamina RTC, Indonesia
- Prof. Ning Yan, Dean's Chair Associate Professor, Head of Green Catalysis Lab, National University of Singapore

Capacity Building Workshop (2)

Cost Structure of CCUS and the Legal Framework Workshop

18 January 2022

Hosted by the Mitsubishi Research Institute (MRI), this 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. It featured the speakers:

- **Mr Yoshihiro Sawada**, Corporate Adviser, General Manager of International Affairs Department, Japan CCS Co., Ltd.
- **Dr Mohammad Rachmat Sule**, Lecturer, Faculty of Mining and Petroleum Engineering, Institute of Technology Bandung (ITB)
- **Ms Yukimi Shimura**, Director, Planning & Development Department, Sustainable Business Division, MUFG Bank, Ltd.
- **Mr Ulysses Coulmas**, Researcher, Mitsubishi Research Institute

Report on ACN Activities 2022-23

Report on ACN Activities 2022-2023

- **2nd Asia CCUS Forum: CCUS Towards Carbon Neutrality Beyond 2050 held on 30 September 2022, Tokyo:** Prof. Hidetoshi Nishimura, President of ERIA, jointly with Mr Nishimura Yasutoshi, Former Minister of Economy, Trade and Industry, and VIPs from member countries of the Asia CCUS Network, and was attended by about 70 people in person and about 600 online. The forum featured keynote speeches emphasising the importance of technological development to reduce the cost of CCUS and the effectiveness of carbon markets in promoting its development.
- **6th KS conference on 31 January 2023:** ACN invited experts from Canadian Company Carbon Engineering to talk about climate technology and DAC.
- **7th KS conference on 16 February 2023:** ACN invited experts from JOGMEC to share experience and findings of pioneering screening methodology in Southeast Asia, using NefTex® Prediction.
- **8th KS conference on 13 April 2023:** ACN invited experts Pertamina and JOGMEC to give in-depth look at Huff and Puff EOR Project to promote decarbonisation tech in Asia.

Capacity Building Workshops/ Joint Workshops

- **USGS–ACN Joint Capacity Building Workshop on 23 June 2022:** USGS Introduces Geological Carbon Sequestration Concepts and Assessment Methods to Facilitate Climate Goals in Asia. Through this collaboration, it aims to: (i) identify countries, especially emerging economies, seeking to estimate their CO₂ storage resources to meet climate goals; (ii) work with multilateral organisations and participate in international initiatives to help facilitate CO₂ assessments through funding or networks; and (iii) generate or facilitate CO₂ storage assessments on a global scale, with a focus on emerging economies.
- **Study Visit to JCCS Tomakomai CCS Project on 28 September 2022:** Members of ACN, ERIA, and IEEJ visited the first large-scale CCS demonstration project in Japan, undertaken by METI, NEDO, and JCCS. From fiscal year (FY) 2012 to FY2015, demonstration facilities were built, injections at a scale of 100,000 tonnes per year commenced in April 2016, and the initial target of 300,000 tonnes of cumulative injections was reached on 22 November 2019.
- **ACN Supported METI–JOGMEC–IETA Joint Workshop on 25–26 January 2023:** Global Carbon Market and CCS – Towards ASEAN Decarbonisation. In collaboration with METI and the International Emissions Trading Association (IETA), JOGMEC held a workshop on carbon credits and the creation of environmental value through CCS, with the aim of facilitating CCS deployment through the appropriate use of carbon markets.

Report on ACN Activities 2023-24 and Planned Activities

Research Studies 2023–24

Activities		2023–2024
Component 1: Annual Work Plan Forum and Knowledge Sharing		
1.1	Third Asia CCUS Network Forum	27 September 2023 in Hiroshima city
1.2	9 th Knowledge-sharing conference: 9 th ACN Knowledge-sharing conference: Middle Arm – The Northern Territory CCS Hub in Australia, followed by CO2 storage potential, policy and regulations, financial scheme, and introduction of CCUS projects in Asia region	30 June 2023
1.3	10 th CAN Knowledge-sharing conference: ACN invited expert from Shell to share the experience on, “Quest for less CO2” in Canada.	12 th September 2023
	10 th – 13 th ACN Knowledge-sharing conference will be held	5–6 times per year
Component 2: Research Studies		
2.1	Feasibility study on initiation of a CCS pilot project in ASEAN region including financing framework	Open tender
2.2	Publishing five research reports (one BRIN and four GCCSI)	End of 2023

Research Studies 2023-24 (Cont.'s)

Component 3: Capacity Building and Workshop		
3.1	Capacity building and training on carbon dioxide storage resource assessments in the ASEAN region Introduction to geologic carbon dioxide storage by U.S. Geological Survey (USGS)	11–15 September 2023
3.2	Workshop on the CO2-EOR guideline prepared by JOGMEC and a financial framework.	18 June 2023
	Upcoming one – two workshops will be held	<i>To be determined</i>
Component 4: Site Visit		
4.1	Osaki <u>Coolgen</u> CCS Project Hiroshima, Japan operated by JGC Holdings Corporation	28 September 2023
Component 5: Advisory Group		
5.1	Advisory Group meetings	3–4 times per year
Component 6: Website and Newsletter		
6.1	New ACN website will be released	October 2023
6.2	Maintenance and update of the website content	Monthly
6.3	Release of quarterly newsletters: Volume VIII-X	4 times per year

Research Studies 2023-24

The ACN Secretariat and Advisory Group members selected five research studies related to CCUS, particularly in ASEAN region. The Global CCS Institute (GCCSI) and the Research and Innovation Agency (BRIN), Indonesia are commissioned by ERIA to undertake these studies.

1. Estimation of Basin-Scale CO₂ Storage in Indonesia

- Perform a geological storage assessment based on criteria developed specifically for Indonesian sedimentary basins and estimate the storage capacity available based on existing data, using the following methodology:
 - Identify sedimentary basins
 - Review the characteristics of sedimentary basins
 - Rank sedimentary basins qualitatively or quantitatively in order of CO₂ storage suitability
 - Estimate storage capacity

2. Estimation of CO₂ Storage Potential in the ASEAN Region

- Create a targeted strategy for CO₂ storage development in this region, focusing on potential CCS networks.
- Characterise storage prospects (onshore and offshore) for the development of storage appraisal programmes.

3. Establishment of Asia CCS/CCUS Value Chain as a Collective Framework in the ASEAN region

- Convene an ASEAN Storage Group and hold a series of in-person workshops to gather information on the current state of knowledge of geological CO₂ storage resources.
- Engage with a network of ASEAN regulators and policymakers through a series of workshops to inform a regulatory gap analysis and to assist in describing the potential institutional frameworks necessary to support CCUS hubs and networks.

4. Study on the Legal and Policy Framework for the Deployment of CCUS in the ASEAN region

- Identify the role of existing national legal and policy frameworks for supporting CCUS deployment.
- Identify and consider discrete policy, legal, and regulatory issues for CCS, including those specific to the region.
- Consider an appropriate legal and policy framework for countries in the ASEAN region.

5. Study on a Financial Framework for the Deployment of CCUS in the ASEAN region

- Forecast the required investment for the deployment of CCS in Asia.
- Identify the roles of public and private finance for CCS projects.
- Identify the financial risks for private sector debt financing and equity investments in CCS projects.
- Understand the role that a CO₂ market price will have in the Asia and how this price will affect CCS projects.

Publications and Links to External Resources

ERIA Report

[Kimura, S., K. Shinchu, S. Kawagishi, and U. Coulmas, eds. \(2020\), *Study on the Potential for the Promotion of Carbon Dioxide Capture, Utilisation, and Storage in ASEAN Countries: Current Situation and Future Perspectives*, ERIA Research Project Report 2020, No. 21. Jakarta: Economic Research Institute for ASEAN and East Asia.](#)

[Kimura, S., K. Shinchu, U. Coulmas, and A. Saimura, eds. \(2021\), *Study on the Potential for Promoting Carbon Dioxide Capture, Utilisation, and Storage \(CCUS\) in ASEAN Countries, Vol. II*, ERIA Research Project Report 2021, No. 25. Jakarta: Economic Research Institute for ASEAN and East Asia.](#)

External Links

IEA's Report on CCUS in Southeast Asia

<https://www.iea.org/reports/carbon-capture-utilisation-and-storage-the-opportunity-in-southeast-asia>

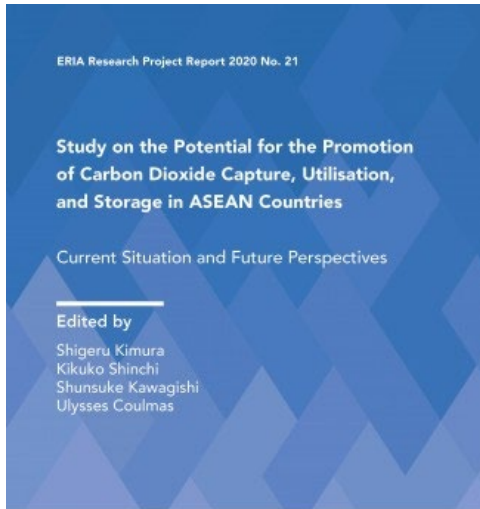
JOGMEC's New Website 'CLEAN FUTURE ENERGY'

<https://mirai.jogmec.go.jp/en/>

National Energy Technology Laboratory Training Resources

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

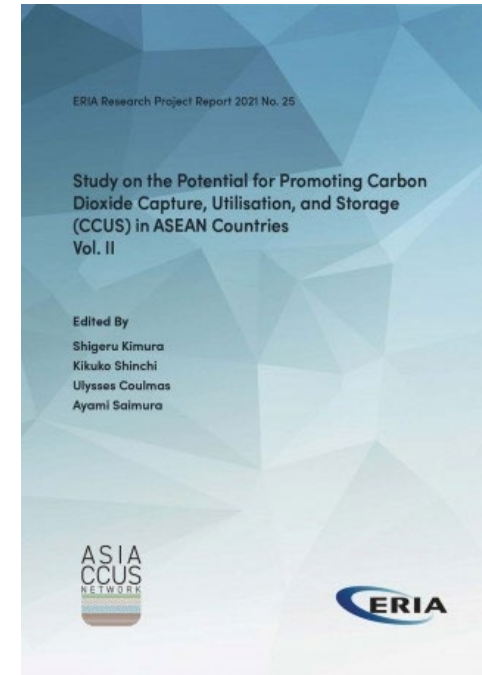
Study on the Potential for the Promotion of Carbon Dioxide Capture, Utilisation, and Storage in ASEAN Countries: Vol. I and Vol. II



Vol I. 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.

[Full report](#)

Edited by Shigeru Kimura, Kikuko Shinchi, Shunsuke Kawagishi, and Ulysses Coulmas



Vol. II 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.

[Full report](#)

Edited by Shigeru Kimura, Kikuko Shinchi, Ulysses Coulmas, and Ayami Saimura

More Information

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