METI
Ministry of Economy, Trade and Industry

ASIA CCUS NETWORK

ERIA

Asia CCUS Network First Forum

Hosted by Asia CCUS Network (ACN)
Supported by Ministry of Economy, Trade, and Industry, Japan (METI)
and Economic Research Institute for ASEAN and East Asia (ERIA)

22 – 23 June 2021
Virtual Conference

‘Asia CCUS Network’ has Launched

https://www.asiaccusnetwork-eria.org/recent-updates/asia-ccus-network-has-launched

On 22 June 2021, Prof Hidetoshi Nishimura, President of Economic Research Institute for ASEAN and East Asia, jointly with Mr. Hiroshi Kajiyama, Minister of Economy, Trade and Industry of Japan, attended the 1st Asia CCUS Network Forum and announced the launch of ‘the Asia CCUS Network’, which is an international industry–academia–government platform aimed at knowledge sharing and improvement of the business environment for utilisation of carbon capture, utilisation, and storage (CCUS) throughout the Asia region. Thirteen East Asia Summit (EAS) member countries (10 ASEAN member countries, Australia, United States, Japan) and more than 100 companies, research institutions, and international organisations participate in the network.

- The Asia CCUS Network aims to contribute the decarbonisation of emissions in Asia through collaboration and cooperation on the development and deployment of CCUS.

- The mission of this network is to facilitate deployment of CCUS through: (i) promoting knowledge sharing through holding an annual forum, conferences, workshops, and meetings; (ii) conducting research studies on technical, economical, and legal standards of CCUS in the EAS region; and (iii) holding capacity building training workshops to bridge the knowledge gap on CCUS.

- This forum provides the most up-to-date information about countries around the world as well as countries in our region that have already started CCUS demonstration projects. Some countries in EAS region such as the United States, Australia, Japan, and the Republic of Korea have already started CCUS demonstration projects and are actively working on the modalities of the future deployment of this technology.

The First Asia CCUS Network Forum : Opening Session

- Day 1 of the event: Announcement of the launch of 'the Asia CCUS Network (ACN)', an international industry–academia–government platform, aimed at knowledge sharing and improvement of the business environment for utilisation of carbon capture, utilisation, and storage (CCUS) throughout the Asian region. Thirteen East Asia Summit (EAS) member countries (10 ASEAN countries, Australia, United States, Japan) and more than 100 companies, research institutions, and international organisations participate in the network. There were congratulatory messages from EAS Ministers and international organisations for the ACN launching.

- Day 2 of the event: Introduction of Japan's CCUS initiative and the Asia CCUS Network's workplan, and discussion of the CCUS financial scheme with member countries, international organizations, and private companies.

EVENT DETAIL

Date	: 22-23 June 2021
Venue	: virtual room
Host	: METI,ERIA

PARTICIPANT

Speakers	: 37
Audience	: about 600 participants

PROGRAMME

22 June
- Opening session (ERIA,METI)
- Ministerial session (EAS Member Countries), Keynote speeches (IEA etc.)
- Panel discussion (Expectations to Asia CCUS Network)

23 June
- Working plan report
- Japan's CCUS showcase (transportation, Gundih CCUS project, storage technology
- Panel discussion (CCUS Private Investment and expectation towards government
- Panel discussion (CCUS financing scheme)

The First Asia CCUS Network Forum : Opening session

- Mr Kajiyama Hiroshi, Minister of Economy, Trade and Industry (METI), and Prof Hidetoshi Nishimura, President of ERIA, provide opening remarks at the launch of Asia CCUS Network

- **Japan supports emerging countries in Asia** that are transitioning towards carbon neutrality and economic growth through use of various energy sources and technologies, **to achieve a realistic energy transition based on the particular circumstances of each country.**
- **CCUS is one of the essential technologies** to be used to achieve carbon neutrality. Each ASEAN country has a capacity to store more than 10 billion tons of CO_2.
- Thirteen East Asia Summit (EAS) member countries (10 ASEAN countries, Australia, United States, and Japan) and more than 100 companies, research institutions, and international organisations participate in the network.

- **Japan contributes to the development of CCUS in the Asian region by:**
  - Developing a vision for inter-industry collaboration at the Tomakomai CCUS and Carbon Recycling Demonstration Center, based on the achievement of CO_2 injection of 300,000 ton.
  - Developing innovative capture technologies and the demonstration of long-distance CO_2 transportation by ship.
  - Joint study between Indonesia and Japan to realize CCUS demonstration utilizing the Joint Crediting Mechanism (JCM)
  - Collaboration with the United States and Australia to demonstrate the application of Japanese monitoring and injection technologies
  - Providing practical guidance for geological CO_2 storage through the Asia CCUS Network

- We would like to **share the knowledge and experience of CCUS in this initiative and to establish CCUS in the Asian region through collaboration and cooperation on decarbonisation.** The proportion of fossil fuels in Asia is 80% of the primary energy mix. CCS is essential to ensure the clean use of fossil fuels and decarbonisation of the region.
- **Commercialisation of CCUS is the key to decarbonisation.** Achieving carbon neutrality in Asia will depend on it. To promote decarbonisation in Asia, it is important for various stakeholders and players to actively participate.

The First Asia CCUS Network Forum : Ministerial Session and Keynote Speech

- Congratulatory messages from EAS ministers and international organisations to ACN emphasizing importance of CCUS

Brunei: HE Dato Seri Setia Dr Awang Haji Mat Suny bin Haji Hussein, Minister of Energy

CO_2 emissions are a major problem in Brunei, a resource-rich country. **CCUS is key to building a clean value chain in the energy sector and to achieving sustainable and efficient regional decarbonisation**

Cambodia: HE Mr Suy Sem, Minister of Mines and Energy

CCUS is important because the region will have to rely on fossil fuels in the future. **Once CCUS is commercialised, it will become a climate change game changer**. Cambodia would like to learn from the experience of other countries about policy systems that introduce clean technology.

Indonesia: HE Mr Arifin Tasrif, Minister of Energy and Mineral Resources

For now, fossil fuels are the mainstream in Asia (including Indonesia), and green technology, especially CCUS, is very essential. CCUS can utilise depleted oil fields. **Commercializing CCUS will need a supporting framework/ platform that includes investors**. We are also improving the investment environment in Indonesia and hope that many investors will participate.

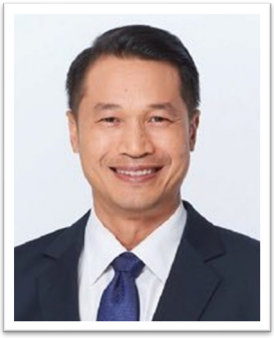
Lao PDR: HE Dr Daovong Phonekeo, Minister of Energy and Mines

For decarbonisation the region should make choices suitable for each country, and Lao PDR would like to find a realistic way to proceed by combining various measures such as compatibility of forest absorption and CCUS technology. **Carbon trading and carbon offsetting are also to be considered.**

The First Asia CCUS Network Forum : Ministerial Session and Keynote Speech

Singapore: Mr GAN Kim Yong, Minister for Trade and Industry

CCUS can be applied to various end users from the development of sustainable products such as hydrogen production to low-emission power sources. It can overcome the geographical restrictions of Singapore, which has little renewable energy. Singapore is also looking forward to international cooperation and welcomes ACN from that perspective.



Thailand: Dr Twarath Sutabutr, Chief Inspector-General on behalf of HE Dr Supattanapong Punmeechaow, Minister of Energy

CCUS technology is a critical technology, but it is still considered high cost. Policy drivers and finance are important.

Philippines: Mr Jesus T. Tamang, Director of Energy Policy Planning Bureau on behalf of HE Mr Jesus Cristino P. Posadas Undersecretary of Department of Energy

Southeast Asia has **large CCUS storage potential and therefore large CO_2 reduction potential.** They are grateful that the network will promote knowledge sharing and research within the region.

United States: Dr Jennifer Wilcox, Acting Assistant Secretary for Fossil Energy and Carbon Management, Dept of Energy

Multilateral cooperation is needed to resolve climate change and is also essential for the development of CCUS. **CCUS contributes not only to electricity but also to the decarbonisation of industry**. It also creates new business opportunities related to Direct Air Capture (DAC) and hydrogen production. We thank the governments and organisations in the EAS region for joining ACN and making commitments on CCUS. The United States is willing to provide technology and believes that the Asian network will contribute not only to EAS but also to the decarbonisation of the world.

The First Asia CCUS Network Forum : Ministerial Session and Keynote Speech

Australia: HE Mr Angus Taylor MP., Minister for Energy and Emission Reduction

CCUS is the only practical solution to decarbonisation in some industries. There are also many needs for cooperation between nations. There is no shortage of CCUS investment environment opportunities. Australia invested A$ 440 million in six projects.

IEA : Dr Fatih Birol, Executive Director of International Energy Agency

The pathway to Net Zero is narrow but reachable, and the next 10 years are important. **The spread of CCUS applications in all sectors is necessary**. Many countries are introducing incentives to popularise CCUS, with 13 projects planned for this year alone. The spread of CCUS in Southeast Asia requires an investment of US$ 1 billion annually. International financial institutions should support the spread of CCUS. **The IEA fully supports this network.**

GCCSI: Mr Brad Page, CEO

CCS is essential to achieve Net Zero (steel industry, cement industry, hydrogen, BECCS/DAC, etc.). Approximately 40 million tons are stored annually at 26 CCS sites around the world. CCS sites have increased over the last few years, but more are urgently needed. **Building a CCS hub is also important.**

OGCI: Mr Bjorn Otto Sverdrup, Executive Committee Chair of Oil and Gas Climate Initiative

The next decade is important and we need to act now. **To scale up CCUS, policy development, collaboration, technology development, etc. are required.** OGCI maintains a resource storage catalogue. We welcome cooperation with each country.

Expert Discussion 1 (Expectations towards Asia CCUS Network)

In Expert Discussion 1, ERIA gave an overview of the need for CCUS and the Asia CCUS network, showing the energy outlook for the EAS region. Government officials and academia discussed expectations of this network.

- As an introduction, the Ministry of Energy and Mineral Resources, Indonesia explained the potential of CO_2 storage and related issues. He also stated that he would like to support this network to upgrade the CCUS value chain.
- The Department of Energy, Philippines, noted that CCUS is yet to be part of the domestic energy policy and they would like to gain knowledge about laws and regulations, technology, and business models in other countries through this network.
- The Ministry of Economy, Trade and Industry, Japan, noted that discussions and precedents in Europe will be explained in international frameworks such as the G7 and CEM, and it is important for each country to cooperate and share knowledge for Asia to reach its potential.
- The Institute of Technology Bandung explained the case of Gundih JCM (Joint Crediting Mechanism) and that there is an economic benefit to covering CAPEX with the JCM scheme.

Key points from the discussion:

- It is advisable to promote project development in the ASEAN region by sharing the experience of players in advanced CCUS countries such as the United States, Australia, and Japan, as best practices.
- Although there is a limit to the spread of renewable energy, CCS is still costly and uneconomical, and knowledge of cost reduction technologies and incentives should be shared.
- CCS departments should be established in each country to promote policy discussions.

The First Asia CCUS Network Forum : Introduction of working plan

- ACN Secretariat introduced this year's activity plan and medium-term plan up to 2025.
- ACN secretariat will steadily proceed while incorporating opinions from the advisory group such as holding capacity building sessions and workshops, conducting surveys, and developing rules.

2021 - Launch of the Asia CCUS Network

- Capacity building and knowledge sharing
  - Joint workshop and conferences with ADB,CEM,OGCI
  - Workshop about separation, collection, transportation, storage
  - Model case study
- Construction of reservoir mapping
- CCUS roadmap development
  - Policy related workshop

2022-2025 CCUS Project and business model construction

- Capacity building and knowledge sharing
  - CCUS value chain, financial scheme
- Matching sources and reservoirs
- Creating common rules for CCUS deployment
- Building CCUS projects

The First Asia CCUS Network Forum : Japan CCUS Showcase

- In the future, Japan will expand the knowledge and technologies gained through research and development and give demonstrations to Asia through its network.
- At the Asia CCUS Network Forum, a session called 'Japan CCUS Showcase' was set up to disseminate domestic and international cooperation efforts.

1. Tomakomai Vision

In Tomakomai City, oil and gas fields, power plants, manufacturing industries, biomass, CCS and demonstration centres are compactly organised. Efforts began in March this year to formulate a vision for inter-industry collaboration that will contribute to the future carbon recycling base.

2. Ship transportation

To establish safe and low-cost mass transportation technology for CO_2 by ship, Japan will carry out a demonstration project to transport CO_2 by ship from the Maizuru Power Station, which is the shipping base, to Tomakomai, which is the receiving base.

3. CCUS JCM Cooperation

Investigations are underway at Gundih Gas Field (Japan: JANUS / J-POWER, Indonesia: Pertamina / Bandung Institute of Technology, etc.) and Sukowati Oil Field (Japan: JAPEX, Indonesia: Pertamina / LEMIGAS) for the conversion of CCUS to JCM. Concluded MOU, etc. between businesses (18 June).

4. Japan Australia Cooperation

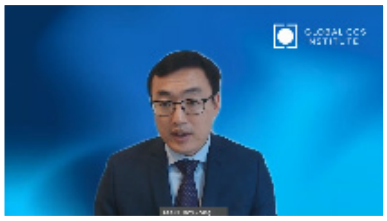
RITE (Research Institute of Innovative Technology for the Earth) has signed an MOU with CO2CRC, an Australian research institute, on microbubble CO_2 injection and geological monitoring projects using optical fibre technology (June).

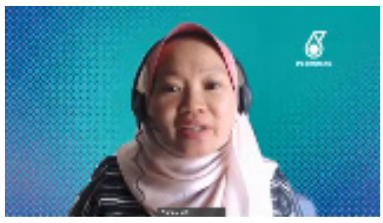
5. CCS Technical Casebook

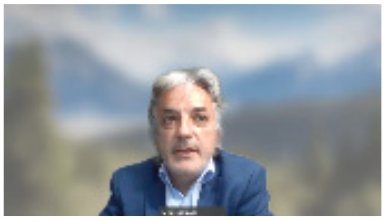
RITE has created a collection of CCUS technology cases (eight volumes in total), and the first is currently compiling the CCS basic plan and storage site selection with the aim of releasing it in August 2021.

Panel Session 2 (CCUS Private Investment Promotion and Expectations towards Government)

In Panel Session 2, JOGMEC, oil majors, and state-owned oil companies participated in discussions on promoting private investment in CCUS and expectations of government support and interventions.





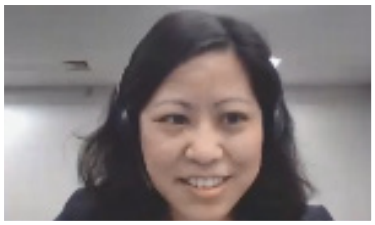


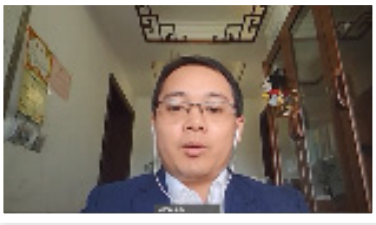
- **JOGMEC** explained that they would like to contribute to policy recommendations on certification systems on the environmental impact of CCUS , long-term storage reliability, promotion of R&D, and legal systems for the development of CCUS.
- **Petronas** pointed out that it is important to discuss three points: CO_2 processing, profitability, and CCU to increase the value chain of CCUS. Petronas also explained the necessity of a business model using 45Q (tax incentive code) as an example.
- **Pertamina** introduced Japan's cooperation in the Gundih gas and Sukowati oil fields. It raised issues regarding the introduction of carbon credits using CDM, JCM, and VCS as examples.
- **Repsol** explained that Green Field development will be promoted using the Sakakemang CCS project as an example toward achieving Net Zero in 2050. It emphasised the need for larger CCS.
- **Exxon** announced that they will promote CCS as a company with the largest amount of CO_2 emissions. It introduced studies on potential and technical understanding of CCS in ASEAN.

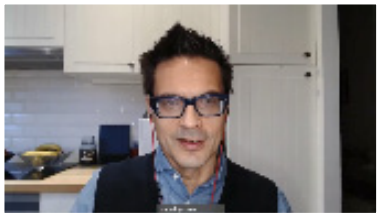
Going forward, **policies (incentives), legal systems, social acceptability including environmental awareness, partnerships, finance schemes**, were mentioned as being particularly important for CCUS financing schemes.

Panel Session 3 (CCUS Finance Promotion)

In panel session 3, the Australian Government, JBIC, ADB, MUFJ, and CEM participated in the discussion on the necessary financing scheme to ensure the commercialisation of CCS based on their experience and future efforts.







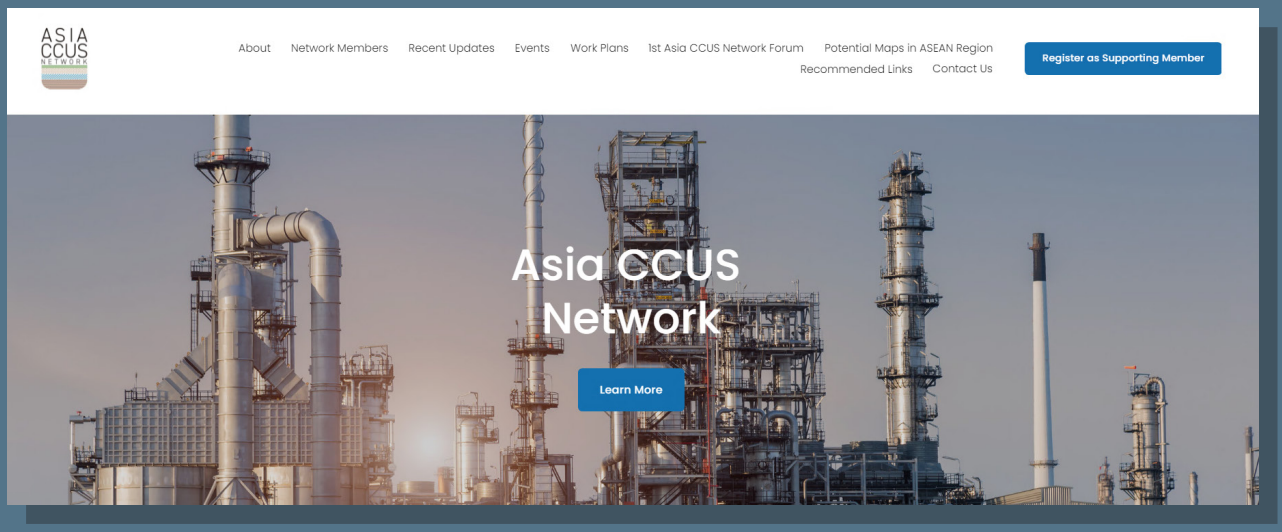
- **ADB**: ADB's private lending sector has shown a keen interest in CCUS. Some commercial banks have formed special teams to implement CCUS.
- **JBIC**: An unclear legal framework for monitoring makes it difficult to estimate costs. Carbon market revenues are also highly uncertain and legal systems need to be put in place to reduce these risks.
- **CEM**: Europe is trying to secure the economic efficiency of CCUS business through a complex policy mix. Public–private partnership is useful from the project development stage.
- **MUFJ**: For a bank to be able to provide a loan, it is necessary to form a clear legal framework, a schedule for system development, and a business model through demonstration.
- **The Australian Government**: 'Grants are provided to support private sector efforts to support initial investment costs.' At the same time, a carbon market is created to support operational costs. Social acceptability and the need for a legal framework are also very essential.

The Asia CCUS Network should focus on the following activities to promote finance:

- Set up a clear legal framework
- Secure government support for CCUS projects
- Ensure social acceptance through demonstration projects

Asia CCUS Network Website

Upon the launching of the network, we have established a website which contains information about members, Asia CCUS potential maps, and a future activity plan



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