

Japan-Asia CCUS Forum 2021  
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Online Forum

# Deployment of CCUS in Asia Region and Role of Asia CCUS Network

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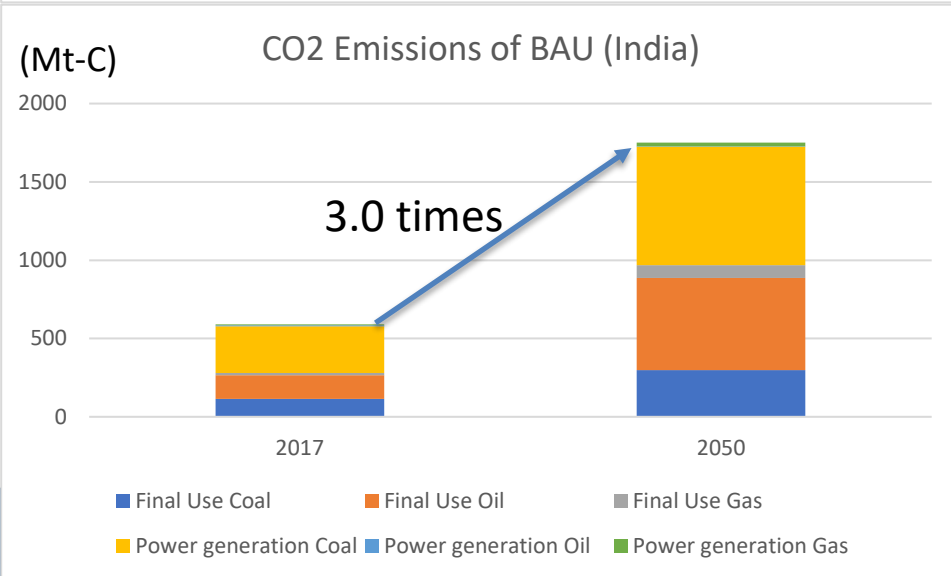
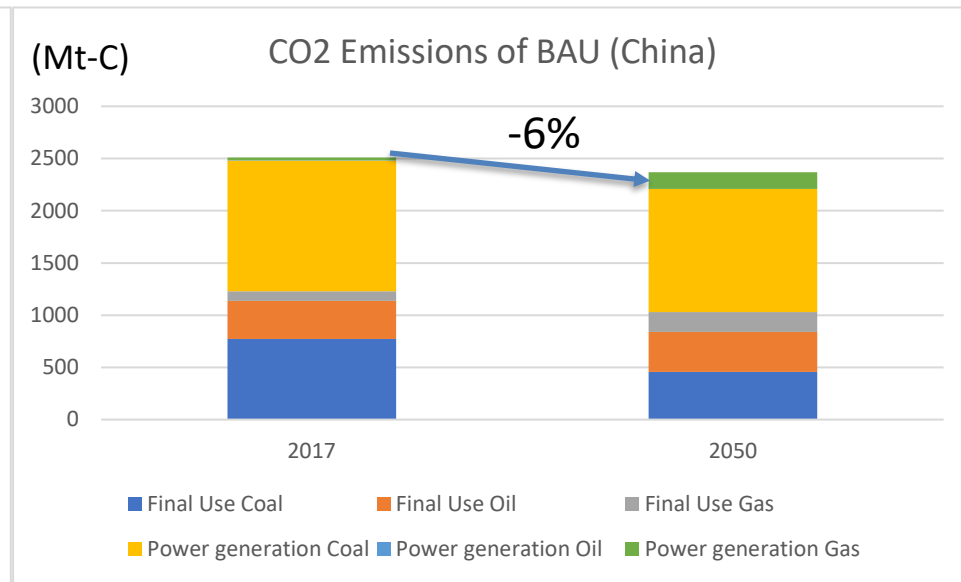
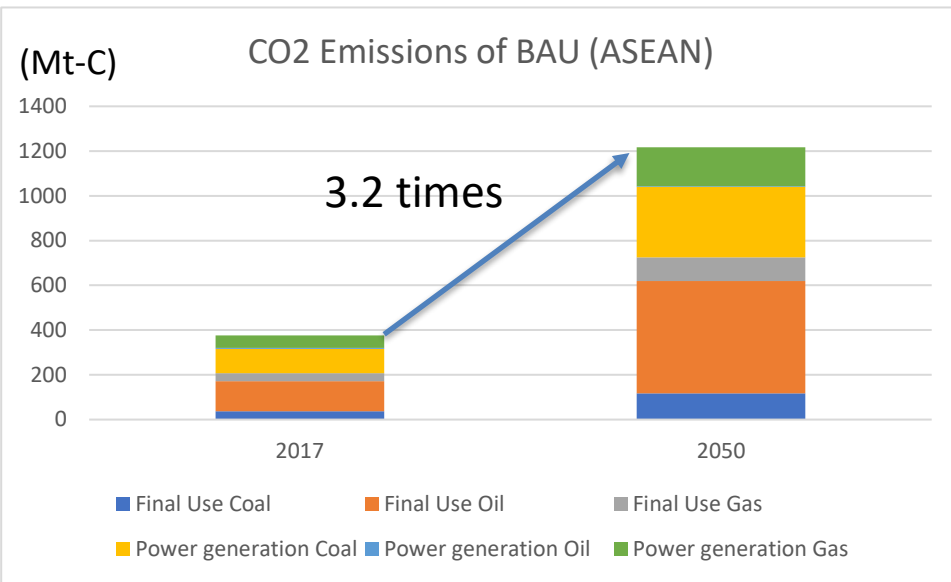
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# EAS Energy Outlook

- EAS stands for East Asia Summit
  - ASEAN 10 + 8 (Australia, China, India, Japan, Korea, New Zealand, Russia and USA)
  - But EAS Energy Outlook being updated by ERIA covers EAS17 countries except Russia
- EEC and RE are high priority energy policies in EAS region
  - EEC and RE targets by each EAS country
- The targets have been assessed periodically (every two years) using energy outlook models
  - Energy saving potential defined as BAU-APS in terms of TFEC, TPES as well as CO<sub>2</sub> emissions potential
- Showing BAU's CO<sub>2</sub> emissions of ASEAN 10 countries + China and India

# CO<sub>2</sub> Emissions from EAS Energy Outlook



Major sectors of CO<sub>2</sub> emissions are/will be a power sector (yellow) due to lots of coal and gas consumptions and final use of oil and coal which are/will be mainly consumed in industry and transport sector. Thus CCUS can be applied for the power sector as well as large factories to produce iron & steel, chemical products and cement .



# Low Carbon Energy Pathways in Asia

- Power sectors
  - Coal and gas power generations are dominant in Asia region.
  - Apply **CCUS** to existing Coal PP & Gas PP (retrofitting) and new Coal PP and Gas PP.
  - Fuel switching from coal & gas to ammonia & hydrogen.
    - Apply CCUS to produce blue hydrogen
- Final energy consumption sectors
  - Industry sector: **CCUS** will be available but only to CO<sub>2</sub> intensive factories.
  - Transport: Fuel switching from gasoline & diesel oil to electricity & hydrogen and DAC with **CCUS**.

CCUS is an important and effective technology to reduce CO2 emissions

# Policy Discussion on CCUS in EAS Region

- **3<sup>rd</sup> East Asia Energy Forum (EAEF3)**

- Date: 17 November 2020

- Theme: Carbon Capture, Utilization and Storage (CCUS) and Carbon Recycling in ASEAN

- High-level speeches;

- Opening remarks by HE Mr. Haong Quoc Vuong, Deputy Minister of Industry and Trade, **Vietnam** and HE Dato Lin Jock Joi, **Secretary General of ASEAN**

- Keynote speeches by Ministers from **Brunei Darussalam, Cambodia, Indonesia, Lao PDR** and Vice Minister of **Japan** as well as Director General of Department of Alternative Energy Development and Efficiency (DEDE) on behalf of Minister of **Thailand**

- One of major outcomes is to establish a collaborative framework together with all the stakeholders of CCUS which are industry, academia and government, to promote development and commercialization of CCUS in EAS region

# Policy Support to CCUS in EAS Region

- **14<sup>th</sup> East Asia Summit – Energy Ministers Meeting (EAS-EMM14)**
  - Date: 20 November 2020
  - Participation of Energy Ministers from ASEAN 10 countries plus 8 countries (Australia, China, India, Japan, Republic of Korea, New Zealand, Russia and United States)
  - The Ministerial Statement mentions about CCUS;
    - The Ministers **noted** the importance of **CCUS and carbon recycling** in supporting the goals of decarbonization, recovery, and economic growth.
    - The Ministers **welcomed** the cooperation initiative led by Japan and ERIA to establish the “**Asia CCUS Network**”, which is expected to realize the partnership that would help implement knowledge and experience sharing and research activities in the EAS region.

# The First Asia CCUS Network Forum

- Announcement of the launch of 'the Asia CCUS Network', 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 and more than 100 companies, research institutions, and international organisations have so far expressed their intention to participate in the network.
- Congratulatory messages from EAS Ministers and keynote speeches by International Organizations like the IEA. Discussion about Japan's initiative and the network's working plans, also substantial discussions on "Expectations to ACN", "Promoting private investment into CCUS with government support" and "Financing scheme for CCUS"

## 1. Event details

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

## 2. Programme

22 June

- Opening session (ERIA, METI)
- Ministerial session (EAS Member Countries, keynote speech from IEA, GCCSI, OGCI)
- Panel discussion 1 (Expectations to Asia CCUS Network)

23 June

- Working plan report
- Japan's CCUS showcase (transportation, Gundih CCUS project, storage technology)
- Panel discussion 2 (CCUS Private Investment and expectation towards government)
- Panel discussion 3 (CCUS financing scheme)



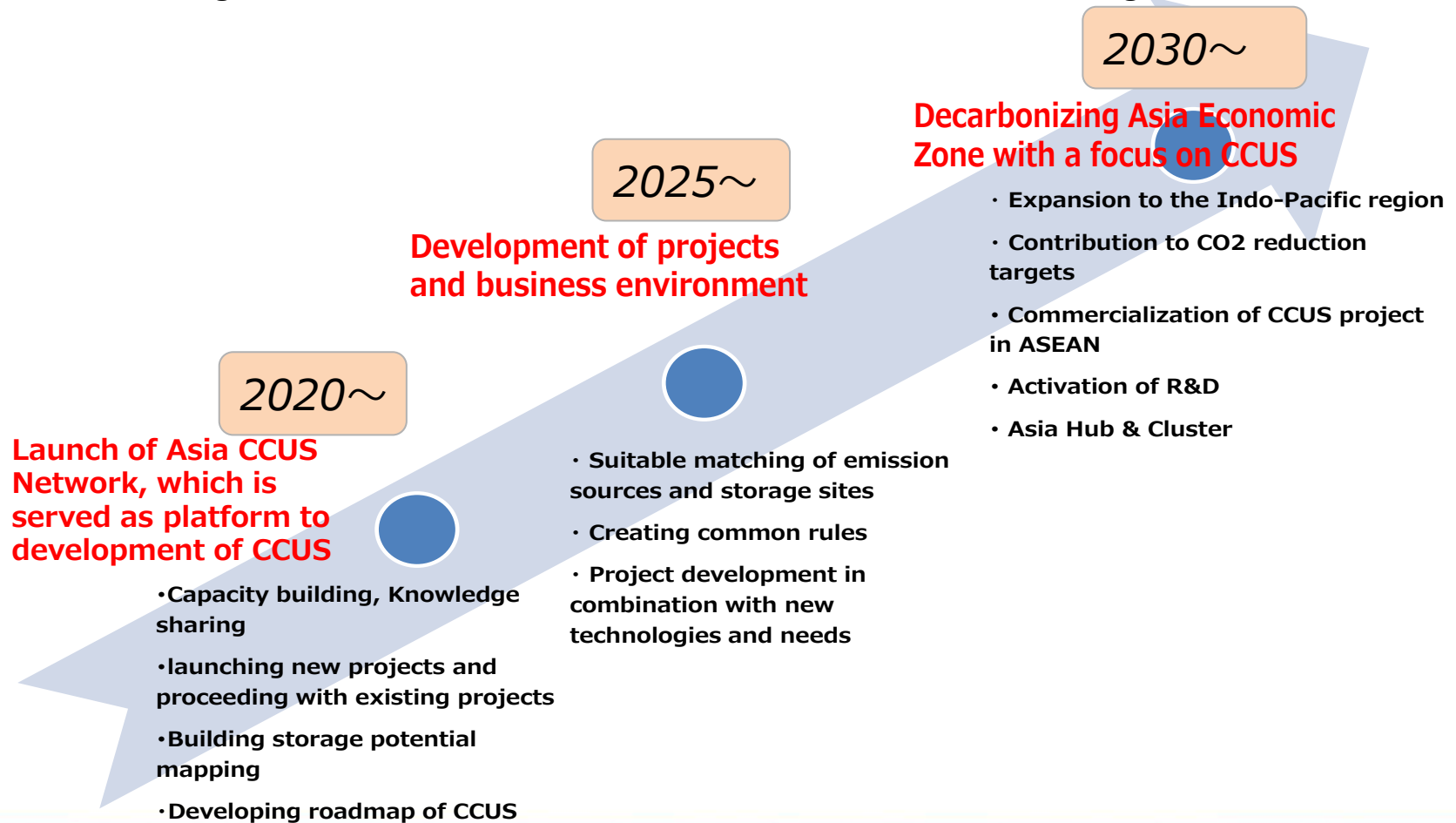
## 3. Participants

- Speakers : 37
- Audience: about 600

# Asia CCUS Network

- **Vision**

- Through collaboration and cooperation on development and deployment of CCUS in EAS region, the Network will contribute decarbonization of the region.





# Asia CCUS Network

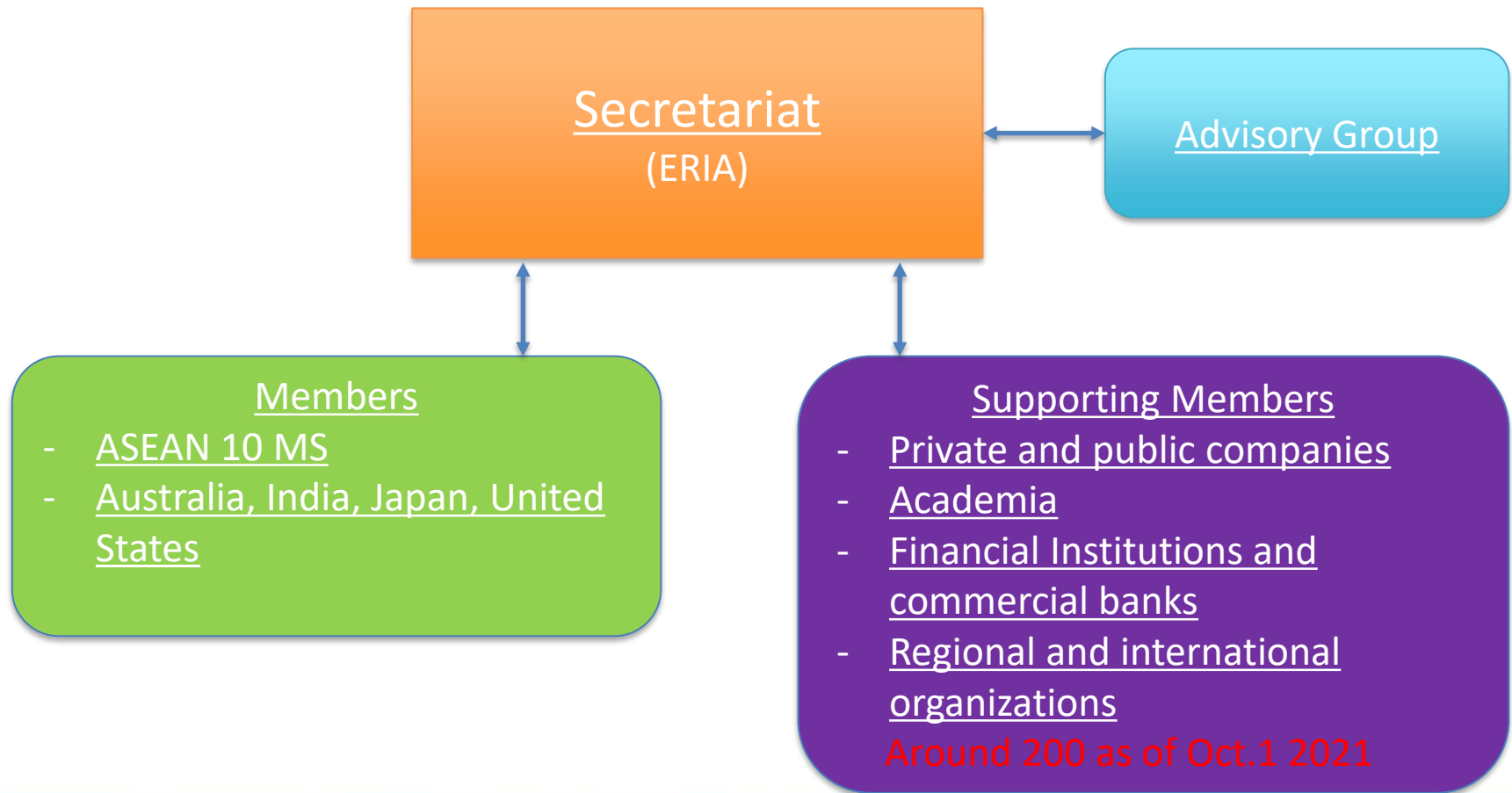
- **Missions**

- Facilitate deployment of CCUS in EAS region through following activities;

- Promote **knowledge sharing** through holding annual forum, conferences, workshops and meetings
    - Conduct **research studies** on technical, economical and legal standard of CCUS
    - Holding **capacity building trainings**

# Asia CCUS Network

- **Institution Framework**



# Action Plans in 2020-2025

- Launch of Asia CCUS Network which serves to develop CCUS as a platform
  - Knowledge sharing and capacity building training
    - 3 knowledge sharing conferences to invite IEA, USDOE and OGCI as a speaker
    - 3-days capacity building training in early October 2021 to focus on technologies of capture, transport, storage, utilization
  - **Launching new projects and proceeding with existing projects**
  - Building of storage potential mapping
    - Apply literature surveys to refer existing reports of storage potential and after that conduct deeper research studies to produce more precise storage potential mapping
  - Developing a roadmap of CCUS
    - A roadmap to show a clear path of deployment of CCUS based on main results of the action plans mentioned above

# Launching CCUS Projects in Asia Region (1)

- Launching a pilot CCUS project
- CCUS Value Chain is a basic concept of a CCUS project;
  - Capturing CO<sub>2</sub>
    - Select a candidate site
      - Coal power plant or large chemical or cement factory
    - Choose a capturing technology
      - Absorption; solvent and solid
      - Membrane
  - Utilization of captured CO<sub>2</sub>:
    - Select utilization technologies and estimate CO<sub>2</sub> amount to be deducted
  - Transporting CO<sub>2</sub>
    - Select transport mode : combined pipelines and ships
  - Storing CO<sub>2</sub>
    - Select a candidate site and a storage technology
- ACN will prepare a detailed scope of work of a pilot CCUS project

# Launching CCS Projects in Asia Region (2)

- ACN consists of all the stakeholders of CCUS activities as its members;
  - Members
    - 14 Governments including Australia, Japan and United States which are advanced countries in term of CCUS;
  - Supporting members
    - Public/Private companies
    - Institutes/academia
    - Financial institutions /commercial banks
    - Regional/international organizations
- ACN will initiate a pilot CCUS project until 2025 with collaboration of the members and supporting members of ACN which are mentioned before and will fully utilize expertise and experiences of CCUS technologies owned by Australia, Japan and United States.

# Conclusions

- Asia region including ASEAN will continuously depend on fossil fuel such as **coal and gas** for power generation and **oil** for road transport.
- CCUS is/will be one of important options when Asia region will achieve a **low carbon energy transition**.
- Thus, **Asia CCUS Network (ACN)** has established in this region and its vision is **promotion of CCUS deployment** in this region.
- Basically deployment of CCUS is purely technology oriented matter, thus **advanced CCUS technologies being owned by developed countries such as Japan** are indispensable.
- In addition to the technologies, appropriate **legal and financial framework** will surely improve CCUS business environment.

# Asia CCUS Network Website

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

<https://www.asiaccusnetwork-eria.org/>



[About](#) [Network Members](#) [Recent Updates](#) [Events](#) [Work Plans](#) [1st Asia CCUS Network Forum](#) [Potential Maps in ASEAN Region](#)  
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A large banner image showing an industrial facility with various towers, pipes, and scaffolding under a clear sky. The text "Asia CCUS Network" is overlaid in the center in a large, white, sans-serif font.

Asia CCUS  
Network

[Learn More](#)



Thank You for your Attention!!