JOGMEC’s mission and technical expertise

**JOGMEC (Japan Organization for Metals and Energy Security)**

**Mission** Securing **stable and affordable supply** of natural resources for Japan

- **Oil & Natural Gas**
- **Geothermal**
- **Stockpiling**
- **Coal**
- **Mine Pollution Control**
- **Metals**

**New Mission (2022~)**

- **CCS**
- **Hydrogen, Ammonia**
- **Wind Power**

- **CCS Group** was established in July 2020
- **Hydrogen and CCS Project Department** was established in November 2022

**CCS** JOGMEC supports CCS with rich technical expertise and more than 50 years of experience in resource development

Technical expertise in **Subsurface Evaluation** **Facility Engineering**
JOGMEC’s activities for realizing CCS value chain

We have unique features!

1. Policy Implementation body
   - Policy making support and policy implementation under METI for energy security and decarbonization

2. Technical assistance function
   - Technical guidelines (CCS, CO2-EOR, and CI)
   - Workshops and Handbooks for **CCS Carbon Credits** and **Cross-border CO2 Transportation**

3. Financial assistance function
   - Equity capital investment and debt guarantees
   - Japanese Advanced CCS Projects
Japan’s Carbon Neutrality and new CCS Business Act

- Estimated annual storage for CCS in Japan is about 120~240 million tons in 2050.
- Final investment decision needed by 2026 to store 6~12 million tons per year by 2030.

New CCS Business Act was passed by the current Parliament on May 24, 2024, and promulgated which regulates a permit system for drilling and storage projects, and safety for pipeline transport.

Source) Introduction of CCS policy [env.go.jp]
JOGMEC’s CCUS Technical Guidelines

- **Recommended guideline for GHG and Carbon Intensity accounting framework for LNG/Hydrogen/Ammonia Projects (Version 2) (June 23, 2023)**
  - Calculate GHG emissions and carbon intensity associated with LNG/Hydrogen/Ammonia
  - Consistent with the international standards, guideline and literature https://www.jogmec.go.jp/english/news/release/news_10_00037.html

- **Recommended guideline for safe, long-term containment of CO2 using CO2-EOR (CO2-EOR guideline) (June 23, 2023)**
  - Work guidelines for the appropriate implementation of CO2-EOR
  - Consistent with the international standards, guideline and literature https://www.jogmec.go.jp/english/news/release/news_10_00038.html

- **Recommended guideline for the implementation of CCS (CCS guideline) (May 30, 2022)**
  - Promote CCS business and assert the view of JOGMEC on CCS
  - Consistent with the international standards, guideline and literature https://www.jogmec.go.jp/english/news/release/news_10_00004.html
JOGMEC’s Handbook on CCS Carbon Credits

Multiple revenue options

- International investment
- Government subsidies
- Financial instruments (ex. Fund, Insurance)
- Carbon pricing systems (ex. Carbon taxes, ETS)

Case of Northern Lights in Norway

Figure 4-2 Concept of leverage to sustain CO2 value chain

(Source) p.26 of JOGMEC’s Handbook for CCS Carbon Credits,
Presentation material by Northern Lights at METI-JOGMEC-IETA joint workshop,
“Global Carbon Markets and CCS: Towards ASEAN Decarbonization”, Jan 2023
JOGMEC’s Workshop on Cross-border CO2 Transportation in Asia-Pacific

Workshop themes
- Legal frameworks and issues related to CCS business promotion and cross-border CO2 transport
- Current status of CCS projects with cross-border CO2 transport and its challenges

Date  February 8, 2024
Speakers
METI, Global CCS Institute, ASEAN Centre for Energy, PETORONAS, Mitsubishi Corporation, Northern Lights JV, Mitsui O.S.K. Lines, Ltd., Nippon Steel Corporation, and law firms

Event Participants
Registered participants: more than 1,100
Participants: Governments and government agencies, international financial institutions, national & major international oil companies, electric power, steel and cement manufactures, universities and research institutes, media, NGOs, etc.
Particpants’ countries: 15 countries (Malaysia, Indonesia, Vietnam, Thailand, Australia, the US, Denmark, Germany, Switzerland, Finland, and several other Asian and African countries)

Preparing for Workshop Handbook in 2024!
MOC on the Cross-border CO2 transportation between JOGMEC, METI and PETRONAS

METI, JOGMEC and PETRONAS signed MOC at the Asia CCUS Network Forum held in September 2023 to promote discussion on bilateral CO2 cross-border transportation and storage.

Source) METI, JOGMEC and PETRONAS Have Concluded MoC on Cross-Border Transportation of CO2 for CCS Businesses
JOGMEC’s pre-screening on CO2 storage potential

Regional site screening for CCS storage

High rating area:
- Java and Sumatra
- Offshore Sarawak and Sabah
- Northern offshore Vietnam
- Gulf of Thailand
- Offshore Malay Peninsula

(Source: JOGMEC)
JOGMEC’s support for CCS value chain projects
“Japanese Advanced CCS Projects”

• New supporting scheme started in 2023.
• The goal is to inject 6-12 Mtpa of CO2 by 2030.
• JOGMEC selected 7 role model projects for 2023.
→ 7 projects store 13 Mtpa of CO2 in total

• Support 100% of the cost for FS/Pre-study for drilling.

Contribute to Japan’s Carbon Neutrality Goals
• Achieve net zero emissions by 2050
• Reduce emissions by 46% compared to 2013 by FY2030

Source) First Step to Launch Japanese CCS Project- JOGMEC selected 7 projects, starting CO2 storage by FY2030 - News Releases | Japan Organization for Metals and Energy Security (JOGMEC)
JOGMEC’s Technical and Financial Supports

JOGMEC’s support schemes for CCS

- Overseas CCS site surveys
- Advanced CCS Projects
  (Supports for FS, Pre-FEED, FEED for CO2 Capturing and Sequestration in Japan and overseas)
- Equity capital investment and Liability(debt) guarantees for exploration/commercial phase
Int’l Collaboration with Asian Center for Energy (ACE) on CO2 Cross-border Transportation

Opportunities and Challenges for CO2 Cross-Border Transportation in ASEAN to Advance CCS Towards a Net Zero Future

An ACE-JOGMEC Joint Research
May 2024

Indonesia: Key Regulatory Framework for Realisation of CCS

Why ASEAN Needs CO2 Cross Border Transport

Supporting Regional Blueprint
- This initiative supports the region's collective efforts under the ASEAN Plan of Action for Energy Cooperation (APAC), Phase II, 2021-2025, Programme Aims No. 5 - Coal and Clean Coal Technology, specifically focusing on OEB 5, Action Plan 1.3. This is aligned with Ministry of Industry's Strategy to explore the potential of CO2 and CCS in promoting a low-carbon energy system.

CO2 Storage Hub
- Indonesia and Malaysia are emerging as pivotal CO2 storage hubs within the ASEAN region. They possess the potential to leverage the vast quantities of CO2 storage capacity present in the region.
- Such efforts are also important for future decarbonization from a global perspective.

Download at ACE’s website!!

JOGMEC’s Projects and Cooperation in Asia-Pacific region

**JOGMEC’s training program**
- Energy Transition Training course for 4 countries in Southeast Asia

- MOU for cooperation on CCS/CCUS
- Joint Study of CO₂-EOR/CCUS in the matured reservoir
- CCS Joint Study for Clean Fuel Ammonia Production
- MOU for cooperation on Energy transition (CO₂-EOR, CCS, H₂, NH₃)

- MOC on Cross-border CO₂ Transportation
- MOC for Cooperation on Carbon Neutrality (H₂, NH₃, CCS)

- Feasibility Studies on Establishing a Clean Fuel Ammonia Supply Chain and CCS
- CCS for LNG decarbonization
- FEED of CCS Hub project
JOGMEC’s activities for realizing CCS value chain

We will continue our initiatives to realize the CCS value chain in Japan and overseas.

We have unique features!

1. Policy implementation body
2. Technical assistance function
3. Financial assistance function

We look forward to working with governments, financial organizations and industries in Asia-Pacific!
Thank you!

Visit our website!
