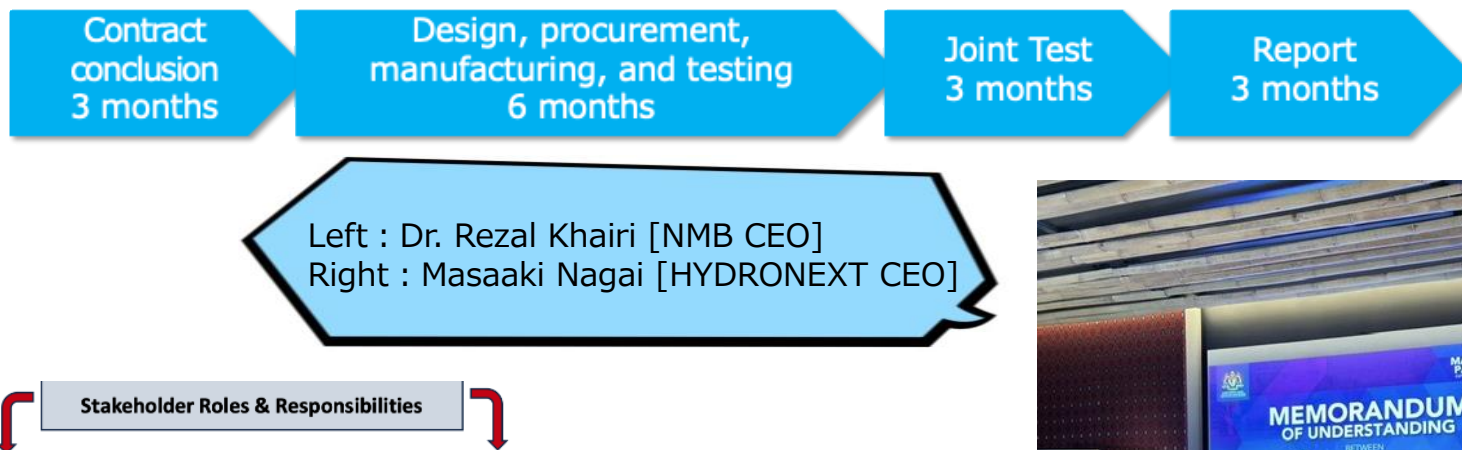
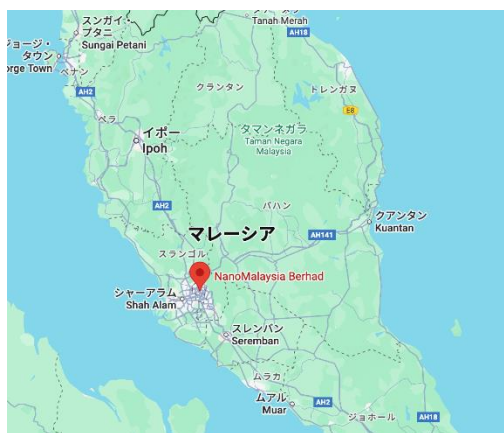


- **Cooperation outline** : Covers FS/R&D; technical cooperation/knowledge sharing (tech transfer as appropriate); hydrogen production, purification and deployment; and joint Japan–Malaysia investment exploration.
- **Purpose or objectives of MOU** : Coordinates Japan–Malaysia stakeholders and shares lessons to build a hydrogen ecosystem/value chain and accelerate deployment in transport fuels, natural-gas co-firing/RNG, industrial heat/power, and chemical feedstocks.



| <b>NMB</b>                                                                                                                                                                                                                                              | <b>NANOCOMMERCE</b>                                                                                                                                                                                                                        | <b>HYPERTECH INDUSTRIES</b>                                                                                                                                                                                                                                                                                                                           | <b>HYDRONEXT</b>                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. Venture builder and funding agency under MOSTI.</li> <li>2. Role: To provide strategic direction, funding support, commercialization guidance, and facilitation for market readiness and scale-up.</li> </ol> | <ol style="list-style-type: none"> <li>1. Project Management Committee (PMC).</li> <li>2. Role: To oversee project milestones, manage timelines, facilitate coordination between stakeholders, and ensure successful execution.</li> </ol> | <ol style="list-style-type: none"> <li>1. Technology collaborator and system design.</li> <li>2. Role: To lead the design, testing, and product validation of the integrated hydrogen system (HyPERactor + separator) in Malaysia.</li> <li>3. Responsible for performance testing, local adaptation, and proof-of-concept implementation.</li> </ol> | <ol style="list-style-type: none"> <li>1. Technology provider for hydrogen purification prototype.</li> <li>2. Role: To supply, validate, and potentially co-develop the hydrogen separator system for integration with the HyPERactor as way forward after successful POC.</li> </ol> |



- **Cooperation outline** : Takafuji Co., Ltd. and PT. Prima Khatulistiwa Sinergi (PRIMA) Signed Memorandum of Understanding (MOU) to Expand Renewable Energy Business.
- **Purpose or objectives of MOU** : The company will broaden its sales network and product lineup of biomass fuels to contribute to the reduction of greenhouse gas emissions.  
"Supplying biomass fuel to power companies in Indonesia and producing & delivering bio-coke made from PKS."

## « Scheme »



PRIMA will lead the project implementation, while Takafuji will provide technical expertise and financial support.



Biomass Fuel Stockpile and planned carbonization plant site  
Indonesia

**PT. ZAPIN AGRO INTERNASIONAL**

- BUTON
- BENGKULU
- BELITUNG

Malaysia

**JM AGRI RESOURCE BHD**  
JOHOR BAHRU

Biomass fuel



**Indonesia**

Power companies such as PLN

biocoke



**JAPAN**

Coke-Consuming Companies

**Creation of Carbon Credits**

Shipment of Biomass Fuel (PKS)



MOU on Renewable Energy Expansion (June, 11, 2025)



場所:インドネシア貿易&経済政策最新ビジネスフォーラム

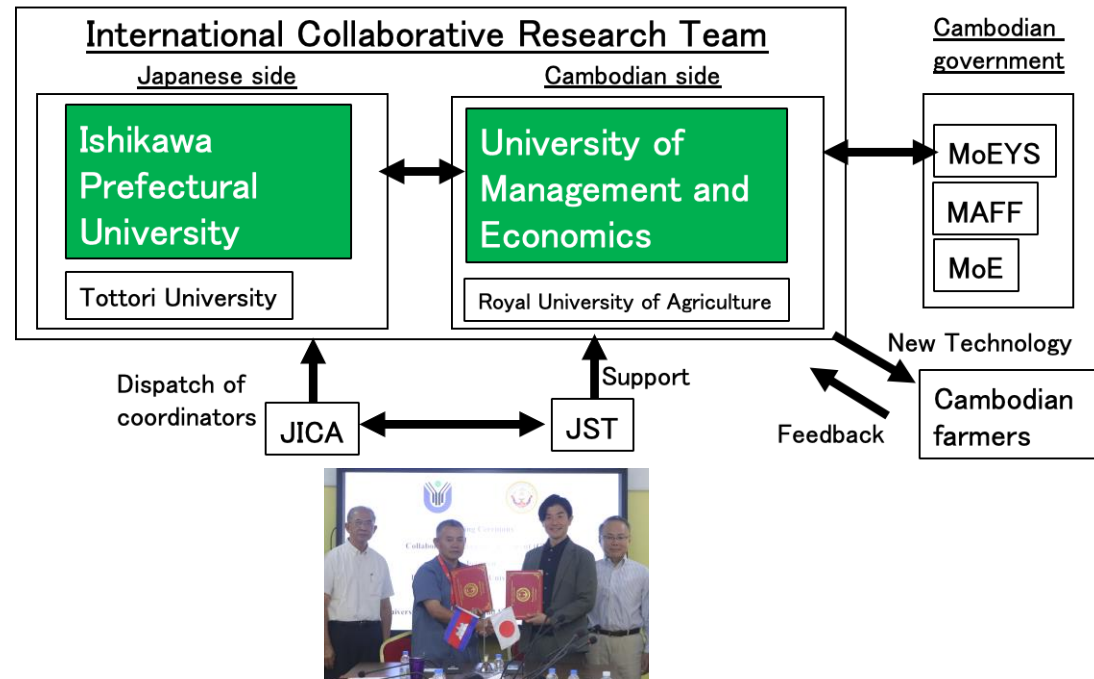
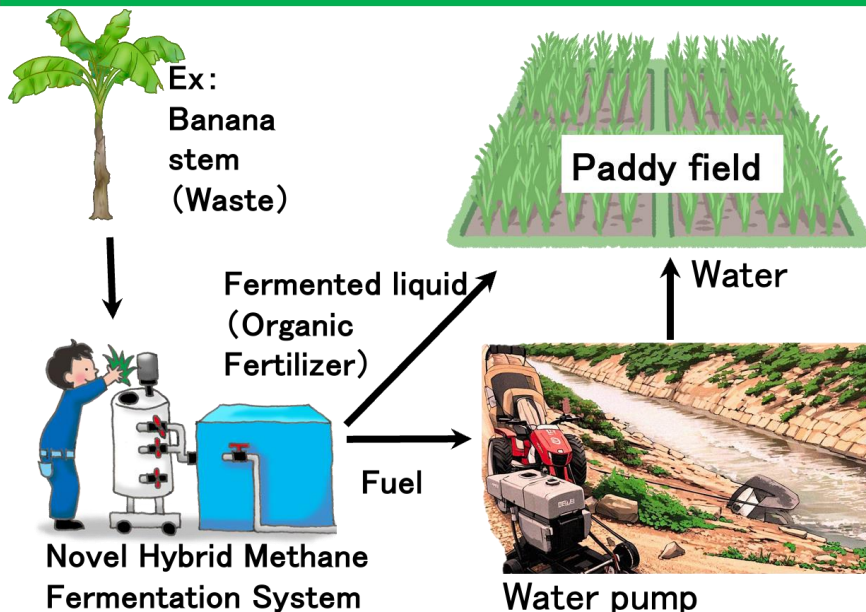


Stockpile Location & Capacity

# Development of a Novel Hybrid Methane Fermentation System for Agricultural Revitalization in Landmine-Cleared Areas

- **Cooperation outline** : Developing a novel hybrid methane fermentation system that produces fuel and fertilizer from weeds and agricultural waste.
- **Purpose or objectives of MOU** : Ishikawa Prefectural University in Japan, together with the Cambodian government and universities, aims to achieve increased farmer income and greenhouse gas reduction with support from JICA and JST (SATREPS).
- URL : [https://www.jica.go.jp/activities/schemes/science/list/n\\_files/2025\\_05.pdf](https://www.jica.go.jp/activities/schemes/science/list/n_files/2025_05.pdf)
- URL : [https://www.jst.go.jp/global/kadai/r0705\\_cambodia.html](https://www.jst.go.jp/global/kadai/r0705_cambodia.html)

## Goal





- **Cooperation outline** : JBIC signed, on July 15, the General Agreement for a credit line up to USD30 million (JBIC portion) with TISCO Tokyo Leasing Co., Ltd. (“TISCO Tokyo Leasing”, Thai subsidiary of Tokyo Century Corporation).
- **Purpose or objectives of MOU** : This is the first achievement under the AZEC-SAVE platform, which aims for promotion of energy-saving in Thailand in collaboration with the Japan-Thailand Energy Policy Dialogue, supporting introduction of Japanese energy-saving equipment in Thailand via TTL, thereby contributing to Thailand’s decarbonization.
- **URL** : [https://www.jbic.go.jp/en/information/press/press-2025/press\\_00051.html](https://www.jbic.go.jp/en/information/press/press-2025/press_00051.html)



The launch ceremony of the AZEC-SAVE



The signing ceremony of the General Agreement



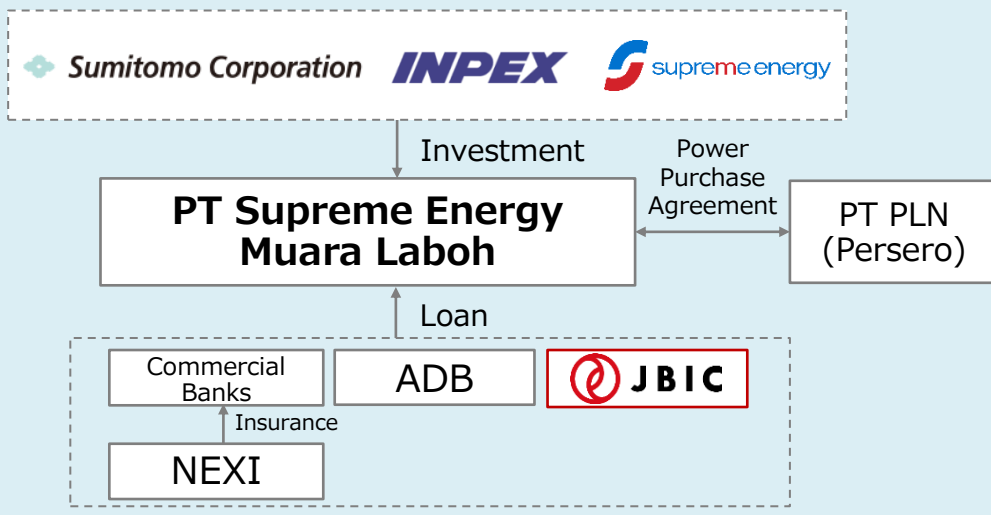
# MOU on Strategic Cooperation with Sarawak Energy of Malaysia

- **Cooperation outline** : Japan Bank for International Cooperation (JBIC) promotes cooperation to support energy transition and enhance electricity grids within the Asia region with Sarawak Energy, a vertically integrated power utility and Malaysia's largest renewable energy developer wholly owned by the Sarawak Government.
- **Purpose or objectives of MOU** : Reinforcing the cooperative relationship between JBIC and Sarawak Energy to support the development of renewable energy and regional interconnectivity infrastructure in alignment with the ASEAN Power Grid (APG) vision, which aims to enable cross-border electricity trading and energy security in ASEAN. As Japanese companies focus on realizing a sustainable, decarbonized society, strengthening the relationship with Sarawak Energy will drive their business expansion.
- **URL** : [https://www.jbic.go.jp/en/information/press/press-2025/press\\_00028.html](https://www.jbic.go.jp/en/information/press/press-2025/press_00028.html)



# Loan Agreement of Project Financing for the Muara Laboh Geothermal Power Expansion Project

- **Outline** : A loan agreement signed by JBIC with PT Supreme Energy Muara Laboh invested in by Sumitomo Corporation, INPEX Corporation, and PT Supreme Energy for project financing (approximately USD138 million for JBIC portion). The loan is co-financed with commercial banks (Mizuho Bank, MUFG Bank, Sumitomo Mitsui Banking Corporation, and The Hyakugo Bank, covered by NEXI), and the Asian Development Bank, bringing the total co-financing amount to approximately USD370 million.
- **Purpose or objectives** : While Indonesia aims to achieve carbon neutrality by 2060, with a plan to increase the share of renewable energy sources including geothermal energy up to 50% of new power sources by 2030, the project addresses the social agenda of decarbonization through participation of Japanese companies with expertise in geothermal energy.
- **URL** : [Project Financing for Muara Laboh Geothermal Power Expansion Project in Indonesia | JBIC](#)



# Renewal of MOU on Strategic Business Cooperation with Petroliam Nasional Berhad (Petronas)

- **Cooperation Outline** : Strengthen the partnership between JBIC and Petronas in key areas including hydrogen and ammonia, renewable energy, the CCS value chain, and the development of domestic and international power transmission networks. This MOU aims to promote collaboration between Petronas and Japanese companies both within Malaysia and globally.
- **Purpose or objectives of MOU** : Malaysia is a key partner in the AZEC initiative, with Petronas serving as a strategic collaborator for Japanese companies in the Japan–Malaysia cross-border CCS concept. Petronas is also actively engaged in developing regional power grids, a critical component of the energy transition. To further enhance cooperation in these priority areas, the MOU has been updated.
- **URL** : [Press Releases | JBIC Japan Bank for International Cooperation](#)





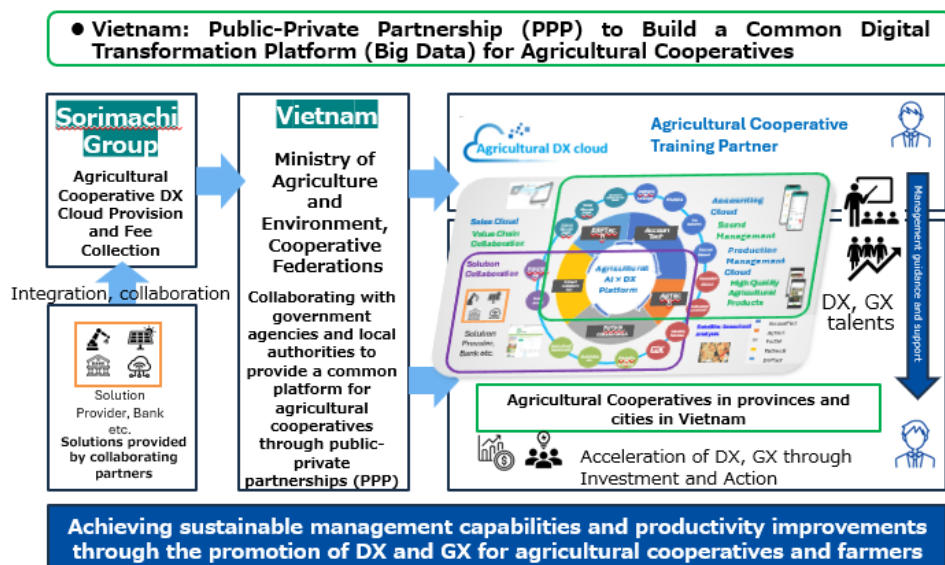
- **Cooperation outline** : JBIC signed a Memorandum of Understanding (MOU) with the Bases Conversion and Development Authority (BCDA) of the Philippines to strengthen the partnership between the parties.
- **Purpose or objectives of MOU** : The MOU aims to promote collaboration opportunities for Japanese companies and BCDA, and to support the development and implementation of BCDA projects and programs for energy transition and quality infrastructure in the Philippines. These goals will be pursued through initiatives such as introducing Japanese technologies that contribute toward BCDA's project development.
- **URL** : [JBIC Signs MOU with Bases Conversion and Development Authority of Philippines | JBIC Japan Bank for International Cooperation](#)



Signing ceremony of the MOU

# Sorimachi Co., Ltd. signs MOU with Vietnam's Ministry of Agriculture and Environment

- **MOU summary:** The parties aim to modernize production, improve productivity and management, ensure traceability and strengthen connectivity with domestic and international market by jointly developing and operating a comprehensive, effective and sustainable digital platform for agricultural cooperatives in Vietnam.
- **Significance and aim of collaboration:** In line with the national digital transformation goals by 2030 under Vietnam's Resolution No. 57/2024, the project aims to connect 100% of industry databases with national databases, engage 50% of cooperatives in digital platforms, and develop a digital ecosystem that visualizes GHG emissions across the entire supply chain.
- **URL :** [https://sorimachigroup.jp/newsrelease/20250909\\_nogyo/](https://sorimachigroup.jp/newsrelease/20250909_nogyo/)





# MOU on decarbonization technology cooperation and joint research with Vietnam National University of Agriculture

- **Cooperation outline** : Introduce a decarbonization technology of solar sharing system for 100% self-consumption and demonstrate the effectiveness of reducing GHG emissions by suppressing methane emissions from rice paddies under solar sharing
- **Purpose or objectives of MOU** : In collaboration with a national university in Vietnam and a private Japanese company, we will gain academic knowledge about the impact of solar sharing on agricultural and fishery production and develop methods for evaluating the environment and productivity.



Location : Ha Noi city, Vietnam National University of Agriculture, VNUA

2 solar sharing system installed at VNUA



Photo: taken at rice paddy field inside VNUA campus at 2025 August.

Main crops to demonstrate

Rice



Taro



Soybean



Demonstration schedule

2025  
July



2025  
End

Install Solar  
sharing system

Data collection

Result  
Presentation  
event



# MOU on decarbonization technology cooperation and joint research with Can Tho University

- **Cooperation outline** : Introduce a decarbonization technology of solar sharing system for 100% self-consumption and demonstrate the effectiveness of reducing GHG emissions by suppressing methane emissions from rice paddies under solar sharing
- **Purpose or objectives of MOU** : In collaboration with a national university in Vietnam and a private Japanese company, we will gain academic knowledge about the impact of solar sharing on agricultural and fishery production and develop methods for evaluating the environment and productivity.



**Location : Can Tho city, Mekong delta region, Can Tho University, CTU**  
**Total 4 solar sharing system installed**

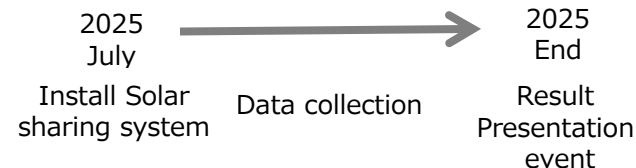


**Photo: taken at CTU campus at 2025 August**

## Main crops to demonstrate

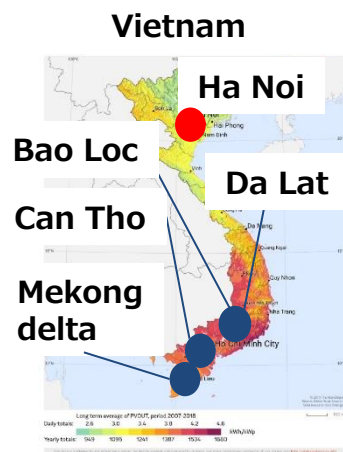


## Demonstration schedule



# MOU with the National Institute of Agriculture Plan and Projection to introduce solar sharing, a decarbonization technology, in the agricultural sector

- **Cooperation outline** : Introduce solar sharing technology in Vietnam to gain academic knowledge, develop methods to evaluate the environment and crop productivity, consider new JCM methodologies and jointly formulate solar sharing guidelines in Vietnam.
- **Purpose or objectives of MOU** : Develop sustainable agriculture that is resilient to disasters caused by climate change and increase the income of Vietnamese farmers.



**Total 8 location: Ha Noi, Da Lat, Bao Loc, Can Tho and Mekong delta region**



## Joint Projects

Introduction of solar sharing equipment and storage batteries

Gaining academic knowledge on the impact of solar sharing on agricultural and marine products

Considering the possibility of new JCM methodologies

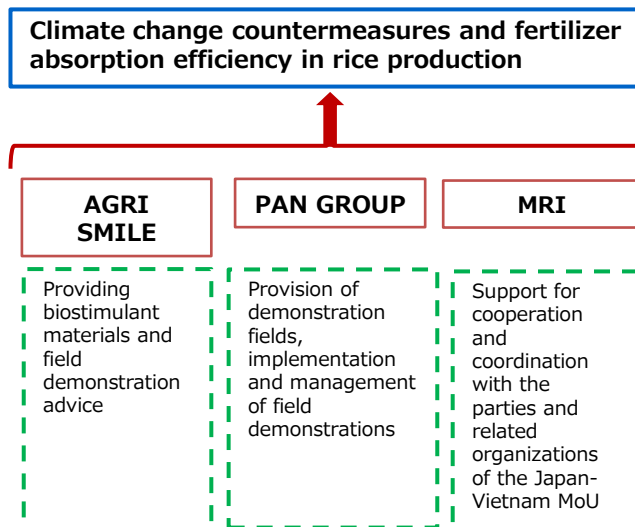
Joint efforts to develop solar sharing guidelines in Vietnam

# Demonstration of climate change countermeasures and fertilizer absorption efficiency improvement in rice production in Vietnam using biostimulant materials

- **Cooperation outline** : Using biostimulant materials extracted from agricultural residues in Japan, we plan to evaluate the effects of climate change countermeasures and fertilizer absorption efficiency in rice production.
- **Purpose or objectives of MOU** : It is expected that this will activate plant immunity which leads improvement of growth and yields even under climate change. The aim is to ensure rice yields and maintain and improve quality even under climate change, while achieving agricultural production with less fertilizer.
- **URL** : <https://thepangroup.vn/vinaseed-and-vfc-partner-with-japanese-firm-to-develop-sustainable-agriculture-solutions-4461.htm>  
<https://www.mri.co.jp/en/news/20251003.html>



Demonstration field in Hung Yen Province, northern Vietnam





# Memorandum of Agreement between Faeger and Philippine Rice Research Institute (PhilRice)

- **Cooperation outline** : Joint Research with PhilRice for Enhancing Agricultural Productivity through Decarbonized Farming Methods including Alternate Wetting and Drying (AWD)
- **Purpose or objectives of MOU** : Scientifically demonstrate the compatibility of decarbonization and agricultural productivity and to advance the transformation of the rice sector in the Philippines.
- **URL** : [https://faeger.company/english-news/moa-philrice\\_20250731/](https://faeger.company/english-news/moa-philrice_20250731/)

<Project Area>  
Luzon island, Philippines



<Project Photo>  
MOA signing ceremony



# Memorandum of Understanding between Faeger , and Dinalupihan Municipal Agriculture Office

- **Cooperation outline** : Faeger and Yanmar Philippines supports rice farmers in Dinalupihan via provision of farmers training and implementation of Alternate Wetting and Drying (AWD)
- **Purpose or objectives of MOU** : Conduct AWD project following Joint Crediting Mechanism (JCM) standard to reduce methane emission and save water usage
- **URL** : n/a

<Project Area>  
Dinalupihan, Bataan, Philippines



<Project Photo>  
Stakeholder Consultation



# Memorandum of Understanding on Technical Support and Human Resource Development Cooperation Aimed at Improving the Quality and High Added Value of Vietnamese Fishery Products

- **MOU/Overview of corporate partnership:** Improvement of the quality of Vietnamese seafood and enhancement of added value through improvements, technological advancements, and human resource development at each stage of the supply chain including onboard, fishing ports, transportation, processing, and market.
- **The significance and aims of this cooperation :** This MOU aims to advance efforts related to the continuous development of the Vietnamese fishery industry(DFIS), along with initiatives for modernization and energy savings of equipment, as well as decarbonized transportation methods and the utilization of blue carbon, in collaboration with the Ministry of Agriculture and Rural Development of Vietnam: the Fisheries Surveillance Bureau. The purpose of this MOU is to pursue both the promotion of its objectives and the dual goal of decarbonization.
- **Others :** In late October of this year, the first meeting regarding this MOU is scheduled between our company representative and the director of the Fisheries Monitoring Bureau. After that, we plan to hold meetings at least once a month on individual themes.
- **URL:** FISH INTERIOR JAPAN Homepage : <https://www.fishinterior.co.jp/>

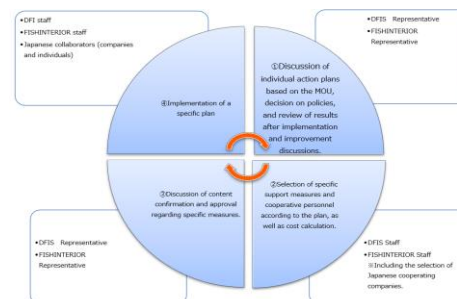
FISH INTERIOR VIET NAM : <https://maps.app.goo.gl/oCBvRoR8XoqkSxB37>

FISH INTERIOR JAPAN: <https://maps.app.goo.gl/a9LN1gf6Mx4r4ViD6>

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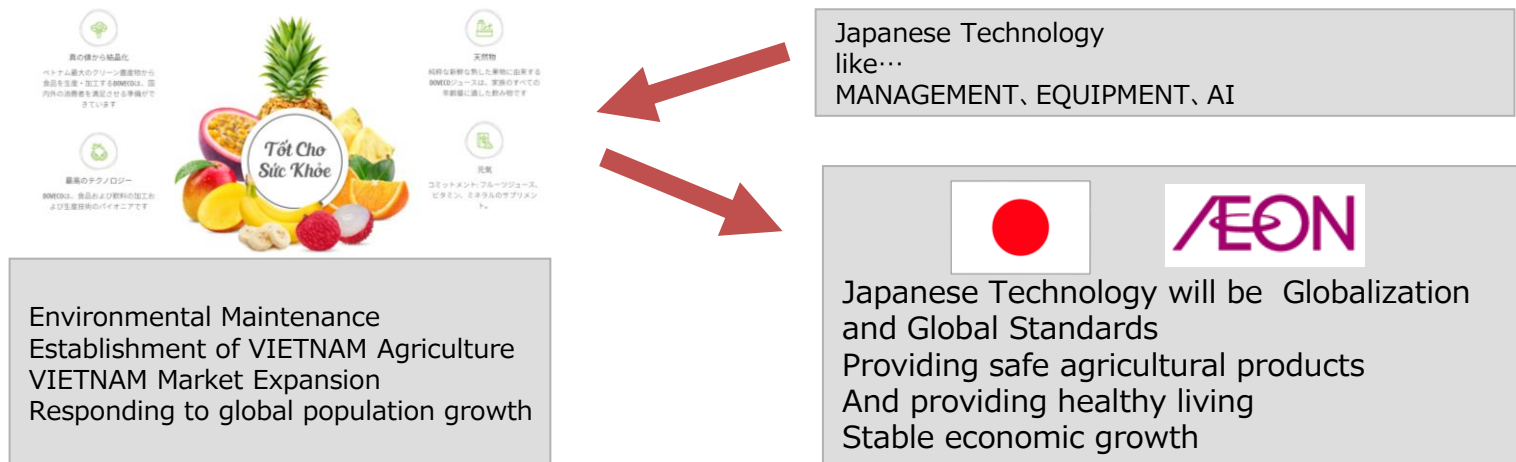
<Project scheme>





# AEON TOPVALU VIETNAM DOVECO VIETNAM CREATING THE AGRICULTURAL FORMAT OF THE FUTURE

- **MOU/Corporate Partnership Overview:** Reducing the Environmental Impact of Agriculture through Business with Us
  - Make the most of Japan's technology to achieve both harvesting and environmental conservation
  - Permanent revitalization of local agriculture through local job creation and scholarship support
- **Significance and Aim of this Cooperation :**
  - Expanding Vietnamese Agriculture by Prioritizing Global Environmental Protection with Japan's Agricultural Technology
- **Others :** Collaboration on a medium- to long-term vision
- **URL :** <https://www.topvalu.net/>



# MOU on Agricultural Carbon Credit Generation in Vietnam (12 MOUs)

- **Outline of the MOU / Corporate Partnership:**

This is an MOU / MOA for project development with institutions and research organizations that have strong connections with local farmers.

- **Purpose and Objectives of the Cooperation:**

Collaboration in project development aimed at reducing methane emissions from rice paddies and increasing soil carbon sequestration.

- **URL :** <https://green-carbon.co.jp/tag/vietnam/>

DARD(Department of Agriculture and Rural Development)  
現 : DAE(Department of Agriculture and Environment)

## 6 Provinces MOU



University and Research Institute

## 6 Institutes MOA



# MOU on Agricultural Carbon Credit Generation in the Philippines (11 MOUs)

- **Outline of the MOU / Corporate Partnership:**  
This is an MOU / MOA for project development with institutions and research organizations that have strong connections with local farmers.
- **Purpose and Objectives of the Cooperation:**  
Developing AWD projects under the JCM scheme with the goal of generating carbon credits.
- **URL :** <https://green-carbon.co.jp/tag/philippine/>

## Provincial Agriculture Office

### 4 Provinces MOU



## University and Research Institute

### 7 Institutes MOA





# MOU on Agricultural Carbon Credit Generation in Thailand (2 MOUs)

- **Outline of the MOU / Corporate Partnership:**

This is an MOU / MOA for project development with institutions and research organizations that have strong connections with local farmers.

- **Purpose and Objectives of the Cooperation:**

Developing projects to reduce methane emissions in rice paddies and generate biochar from rubber tree residues, with the aim of creating carbon credits.

- **URL :** <https://green-carbon.co.jp/tag/thailand/>

Rubber Authority of Thailand

## 1 Organizations MOU



University and Research Institute

## 1 Institutes MOU



# MOU on Agricultural Carbon Credit Generation in Cambodia ( 1 MOU)

- **Outline of the MOU / Corporate Partnership:**

This is an MOU / MOA for project development with institutions and research organizations that have strong connections with local farmers.

- **Purpose and Objectives of the Cooperation:**

Developing projects to reduce methane emissions in rice paddies with the aim of creating carbon credits.

- **URL :** <https://green-carbon.co.jp/tag/cambodia/>

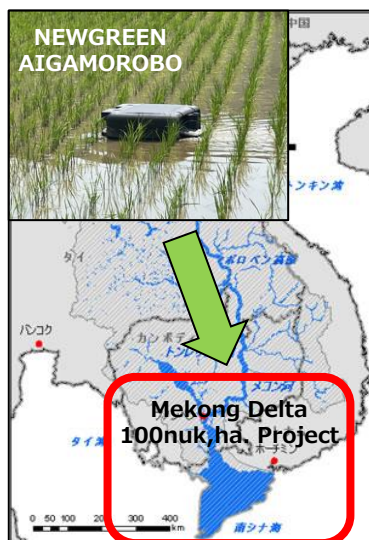
University and company

## 1 Institutes MOU



# MOU between Loc Troi Group (Vietnam) and NEWGREEN Inc. (Japan) on Methane Emission Reduction in Rice Paddies

- **Outline of MOU and Corporate Partnership:** Establishing a collaborative framework for the research and implementation of cultivation methods utilizing AWD and AIGAMOROBO, aiming at the early achievement of methane emission reduction targets in the Mekong 1mill.ha. project.
- **Significance and Objectives of MOU:** The Government of Vietnam has launched 1mill.ha. Mekong Delta Project, focusing on high-quality and low-emission rice cultivation in line with green growth by 2030. Leveraging the AIGAMOROBO supports Loc Troi, the private sector leader, to accelerate the early realization of this goal.
- **URL :** <https://newgreen.inc/news/Vietnam2>



April 2024 : Presentation to the Minister of Agriculture and Rural Development of Vietnam



September 2025 : MOU between Loc Troi and NEWGREEN was presented in the presence of the Ministers of Agriculture of Japan and Vietnam

**[Project: Research and Implementation of Cultivation Methods]  
(AWD + AIGAMOROBO) ⇒ Aiming early achievement of methane reduction**



# MOU for Sustainable Agricultural Development between Vietnam and Japan by MUFG Bank, VietinBank, and PSAV.

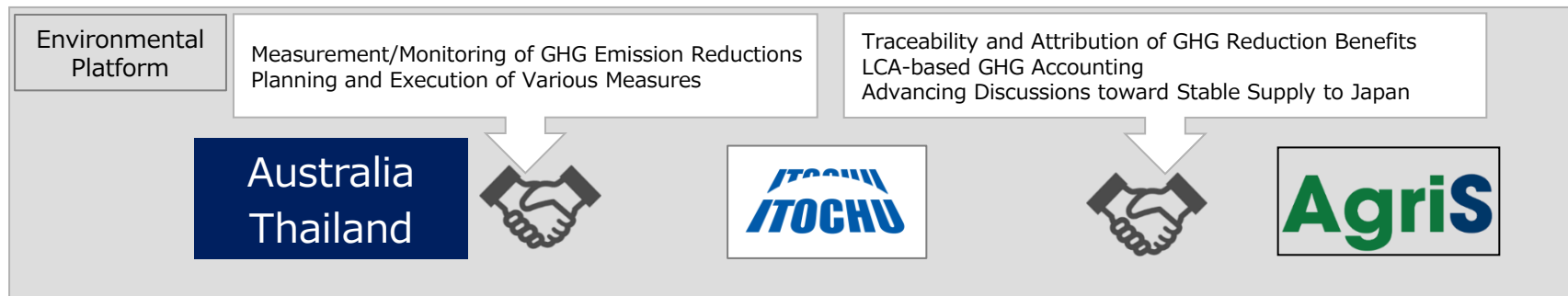
- **Cooperation outline** : The three parties will collaborate through information exchange and business matching, aiming to advance agricultural cooperation between Japan and Vietnam and achieve carbon neutrality goals.
- **Purpose or objectives of MOU** : By leveraging the extensive networks of MUFG Bank and VietinBank, the partnership will promote diverse collaborations in the agricultural sector between both countries.
- **Other points** : The three parties will hold regular council meetings, while also planning to host business matching events in Vietnam to attract Japanese companies.





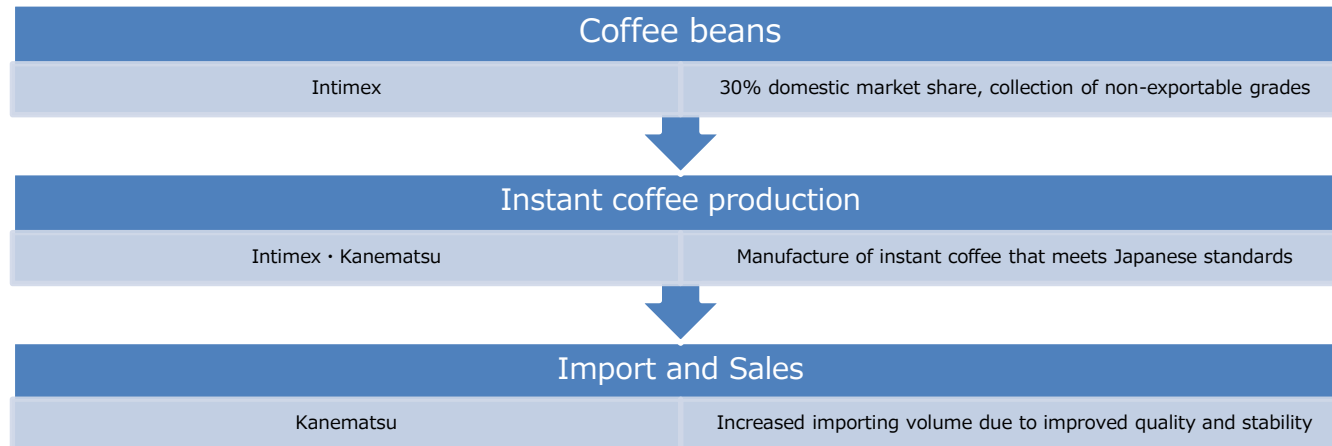
# Establishment of a Low-GHG Sugar Supply Chain in Vietnam

- **Cooperation outline** : A joint initiative between TTC AgriS and ITOCHU to establish a sustainable sugar supply chain for the Vietnamese market.
- **Purpose or objectives of MOU** : TTC AgriS has declared a target of achieving net-zero GHG emissions by 2035. Through its environmental platform, ITOCHU will promote the measurement and continuous reduction of GHG emissions by:
  - Proposing and advancing ideas for the measurement and continuous reduction of GHG emissions for Australian and Thai raw sugar imported by TTC AgriS into Vietnam.
  - Conducting LCA-based GHG accounting for sugarcane feedstock procured domestically in Vietnam and for the sugar manufacturing process, and promoting ongoing reduction initiatives.
- **Other points** : In the long term, by importing to Japan (i) Vietnamese raw sugar produced using established low-GHG methods, and (ii) Australian raw sugar supplied by Australian sugar growers affiliated with TTC AgriS, the parties aim to contribute to lowering the GHG intensity of Japan's imported raw sugar and to a stable supply through diversification of origins.



- **Cooperation outline** : The project is to expand business, provide technology, and develop high-quality instant coffee products to promote selling coffee as a major agricultural crop in Vietnam.
- **Purpose or objectives of MOU** : Under the MOU, Kanematsu and Intimex concluded to strengthen cooperative relationship. Processing by high technology less than export grades of coffee beans turning into tasty instant coffee leads to that we can drink good coffee without any uselessness, will be a sustainable initiative.
- **Other points** : We will continue to visit Intimex on a regularly to provide technical assistance by our knowledge of the facilities, processes, and management know-how that contribute to meeting the "Japanese standards," which have a higher level of food quality and hygiene control than those of other countries. Collaborate with Intimex to continuously import and supply safe, secure food products.

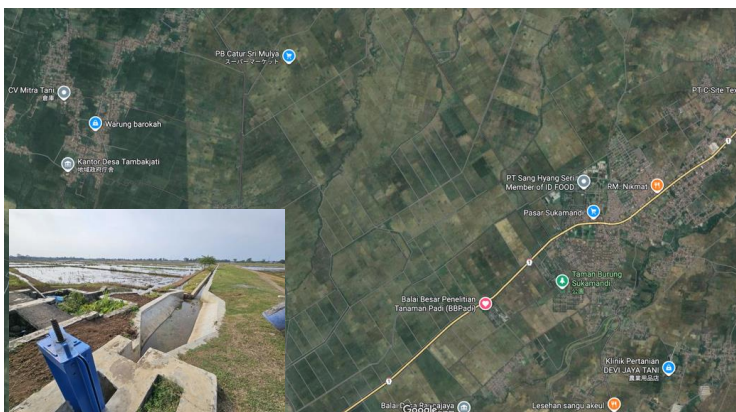
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# Cooperation for sustainable agriculture development through carbon credits and the application of alternate wetting and drying with satellite technology support

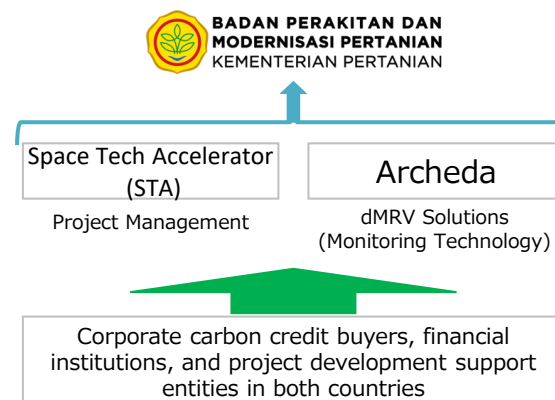
- **Cooperation outline** : Demonstration trials and feasibility studies on AWD will be conducted on fields managed by Indonesian government agencies. The aim is to implement monitoring technologies and expand AWD practices with satellite-based monitoring nationwide.
- **Purpose or objectives of MOU** : The partnership seeks to visualize methane reduction and water management through satellite-based monitoring, thereby enhancing agricultural productivity and contributing to climate change mitigation.
- **URL** : <https://archeda.inc>

- Project overview -



Source: Google Maps

- Project scheme -



- **Cooperation outline** : In Cambodia, where methane emitted from rice paddies is a major source of greenhouse gas emissions, the project aims to establish a locally appropriate intermittent irrigation method, thereby contributing to the achievement of Cambodia's NDC (greenhouse gas reduction target) determined by the country itself.
- **Purpose and objectives** : Through international joint research by Japanese and Cambodian researchers aiming to solve global-scale issues in the environmental field, the project aims to create innovations and implement technologies in society in line with local needs.
- **URL** : <https://www.jircas.go.jp/en/reports/2024/r20240402>

(Principal Investigator)  
JIRCAS

(Participating org.)  
NARO, Tokyo Gakugei Univ  
Tokyo Agric. Univ,  
Hokkaido Univ.



Royal Univ.  
of Agriculture  
Inst. Of Technology  
of Cambodia





# Collaborative Research Agreement between JIRCAS and Halu Oleo Univ, Indonesia

- **Cooperation outline** : In order to cope with the increasing risk of future climate change in Indonesia, which has rich coastal ecosystems with high biological diversity, this project proposes measures to strengthen the resilience of the target marine area by considering it as an integrated social-ecological system.
- **Purpose and objectives** : Introduce a comprehensive approach with innovative methodology development for the enhancement of integrated ecosystem services, thereby enabling the maintenance and improvement of the region's blue economy.
- **URL** : [https://www.jircas.go.jp/ja/reports/2024/r20240410\\_0](https://www.jircas.go.jp/ja/reports/2024/r20240410_0)

JIRCAS

- Forestry Division
- Fisheries Division



Halu Oleo  
University,  
Indonesia



Research site of a mangrove  
in Sulaweshi Island

# Collaborative Research Agreement between JIRCAS and Malaya University, Malaysia

- **Cooperation outline** : Develop sustainable tropical forest management practices based on appropriate monitoring of tropical mangrove forests, incorporating the adaptive capacity of natural and planted forests in Peninsular Malaysia, along with ecological and genetic analysis.
- **Purpose and objectives** : Accelerate the elucidation of the relationship between tree productivity and soil microbiota and greenhouse gas dynamics in mangrove ecosystems in the Malay Peninsula and promote understanding of the function and productivity of mangroves.
- **URL** : [https://www.jircas.go.jp/ja/reports/2024/r20240410\\_0](https://www.jircas.go.jp/ja/reports/2024/r20240410_0)

JIRCAS

•Forestry Division  
•Biological Resources and  
Post-harvest Division



Malaya  
University,  
Malaysia



Study site of a dead  
mangrove in peninsula Malay

# Collaborative Research Agreement between JIRCAS and PhilRice

- **Cooperation outline** : Develop GHG reduction technologies by combining Filipino rice varieties and water management.
- **Purpose and objectives** : Reducing methane emissions in global boiling is an urgent issue, and it is imperative to develop technologies that meet the current situation in Southeast Asia in order to contribute to reducing emissions from rice paddies, one of the main methane emitters.

JIRCAS  
•Crop, Livestock and  
Environment Division



PhilRice,  
Philippines



Seed multiplication in a  
pot at screening house

# Collaborative Research Agreement between JIRCAS and CLIRRI

- **Cooperation outline** : Develop GHG reduction technologies by combining Vietnamese rice varieties and water management.
- **Purpose and objectives** : Reducing methane emissions in global boiling is an urgent issue, and it is imperative to develop technologies that meet the current situation in Southeast Asia in order to contribute to reducing emissions from rice paddies, one of the main methane emitters.

JIRCAS  
•Crop, Livestock and  
Environment Division



Cuu Long Delta  
Rice Research  
Institute (CLIRRI),  
Vietnam



Seed multiplication in a small  
plot at screening house



# MOU between JIRCAS and BSWM, Philippines

- **Cooperation outline** : Develop and implement technologies for soil carbon sequestration, soil runoff mitigation, and river water quality conservation that are resilient to climate change, harmonize with the environment, and enable resource recycling.
- **Purpose or objectives of MOU** : Aim to reduce the environmental impact from agricultural land at the national level through deployment technologies such as carbon sequestration technology that has been developed in sugarcane fields in the Philippines.
- **URL** : <http://www.jircas.go.jp/ja/release/2024/press202409>

## JIRCAS

- Tropical Agriculture Research Front
- Crop, Livestock and Environment Division
- Rural Development Division



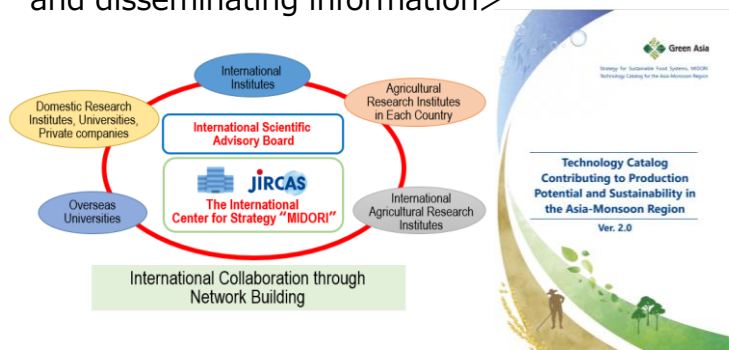
BSWM,  
Philippines



# Dissemination of technologies that contribute to climate change mitigation and sustainable agriculture and joint research for their application in the Asia-Monsoon region

- **Outline** : In order to promote the deployment of technologies that contribute to climate change mitigation and sustainable agriculture, information sharing and joint research have been conducted to disseminate technologies scalable in the Asia-Monsoon region and for their application in various regions.
- **Purpose and objectives** : Implementation of technologies that contribute to climate change mitigation and sustainable agriculture in the Asia-Monsoon region will be promoted.
- **Other points** : Vice Minister of Agriculture, Forestry and Fisheries, Japan, introduced Technology Catalogue in his speech as a representative of Japan at FAO Regional Conference for Asia and the Pacific. Technology Catalog has been also introduced at various ASEAN meetings.
- **URL** : <https://www.jircas.go.jp/ja/greenasia>

<Establishing an international cooperation system and disseminating information>



<Expansion of application area for the technology to reduce GHG emissions from paddy fields>

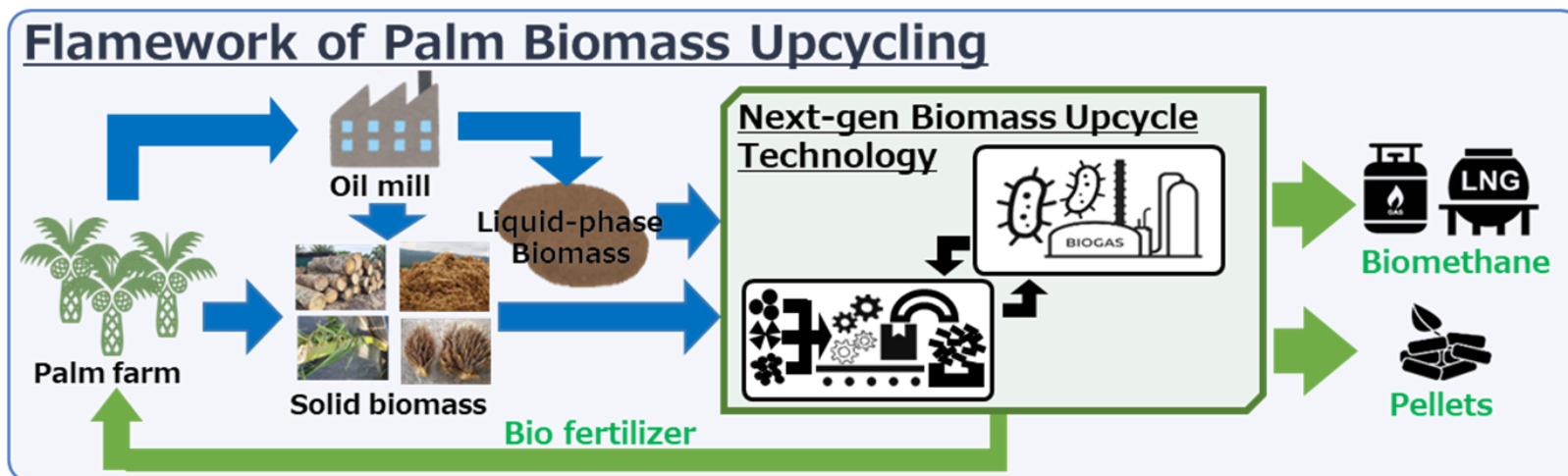


<Cultivation demonstration of Biological Nitrification Inhibition (BNI)-enabled wheat>



# Joint Research Agreement for Next-Generation Biomass Upcycling Technology

- **Cooperation outline** : A joint research agreement between Universiti Sains Malaysia (USM) and Japan International Research Center for Agricultural Sciences (JIRCAS) which aimed at developing and implementing next-generation biomass upcycling technologies.
- **Purpose or objectives of MOU** : The collaboration aims to promote the sustainable use of unused biomass from palm oil production by converting it into high-value energy and materials through the development and dissemination of advanced upcycling technologies.



# MOA between JIRCAS and Central State University

- **Cooperation outline** : Develop and apply reforestation techniques to reduce soil erosion on slopes and improve tree productivity, as part of efforts to manage mountain resources and lessen environmental impact..
- **Purpose or objectives of MOU** : Promote effective soil and water conservation, this initiative aims to adapt domestic reforestation techniques to local conditions in Negros Island, developing and implementing technologies that also support farmers' livelihoods.

JIRCAS  
•Tropical Agriculture  
Research Front  
•Rural Development  
Division



College of  
Agriculture  
and Forestry,  
Central State  
University,  
Philippines





- **Cooperation outline** : NARO was designated as an APO (Asian Productivity Organization) COE (Center of Excellence) in 2023. NARO will provide Climate-smart Agriculture technologies developed by NARO to APO members.
- **Objectives** : Improving agricultural productivity and reducing greenhouse gas (GHG) emissions in member countries. NARO will provide technical information through workshops, etc., such as developing carbon credit methodologies that can evaluate GHG reduction and absorption efforts, and methods for setting up and operating web-based tools that can instantly assess absorption efforts.
- **URL** : [Centers of Excellence - APO \(apo-tokyo.org\)](http://Centers of Excellence - APO (apo-tokyo.org))

**Web-base tool of NARO**  
**"Soil Carbon Sequestration Visualization"**

Click on map → get weather and soil data

Select crop and management

Simple and easy interface

→ Show results of changes in soil carbon

Total evaluation of 3 greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O)

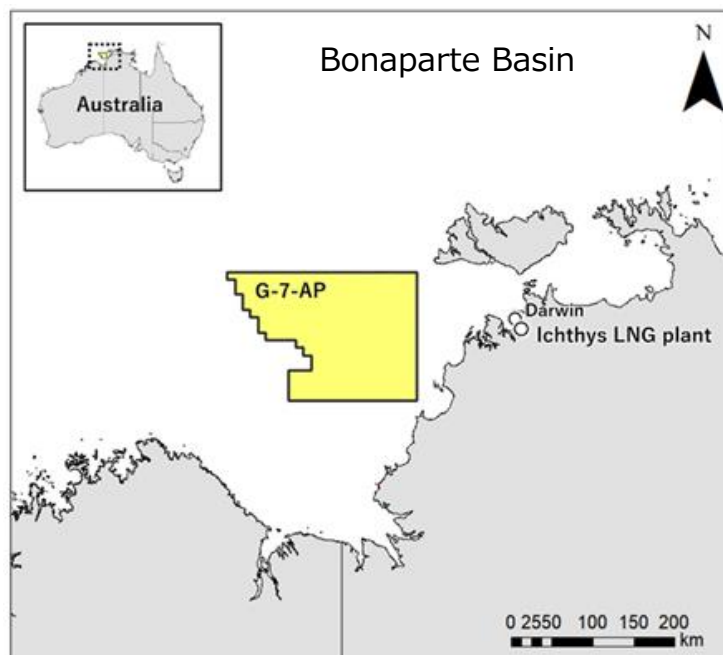


Exchange of views with a government of APO member on soil carbon sequestration

# Joint study between INPEX Browse E&P Pty Ltd. and Chubu Electric Power Co., Inc. toward the realization of CCS in the Northern Territory of Australia

- **Cooperation outline** : The parties will study the optimal value chain for cross-border CO<sub>2</sub> transport and storage from Nagoya Port to the Bonaparte Basin, including an integrated schedule aligned with relevant legal and regulatory procedures.
- **Objective & Significance of This Study** : This initiative aims to the decarbonization of both regions by developing a large-scale and economically viable ship-based CCS value chain in a comprehensive manner.

## <Project Overview>



## <Scope of study>

- ◆ Optimize CO<sub>2</sub> transport methods across the entire value chain
- ◆ Develop an integrated value chain schedule for the value chain, aligned with relevant legal and regulatory procedures in Japan and Australia
- ◆ Identify key challenges and explore collaboration opportunities with relevant organizations toward the realization of a commercial CCS project, and associated activities

# Trial plantation of non-edible oilseed tree crop Pongamia in Queensland, Australia

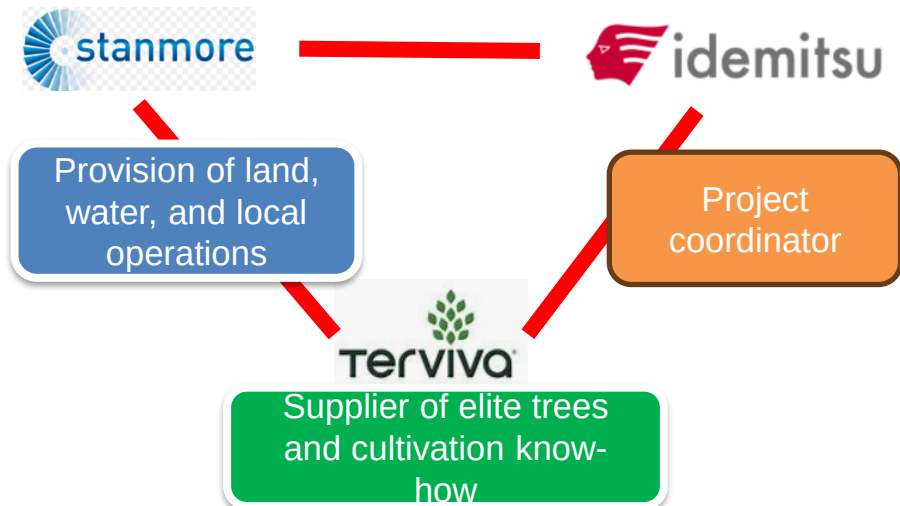
**Outline of cooperation** : The trial plantation will be conducted in collaboration with Terviva, which has 15 years of research achievements and cultivation capabilities with Pongamia, which is a potential feedstock for SAF, on a buffer area of a coal mine of Stanmore Resources.

**Objectives of the project** : verify long-term cultivation methods for Pongamia, with the optimization of the entire supply chain, as well as the creation of carbon credits, the production of pellets from shells, and the use of pressed oilseed cake as livestock feed, among other uses beyond feedstock for SAF.

Project site Photos



Project structure



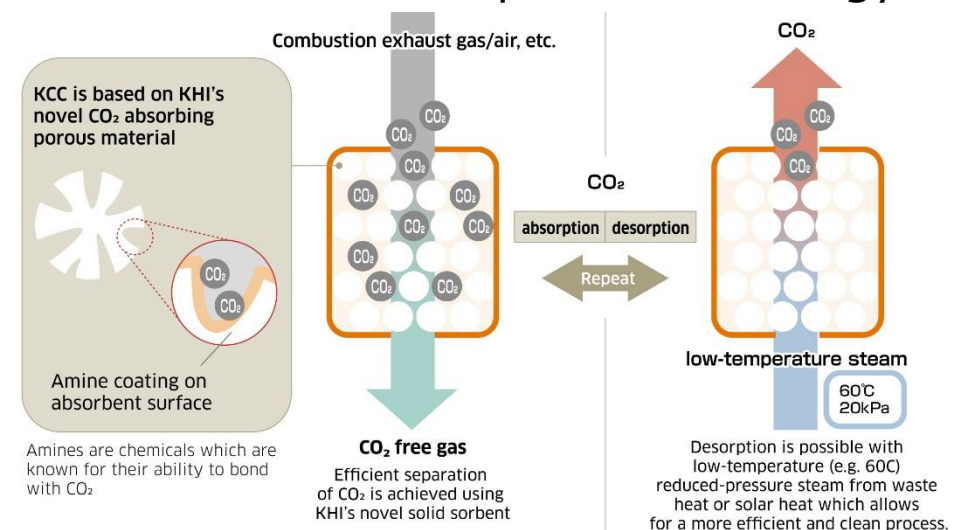
# MOU for Joint Exploration towards Achieving CO<sub>2</sub> Emission Reduction in the Heavy Industry Sector between Kawasaki Heavy Industries and Low Emission Technology Australia (LETA)

- **Cooperation outline** : The purpose of this MOU is to collaborate on the development and deployment of Post Combustion Capture technology, especially for the heavy industry sector.
- **Objectives of MOU** : This cooperation will pave the way for the joint development of pilot projects utilizing CO<sub>2</sub> capture technology, contributing to the decarbonization of the industry
- URL : <https://letaaustralia.com.au/wp-content/uploads/241106-Media-Release-LETA-and-Kawasaki-Join-Forces-to-Accelerate-Emissions-Reduction.pdf>

## Signing of the MOU by LETA and KHI



## Overview of CO<sub>2</sub> Capture Technology





# Cooperation among PT PLN (Persero), Chubu Electric Power Co., Inc., and the Okinawa Electric Power Company, Incorporated. regarding the de-dieselization in Indonesia

**Cooperation outline** : Feasibility study on de-dieselization in Indonesia through solar power generation, battery storage, and grid stabilization measures in the island regions.

**Objectives** : To promote the de-dieselization in the Indonesian island areas using Japanese grid stabilization technology.

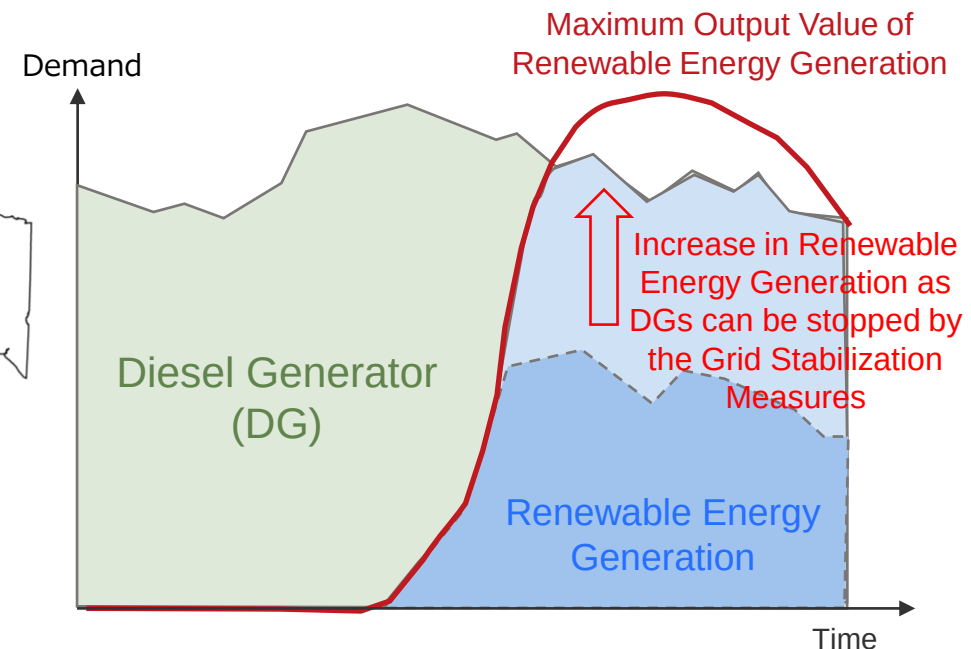
## <Project Outline>



### ◇ Target areas

- Island areas in Indonesia
- Elimination of diesel generations with solar power generation, battery storages and grid stabilization measures

## <Image of de-dieselization>



# MOU between PT PLN (PERSERO) and Chubu Electric Power Grid regarding capacity building in transmission and distribution area

**Cooperation outline** : Both companies cooperate with capacity building as well as technological exchange regarding transmission and distribution's technology, smart grids and digital transformation.

**Purpose or objectives of MOU** : The goal is to advance O&M of PLN's transmission facilities and build smart grids in Indonesia's islands and areas with increasing renewable energy power.

## Main Topics

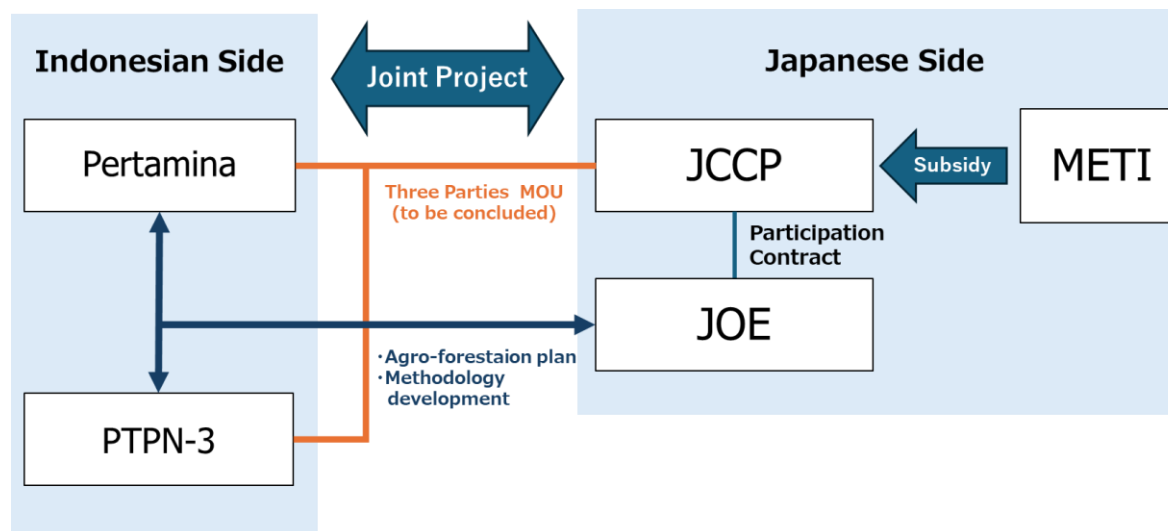
- To advance PLN's transmission facilities
  - Unmanned substations
  - Utilization of drones for transmission lines inspection
- To build smart grids
  - Building grids utilizing PV and batteries in islands
  - Measures for T&D with increasing RE power



# JOINT STUDY AGREEMENT ON JOINT PROJECT “Agro-forestation of Rubber Tree for Producing Carbon Neutral Oil”

- **Cooperation outline** : To study an agro-forestaion plan in rubber plantation and the methodology for carbon credit creation in collaboration with Pertamina and PTPN-3 (state-owned plantation company) to generate carbon credits in order to achieve carbon offset for Pertamina's petroleum products.
- **Purpose or objectives of MOU** : Through this project, JCCP and JOE will support to the carbon neutralization of the petroleum industry in Indonesia. Also, this project will strengthen the relationship with Indonesia, and promote the carbon credit business in Indonesia, Japan and abroad.

## 〈Project scheme〉



# Memorandum of Cooperation between PT Pupuk Indonesia (Persero) and JICA concerning partnership toward promoting Clean Ammonia Value Chain Development

**Cooperation outline** : 1. Through regular exchange of opinions etc., the participants are going to make continuous dialogue for further cooperation regarding the promotion of clean ammonia. 2. The Participants continue cooperate for JICA's Data collection survey for establishing a value chain for new energy (hydrogen and ammonia). Each Participant is going to obtain roadmap for Indonesia – Japan hydrogen partnership. 3. Conducting any other forms of cooperation as mutually decided by the Participants.

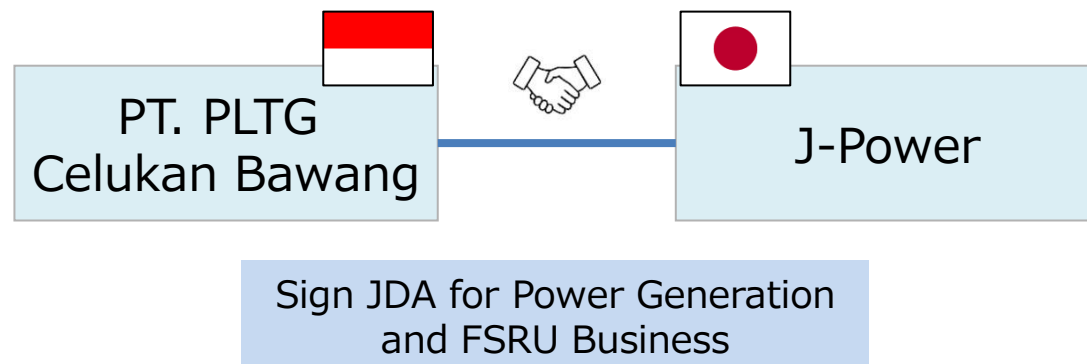
**Purpose** : The purpose of this MoC is to develop cooperation in the field of promoting hydrogen and ammonia toward decarbonization in Indonesia with the view to achieve the purpose of Article 2 of the Paris Agreement and Net Zero target by 2060 in Indonesia.



# Joint Development Agreement for CCGT Project in Celukan Bawang, Bali, Indonesia

**Cooperation outline :** In order to contribute Net Zero target in Indonesia, PT. PLTG Celukan Bawang and Electric Power Development Co., Ltd. (J-Power) have signed Joint Development Agreement (JDA) for a gas-fired Combined Cycle Power Plant.

- **Purpose or Objective of JDA:** The project's development is intended to contribute to the energy transition and support the supply of electricity in regions of Indonesia with high electricity demand. In addition, with a view toward the future realization of a hydrogen-based society, the adoption of gas turbines capable of hydrogen combustion is under consideration.

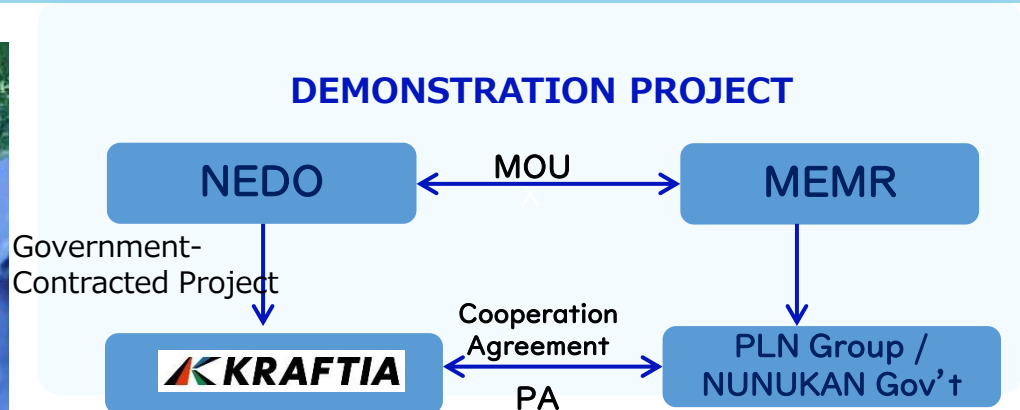


# Detail Study of Joint Demonstration Project for Renewable Energy Deployment in Remote Islands in North Kalimantan (PLN Indonesia Power, KRAFTIA Corporation)

**Cooperation outline** : In 2023, signed a comprehensive MoU with PLN Indonesia Power on renewable energy project development. As a concrete outcome, a NEDO international demonstration project is underway in Nunukan Island, North Kalimantan, to use renewable energy as a baseload source and raise the RE share in island microgrids. In collaboration with local government, establishing a local biomass fuel supply model.

**Purpose or objectives of MOU** : Demonstrating stable power supply mainly from renewables in a microgrid. Potential future expansion not only across Indonesia (an island nation) but also to other regions and Japan.

**Other points** : Passed NEDO Stage-Gate review in June 2024; now preparing pre-demonstration study. If approved in the "feasibility evaluation," project launch planned for FY2026 (2nd half). Demonstration scheduled for FY2026–2028 (3 years).



**Demonstration Overview** : Combine EFB biomass, solar, and batteries to stably supply renewable power to the microgrid. During grid outages, **channel renewable power to specific areas to test full-RE transmission**.

# MOU on collaboration for de-carbonization in Cirebon 2 Thermal Power Plant

- **Cooperation outline** : Cirebon Expansion thermal power plant, owned and operated by PT. Cirebon Energi Prasarana ("CEPR"), in which Marubeni and JERA have equity stakes, will jointly study the feasibility of optimal decarbonization solutions for the power plant with PLN, such as biomass/ammonia co-firing and CCS/CCUS utilization.
- **Purpose or objectives of MOU** : Contribute to Indonesia's carbon neutrality by jointly examining and implementing decarbonization solutions with PLN and confirming sustainable decarbonization solutions.

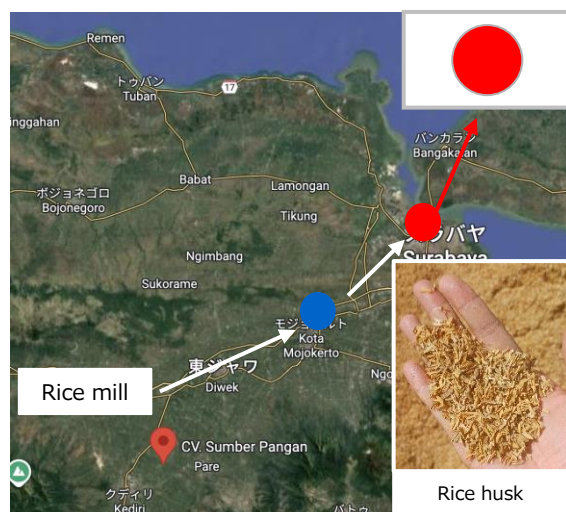


# Memorandum on the development and effective utilization of various types of waste generated at rice mills in Indonesia

**Cooperation outline** : A project to produce products using various types of waste such as rice husks generated at rice mills in Indonesia, and to supply these products domestically in Indonesia and export them to Japan.

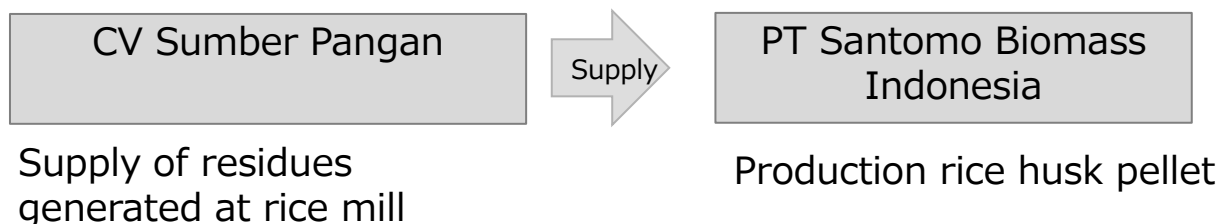
**Purpose or objectives of MOU** : Indonesia, particularly east Java, produces a significant amount of rice milling residues, which can be effectively utilized to diversify biomass fuels currently used in factories in Indonesia, and imported by Japan.

## <Project image>



-  Santomo Biomass Indonesia factory
-  Export port (Surabaya)

## <Scheme>



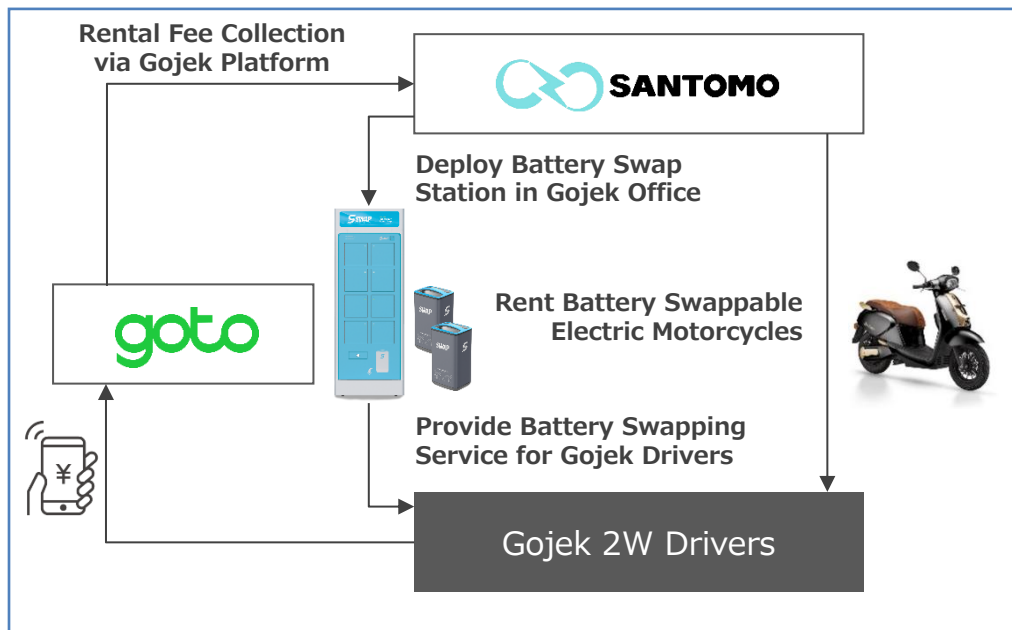
## <Schedule>

- In February 2026, conduct rice husk procurement and manufacturing trials, and begin trial supply to Japanese-affiliated factories in East Java Province
- Starting April 2026, ordering equipment, and constructing the factory; plan to commence rice husk pellet manufacturing from October 2026



- **Cooperation outline** : Acceleration of EV shift to Gojek drivers by providing electric motorcycle with battery swapping technology by PT Santomo Green Power Management and PT GoTo Gojek Tokopedia.
- **Purpose or objectives of MOU** : In Indonesia, online driver platforms such as Gojek are now indispensable for daily services such as logistics, but most drivers currently use ICE motorcycles. By providing 2-wheeled EV with affordable price and battery swapping technology, parties aim to contribute to reduce carbon emission.
- URL : [https://san-tomo.com/posts/8s5N\\_gJq](https://san-tomo.com/posts/8s5N_gJq)

## Cooperation Scheme



## Project Photo



Photo: Gojek drivers using electric motorcycles provided by PT SGPM

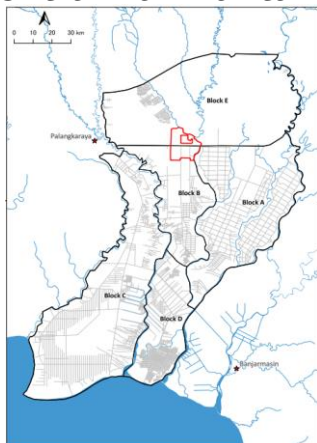
# THE PILOT PROJECT FOR RESTORATION AND MANAGEMENT OF PEAT ECOSYSTEMS IN CENTRAL KALIMANTAN PROVINCE

**Cooperation outline** : Indonesian Forestry Ministry and PT. Sumitomo Forestry Indonesia signed MoU to develop sustainable model for Central Kalimantan peatland restoration.

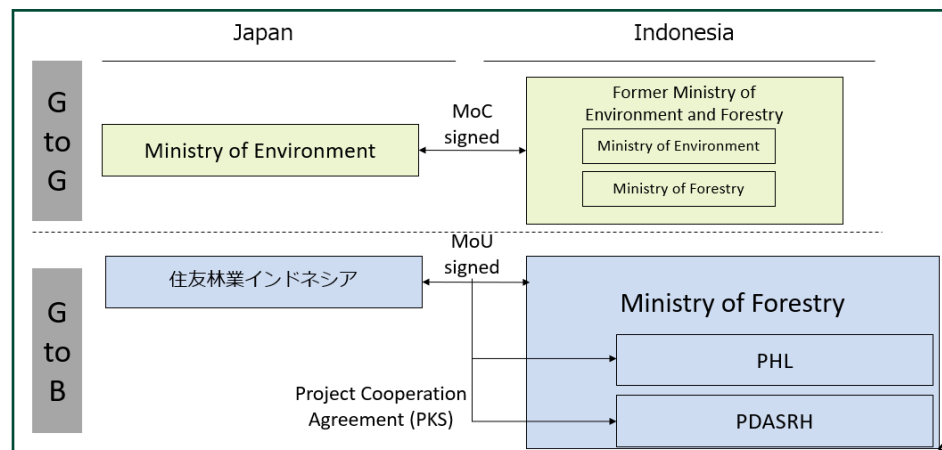
**Purpose or objectives of MOU** : Mitigate fire risks, create carbon credits and establish a sustainable peatland management model to achieve economically viable afforestation.

**Other points** : As part of this initiative, Sumitomo Forestry Indonesia will develop a JCM methodology to quantify CO<sub>2</sub> emission reductions, aiming for emission reductions through peatland management and the stable supply of woody biomass fuel.

<Ex Mega Rice Project site, Central Kalimantan>      <Company's demonstration site in degraded peatland>



## <Business scheme>



**Cooperation outline :** The parties confirm their cooperation to consider two projects aimed at promoting decarbonization of industry in Deltamas City including GIIC:

1. Development of **large-scale solar power projects** utilizing green spaces, ponds and other available areas both within and around the estate
2. Development of **bio-methane/CNG value chain**

**Purpose or objectives of MOU :** To promote decarbonization of electricity and gas and accelerate decarbonization of industry and industrial park, we aim to develop large-scale solar power projects by utilizing unused areas in and around the estate to address land scarcity issues, while also developing a new bio-methane/CNG value chain utilizing waste from nearby West Java region.

## ① Decarbonization of electricity: large-scale solar power projects

### Unused land in/around the estate

Utilizing unused area such as green areas, under power lines and ponds



### Large-scale solar power

Large-scale solar power projects that preserve function of green areas



## ② Decarbonization of gas: bio-methane/CNG

### Biomethane feedstock sourcing

Sourcing feedstock such as agricultural and livestock waste etc. from nearby West Java



### Production of bio-methane/CNG

Producing bio-methane through waste fermentation, with optional conversion to bio-CNG



### Decarbonization of industry and industrial park

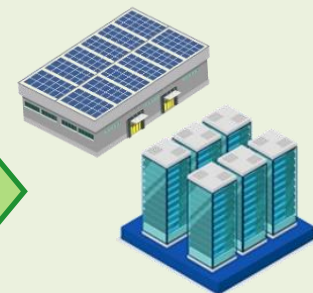
Promoting decarbonization of industry and industrial park through supply of renewable energy and bio-methane/CNG



Renewable energy



Bio-methane/CNG



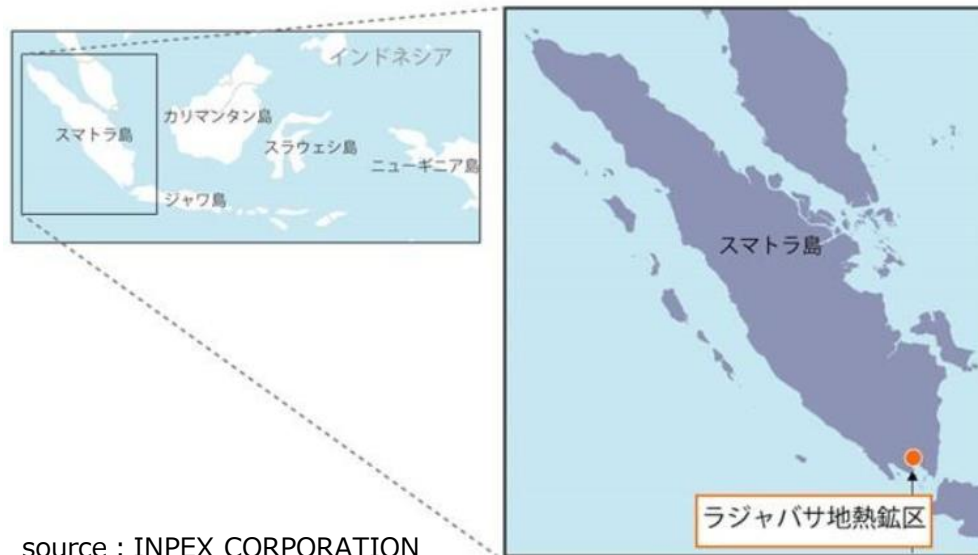
Industry players



# MOU regarding various studies towards the realization of the Rajabasa Geothermal Power Project

- **Cooperation outline** : To study various measures (economics improvement, geothermal risk mitigants, etc.) for realization of the project, being developed by Sumitomo Corporation, INPEX CORPORATION, and PT Supreme Energy.
- **Purpose or objectives of MOU** : Geothermal power is a stable, renewable energy source that is unaffected by time, weather or season. Promoting the development of this project can contribute to Indonesia's energy transition.
- **URL** : [Assets](#) | [Supreme Energy](#)

<Project Site>



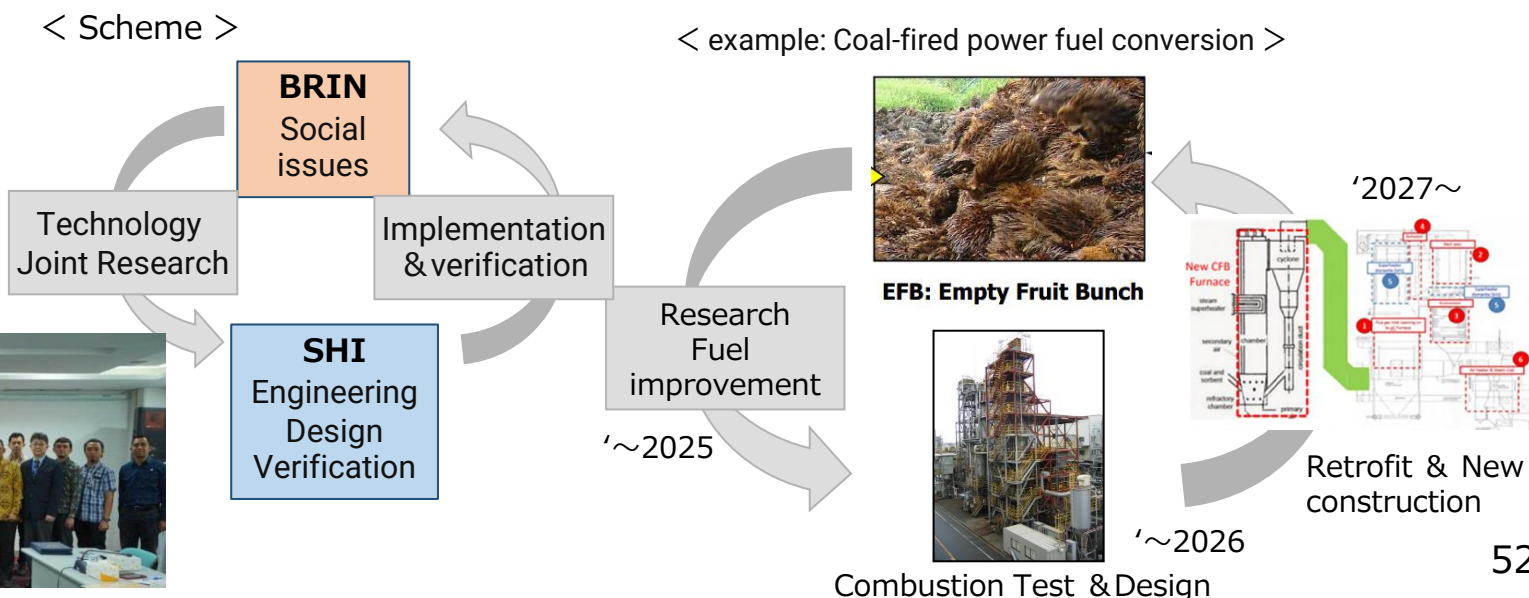
source : INPEX CORPORATION

<Jetty>





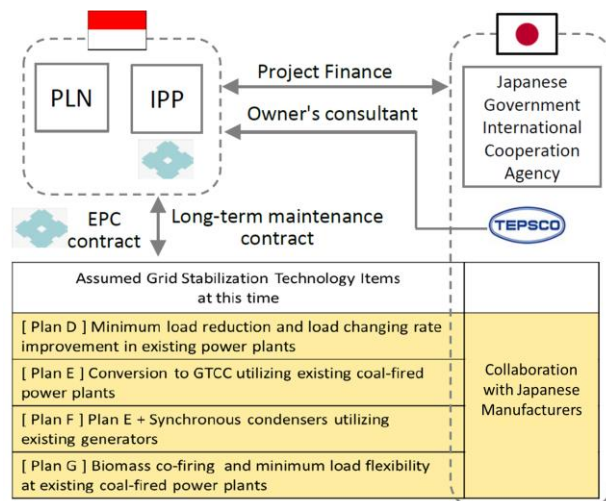
- **Cooperation outline** : Joint research and development of low-carbon technologies and manufacturing in sectors such as power generation, wastewater treatment, and food processing etc.
- **Purpose or objectives of MOU** : In collaboration with BRIN, we aim to create feasible decarbonization scenarios at the industrial level, including transitions, identify challenges, and build and deploy solution technologies.
- **Other points** : As the first initiative, the development of technology to utilize palm oil residues (EFB), a representative example of unused biomass. Detailed exchanges of opinions have begun in fields such as wastewater treatment, food processing, and renewable energy utilization.



# Indonesia / Java-Madura-Bali (“Jamali”) Electricity Grid Impact Study and Creation of Short-Mid Term Decarbonization Master Plan

- **Cooperation outline** : In order to achieve Net Zero Emission in 2060, Indonesia targets to cover more than half of the total electricity capacity by renewable energy (RE). However, the power system will become unstable when the proportion of RE increases. This study by Tokyo Electric Power Services Co., Ltd. and Sumitomo Corporation will identify the challenges to expand RE introduction to the Jamali Grid, and propose measures for grid stabilization by the “utilization of existing power generation facilities” and its implementation priority to PLN (state electricity company).
- **Purpose or objectives of MOU** : (1) Formulation of a plan to promote the introduction of RE in Indonesia, (2) Reflect the contents of the proposal in RUPTL (PLN Electricity Supply Business Plan).
- **Other points** : The MOU was executed in January 2025. Through this study, a Master Plan for the next 10 years will be created. Plan to finalize the study by January 2026.

## <Image of Future Commercialization>



## <Study Organization>

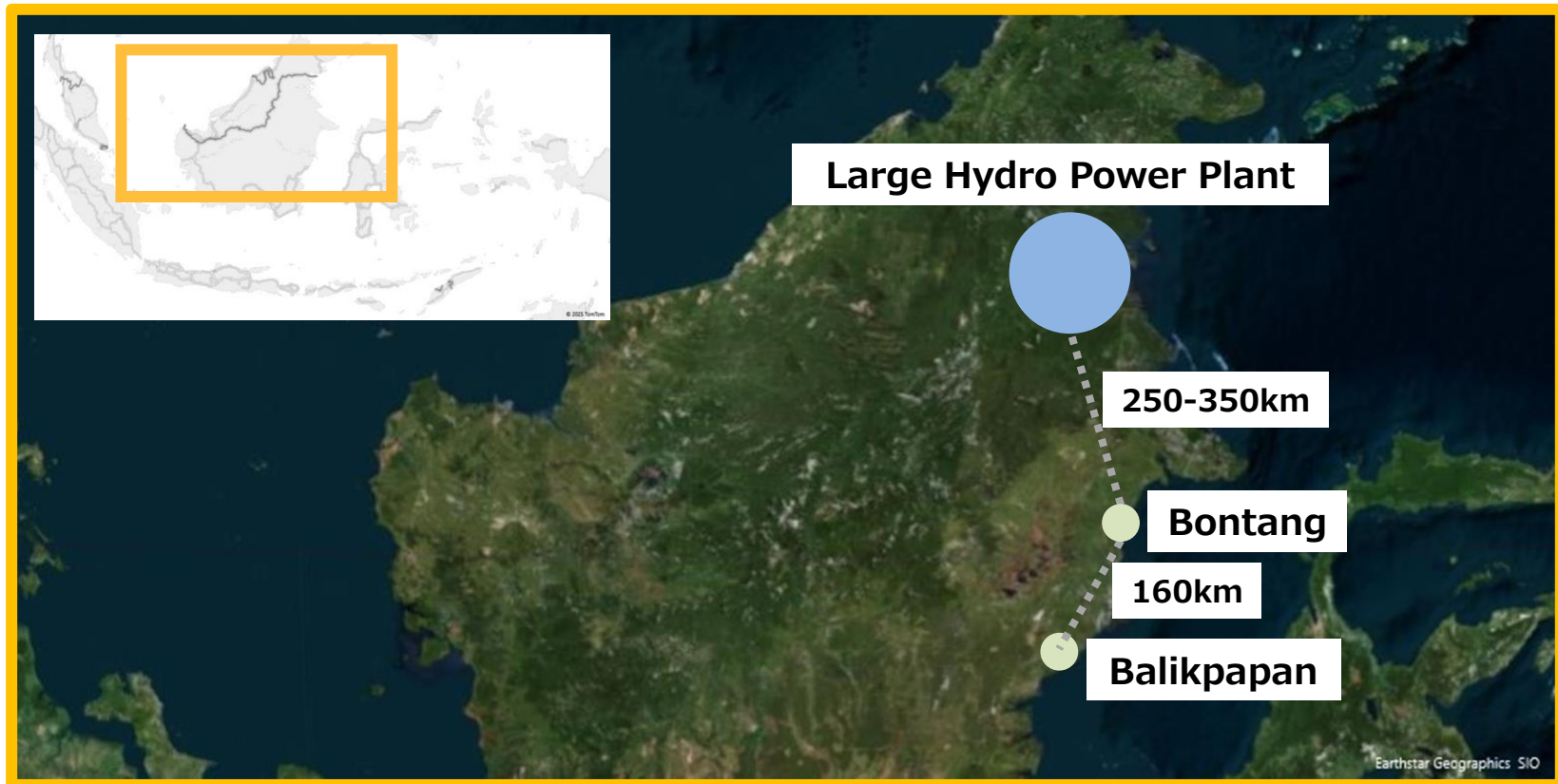


MOU Signing (Jakarta)

- Joint study by Tokyo Electric Power Services Co., Ltd. and Sumitomo Corporation
- Work on power system analysis is outsourced to PLN Enjiniring, subsidiary of PLN
- The study is carried out efficiently through the MOU between PLN, TEPSCO, and SC

# Memorandum of Understanding on e-methane Development in Indonesia

- **Cooperation outline** : Between 2022 and 2023, Pertamina and IHI conducted a feasibility study on e-methane production costs. Following that study, in 2025 Tokyo Gas will join as well and altogether explore the opportunity and feasibility of exporting e-methane to Japan.
- **Purpose of MOU** : The production of e-methane will utilize CO<sub>2</sub> emitted from Badak LNG in Bontang as the feedstock, and therefore this initiative will contribute to the development of a decarbonized society in Japan and around the world.





# Joint Development of Bioenergy Projects in Malaysia and Indonesia

**Cooperation outline :** Establishing a collaborative framework by reNIKOLA Holdings SDN BHD and Sumitomo Corporation to jointly develop and expand the bioenergy (biogas and biomethane) businesses in Malaysia and Indonesia, with the aim of contributing to the realization of carbon neutrality in both countries.

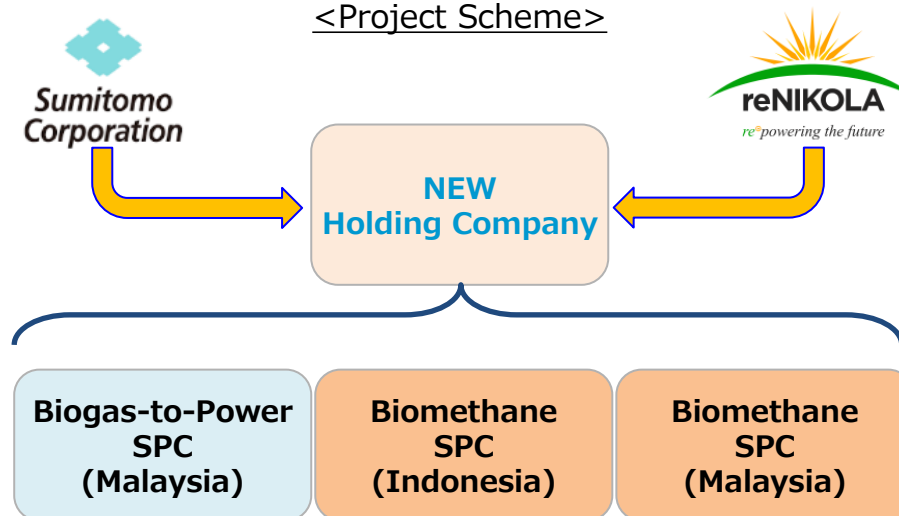
**Purpose or objectives of MOU :** The cooperation aims to promote the energy transition and the growth of sustainable energy independent from fossil fuels, such as through the reproduction of palm oil residues into bioenergy (biogas and biomethane) in Malaysia and Indonesia.

**Other :** MOU signing ceremony was held in May 2025, led by MOSTI (Ministry of Science, Technology and Innovation), at the Malaysia Pavilion of the Osaka Expo held under the theme "Weaving a Future in Harmony,"

<Image of plant construction in a similar project>



<Project Scheme>





**Cooperation outline** : TSB Green Nex and Lao Green Hydrogen of the Laos will jointly conduct a feasibility study on a project to convert fuel source for the calcination process in planned alumina processing—based on bauxite deposits in Sekong Province, Laos—from fossil fuels to green hydrogen.

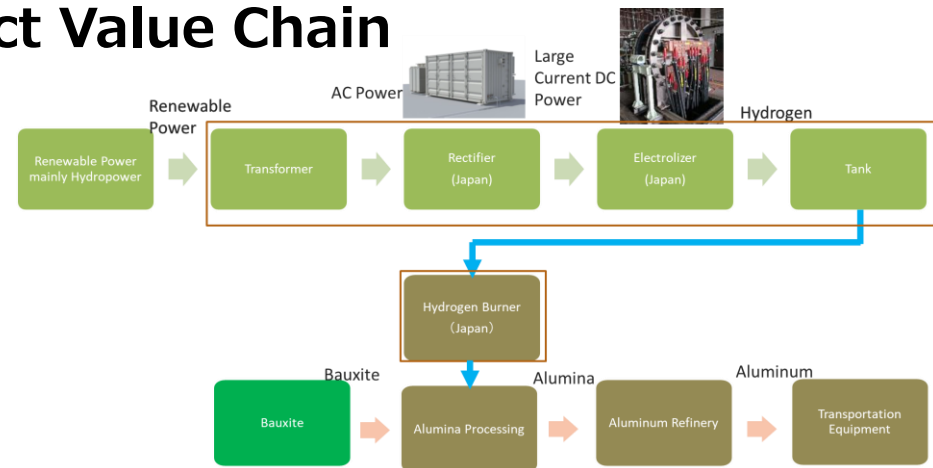
**Purpose or objectives of MOU** : Amid growing global demand for green aluminum, calcination process in alumina production still relies on fossil fuels. By replacing these with green hydrogen, the project seeks to contribute to decarbonization and support development of green aluminum production.

**Other points** : A green hydrogen roasting project is already underway in Laos, and the knowledge gained from that initiative will be leveraged for this project. Although the bauxite deposits in the province are among one of the largest in the world, they remain undeveloped due to insufficient infrastructure.

## Sekong Province in Lao



## Project Value Chain



# Decarbonization Collaboration with Malaysian Rubber Council

**Cooperation outline** : Provision of decarbonization training and introduction of calculation system for MRC member companies

**Purpose or objectives of MOU** : Maximize the decarbonization impact of the entire industry by promoting the introduction of decarbonization knowledge and calculation solutions to small and medium-sized enterprises in the Malaysian rubber industry.

## Project site



## Collaboration Scheme



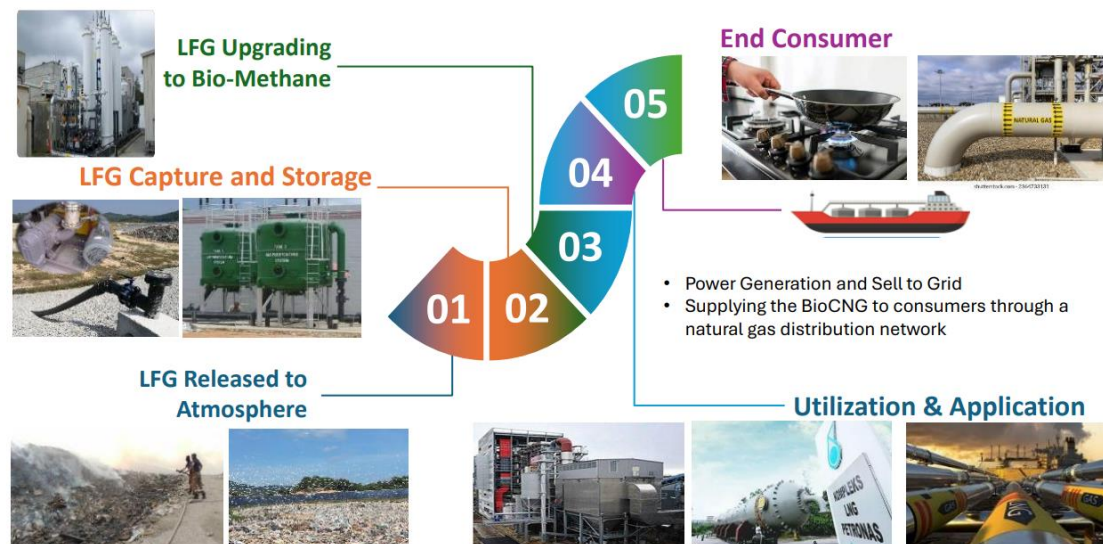
# Landfill rehabilitation & development project in Malaysia

- **Cooperation outline** : Idemitsu International (Asia), PETCO Trading Labuan Company, Saxon Renewable Energy and AE Carbon Capital will explore the possibilities of potential business opportunities and/or to collaborate in relation to a landfill rehabilitation & development project in Malaysia.
- **Purpose or objectives of MOU** : The collaboration aims to jointly study and/or assess the feasibility of the potential project. The project aims to extract methane from the landfill and recover it for either power generation or upgrading to Bio-CNG while simultaneously generating carbon credits.

## Pictures of project site



## Project Concept



# Euglena completed 15% Investment in Biorefinery JVCo with PETRONAS and Eni

**Cooperation Outline** : Euglena Co., Ltd. had increased its equity stake to 15% in the joint venture company responsible for constructing and operating a commercial-scale biorefinery in Malaysia jointly promoted with PETRONAS Mobility Lestari Sdn Bhd, a subsidiary of PETRONAS and Enilive S.p.A., a subsidiary of Eni S.p.A. as of July 16, 2025.

**Objective** : Securing the stake holding to the World Scale biorefinery project of which construction is scheduled to complete in 2<sup>nd</sup> half 2028, and contribute to the Carbon Neutral of transportation sectors in Asia.

## Outline of Biorefinery Project

### Biorefinery Project in Malaysia - Project Overview

Final Investment Decision taken on a biorefinery project in Malaysia with PETRONAS and Eni

JV company was established in December 2024 and aims to start operations in 2H 2028.



| Project Plan overview |                                                                                                                                                                                             |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| JV Company            | Pengerang Biorefinery Sdn Bhd                                                                                                                                                               |
| Location              | Pengerang Integrated Complex (PIC) in Johor, Malaysia                                                                                                                                       |
| Production            | Flexible configuration to maximize the production of Sustainable Aviation Fuel (SAF) and Hydrogenated Vegetable Oil (HVO)                                                                   |
| Feedstock             | Used vegetable oils, animal fats, waste from the processing of vegetable oils, and other biomass including microalgae oils to be explored in the mid-term                                   |
| Processing capability | About 650,000 tons per year of feedstock                                                                                                                                                    |
| Production capability | Up to 12,500 barrels per day (about 725,000KL per year) of biofuels (SAF, HVO and bio-naphtha)<br>By our 15% shareholding ratio, we plan to deliver 100,000KL per year of SAF/HVO to Japan. |
| Project size          | Approximately US\$1.3 billion                                                                                                                                                               |



## Project Site: Pengerang Integrated Complex





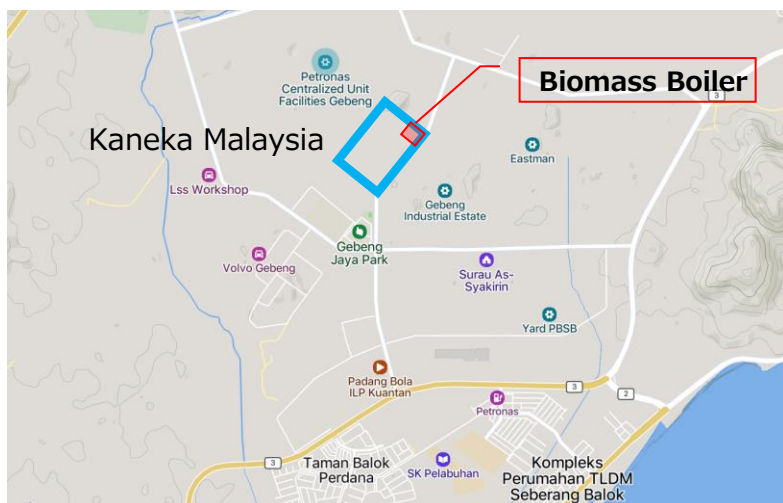
**Cooperation outline** : As part of effort from the Kaneka Malaysia Group (KM) to achieve carbon neutrality by 2050, KM contracts the steam purchase agreement with BAC Renewable Energy (BACRE).

**Purpose or objectives of MOU** : BACRE, which has a scheme from collecting biomass fuel to producing steam, and Kaneka Malaysia, which is using steam, work together to contribute to meet the Malaysia Energy Transition Road Map.

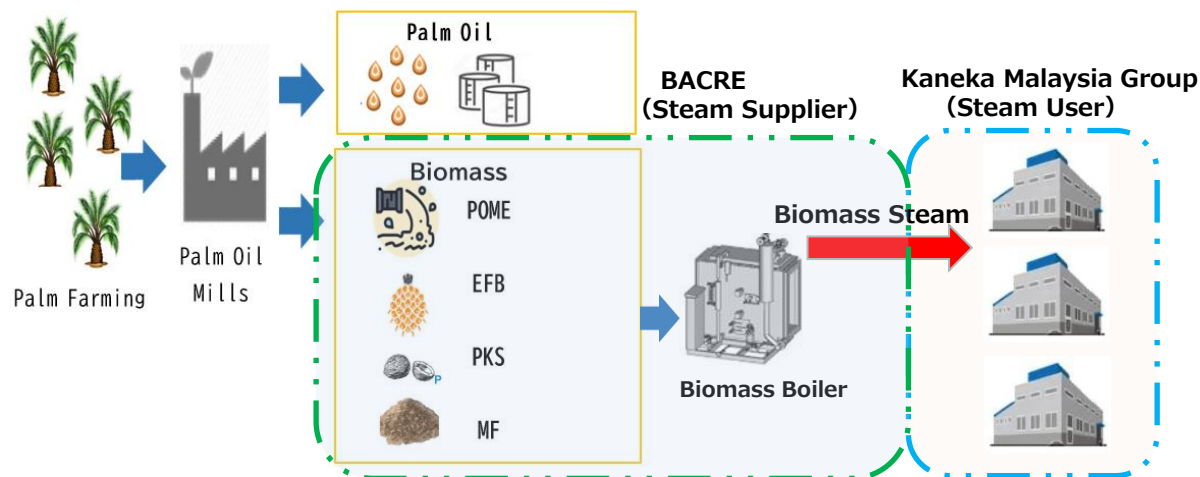
**Other points** : The contract has been signed in April 2024, and the biomass steam will be supplied from September 2026.

URL : [Home - Kaneka Malaysia](#)

<Site of Project>



<Scheme>



# MOU on the Implementation of a Feasibility Study for CO<sub>2</sub> Capture from Emission Sources in Malaysia between Kawasaki Heavy Industries and PETRONAS CCS Solutions Sdn. Bhd.

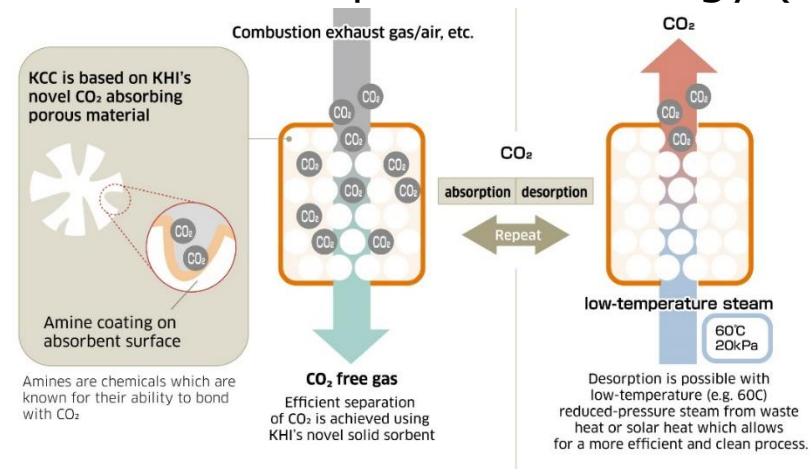
**Cooperation outline** : A study will be conducted on the application of Kawasaki's CO<sub>2</sub> capture technology (KCC; Kawasaki CO<sub>2</sub> Capture) to industrial emission sources in Malaysia, examining policy, economic, and technical aspects. In addition, considerations will be made toward the introduction of a demonstration unit aimed at capturing CO<sub>2</sub> from local emission sources.

**Objectives of MOU** : Through the implementation of this feasibility study, the aim is to assess the potential for introducing CCS technology in Malaysia's industrial sector, and by linking it to the next steps of demonstration and commercialization, contribute to the achievement of Malaysia's NDC targets and the enhancement of its export competitiveness.

## PCCSS and Kawasaki



## Overview of CO<sub>2</sub> Capture Technology (KCC)



# MoC between METI and The Government of Malaysia in the field of CCS

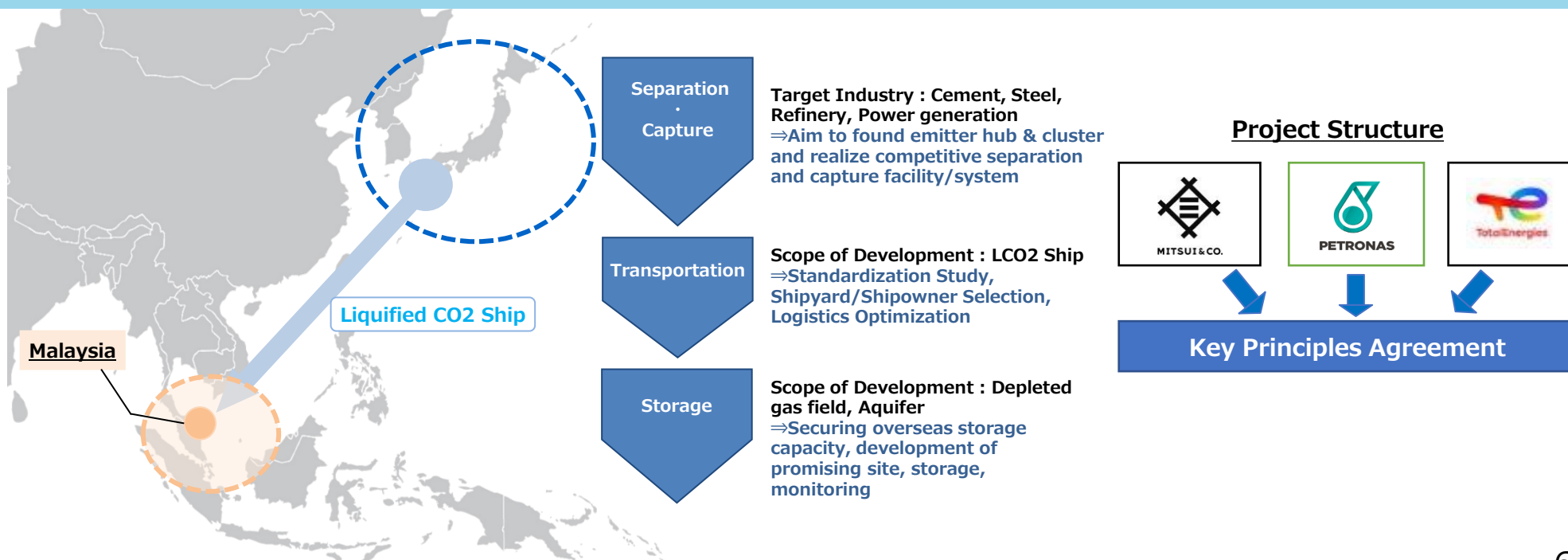
**Cooperation outline** : Initiating bilateral discussions to enable cross-border CCS, discussion on policy to enable CCS deployment, and strengthening technical co-operation

**Purpose or objectives of MOU** : Creating a framework for knowledge sharing and exchange activities to promote co-operation in the area of CCS



**Outline :** The CCS project has been jointly developed by PETRONAS, Mitsui and TotalEnergies since 2023 and the parties agreed to enter Key Principles Agreement (KPA) in July 2025 to develop the project further. The project aims to develop the first CCS value chain to store industrial CO<sub>2</sub> from Asian countries, mainly Japan, in offshore Peninsular Malaysia. The project is awarded JOGMEC's Advanced CCS program and aiming to commence operations by the early 2030s.

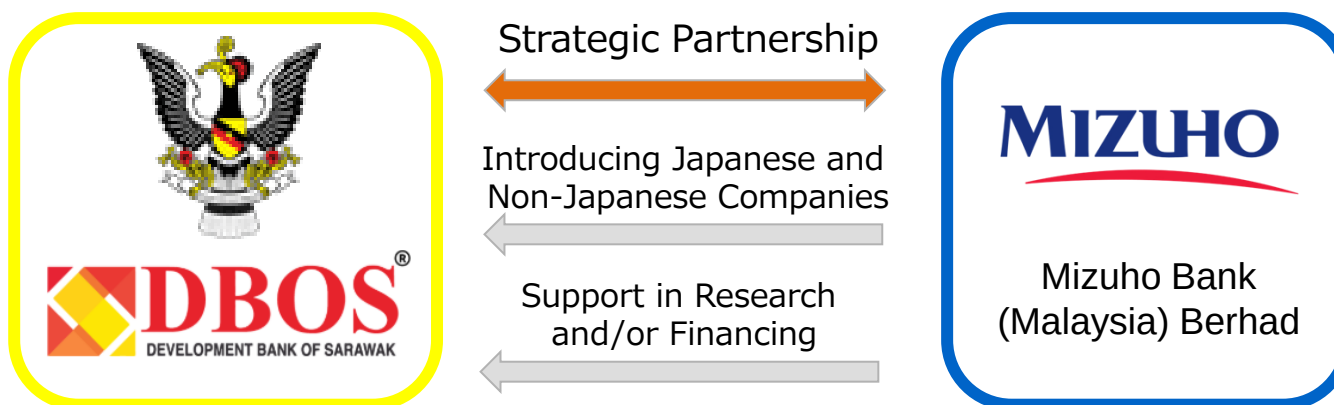
**Purpose of Agreement :** KPA will provide further alliance between PETRONAS, Mitsui and TotalEnergies for higher techno-economics evaluation of the CCS project based on the ground works in past years since the tripartite collaboration started.





# MOU between DBOS and Mizuho Malaysia for Strategic Collaboration

- **Overview** : Establish strategic collaboration between Development Bank of Sarawak Berhad (DBOS) and Mizuho Bank (Malaysia) Berhad (Mizuho) to promote and support the development of infrastructure projects in line with the aspiration and vision of the State of Sarawak, a state abundant in renewable energy resources.
- **Objective** : Mizuho may introduce potential investors from its global client base to invest into Sarawak strategic projects. Mizuho may provide research and/or financing support. DBOS may consider them as potential business collaborators in advancing Sarawak.
- **Others** : Mizuho held three workshops on decarbonization with one of the Sarawak State Ministries since 2023 covering topics on hydrogen, biomass power generation and carbon credits. Mizuho has introduced two Japanese companies.



- **Cooperation outline** : The DOE of the Philippines and the METI of Japan intend to pursue a Memorandum of Cooperation on Energy Partnership.
- **Purpose or objectives of MOU** : Both countries share the importance of the AZEC principles of "aiming for common goals through various pathways" and "simultaneously achieving economic growth, energy security, and low carbon development". In addition, both countries recognize that innovation plays an indispensable role in the pathway toward carbon neutrality, equity and inclusiveness.

## Main area and scope of cooperation

1. **The formulation and update of energy transition roadmap** towards carbon neutrality based on the national circumstances and priorities of the Philippines
2. **The research and development of various energy sources and technologies**
3. Other areas of cooperation mutually decided by both sides within its scope of functions

## Main forms of cooperation

1. **Capacity building and training programs** to enhance technical and managerial skills in the field of energy transition.
2. **Knowledge exchange and sharing of best practices** in areas such as renewable energy deployment, grid integration, energy storage, smart grids, hydrogen and ammonia utilization, energy efficiency measures, LNG, CCUS and policy frameworks.
3. **Collaboration on pilot projects for the demonstration and deployment** of innovative and sustainable energy solutions.
4. **Policy dialogue and engagement to foster regulatory frameworks** that support energy transitions and attract investments in clean energy.

# Mizuho Bank and PEZA: MOU for business cooperation

**Overview :** MOU between PEZA (Philippine Economic Zone Authority) and Mizuho Bank to support entry to the Philippines and partnership with local companies, since 2012. In 2025, scope of the MOU was extended to ESG, including transition credits.

**Significance :** Transition credits are a solution to promote energy transition in an economic way, by applying carbon credits to coal managed phase out

## 【Scope of the MOU】

- 1) Mutual cooperation to attract Japanese and other Asian companies to the Philippines
- 2) Co-hosting of events such as seminars connecting Japanese and other Asian companies with Philippine companies for business matching and investment
- 3) Support for various procedures for Japanese and other Asian companies entering the Philippines

4) Collaboration on environmental, social, and governance (ESG) frameworks such as carbon credit projects and transition credits

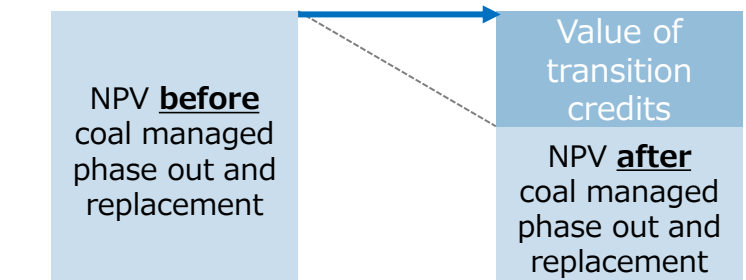
## 【About PEZA】

PEZA is an agency under the Department of Trade and Industry (DTI) of the Republic of the Philippines. It is one of the government agencies responsible for receiving and advising on foreign companies' investment applications and foreign companies' applications for permits and approvals, and it serves as a contact point for investment in the Philippines.

\*Transition credits are a financial mechanism to promote the early retirement of coal-fired power plants and the transition to renewable and other types of alternative energy. They involve a quantitative assessment of the CO<sub>2</sub> emissions from coal-fired power plants' continued operation and of the reductions from retirement, conversion of the reductions into environmental value (generation of carbon credits), and direction of the profits from sales of carbon credits to the costs of early retirement and alternative energy.



## 【Transition credits\*】



# MOU on Decarbonization between Zeroboard and Philippine Economic Zone Authority (PEZA)

- **Cooperation outline** : Zeroboard and the Philippine Economic Zone Authority (PEZA) have signed an MOU to promote decarbonization in Philippine special economic zones. We collaborate on GHG emissions management and GX human resource development.
- **Purpose or objectives of MOU** : Under this collaboration, we support GHG emissions calculation and visualization for PEZA-registered companies, jointly implement GX human resource development programs, co-develop a “Green SEZ” certification scheme, and select model industrial parks for pilot projects to realize sustainable special economic zones.



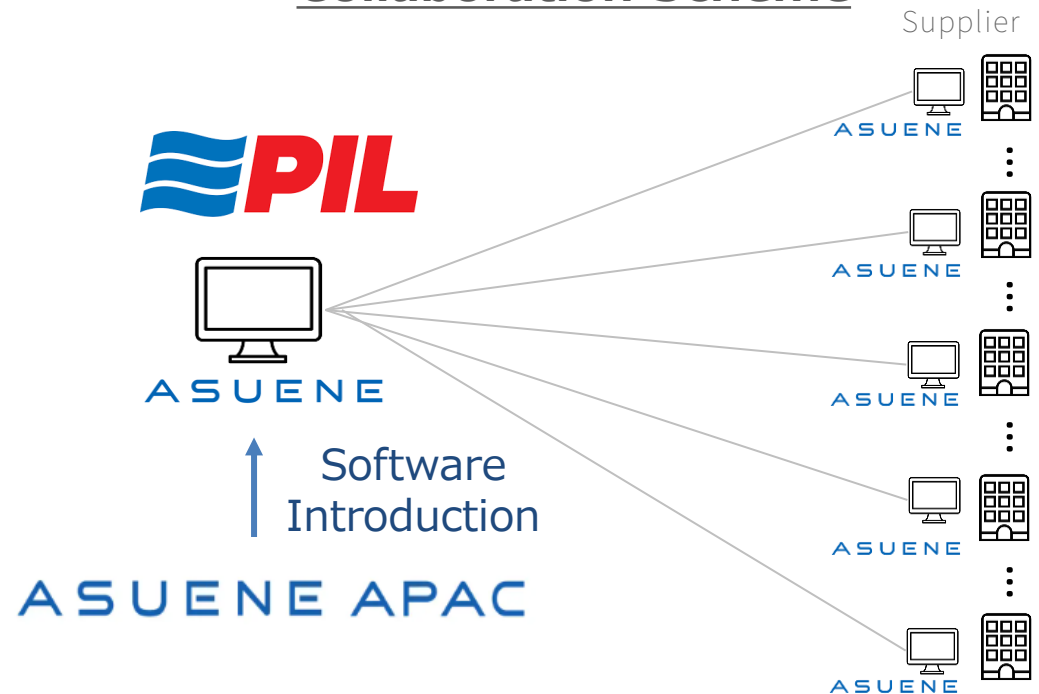


- **Cooperation outline** : Introduction of the system to PIL and efforts to promote decarbonization to PIL's supply chain partners
- **Purpose or objectives of MOU** : Through PIL, the largest local shipping company in Singapore, we will promote CO2 visualization and decarbonization efforts to SMEs in the supply chain, creating a sustainability impact in the industry.

## Signing Ceremony



## Collaboration Scheme



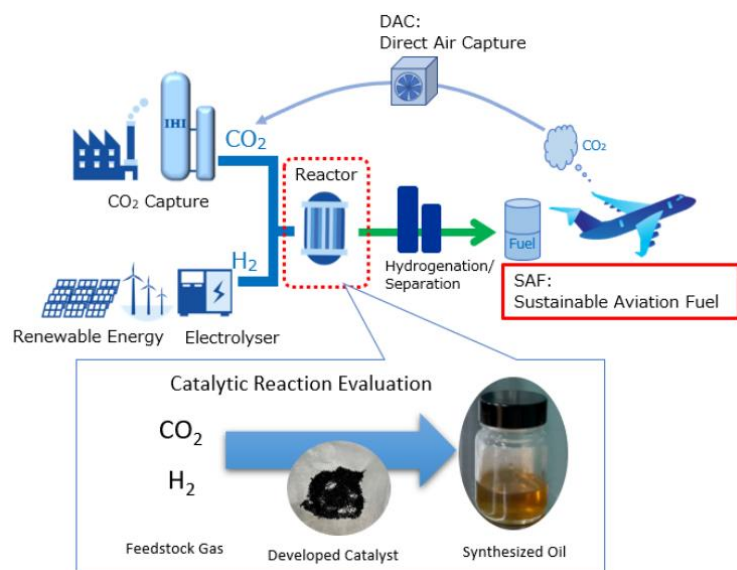
**Cooperation outline** : Accelerating the commercialization of a technology co-developed with IHI and ISCE<sup>2</sup>(\*1), which synthesizes hydrocarbons directly from hydrogen and CO<sub>2</sub> for use in SAF.

**Purpose or objectives of MOU** : Accelerate efforts for implementation of this technology in the Asia-Pacific region by scaling up SAF production technology, obtaining fuel standard approval (\*2) and exploring business opportunities, in order to contribute to the carbon neutrality of aviation industry.

**URL** : [https://www.ihico.jp/en/all\\_news/2024/technology/1201109\\_13699.html](https://www.ihico.jp/en/all_news/2024/technology/1201109_13699.html)

\*1: Institute of Sustainability for Chemicals, Energy and Environment

\*2: the standard for commercial deployment of SAF, regulated by ASTM International.



IHI's SAF Concept



MOU Signing ceremony  
on Oct 24<sup>th</sup> 2024



SAF test Rig at ISCE<sup>2</sup>

# GenZero and Mizuho Bank: Strategic partnership for transition credits

**Overview** : In February 2025, GenZero and Mizuho Bank signed an MOU to form a strategic partnership for transition credits, which are currently being developed to facilitate the early retirement of coal-fired power plants.

**Significance** : By supporting the robust evaluation of decarbonization initiatives and mobilization of international carbon finance, transition credits open a path to accelerate the phase-out of coal-fired power generation while mitigating economic, energy, and social impacts.

## Strategic partnership for transition credits



- Temasek-owned decarbonisation-focused investment platform company
- Frontrunner driving transition credits efforts



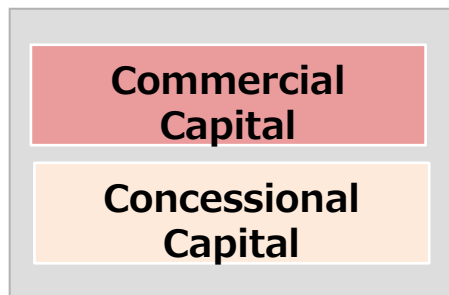
- Carbon credits is one of strategic focuses in sustainability
- Working to enhance the scalability and mechanisms of carbon credits as a financing method



- Leverage their financial insights and networks
- Jointly develop capital raising mechanisms incorporating carbon credits
- Further the design of frameworks for transition credits

# Statement of Intent to unlock investment opportunities in decarbonization in Asia

- **Statement Of Intent (SOI) Outline** : November 12,2024 – MAS, BlackRock, IFC, NEXI, AIA, and MUFG have signed an SOI at COP29 to explore ways to work together on a blended finance debt initiative for global investors seeking opportunities to finance corporates' decarbonization projects at scale in Asia with a focus on Southeast Asia(SEA).
- **Purpose of SOI** : To accelerate decarbonization in SEA by expanding investor access to private companies and projects working on decarbonization, thereby mobilizing public and private funds to address the region's decarbonization financing gap.
- **Other points** : The Industrial Transformation infrastructure debt program is one of the programs under MAS' Financing Asia's Transition Partnership (FAST-P), a blended finance initiative announced by the Singapore Government at COP28 that aims to mobilize up to US\$5 billion from public, private, and philanthropic partners to finance transition opportunities in SEA.



- ◆ Hard to abate sectors
- ◆ Technology solutions for the low-carbon transformation
- ◆ Industrial opportunities



# Collaboration agreement on decarbonization solutions in Thailand

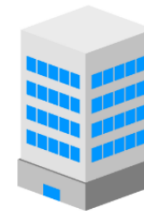
- **Cooperation outline** : Conclusion of collaboration agreement with Thai local company Banpu Next for Asuene's GHG calculations
- **Purpose or objectives of MOU** : Strengthen partnerships for customer referrals and promote companies' achievement of net zero by promoting visualization of CO2 emissions
- **URL** : <https://www.vritimes.com/th/articles/a97a0d24-2509-11ee-93d7-0a58a9feac02/68ea659c-dd0e-11ef-aae3-0a58a9feac02>

## Project site



## Collaboration Scheme

Local companies



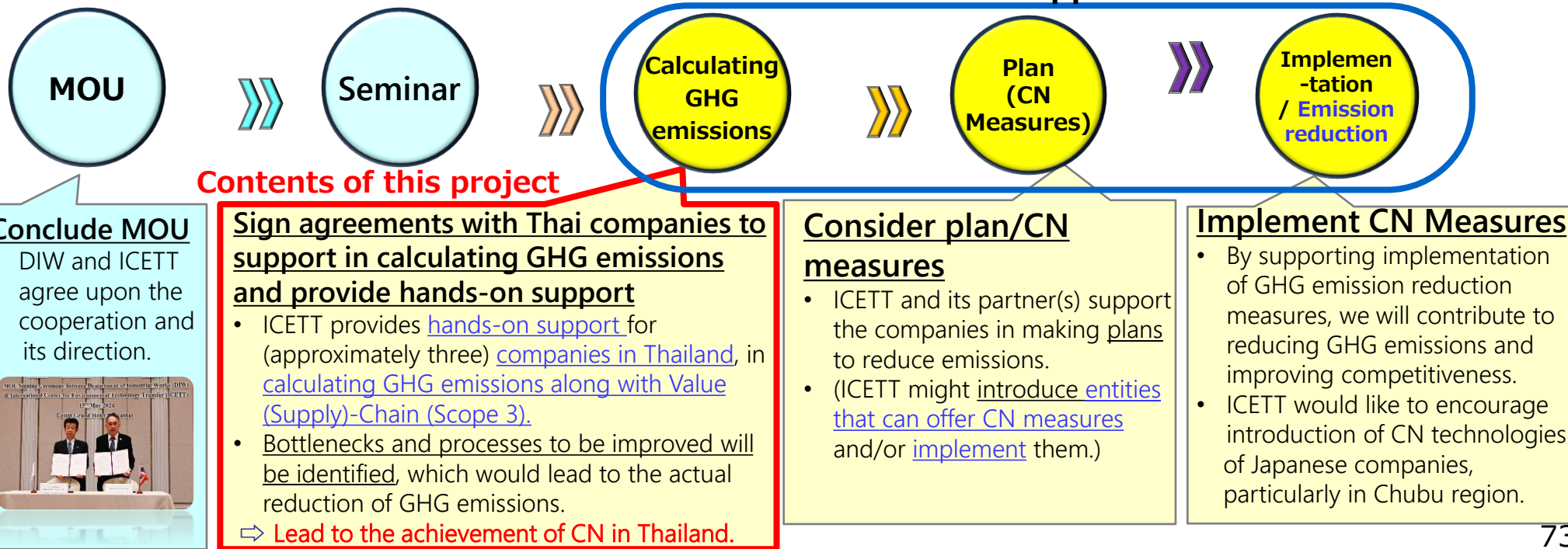
**Project outline** : ICETT will provide hands-on support for Thai companies (approximately three companies) in calculating greenhouse gas (GHG) emissions in fiscal year 2025 . This project will be implemented based on the Memorandum of Understanding (MOU) that Department of Industrial Works (DIW), Ministry of Industry of Thailand and ICETT signed in May 2024, to support GHG emissions calculation and reduction efforts in Thailand's industrial sector.

**Intension and Aims of the project** : Through the hands-on support from Utilizing ICETT's knowledge and expertise in this field, we will cooperate with Thai industry's efforts to conserve the environment, and particularly carbon neutrality from this fiscal year. Additionally, in the future, as a measure to reduce GHG emissions, we will support Japanese companies in expanding their business overseas by introducing CN technology.

**Related URL** : [https://www.icett.or.jp/2024/05/r6\\_thai\\_may/](https://www.icett.or.jp/2024/05/r6_thai_may/)

## Hands-on support for local Thai companies in calculating GHG emissions through collaboration with DIW

### Hands-on support

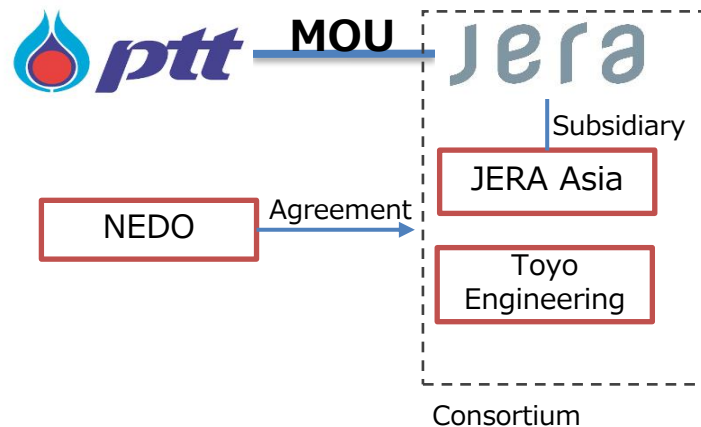


**Outline of the MOU :** JERA and PTT will collaborate and consider the building of hydrogen/ammonia supply chain creation in Thailand toward carbon neutrality by 2050 and net zero emission by 2065. Under the MOU, the consortium with JERA, JERA Asia and Toyo engineering is conducting the feasibility study about ammonia cracking funded by NEDO.

**Purpose :** To ensure the technology of ammonia cracking and expand the utilization of hydrogen in Thailand, which highly rely on the gas-fired power plant.

URL : [Collaboration with PTT on Building a Hydrogen and Ammonia Supply Chain for Decarbonization of Thailand | Press Release\(2023\) | JERA](#)

## Project organization



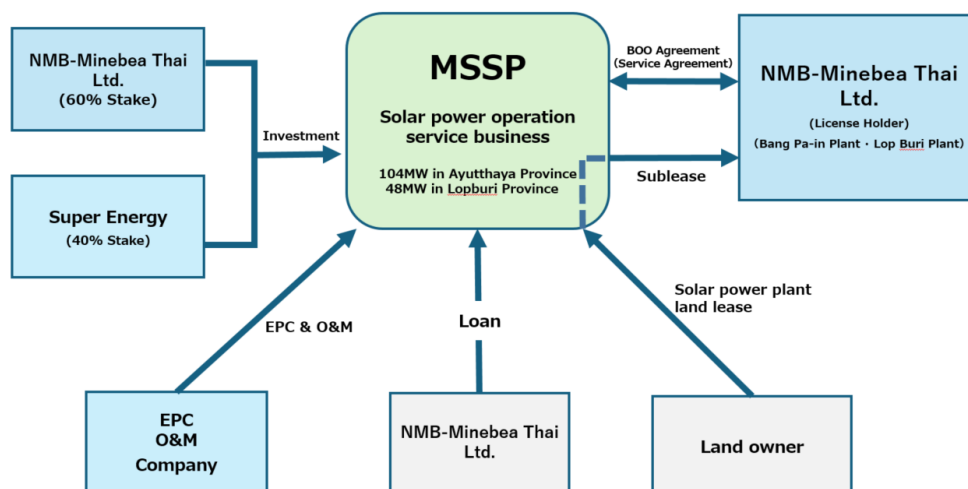
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## MOU execution ceremony



- **Outline of the Projects** : In collaboration with Super Energy, a private power producer in Thailand, we will jointly invest in and operate a total of 152MW-scale solar power generation and battery storage projects for 25 years at sites in Bang Pa-in, Ayutthaya Province, and Lopburi Province.
- **Objectives of This Collaboration** : Approximately 38% of the electricity used at MinebeaMitsumi's Banpain and Lopburi Plant will be converted to renewable energy by these projects. The introduction of a large-scale storage system will enable efficient operation of solar power generation while reducing excess electricity
- **Current Situation**
  - ① All necessary major contracts, including the joint venture agreement, have been executed.
  - ② Currently trying to get permission for the projects from the Thai Energy Regulatory Commission (ERC). Operations of the projects will be starting from mid-2026.

## Project scheme



## Project Site





**Cooperation outline** : TOWING will enhance the biochar produced by SCG Cement with its proprietary microbial technology, creating “high-performance biochar,” and the parties jointly pursue business development in Thailand

**Purpose or objectives of MOU** : “Biochar,” produced by carbonizing unutilized local biomass, enables carbon to be captured in a soil when applied to farmland. Adding microbes that address agronomic issues to biochar, the project aims to tackle GHG and agronomic issues across the country

**Other points** : In relation to the energy transition, the heat generated during the biochar production process can be reused, while the use of high-performance biochar promotes the adoption of organic fertilizers, contributing to the less reliance of fossil-based fertilizer and fossil fuel use.

<Project photo>

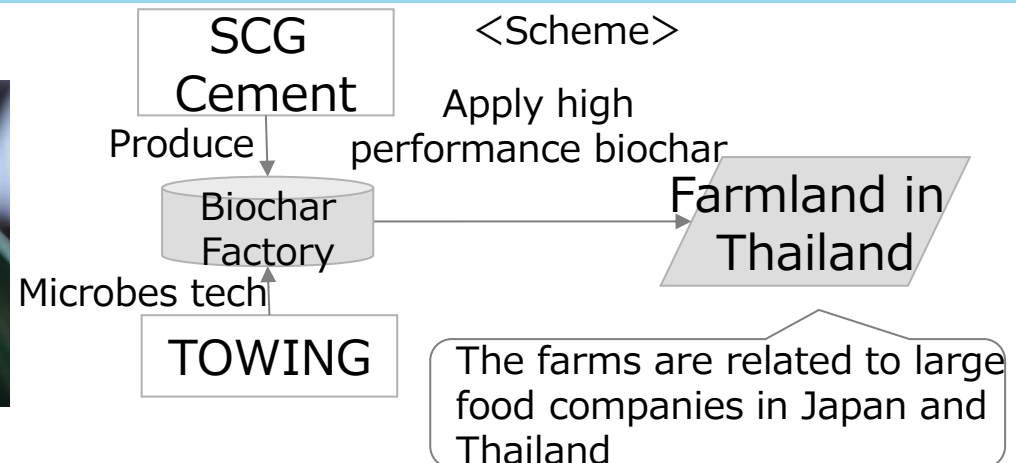


Ongoing field trial in Thailand



High-performance biochar

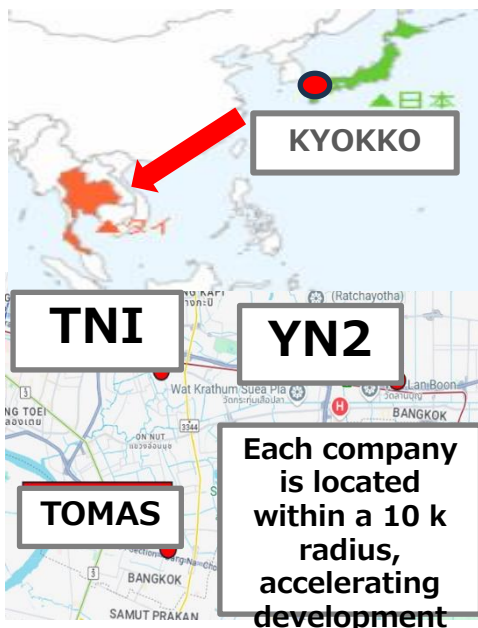
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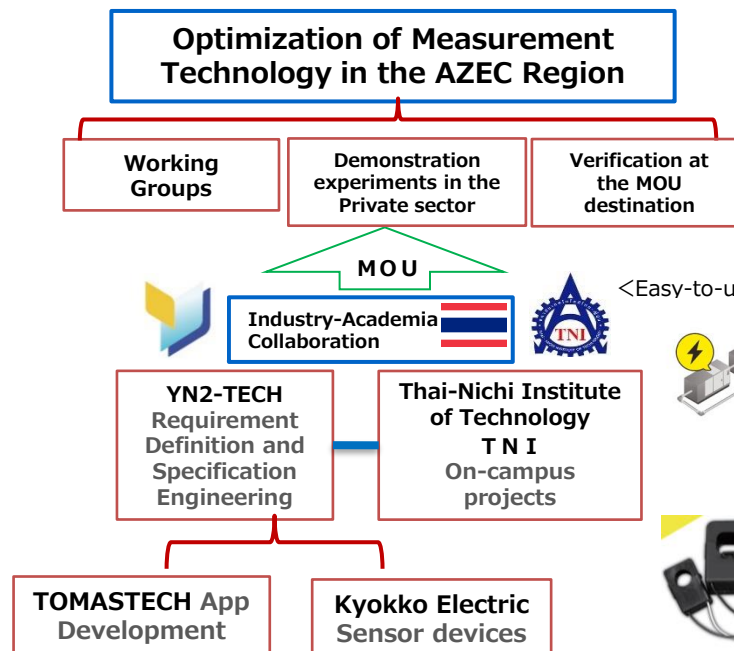
# MOU on the Standardization of Accurate CO<sub>2</sub> Emissions Measurement for Decarbonization among Companies and Related Organizations in AZEC Partner Countries

- **Outline of MOU/Corporate Alliance** : To promote the standardization of sensor measurement accuracy, this initiative addresses the issue of insufficient accuracy in commercially available sensors that quantitatively and automatically measure CO<sub>2</sub> emissions. This is a critical challenge in achieving CN in AZEC partner countries. To tackle this, a new forum for discussion and a business-matching framework will be established to formulate specific evaluation criteria.
- **Significance and Aim of the MOU** : This MOU aims to optimize measurement technologies and UI in the AZEC region, in collaboration with the Thai-Nichi Institute of Technology (TNI). The goal is to define industry standards for high-precision CO<sub>2</sub> measurement using sensor devices among AZEC-related partner companies. Thai-Nichi Institute of Technology(TNI), YN2-TECH, KYOKKO ELECTRIC, and TOMAS TECH will promote industry-academia collaboration and engage in discussions with other stakeholders to develop desirable measurement standards.
- **Other** : Keeping in mind the creation of a framework for "measurement standards" such as CE marking in the industry in the future

## < Map (Project Site Map)>



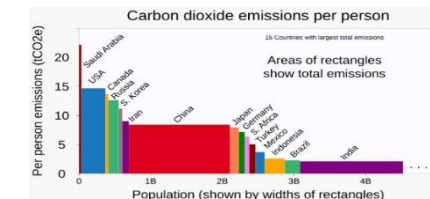
## <PJ Scheme>



## <Schedule>

**In 2025, a demonstration experiment report will be compiled at TNI, the MOU partner in Thailand.**  
**The solution will be expanded to AZEC partner countries.**  
**A simple solution**

<Easy-to-understand material >



# MOU on Decarbonization between Zeroboard and Rojana Industrial Park

- **Cooperation outline** : Zeroboard and Rojana Industrial Park signed an MOU to jointly promote decarbonization in Thailand, utilizing Zeroboard's GHG visualization and reduction platform for tenants within the industrial park.
- **Purpose or objectives of MOU** : To enable park-wide GHG tracking, support supply chain decarbonization, and strengthen the global competitiveness of tenant companies.
- **Other points** : Future expansion may include additional Rojana parks and broader solutions such as renewable energy and carbon credit initiatives.





**Cooperation outline :** In January 2025, Idemitsu and Lasuco began a regenerative agriculture trial using Sagri's satellite tech to reduce fertilizer use and generate carbon credits from lower GHG emissions.

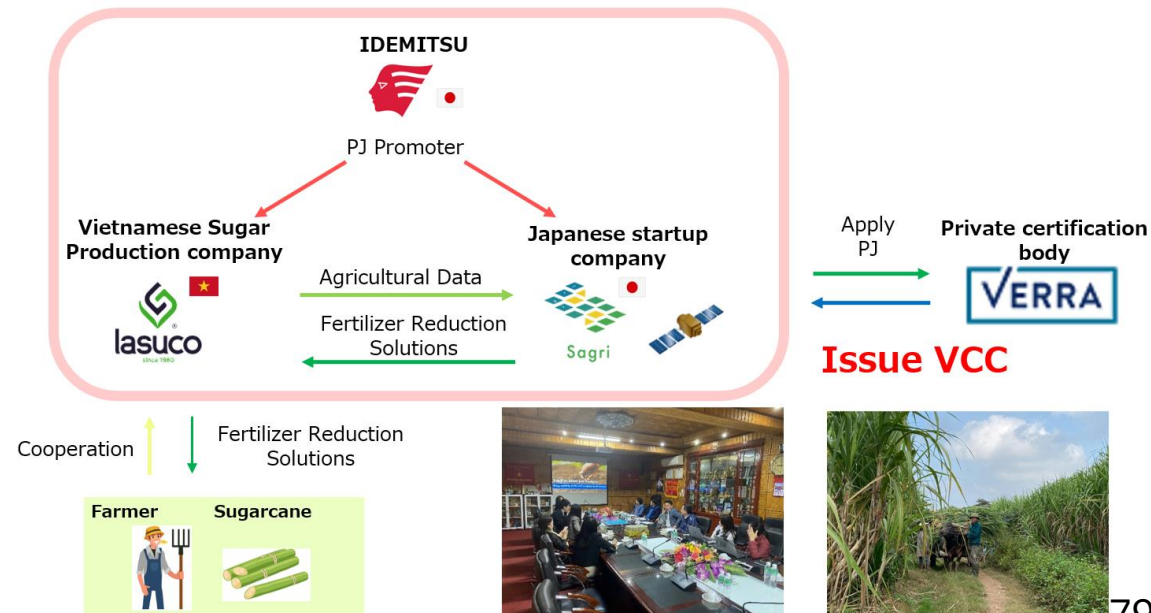
**Objectives of MOU :** Vietnam targets net-zero emissions by 2050, requiring decarbonization of its major agricultural sector. This project supports agricultural decarbonization by cutting chemical fertilizer use, which consumes significant fuel in production and increasing organic carbon in the soil.

**URL :** <https://idemitsu.vn/press-releases/idemitsu-kosan-lasuco-and-sagri-agree-to-collaborate-on-vietnams-first-carbon-credit-registration-based-on-improved-farmland-management-vm0042/>

Pictures of Workshop with farmers



Project Scheme

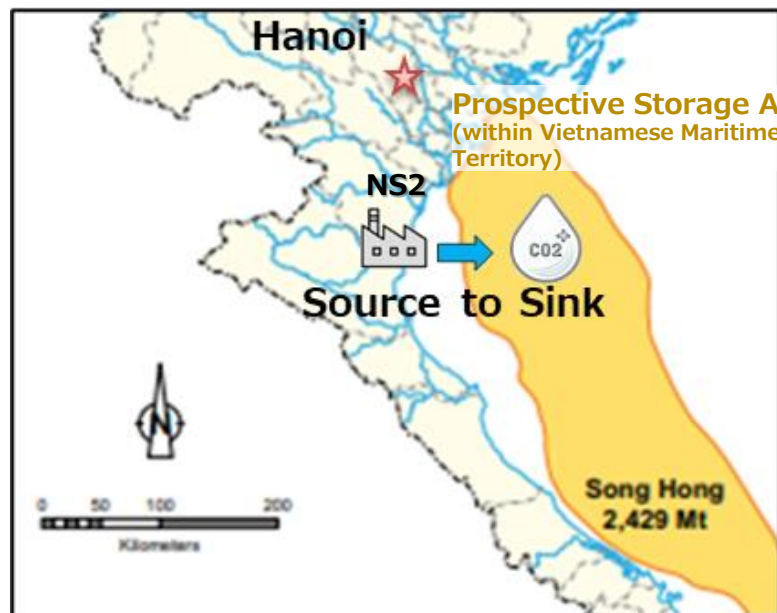




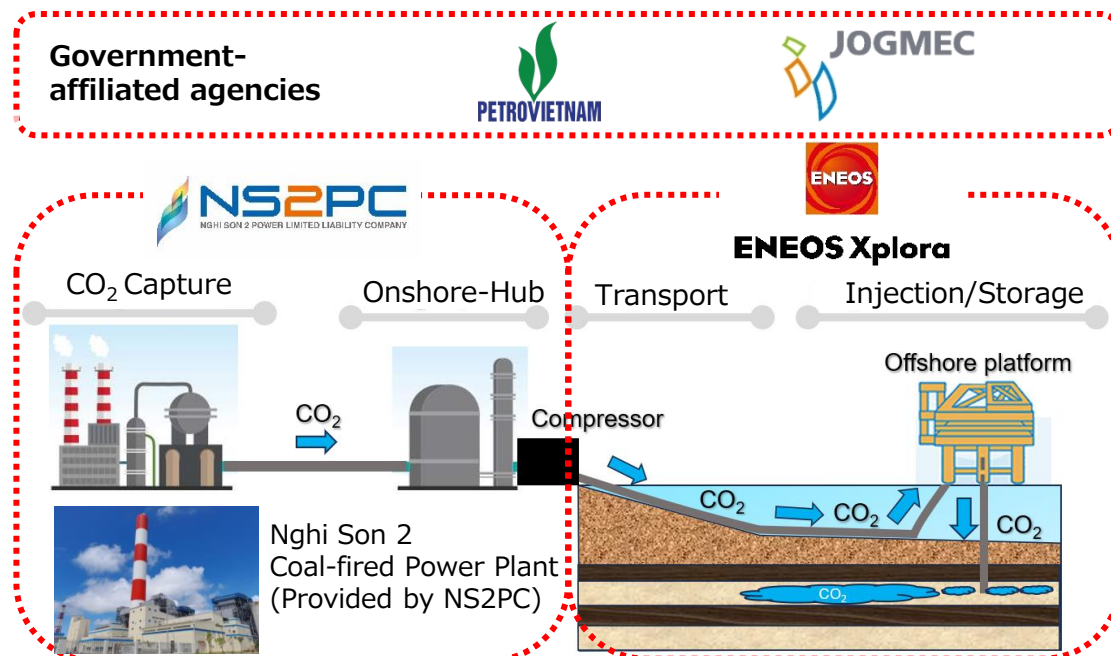
**Cooperation outline** : To contribute to the net zero emissions by 2050 in Vietnam, this MOU establishes a cooperative framework for launching a Carbon dioxide Capture and Storage (CCS) project.

**Purpose of MOU** : Toward the early launch of CCS project, a collaborative framework is built for activities contributing to legal development, securing international support, and exploring business model.

**Other points** : Holding joint workshops to promote information sharing, capacity building, and stakeholder engagement will be considered.



Modified after: ADB (2013)



Modified after: ENEOS Xplora material presented at the PVN-JOGMEC CCS Workshop held in Vietnam on May 29, 2025

# MOU on promoting decarbonization management in Vietnam between Zeroboard and CAE

- **Cooperation outline** : Zeroboard has formed partnership with Udata, a Vietnamese company who provides IoT, energy monitoring, energy efficiency solutions for industrial buildings.
- **Purpose or objectives of MOU** : promote GHG emission amount calculation and visualization cloud service “Zeroboard” to CAE’s local clients, as well as to hold decarbonization workshops to raise awareness.
- **Other points** : support decarbonization management throughout Vietnam, aiming to reduce the environmental and climate change impacts of both parties' stakeholders, support Vietnam's national goal of carbon neutrality by 2050.
- **URL**: <https://www.zeroboard.jp/>, <https://cae.vn/>



- **Cooperation outline** : Zeroboard and EGP became partnership to jointly promote decarbonization in Vietnam, utilizing Zeroboard's GHG calculation and visualization platform for local companies.
- **Purpose or objectives of MOU** : combine EGP's extensive expertise in sustainability to localize Zeroboard's GHG calculation and visualization tool, promote "EGP – powered by Zeroboard" tool to Vietnamese companies.
- **Other points** : Two companies will work to support decarbonized management throughout Vietnam, aiming to reduce the environmental and climate change impacts of both parties' stakeholders, in order to achieve Vietnam's national goal of carbon neutrality by 2050.
- **URL**: <https://www.zeroboard.jp/>, <https://egp.vn/>



# MOU on Decarbonization between Zeroboard and FPT IS

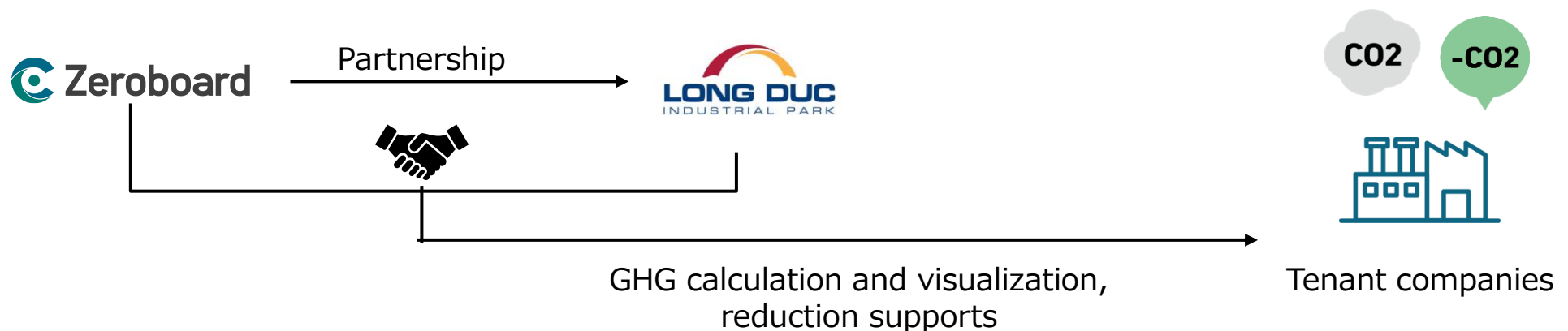
- **Cooperation outline** : Zeroboard has signed a partnership MOU with FPT IS, a subsidiary of FPT Corporation, Vietnam's largest telecommunications and IT company.
- **Purpose or objectives of MOU** : This partnership enables mutual data integration between the two GHG emissions calculation and visualization platforms, "Zeroboard" and "VertZéro", strengthening support for corporate decarbonization, aiming to expand in the ASEAN market and enhance global decarbonization efforts.
- **Other points** : Both companies will continue to promote user-friendly systems that facilitate corporate decarbonization efforts, contributing to the realization of carbon neutrality.
- **URL**: <https://www.zeroboard.jp/>, <https://fpt-is.com/>





# MOU on Decarbonization between Zeroboard and Long Duc Industrial Park

- **Cooperation outline** : Zeroboard and Long Duc Industrial Park signed an MOU to jointly promote decarbonization in Vietnam, utilizing Zeroboard's GHG visualization and reduction platform for tenants within the industrial park.
- **Purpose or objectives of MOU** : To enable park-wide GHG tracking, support supply chain decarbonization, and strengthen the global competitiveness of tenant companies.
- **Other points** : Future expansion may include additional industrial parks by the same investors and broader solutions such as decarbonization solutions matching.
- **URL**: <https://www.zeroboard.jp/>, <https://longduc-ip.com.vn/en/>



- **Cooperation outline** : Zeroboard has formed partnership with Udata, a Vietnamese company who provides IoT, energy monitoring, energy efficiency solutions for industrial buildings.
- **Purpose or objectives of MOU** : release a white-label product named “Uzero – powered by Zeroboard” for GHG emissions calculation and visualization and promote the product to Udata’s clients network.
- **Other points** : Udata considers to integrate Uzero to Udata’s IoT ecosystem as one-stop solution.
- **URL**: <https://www.zeroboard.jp/>, <https://udata.ai/>



# MOL Signs Comprehensive MoU with the Maritime and Port Authority of Singapore (MPA) on Decarbonisation, Digitalisation, and Human Resource Development

- **Cooperation outline :** In November 2024, Mitsui O.S.K. Lines, Ltd. (MOL) signed a MoU with MPA to establish a comprehensive cooperative framework in three key areas: decarbonisation, digitalisation and maritime innovation, and joint development of maritime human resources. MOL and MPA aim to build a sustainable maritime industry in Singapore through next-generation fuels, efficient port operations, and talent development.
- **Purpose or objectives of MOU :** This partnership promotes decarbonisation and digitalisation in Singapore, strengthening global competitiveness and supporting a sustainable maritime ecosystem for both Japan and Singapore.
- **URL :** <https://www.mol.co.jp/en/pr/2024/24119.html>

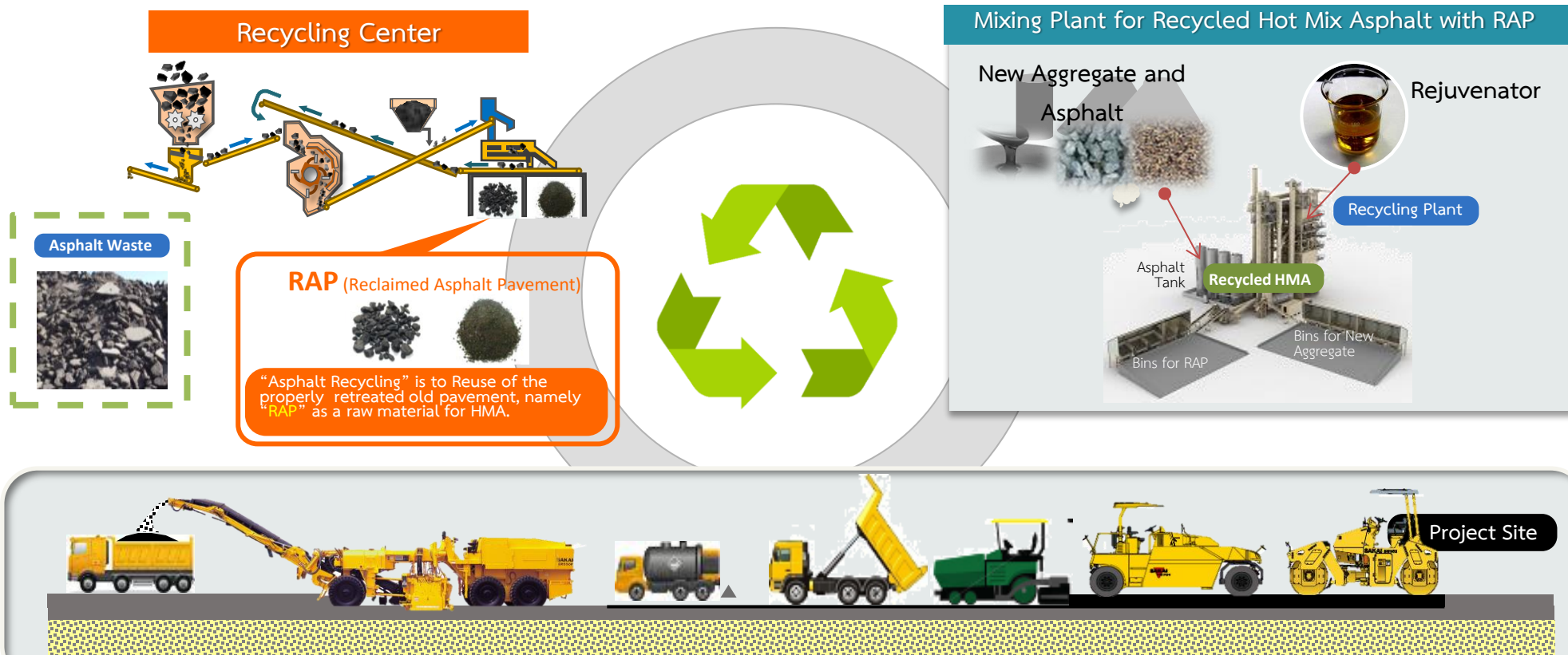
## Signing Ceremony

## Initiatives Toward Building Green and Digital Shipping Corridors



# NIKKO Co., Ltd. Aims to establish a roadmap for the widespread use of RAP and acquisition of national standard in Vietnam.

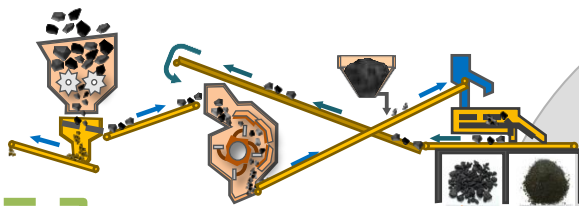
- **Overview of the MOU :** Nikko Co., Ltd. Collaborate with the University of Transport and Communications(UTC) in Vietnam, with the aim of obtaining national standards for hot recycled asphalt pavement with a recycling rate of 50% to 75%.
- **Significance and aims of this collaboration :** By utilizing NIKKO heated recycled asphalt plant, CO<sub>2</sub> emissions from material procurement (aggregate and asphalt transportation) can be reduced. By partnering with UTC, the most authoritative institution in Vietnam's transportation infrastructure sector, it becomes possible to effectively advance both the development of a roadmap for recycled asphalt paving and the smooth acquisition of national standards.





- **Cooperation outline** : NIKKO Co., Ltd., SAKAI HEAVY INDUSTRIES, Ltd. and IKEE Ltd. collaborate with the Ministry of Public Works and Transport of Cambodia to establish technical partnerships for the national standardization of heated recycled asphalt mixtures.
- **Objectives** : Milling materials generated by SAKAI wheeled road cutters will be recycled at NIKKO heated recycle plant. IKEE shall provide technical guidance and support to MPWT to ensure the effective application of recycled asphalt technology.
- This process promotes sustainable resource use, reduces CO<sub>2</sub> emissions, and serves as a model for a circular, environmentally responsible society.

Recycling Center



Asphalt Waste

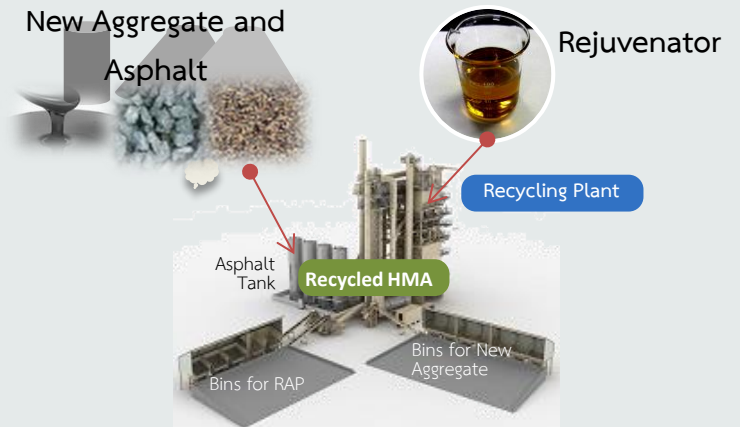


**RAP** (Reclaimed Asphalt Pavement)



"Asphalt Recycling" is to Reuse of the properly retreated old pavement, namely "RAP" as a raw material for HMA.

Mixing Plant for Recycled Hot Mix Asphalt with RAP



Project Site

# Initiatives to foster a Decarbonization Market through Technical Assistance and Field Demonstration in the Philippines.

\*GS (Global South)

- **Summary:** By utilizing the Ministry of Economy, Trade and Industry's GS(\*) Subsidy Program, we collaborate with the Department of Public Works and Highways, Philippines and local private companies, and through technical assistance and field demonstrations of road asset management technologies contributing to decarbonization (including not only recycled asphalt but also modified asphalt and vegetable-based resin waterproofing layers for extending pavement and bridge lifespans, as well as road repair materials using vegetable oils), our company aims to foster the formation of a decarbonization market in Asia.
- **Significance and Objectives:** While there is potential demand for road asset management technologies that contribute to decarbonization in Asian countries, sufficient technology diffusion has not yet been achieved. Therefore, through coordination between individual decarbonization-related projects and policies facilitated by AZEC, we will attempt to establish rules aimed at promoting the diffusion of decarbonization technologies and expanding their market.

DPWH Technical Workshop



Aug.2024

Decarbonization technology introduction and pavement lecture at DPWH

Technical Conference (PICE) @Manila

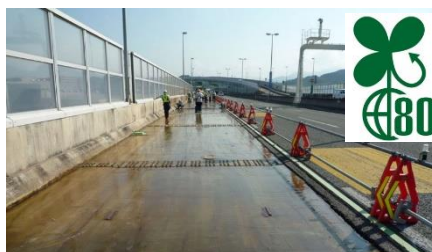


Oct.2024

Lecture for recycled asphalt technology at Philippine Institute of Civil Engineers



Warm mixture technology



Vegetable-based resin waterproofing material



Repair material using vegetable oil



Signing MOU with Philippine company (Nov. 22, 2024)



# SAKAI HEAVY INDUSTRIES, LTD. will be actively promoting the dissemination of CAE Stabilizer Method for sustainable road maintenance.

- **Overview of the MOU:** SAKAI will be establishing a cooperative relationship with the University of Transport and Communications (Ho Chi Minh City) and technology transfer, with the aim of promoting the dissemination of CAE Stabilizer Method, a type of Cold In-Place Recycling, which has already been certified as a national standard, and its related products.
- **Significance and aims of this collaboration:** CAE Stabilizer method contributes to the realization of a sustainable, circular society by reducing CO<sub>2</sub> emissions from material procurement and crushed stone transport, as well as promoting efficient use of resources. Through this cooperation, we aim to encourage the development of a market for recycled materials and foster sustainable practices in pavement maintenance.

## CAE Stabilizer Method Using Road Stabilizer (PM550-S):

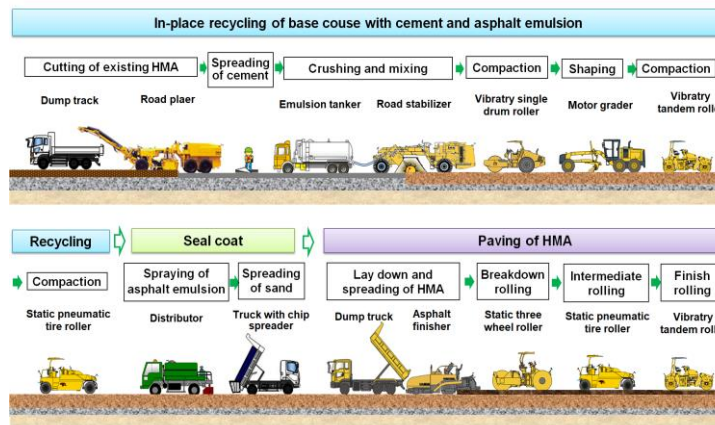
**Technology:** CAE (Cement/Asphalt Emulsion) Stabilizer Method

- Ex. pavement is mixed on-site with cement and As emulsion to construct a strong recycled base course.
- By providing flexibility, it improves long-term durability and contributes to long-life pavement.
- Reuses ex. pavement as base material, promoting effective resource utilization.
- Helps reduce CO<sub>2</sub> emissions associated with material procurement and the transportation of materials.

**Supply Achievements:** ODA (Supplied to 17 countries)

- Vietnam (2016), Indonesia (2025) - Standardization
- JICA Business Demonstration Project in 2022-23
- METI's Global South Subsidy Project in 2025
- Accepted as a proposed method by UNIDO in 2025

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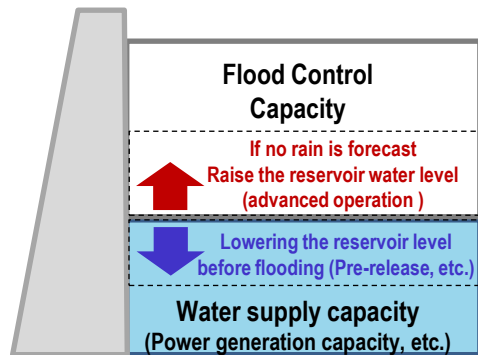


**[Vietnam national Standard (TCVN)]**

- **Cooperation outline** : Promote discussions with Malaysia on dam operation and improvement that contribute to climate change adaptation and mitigation measures.
- **Objectives of MOC** : To strengthen, promote and develop cooperation in the field of water resources management between the two countries.
- **Other Points** : MOC was signed between the both Ministers of MLIT and PETRA in September 2025. Both countries will discuss cooperative activities and collaborate on initiatives moving forward.

## < Examples of efforts to improve the operation and efficiency of existing dams in Japan >

### Advanced Dam Operation



### Construction of new power generation facilities at existing dams



Image of power generation facility



### Dam upgrading and multipurpose Dam Construction



Strengthening flood control functions and increasing hydroelectric power generation by raising the dam height

Introduction of hybrid technologies that can simultaneously reduce flood damage (adaptation measures) and GHG emissions (mitigation measures)



AZEC  
Asia Zero Emission Community



# Collaboration on sustainable development for the built environment between JTC and MLIT



- **Cooperation outline** : The Jurong Town Corporation (JTC) of Singapore and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) of Japan will share their experience and knowledge through various measures, such as regular meetings, with the aim of promoting decarbonization in the building sector.
- **Purpose** : Giving the global importance of reducing greenhouse gas emissions from the building sector, JTC and MLIT will promote the decarbonization of the building sector by sharing knowledge on decarbonization of the building including the Life Cycle Carbon Assessment and saving energy or carbon about building.
- **Other points** : JTC and MLIT will hold regular working-level meetings to share information and facilitate discussion.

## <Overview>

- Scope of cooperation  
Decarbonization measures for buildings, including the Life Cycle Carbon Assessment



Contributing to decarbonization in the building sector in the international community

## < The signing ceremony >



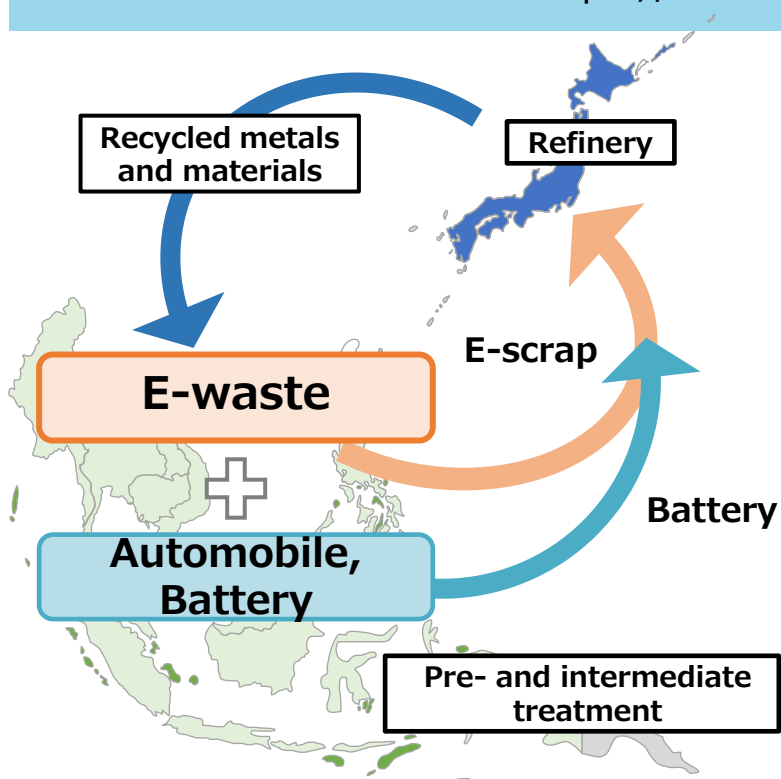
Signed by: Nelson Liew (JTC), Counselor Ishikawa (MLIT)  
Witnessed by: David Tan (JTC), Deputy Director-General Goto (MLIT)  
\*Titles omitted



# ASEAN-Japan Resource Circulation Partnerships on E-Waste, ELV and Critical Minerals (ARCPEEC)



- **Cooperation outline** : ARCPEEC was agreed at the ASEAN-Japan Ministerial Dialogue for Environment and Climate Change (AJMDEC) held in September 2025.
- **Objective of ARCPEEC** : The partnership will promote environmentally sound recycling and recovery of critical minerals from e-waste and End-of-Life Vehicles (ELVs) including batteries to contribute to decarbonization across the relevant supply chains. It will support for developing the regulatory frameworks, enhancing enforcement of regulations through technical assistance, and fostering collaboration among the private sectors, promoting environmentally sound resource circulation.
- **【Press release URL】** [https://www.env.go.jp/press/press\\_00573.html](https://www.env.go.jp/press/press_00573.html)



## Expected Contents of Cooperation

### 1 Promotion of an enabling environment

Support to develop relevant laws and regulations including environmental standards and guidelines for collection, dismantling and disposal. It also includes registration and permission system of recycling business, and integration of the informal sector through proper enforcement.

### 2 Capacity building

Promote capacity enhancement of governments and businesses.  
For governments: enforcement of laws and regulations and monitoring of the entire operation from collection and recycling to final disposal.  
For businesses: improvement of technical and operational capacities of recycling operators.

### 3 Promotion of private partnerships

Foster collaboration between local companies and Japanese ones e.g. Technical cooperation, Joint ventures, Investments in local facilities

# Letter of Intent between the Ministry of the Environment of Japan and the Ministry of Environment of Kingdom of Cambodia

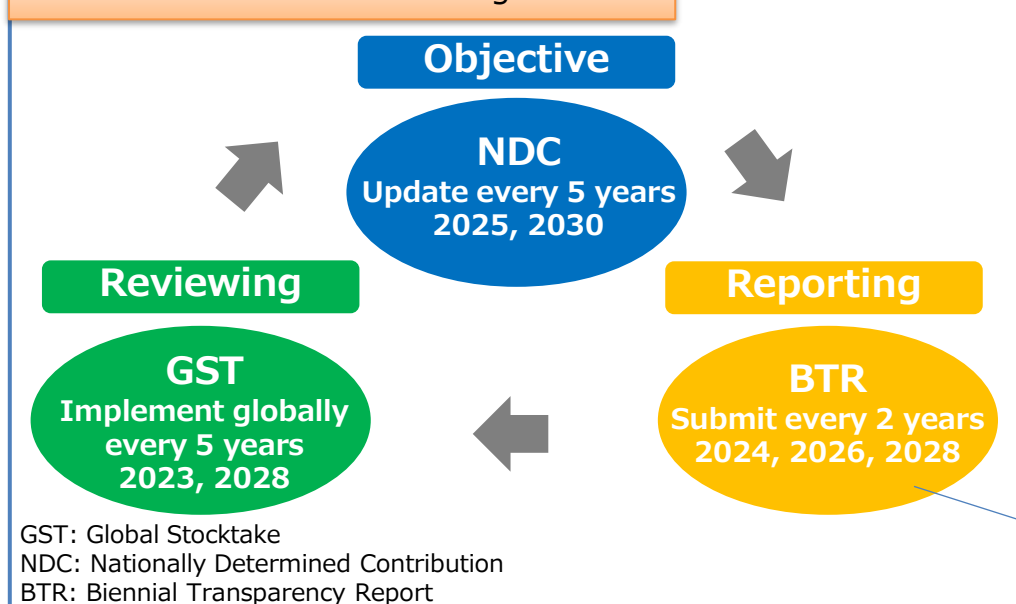
- **Cooperation outline** : This aims to further strengthen cooperation in the field of climate change mitigation, including support for the creation of 2nd BTR\*<sup>1</sup> and the GHG inventory\*<sup>2</sup>.
- **Objectives of LOI** : It aims to promote the formation of JCM projects and contribute to global decarbonization through developing information infrastructure such as the GHG inventory.
- **URL** : [https://www.env.go.jp/en/press/press\\_00266.html](https://www.env.go.jp/en/press/press_00266.html)

\*1: Second Biennial Transparency Report, \*2: Greenhouse Gas inventory

Signing of LOI



The Mechanism of the Paris Agreement



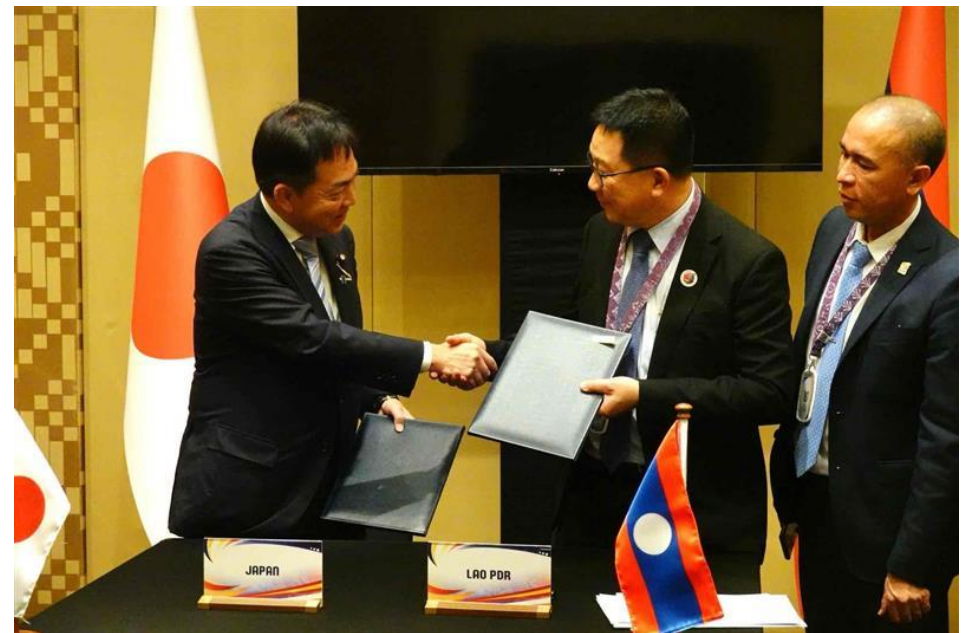
Cambodia's initial BTR (BTR1)



Support for the development BTR/inventory etc.  
[Support Initiative for Transparency in Asia (SITA)]



- **Cooperation outline** : On 3 September 2025, at Langkawi Island, Malaysia, the Minister of the Environment of Japan and the Minister of Agriculture and Environment of the Lao People's Democratic Republic signed a Memorandum of Cooperation (MoC) on Environmental Cooperation to advance bilateral cooperation on climate change and pollution prevention.
- **Objectives of MOC** : To cooperate with Lao PDR on climate change and pollution prevention by harnessing Japan's experience in addressing environmental pollution and its decarbonization technologies.
- **[Press Release URL]** [https://www.env.go.jp/press/press\\_00567.html](https://www.env.go.jp/press/press_00567.html)





# Strategic Program for ASEAN Climate and Environment (SPACE) 2025

- **Cooperation outline** : 3<sup>rd</sup> ASEAN-Japan Ministerial Meeting on Environment (AJMDEC) held in conjunction with the 19<sup>th</sup> ASEAN Environment Ministers' Meeting on 4 September 2025 at Langkawi, with the attendance of environment ministers and other senior officials from Japan and ASEAN countries. AJMDEC adopted both Joint Statement confirming this dialogue will be held on a regular basis, and as well as the updated 'STRATEGIC PROGRAM FOR ASEAN CLIMATE AND ENVIRONMENT(SPACE)'.
- **Objective of SPACE** : With view to address the triple crises of climate change, pollution and biodiversity loss, Japan and ASEAN further deepens cooperation in the field of environment and climate change.
- **【Press release URL】** [https://www.env.go.jp/press/press\\_00573.html](https://www.env.go.jp/press/press_00573.html)

