



# Catalog of Products and Services of Japanese Companies Contributing to Decarbonization in Malaysia (1st edition)

Japan External Trade Organization (JETRO)  
Kuala Lumpur Office  
Overseas Business Development Department

March 2024



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# I | Introduction

- The Malaysian government has declared to achieve carbon neutrality by 2050. In 2023, they announced the National Energy Roadmap (NETR), the pillar of the country's decarbonization policy. The roadmap specifies important areas, such as renewable energy and hydrogen, and efforts toward the energy transition that are in full swing, including the launch of a two-billion-ringgit fund.
- The Japanese government is promoting support for decarbonization in ASEAN countries, including the launch of the Asian Zero Emission Community (AZEC) by the Ministry of Economy, Trade, and Industry in March 2023. According to a JETRO survey, the percentage of Japanese companies working on decarbonization in Malaysia is 80.5%, which is high among major ASEAN countries, and small and medium-sized enterprises are also making progress. Decarbonization has become an important trend that Japanese companies, including small and medium-sized enterprises, should be aware of when developing business in Malaysia.
- This catalog is created to introduce businesses by Japanese companies that can contribute to decarbonization and emission reduction in business activities in Malaysia. Particularly for small and medium-sized enterprises, it is hoped that the listing will provide an opportunity for future business expansion.

March 2024  
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# II | Survey Overview

## ■ Survey Method/Target

- Six Energy Transition Levers are specified by the Malaysian government in the National Energy Transition Roadmap (NETR): (1) Energy Efficiency, 2) Renewable Energy, 3) Hydrogen, 4) Bioenergy, 5) Green Mobility, 6) CCUS/CCS (Note) and 10 Flagship Catalyst Projects (Efficient Switch, Renewable Energy Zone, Energy Storage, Energy Secure, Green Hydrogen, Hydrogen for Power, Biomass Demand Creation, Future Mobility, Future Fuel, and CCS for Industry). Major Japanese companies in each sectors in Malaysia are selected.
- Based on the list of Japanese companies in Malaysia, we prioritized small and medium-sized enterprises and start-up companies. The list is based on publicly available information, such as company websites, press releases, news reports, exhibition information, and interviews with each company.
- Even if they are located outside of Malaysia, Japanese companies working on decarbonization projects in Malaysia will also be included.
- The definition of a company is as follows.
  - Unlisted company: An unlisted company that has been in business for 10 years or more
  - Start-up company: A company founded less than 10 years ago
  - Listed company: A company listed in Malaysia or Japan

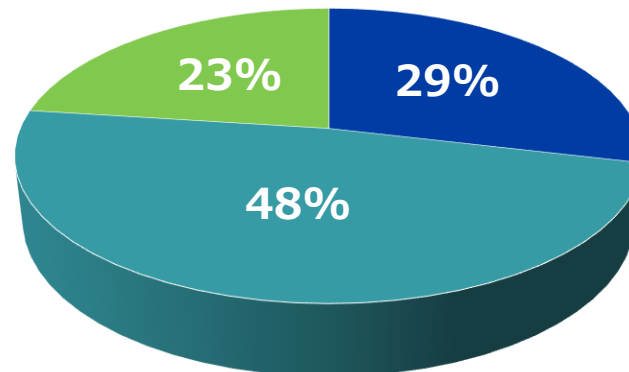
(Note) CCUS … Carbon capture and usage and storage of carbon dioxide  
CCS … Carbon capture and storage of carbon dioxide

# III | Listed Company Overview (1) – By Company Size and Location

- ◆ Number of listed companies : 17 companies
- ◆ By company location
  - Malaysia 5 companies
  - Japan 9 companies
  - Singapore 2 companies
  - Indonesia 1 company
- ◆ By company size
  - 5 unlisted companies
  - 8 start-up companies
  - 4 listed companies

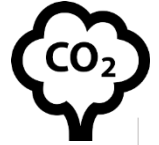
## By company size

- Unlisted companies
- Start-up companies
- Listed companies



# III | Listed Company Overview (2) – By Sectors

Companies by Sectors (6 Energy Transition Levers and 10 Flagship Catalyst projects as defined by NETR)



Energy Efficiency

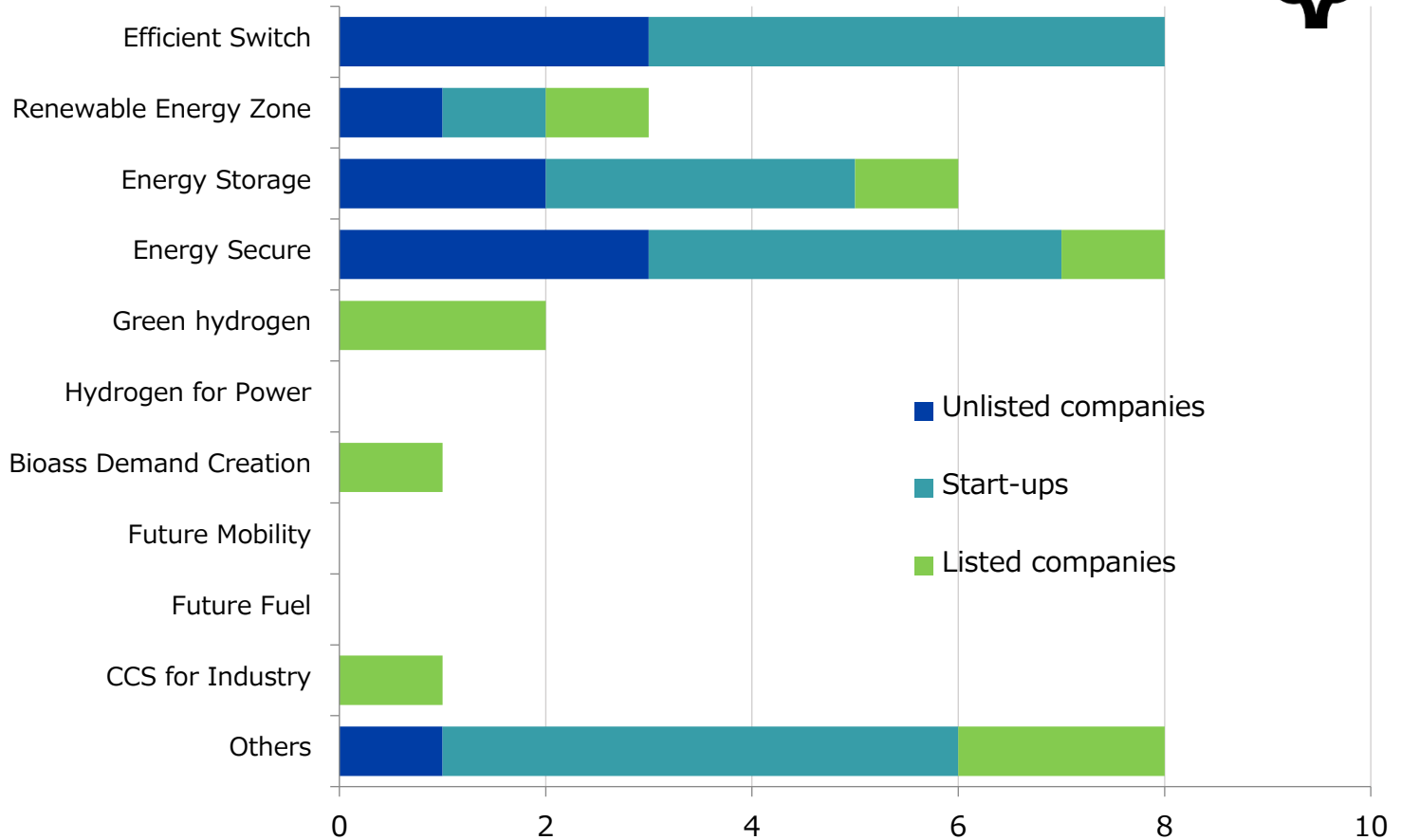
Renewable Energy

Hydrogen

Bioenergy

Green Mobility

CCUS/CCS



(Note)

1. Companies with multiple businesses will be counted as multiple.
2. Cases that do not fall under the core business, such as carbon credit business or resource recycling, are counted as "others".

# IV | Listed Companies (1)

Company name		Company size	Efficient Switch	Renewable Energy Zone	Energy Storage	Energy Secure	Green Hydrogen	Hydrogen for Power	Biomass Demand Creation	Future Mobility	Future Fuel	CCS for Industry	Others	Page
Energy Efficiency														
01	Mitsubishi Electric Sales Malaysia Sdn. Bhd.	1	○			○								10
02	Nabtesco Corporation	1	○											11
03	Recomm Business Solutions (Malaysia) Sdn. Bhd.	2	○										○	12
04	Sagri Co., Ltd.	2	○										○	14
05	Zeroboard Inc.	2	○			○							○	13
Renewable Energy														
06	Amita Holdings Co., Ltd.	3		○									○	16
07	PT. Chugai Ro Indonesia	1	○	○									○	17
08	ENEOS Oil & Energy Asia Pte. Ltd.	1			○	○								18
09	Enel-X Advisory Services Japan	2		○	○	○								19
10	KYOCERA Propel Network Sdn. Bhd.	1			○	○								20

(Note) 1: Unlisted company, 2: Start-up company, 3: Listed company

## IV | Listed Companies (2)

Company name		Company size	Efficient Switch	Renewable Energy Zone	Energy Storage	Energy Secure	Green Hydrogen	Hydrogen for Power	Biomass Demand Creation	Future Mobility	Future Fuel	CCS for Industry	Others	Page
11	Loop Energy (M) Sdn. Bhd.	2			○	○								21
12	Shizen Malaysia Sdn. Bhd.	2			○	○								22
Hydrogen														
13	Asahi Kasei Corporation	3					○							24
14	Sumitomo Corporation	3					○						○	25
Bioenergy														
15	Osaka Gas Co., Ltd.	3			○	○			○			○		27
Green Mobility														
CCUS/CCS														
16	Asuene APAC Pte. Ltd.	2	○										○	30
17	Green Carbon Co., Ltd.	2	○										○	31

(Note) 1: Unlisted company, 2: Start-up company, 3: Listed company



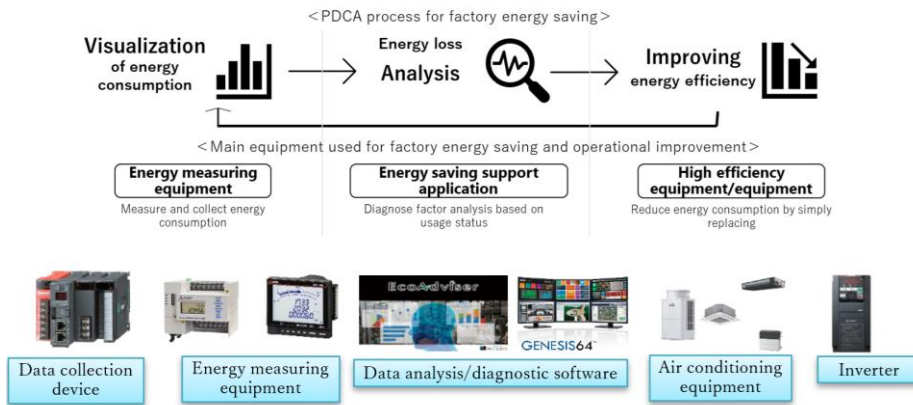
## 1 Energy Efficiency

- 01 Mitsubishi Electric Sales Malaysia Sdn. Bhd.
- 02 Nabtesco Corporation
- 03 Recomm Business Solutions (Malaysia) Sdn. Bhd.
- 04 Saguri Co., Ltd.
- 05 Zeroboard Inc.

Energy saving solution

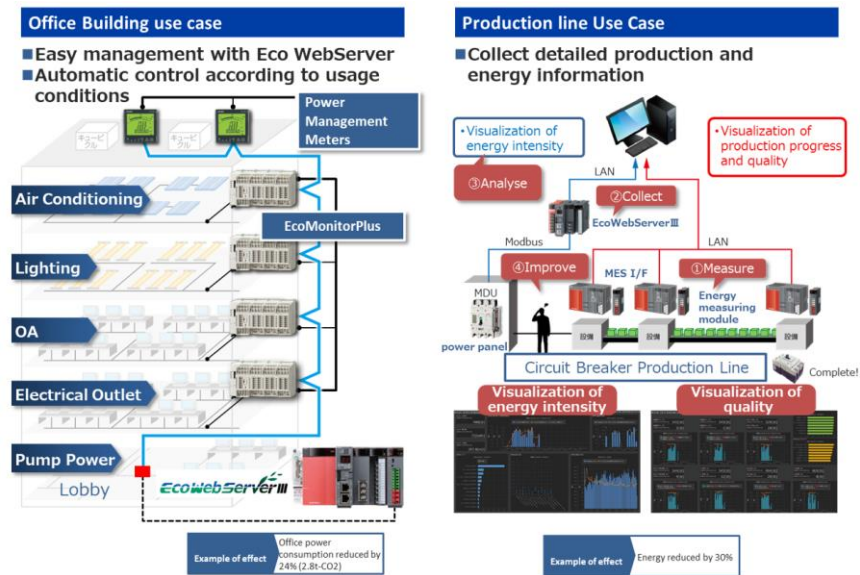
Product / Service Overview

- Provides comprehensive support for the reduction of CO2 emissions by promoting energy conservation in buildings, factories, etc. through various measuring instruments, applications, and high-efficiency equipment and devices that run the PDCA cycle of “visualization”, “analysis”, and “improvement” of energy consumption.



Achievements / Case Studies

- <Example of system configuration in a building/ factory>  
Case study of Mitsubishi Electric Corporation’s Fukuyama Works



Contact Information

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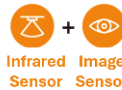
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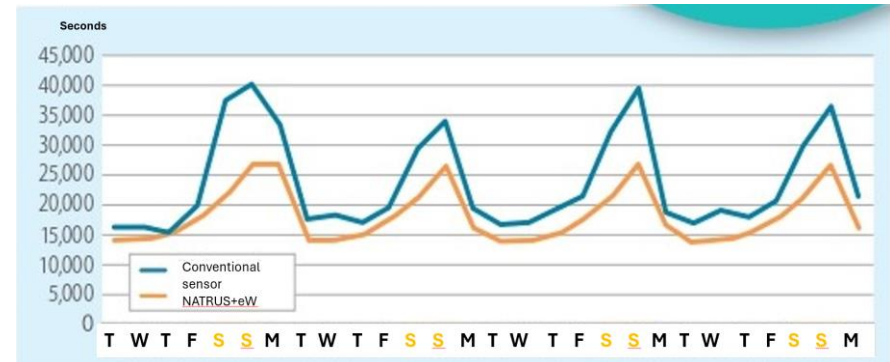
**“NATRUS +e W sensor”****-Earth-friendly and people-friendly automatic door sensor****■ Product / Service Overview****□ NATRUS +e W**

- Equipped with “Image Sensing W”, a two-sensor (W) infrared sensor and image sensor that expands the flow line judgment area to approximately four times that of conventional models. A wide detection range accurately detects the speed and movement direction of people and objects, reducing the unnecessary opening of automatic doors.
- Reduces unnecessary opening time (time when automatic doors are open, but no people are passing through), contributing to building energy savings.
- Improves the indoor environment by stopping the inflow of cold and hot air from the outside due to wasteful opening.
- Accurately understands people’s walking conditions and predicts the time it will take them to reach the door. Excellent trafficability is achieved by opening at the appropriate time according to walking speed.

Image Sensing W

**■ Achievements / Case Studies**

- Effects of reducing unnecessary opening and improving trafficability when the demonstration installation was performed on automatic doors in the Shin-Tomei Expressway service area “NEOPASA Suruga Bay Numazu Kudari”
  - Reduction of unnecessary opening of automatic doors: Approximately 21%
  - Trafficability improvement effect: Approximately 20% of total traffic
  - Reduction of malfunction: Reduces malfunction due to fog



(Graph) Comparison of door opening time by day of the week

**Contact Information**

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**Power consumption + CO2 reduction solutions  
(LED lighting, commercial air conditioners, etc.)  
Infection prevention solution (“ReSPR”)**

■ **Product / Service Overview**

□ **LED lighting**

- High quality, long life, and 5-year warranty for peace of mind
- Select the most suitable product from a wide variety of selectable products

□ **Commercial air conditioner with environmental impact in mind**

- Switching from air conditioners that use R22 refrigerant gas, which was virtually discontinued in developed countries, such as Japan in 2020, and reducing power consumption.
- Further power consumption reduction when combined with “radiant cooling magnet sheet”.

□ **Virus sterilization device “ReSPR”**

- Providing sterilization and deodorizing effects using heterogeneous photocatalytic technology developed by NASA that decomposes viruses.
- Sizes range from portable type to duct-embedded type.



■ **Achievements / Case Studies**

- In Malaysia, the company started selling LED lighting in February 2018.
- **Case 1 “LED”:** Increase in electricity costs at a logistics warehouse of a transportation company → Introduction of LED lighting that can reduce power consumption. 5-year warranty provided. → Achieved up to 70% reduction in power consumption after installation
- **Case 2 “Air conditioner”:** Automotive parts manufacturer factory  
Total replacement of centralized air conditioners  
= Switching from air conditioners that use R22, which has a high environmental impact  
→ Power consumption ▲35% reduction
- **Case 3 “ReSPR”:** Infectious disease control at an auto parts manufacturer → Air purification using a method of jetting ozone and hydrogen peroxide. It also has a wide application floor area and is easy to carry. Adaptable to the installation environment, and users may experience deodorizing effect after installation.

**Contact information**

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## Soil analysis, fertilization optimization and decarbonization of farmland using satellite data

### ■ Product / Service Overview

#### Application services using satellite data and AI

- **App to grasp the agricultural land condition “Aktaba”**  
An app that visualizes abandoned farmland
- **Crop survey efficiency application “Detaba”**  
An app that visualizes the types of crops
- **Farm amangement app “Sagri ”**  
An app that visualizes field conditions (growth, soil) and realizes efficient farming.



By conducting soil analysis on farmland and reducing excessive use of chemical fertilizers, Sagri will generate and sell carbon credits as supplementary income to farmers.

- Farmland zoning using machine learning from satellite data (patented)
- Soil analysis using satellite data and optimization of chemical fertilizer amount
- Creation and sale of private carbon credits due to fertilizer amount optimization

### ■ Achievements / Case Studies

- An impactful start-up from Gifu University founded in 2018. Certified as a J-start-up by the Ministry of Economy, Trade, and Industry in 2023.
- Has strengths in overseas expansion, with subsidiaries in Singapore and India. The company is also expanding its business in Africa and Central and South America.
- In Japan, the company conducts public works projects, agricultural management, and carbon credit projects for central ministries and local governments. In overseas, it mainly carries out farming and carbon credit projects.
- In India and Thailand, it has succeeded in reducing the usage of chemical fertilizer usage in rice cultivation and applications for carbon credit projects have already been completed.
- In the past, Sagri has participated in many Japanese government-related projects, such as JICA, JETRO, Ministry of Agriculture, Forestry and Fisheries, and Ministry of Economy, Trade, and Industry projects.
- The company carries out carbon credit creation projects in partnership with agricultural companies, food companies, agritech companies, etc. that have networks with farmers.

### Contact Information

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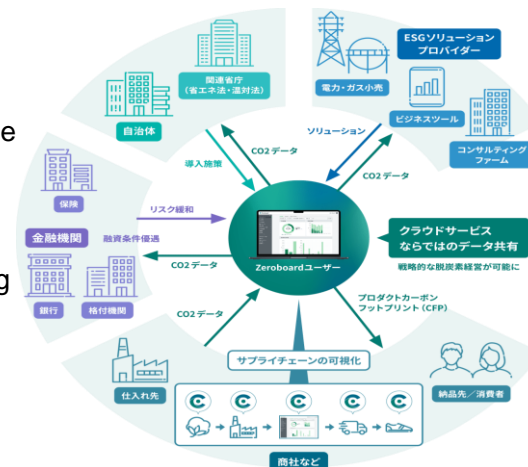
Email: sakamoto-kazuki@sagri.co.jp

# Greenhouse gas emissions accounting/visualization solution

## ■ Product / Service Overview

### □ Greenhouse gas (GHG) emissions calculation and visualization solution “Zeroboard”

- Computation and visualization software that visualizes GHG emissions from overall corporate activities
  - 01 Calculates and visualizes GHG emissions just by linking and inputting activity data
  - 02 AI chatbot “Dr. Zero” using ChatGPT API answers calculation questions
  - 03 Reporting function to comply with global warming countermeasures laws, energy saving laws, and regulations of each country
- The company provides calculation and visualization software, expert support, and optimal reduction solutions for over 100 partners.



## ■ Achievements / Case Studies

Currently used by more than 2,600 companies (more than 6,000 companies if includes group companies)

- Used by a wide range of companies including companies working on decarbonized management / prime market where Scope 1-3 disclosure is required / small and medium-sized enterprises
  - **Okuno Pharmaceutical Industry Co., Ltd.:** Employees’ awareness of decarbonization has changed. An increasing number of new graduate hires cited environmental considerations as a reason for wanting to join the company. Competitiveness has improved through the development of environmentally friendly products.
  - **Nihon Kagaku Kogyo Co., Ltd.:** Environmental initiatives including decarbonization have led to BCP (Business Continuity Plan) and age-friendliness (introducing LEDs to reduce power consumption and brighten the environment, making it easier for older workers to work). Additionally, employees’ attitudes toward work have changed.
  - In February 2024, Bank of Ayutthaya Group in Thailand implemented Zeroboard, aiming to improve the efficiency and sophistication of GHG emissions calculations.

## Contact Information

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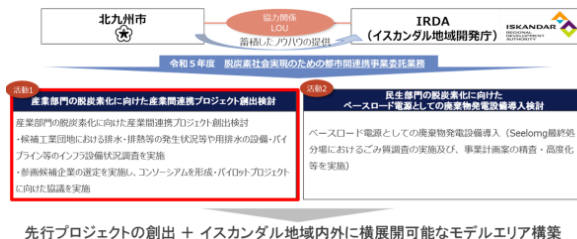
## 2 Renewable Energy

- 06 Amita Holdings Co., Ltd.
- 07 PT. Chugai Ro Indonesia
- 08 ENEOS Oil & Energy Asia Pte. Ltd.
- 09 Enel-X Japan Co., Ltd.
- 10 Kyocera Propel Network Sdn. Bhd.
- 11 Loop Energy (M) Sdn. Bhd.
- 12 Shizen Malaysia Sdn. Bhd.

## Decarbonization model area construction project in Iskandar region (Phase 2)

### ■ Activities

- The Iskandar region started the Iskandar Plan in 2006, which aims to coexist with nature while suppressing CO2 emissions and is still in progress.
- Starting in 2022, this project will involve collaborations between NTT Data Institute of Management Consulting, Kitakyushu City, Nippon Steel Engineering, AMITA, and Iskandar Regional Development Agency. The project involves investigation of the infrastructure status, forms consortiums for decarbonization in the industrial sector, and considers introducing waste to power generation equipment and renewable energy in the civil sector.
- In addition to **providing the know-how regarding resource recycling**, AMITA will promote the formation of consortiums with companies and other entities located in local industrial parks, as well as the formation of an executing committee to implement pilot model projects.



### ■ Other Achievements / Case Studies

- Since 2017, we have established a joint venture with a local company in Malaysia, leveraging the know-how we have cultivated in Japan. We are developing a 100% recycling business.
- Rather than simply disposing of waste or partially recovering it, we use our proprietary technology to **turn designated waste into alternative raw materials (ARM) and alternative fuels (AF)** and due to that 100% recycle without leaving any residue was made possible.



AMITA  
BERJAYA Sustainable  
Resource Management  
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### Contact Information

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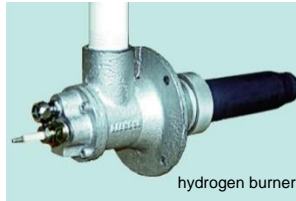
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## Industrial furnaces, combustion equipment, industrial machinery, Regenerative Thermal Oxidizer (RTO)

### ■ Product / Service Overview

- ▣ Sales and after-sales service of industrial furnaces, combustion equipment, and industrial machinery
  - Burner/combustion control equipment  
hydrogen burner, ammonia burner, regenerative burner, oxygen burner, etc.
  - Steel/non-ferrous metal heating furnace/ heat treatment furnace SUS-APL/BAL, Cu-APL/BAL, AL-CAL, CGL, H<sub>2</sub>-BAF, CCL/AL-CCL
  - Heat treatment furnace for automobiles and mechanical parts, heat treatment furnace for batteries, substrates, catalysts, and magnetic materials, heat treatment furnace for shapes, tubes, and wires
  - Regenerative Thermal Oxidizer (RTO) , environmental process equipment (multi-tube rotary kiln, fluidized bed heating equipment)
- ▣ Through the development of combustion technology that does not emit CO<sub>2</sub> and heat treatment equipment for EVs, secondary batteries, and semiconductor components, the company is responding to all customers' requests regarding thermal technology toward achieving carbon neutrality and contributing to the creation of a sustainable society.



### ■ Achievements / Case Studies

- In Malaysia, the company has a track record of delivering **regenerative burners\*** and **RTOs**.
- 1994: Developed and started sales of thermal exhaust gas treatment equipment (currently no. 1 in Japan with over 320 orders and deliveries)
- 2018: Jointly developed the world's first general-purpose hydrogen burner with Toyota Motor Corporation
- 2021: Selected for NEDO's "Energy and Environment New Technology Leading Research Program (Decarbonized Industrial Furnace Using Innovative Ammonia Combustion)" and "Ammonia Mixed Firing Thermal Power Generation Technology/Demonstration Project"
- 2022: Received order for Japan's first hydrogen combustion exhaust gas treatment equipment
- 2023: Participated in the Ministry of the Environment's JCM project "Decarbonization and smart city formation promotion project through collaboration between Sakai City and Vietnam cities"
- 2023: Selected for NEDO "Green Innovation Fund Project / Decarbonization of Thermal Processes in the Manufacturing Field"
- 2023: Opening of Thermal Technology Creation Center

### Contact Information

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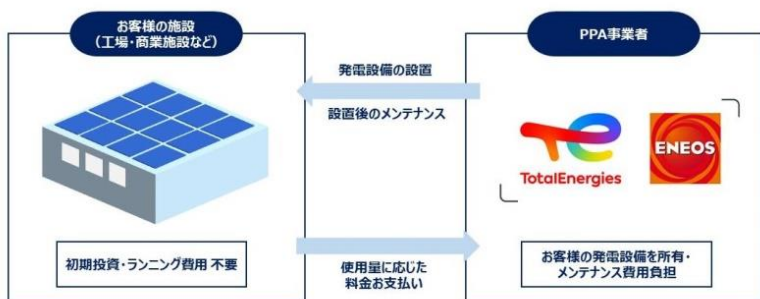


## Self-consumption solar power support project for corporations

### ■ Product / Service Overview

#### □ Rooftop solar power with zero initial cost

- ENEOS has started a self-consumption solar power generation support for corporations in nine Asian countries (Malaysia, Japan, Singapore, Thailand, Vietnam, Indonesia, the Philippines, Cambodia, and India).
- ENEOS installs solar power generation equipment on corporate customers' premises and facilities (factories, commercial facilities, etc.) with zero initial cost, reducing power costs and providing low-carbon energy.



- During the power purchase agreement ( PPA ) period, a significant reduction in your electricity bill can be expected.
- By significantly reducing carbon dioxide emissions, companies can demonstrate both internally and externally that they are environmentally friendly and contribute to SDGs.

### ■ Achievements / Case studies

- A joint venture between ENEOS and Total Energies, which has over 150MW of solar power generation capacity in nine Asian countries (including those in operation and under development)

#### □ Implementation results in Malaysia

\*The partner company, Total Energies's track record:  
 1,200kWp machine manufacturing plant  
 1,800kWp mining facility  
 600kWp agricultural facility  
 And many other achievements



Malaysia Company H

### Contact Information

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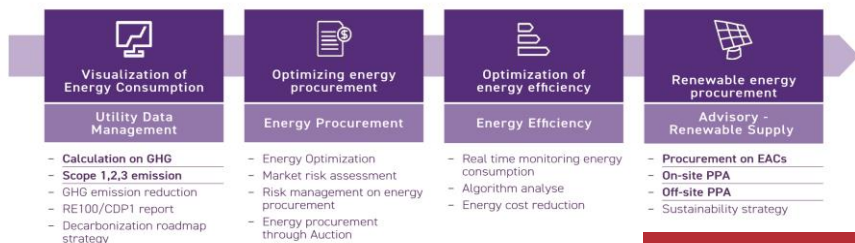
## Providing support for renewable energy procurement and GHG emissions calculations for decarbonized management

### ■ Product / Service Overview

#### □ Proposing and implementing solutions for decarbonization

Accompanied by over 400 advisors from 28 countries

- Renewable energy procurement support ((V)PPA advisory)
- Scope 1, 2, and 3 calculation support based on global standards
- Global/local road including mid- to long-term energy strategies support for map formulation
- Unified procurement of domestic and international environmental certificates, etc.



- Global support services as a CDP\*1 Gold Partner



### ■ Achievements / Case Studies

Track record of partnerships with more than half of the Fortune 100\*2

#### ➤ Case 1: Global IT company

Optimization of renewable energy procurement methods → Supporting the procurement of approximately 2,000MW of renewable energy through reverse auction

#### ➤ Case 2: Globally expanding automotive parts supplier

Visualization and optimization of energy, optimization of energy consumption, procurement of renewable energy → By introducing various systems, such as energy management, Enel-X aims to improve energy efficiency and improve the procurement of renewable energy on the premises through support on equipment installation

#### ➤ Case 3: Global real estate and logistics company

Reducing GHG emissions that fall under Scope 3 → Introduction of renewable energy for the entire facility, including tenants, and realization of EAC (energy attribute certificate) procurement supplier engagement

### Contact Information

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\* 1 Non-governmental organization (NGO) managed by a UK charity

\* 2 Top 100 global companies in terms of total revenue

## Solar power project support business

### ■ Product / Service Overview

- Kyocera Group's solar power generation system solutions
  - Kyocera has been researching and developing solar cells since 1984, and continues to demonstrate the advanced technology and long-term reliability of Kyocera solar cells.
  - Kyocera Group operates in Southeast Asia as a specialist in engineering, procurement, and construction of solar power generation systems for public and industrial use.
  - It supports solar power generation projects from concept creation to post-completion operation, maintenance, and commissioning.
  - Has a collaboration with Mitsubishi HC Capital for financing proposal. Self-investment and financing proposals from Mitsubishi HC Capital are available.

### ■ Achievements/ Case Studies

- AICELLO Malaysia Solar installation track record 774.75kWp
- Project to supply electricity to non-electrified villages in Myanmar (World Bank loan) Total 1,538.8kW



### Contact Information

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**Loop Energy (M) Sdn. Bhd.****Simulation, design, and construction of solar power generation  
and storage batteries****■ Product / Service Overview**

- Provides design, construction, and after-sales service for solar power generation systems mainly in Malaysia and the Philippines.
- Proposal of CAPEX (self-investment) and PPA (power sales agreement that allow cost saving to a minimum with no initial cost) scheme.
- Registered and certified under the Malaysian government's green certification system "MyHijau"



Solar power generation 265.98kWp (Malaysia)

**■ Achievements / Case studies**

More than 61MW of IPP and 200MW of EPC have been installed for solar power generation at more than 2,000 sites across Japan, supplying electricity to more than 300,000 customers. It ranks among the top 10 new power retailers in Japan, with sales of over \$500 million in 2020.



Storage battery (BESS) 500kWh (Malaysia)

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## Connecting the blue earth to the future, providing solutions to achieve carbon neutrality

### ■ Product / Service Overview

- Rooftop solar power generation (on-site PPA\*)
- Off-site solar power generation (virtual PPA , etc.)
- Projects are currently underway in Japan, Brazil, Indonesia, Thailand, Vietnam, South Korea, etc.



Experience in renewable energy procurement in diverse countries



1GW or more renewable energy development results



IREC procurement of certificates applicable to international standards

### ■ Achievements / Case studies

- **Hokto Malaysia Sdn Bhd:** Rooftop solar power generation 0.7MW in operation.

Signed the first long-term power supply contract using an on-site PPA model with a Japanese company based in Malaysia. It is expected to reduce CO2 emissions by 11,938 tons over the 20-year contract period while reducing electricity costs.

- **Top Glove:** Rooftop solar power generation 6.1MW already in operation (partially under construction).
- **CGPP Project** (Virtual PPA): Solar power generation 29.9MW certified by the Malaysian government in 2023.
- Virtual PPA with **Microsoft** (Japan parent company: Natural Energy): Solar power generation 31MW.

This is the first PPA that Microsoft has concluded in Japan. This is the largest single solar power generation plant in Japan for a corporate PPA that has cross financing. A contract was signed in 2023, and operations began in February 2024.

### Contact Information

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## 3 Hydrogen

- 13 Asahi Kasei Corporation
- 14 Sumitomo Corporation

## Hydrogen production plant

### ■ Initiatives

- ❑ In November 2023, a feasibility study (FS) between Asahi Kasei Corporation, Gentari Hydrogen Sdn. Bhd. and JGC Holdings Corporation for the construction of a 60MW class alkaline water electrolysis system to produce 8,000 tons of green hydrogen per year in Malaysia was completed. The two companies announced that they have signed a memorandum of understanding (MOU) to move to the Front End Engineering Design (FEED) stage.
- ❑ FEED will begin in January 2024, with a view to start demonstration operations in 2027.
- ❑ A 60MW class electrolyzer will be introduced and an integrated control system will be demonstrated to optimize plant operation.



Large alkaline water electrolysis equipment

### ■ Goal

- ❑ Gray hydrogen is produced using fossil fuels, such as oil, natural gas, and coal, and CO<sub>2</sub> is emitted during the process. Blue hydrogen captures and stores emitted CO<sub>2</sub>, reducing it to virtually zero. Green hydrogen, which is produced by electrolyzing water using renewable energy, such as sunlight and wind, does not emit CO<sub>2</sub> and contributes to decarbonization. However, its low-cost and efficient production is a high technical hurdle. In particular, large-scale, mass production with practical application in mind is virtually unprecedented in the world. Asahi Kasei has developed a **large-scale alkaline water electrolysis system for green hydrogen production and aims to commercialize it.**
- ❑ Through demonstration of green hydrogen production in Malaysia, Asahi Kasei will develop a large-scale, low-cost water electrolysis system and complete a system that can control multiple electrolysis equipment simultaneously, promoting market development in Japan, Malaysia, and Southeast Asia, as well as to establish a green hydrogen production base within the region for carbonization.

### Contact Information

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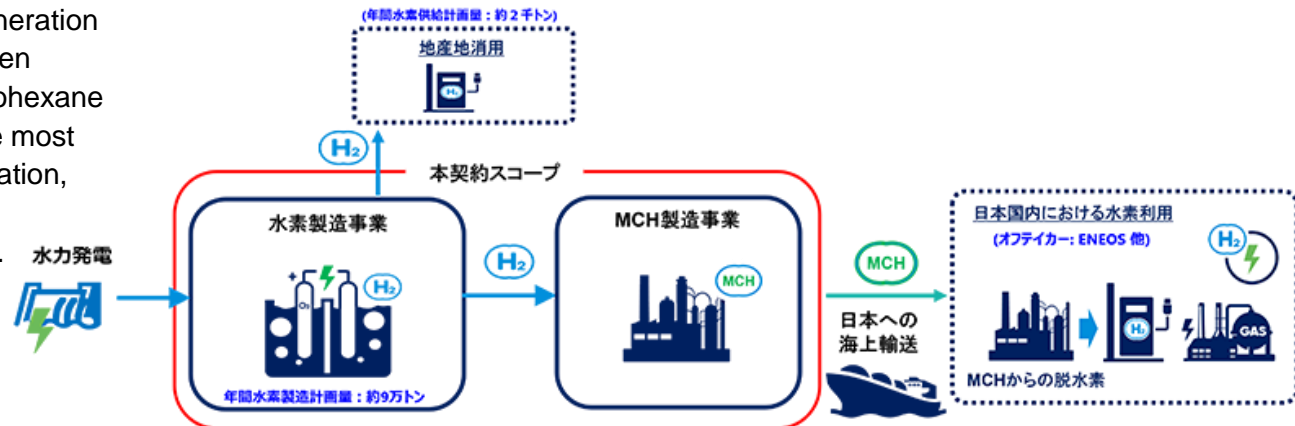
Email: [green-solution-ml@aml.asahi-kasei.co.jp](mailto:green-solution-ml@aml.asahi-kasei.co.jp)



## Building a clean hydrogen supply chain

### ■ Initiatives

- In December 2023, Sumitomo Corporation, ENEOS Co., Ltd. and SEDC Energy Sdn. Bhd. signed a joint development agreement for a clean hydrogen supply chain using renewable energy.
- The jointly developed clean hydrogen supply chain will produce approximately 90,000 tons of clean hydrogen annually (approximately 2,000 tons of which will be produced locally for local consumption in Sarawak) using electricity derived from renewable energy generated by hydroelectric power generation in Sarawak. The project then converts it into methylcyclohexane (MCH), which is one of the most efficient forms of transportation, and transports it by sea to demand areas in Japan.



### ■ Goal

- The Front End Engineering Design (FEED) has begun with the aim of starting hydrogen production by 2030.
- Sumitomo Corporation will lead the business evaluation and financing arrangements for the entire joint development scope, and will support power procurement. ENEOS will lead the engineering related to MCH production to meet the scale of Japan's demand, while SEDC Energy will lead the study on power procurement and hydrogen production.

### Contact Information

Company name: Sumitomo Corporation

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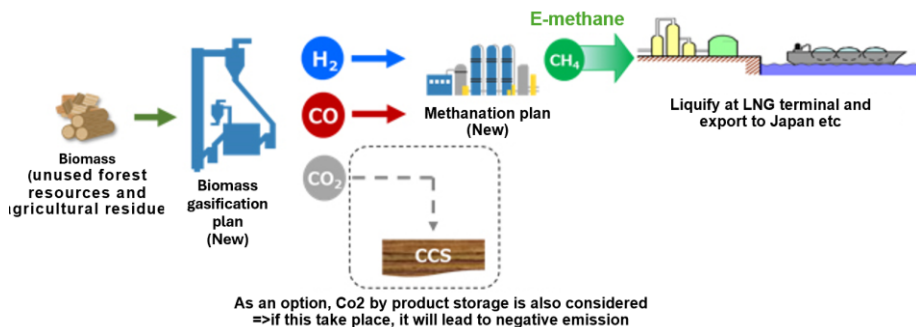
## 4 Bioenergy

15 Osaka Gas Co., Ltd.

## E-methane production business by using biomass

### ■ Initiatives

- In April 2023, Osaka Gas, IHI Corporation, and Petronas Global Technical Solutions Sdn. Bhd. signed a memorandum of understanding to determine the implementation of the Front End Engineering Design (FEED) for an e-methane production project that utilizes biomass of unused forest resources and agricultural residues in Malaysia.
- Aiming to produce e-methane using biomass as an energy source that is not affected by the price of renewable electricity



### ■ Goal

- By gasifying biomass, such as unused forest resources and agricultural residues, at high temperatures, synthetic gas containing hydrogen, carbon monoxide, and carbon dioxide is produced. Furthermore, by performing methanation using the obtained synthesis gas, it is possible to produce e-methane that is not affected by the price of renewable electricity.
- The aim is to liquefy the e-methane produced at an LNG terminal owned by Petronas in Malaysia and export it to countries, such as Japan, in 2030.
- If CO<sub>2</sub> derived from biomass that is obtained as a byproduct is stored underground (CCS), negative emissions will also be possible, and this possibility will be considered in the future.

### Contact Information

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Contact name : - Telephone number : -

Email: <https://www.osakagas.co.jp/ssl/form/mailshori/index.html>

## 5 CCUS/CCS

- 16 Asuene Apac Pte. Ltd.
- 17 Green Carbon Co., Ltd.

### Asuene – CO<sub>2</sub> calculation / reduction software + decarbonization consultation

#### ■ Product / Service Overview

- CO2 emissions visualization, reduction, reporting cloud service



- Automatic collection and calculation of Scope 1-3 GHG gas emissions by AI-OCR×ISO14064-3 certification.
- Supports international standard initiatives, boundary setting, and calculation method selection.
- Implements optimal methods to reduce CO<sub>2</sub>, such as energy conservation, energy-saving suppliers, and carbon offsets.

#### ■ Achievements / Case Studies

##### □ Kanematsu Co., Ltd.

- Data collection/input logic formulation and reduction and optimization of work man-hours.
- A sense of speed that calculates Scope 3 within two months of implementation.

##### □ OPTEX GROUP Company, Limited

- Initiated the first step towards visualizing CO<sub>2</sub> emissions as a group.
- As a globally renowned niche company, articulated its dedication to decarbonization and highlight its product strengths both internally and externally.
- Engaged in CDP disclosure.

##### □ UCC Japan Co., Ltd.

- Manage domestic and international figures up to Scope 3.
- Multilingual support enables seamless data entry and calculations from overseas locations.

#### Contact Information

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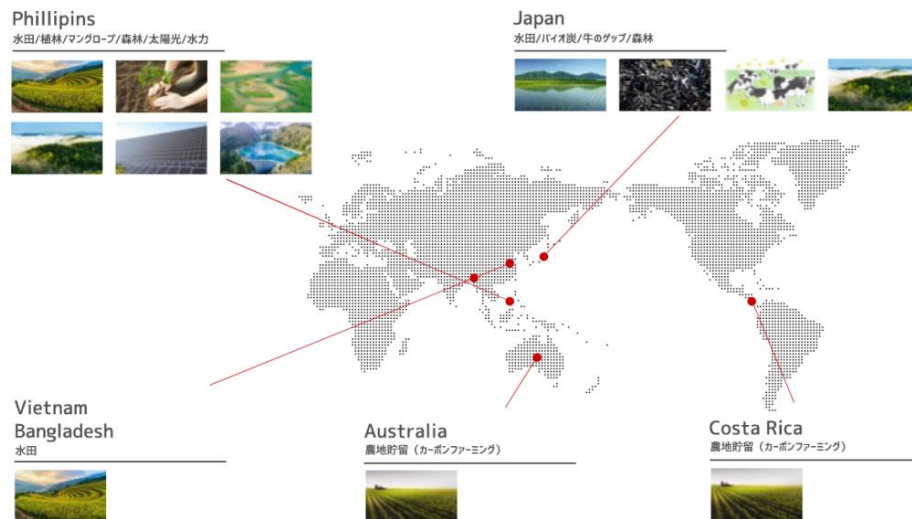
Email: [masaaki.hamada@asuene.com](mailto:masaaki.hamada@asuene.com)

# Mitigating climate change and increasing farmers' incomes

## "Agricultural Carbon Credit Creation Project"

### ■ Product / Service Overview

- ❑ Carbon credit creation project generation and consulting business
- ❑ Research and development project for plants that absorb a large amount of carbon dioxide.  
The company conducts research and development centered on genome editing and aimed at accelerating the growth rate of plants and improving carbon dioxide absorption.
- ❑ Carbon credit trading business
- ❑ ESG consulting business



### ■ Achievements / Case studies -- Carbon credit creation project

Carbon credit creation projects are already underway in Japan, the Philippines, Vietnam, Bangladesh, Australia, and Costa Rica using methods such as rice paddies (AWD), farmland storage, forest and mangrove plantations, biochar, and cow burp control.

#### Contact Information

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# Inquiries regarding this survey

\*If you would like to include your case study in this report, please fill out the form below.  
<https://forms.office.com/r/KfJgV3x4fS>

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## ■ Notes and disclaimers regarding the use of the report

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