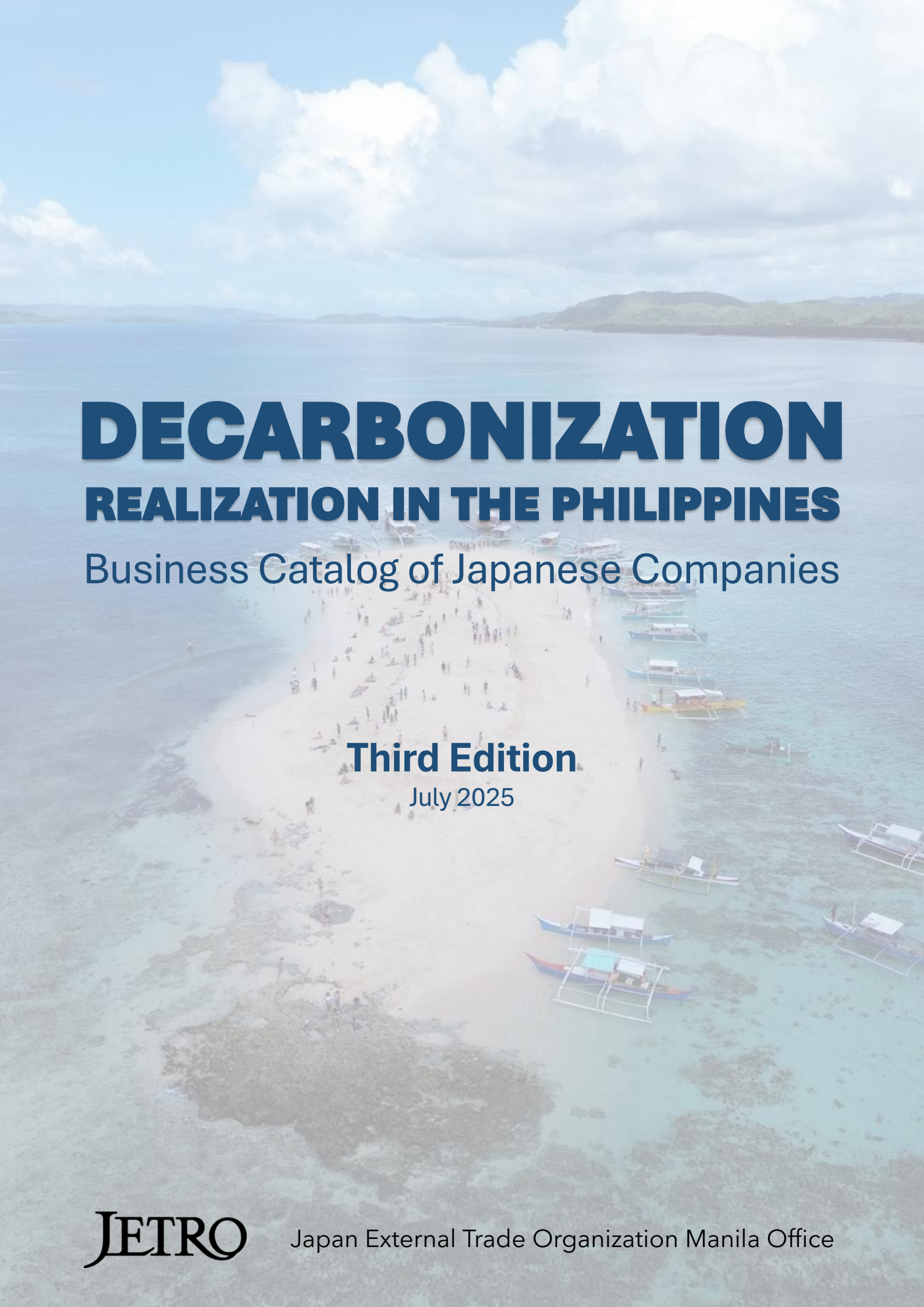




DECARBONIZATION REALIZATION IN THE PHILIPPINES

Business Catalog of Japanese Companies

Third Edition

July 2025

DECARBO

Introduction

The Philippines government has set a goal of 50% renewable energy in domestic supply by 2040. To achieve this goal, incentives such as feed-in tariffs (FIT) and the Green Energy Auction Program (GEAP) have been established to maximize the use of renewable energy.

The Japanese government has been supporting the decarbonization of ASEAN countries by launching the Asian Zero Emissions Community (AZEC) in March 2023. In January 2024, it was agreed to launch the AZEC Japan-Philippines High-Level Coordination Dialogue as a framework for local consultation between the Japanese public and private sectors and the Philippine government to promote decarbonization efforts.

This business catalog is prepared to introduce Japanese companies' products and services for decarbonization in the Philippines, such as the introduction of renewable energy and energy conservation in the industrial sector, to the Philippine government and businesses.

We hope that this catalog will contribute to the creation of new businesses and decarbonization in the Philippines.

August 2024
JETRO Manila Office

NET ZERO TRANSITION

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Renewable Energy

Wide range of Renewable Energy

- 🔌 Asian Gateway Corporation (Tokyo)
- 🔌 CHODAI CO., LTD.
- 🔌 Marubeni Asian Power Philippines Corp.
- 🔌 RENOVA Inc.
- 🔌 TODA Corporation

Solar Energy

- 🔌 Advantec Philippines, Inc.
- 🔌 Looop Energy Malaysia Sdn. Bhd.
- 🔌 NTT Data Inc. Philippines (NTT Data PH)
- 🔌 Sky Renewables Philippines, Inc.
- 🔌 TeaM (Philippines) Energy Corporation
- 🔌 Transnational Uyeno Solar Two Corporation

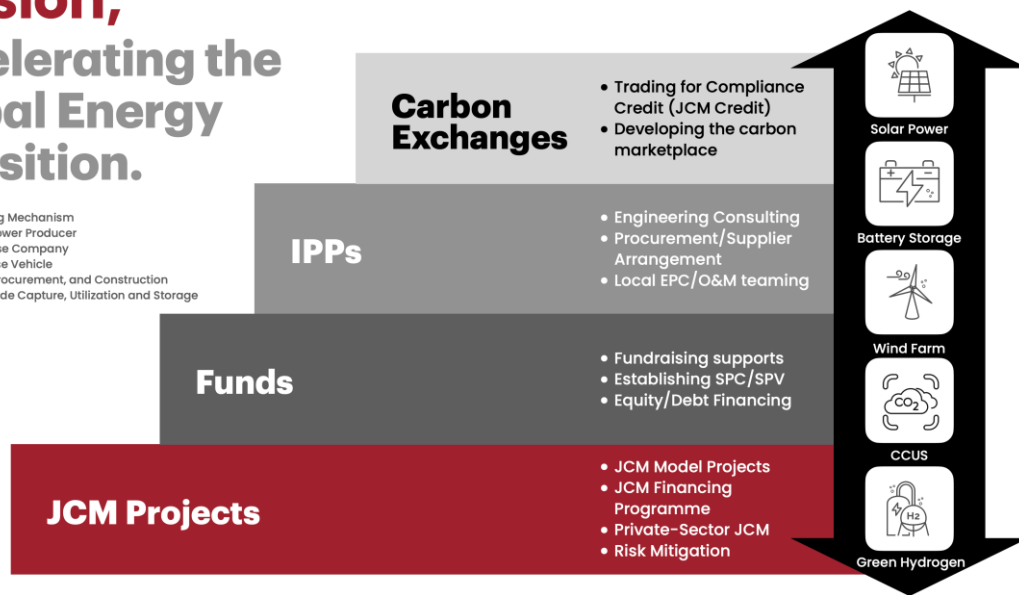
Biomass Power Generation

- 🔌 Sumitomo Heavy Industries, Ltd.

Asian Gateway Corporation (Tokyo)

Mission; **Accelerating the** **Global Energy** **Transition.**

JCM: Joint Crediting Mechanism
IPP: Independent Power Producer
SPC: Special Purpose Company
SPV: Special Purpose Vehicle
EPC: Engineering, Procurement, and Construction
CCUS: Carbon dioxide Capture, Utilization and Storage



Overview of Service

- Our company is accelerating the "global energy transition" in JCM partner countries.
- Since 2013, we have been supporting JCM facility projects and are involved in solar power generation, battery storage, wind and biomass power generation, and the development of CCUS and green hydrogen.
- We invest in private equity funds and impact investments, promote IPP projects ourselves and support the trading of compliance credits (mainly JCM credits).

Actual Result and Example

- In the Philippines, we are promoting decarbonisation through public-private partnerships (PPPs).
- Outside the Philippines, JCM facility subsidy projects have been implemented in Cambodia (rooftop solar), Vietnam (rooftop solar), Mongolia (large-scale solar combined with storage), Sri Lanka (large-scale solar) and Chile (biomass, rooftop solar, wind, biogas and biomass boilers). We have a track record of providing subsidies for JCM plants in Chile.



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CHODAI CO., LTD.



Overview of Service

- CHODAI CO., LTD. is an engineering consulting firm with track record in developing various renewable energy projects including solar, wind, hydroelectric, biomass, and waste-to-energy power generation.
- We support everything from small-scale facilities for private consumption to large-scale facilities with equity participation.
- We provide support for planning, feasibility studies, detailed design, construction supervision, operational management, maintenance, and project fundraising. For small and medium-sized facilities, we offer zero-initial-cost service.
- We can assist in accessing a range of JP government support programs for equipment installation and project development.

Actual Result and Example

〈Mindanao Island, CARAGA Region, Mini-Hydropower Plant, 8MW〉

- Commissioned in 2018 with annual GHG reduction of 19,402 tons.
- 10% equity investment, technical consultant, facilitated two-step-loan from JBIC.
- Began in 2011, formed partnership, reviewed technical design, supervised construction, procured turbines from JP manufacturers, monitoring operations.
- Hosted numerous on-site tours for JP government officials and JP companies.

〈Solar Power Generation Projects〉

- Utility-scale solar farm, 390MW (under development).
- Remote island resort, (zero-initial-cost/under development for multiple projects).

〈Waste-to-Energy Projects〉

- Supplied steam turbine and provided plant engineering services in Thailand.
- Engaged in development activities in Vietnam, Saipan, and the Philippines.

〈Pipeline Investment Projects in the Philippines〉

- Negros Island: Mini-hydropower, 7MW (joint investment with a JP company).
- CARAGA: Mini-hydropower, 4MW (construction underway).
- CARAGA: Wind power, 72MW (construction, equipment procurement underway).
- Aurora Province: Biomass, 5MW (FS completed, commercialization underway).

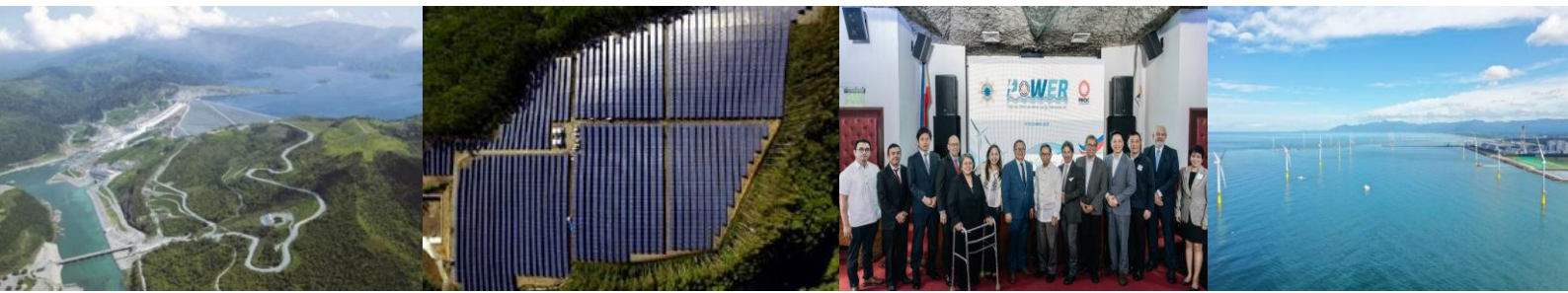
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Marubeni Asian Power Philippines Corp.



Product and Service outline

- Marubeni Asian Power Philippines Corp., a power generation development company wholly owned by Marubeni Corporation, is actively engaged in developments of renewable energy generation projects aimed at realizing a low-carbon society.
- The company primarily focuses on developing/operating solar, hydro and wind power. Leveraging expertise accumulated from owning and operating power plants worldwide (Net Capacity :11,402MW), it has established an in-house system capable of comprehensive development covering technology, finance, and legal aspects.
- As a member of the industry association, Pilipinas Offshore Wind Energy Resource, formed by six domestic and international companies involved in renewable energy in the Philippines, the company contributes to activating the offshore wind power sector and provides advice to government agencies.

Actual Result and Example

- Operation Projects
 - San Roque Hydropower Project (435MW / COD: May 2003), Pangasinan Province, Luzon, engaged in development and maintenance/operations.
- Projects under development
 - Developing multiple solar / floating solar power projects (50MW to 150MW) in Luzon and Western Visayas.
 - Developing offshore wind power projects in two marine areas in Northern and Central Western Visayas, Philippines.

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Ortega, Bryan Carlo

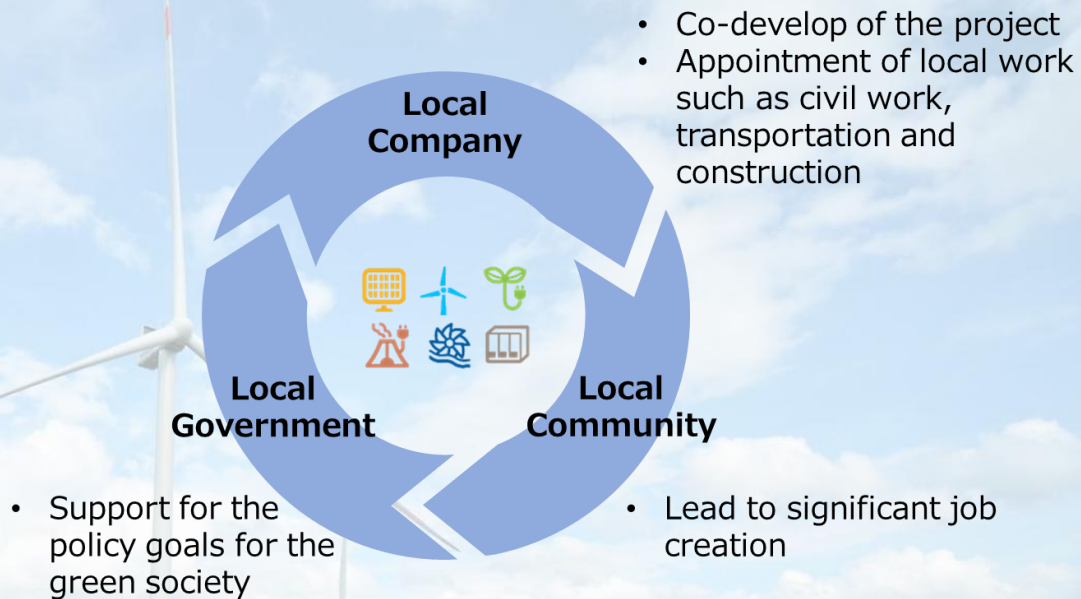
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RENOVA Inc.



Center: President Marcos
Right: RENOVA CEO Kiminami
LOI Sign Ceremony



Business outline

- Develop and operate multiple renewable energy power sources, including solar, wind, biomass, geothermal and hydro
- Green businesses such as storage batteries that contribute to the expansion of these renewable energy power sources and the other which contribute to decarbonization
- Not only "building power plants" but also "promoting business development" that can coexist with the local community and industry

Actual Result and Example

- Under developing
 - Kiangnan Hydroelectric [8.3 MW]
Under construction
 - Mabini Onshore Wind [50 MW]
JDSHA with Basic Energy Corporation
(Operation is scheduled to start by 2028.)
- Sourcing projects
 - Onshore Wind [250 MW]
 - Ground Solar [140 MW]
 - Ground Solar [40 MW]
etc.
- Other examples
 - Signing of LOI (Letter of Intent) on renewable energy project development with DTI (Department of Trade and Industry Philippines) in the presence of President Marcos
 - Established a local office in Manila, creating employment for 10 local employees

Contact Point

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Development of Floating offshore wind power plant ～ Hybrid floating body made of steel & concrete～

TODA CORPORATION



The first floating wind turbine to begin commercial operation in Japan.



Hybrid spar type floating body

Product and Service outline

- We are developing floating offshore wind power technology. As our unique technology, we use a hybrid spar type floating wind turbine, with the floating body made of a hybrid of steel and concrete.
- In 2013, we began commercial operation of Japan's first floating offshore wind turbine (2MW) in Goto City, Nagasaki Prefecture in Japan.
- We are currently constructing a total of 8 floating offshore wind power plants (16.8MW) in Goto City, Nagasaki Prefecture in Japan.
- We plan to start with onshore wind farm in the Philippines and then expand our business to offshore wind power plant, with the aim of expanding floating wind power plant in the future.

Actual Result and Example



Wind power plant in Brazil



Wind power plant in Brazil

- In Brazil, we operate two wind power plants with capacities of 27.7MW and 94.4MW.
- In Japan, the total capacity of the wind power plants we have been involved in constructing so far has reached 541 MW.

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ADVANTEC PHILIPPINES INC.



Net Zero Energy Building



Micro-Grid Smart City



Battery System



Solar System

Product and Service outline

- Engineering and Installation of Solar Power System, Battery System, Energy Management System and Emergency Back Up Ssystem
- Power Purchase Agreement (PPA)
- Micro-Grid Smart City Development, ZEB Planner

Actual Result and Example

- Solar System Installation to 3 Japanese Factories in Luzon Island. (125kW-700kW)
- PPA to PEZA Economic Zone 10 locators (409kW)
- PPA to public 13 facilities (City Hall, Public Hospital etc.) in 2 Mindanao.

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Loop Energy Malaysia Sdn. Bhd.



Product and Service outline

- Main services: **Design, construction, and O&M service for solar PV and battery energy storage systems(BESS)**
- Loop's PV and BESS systems help to reduce the customer's electricity bills and CO² emission.
 - For customers with limited roof load capability, we proactively propose to use **lightweight solar panels**.
- BESS options: BESS can be designed to meet the diverse needs of the customers, such as **maximizing solar PV generation to reduce electricity costs** and providing **Back-up energy functions** etc.

Actual Result and Example

- Based on the know-how we have cultivated in Japan, we began providing services in Southeast Asia in 2018.
 - Panel Trading : Over 120,000 kWp
 - Solar PV System : 34,262,610 kWp (In Philippines : 30,656,850 kWp)
 - BESS System : 6,691 kWh (In Philippines : 5,316kWh)



Nueva Era PV + BESS
(PV 29,952kWp+4,386kWhBESS)



Leyte Government Complex
(PV378.51kWp+500kWhBESS)



Clark C&I rooftop
(PV1.297.10 kWp)

Contact Point

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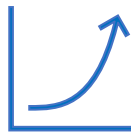
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NTT Data Inc. Philippines (NTT Data PH)



**Reduce your
electricity bill**



**Hedge against
tariff hike**



**SDG initiative
Save the Earth**

Product and Service outline

- We provide one-stop support for the installation of solar panels at customer sites (factories, warehouses, offices).
- Depending on your investment plan, we offer both CAPEX and Zero-CAPEX (PPA) billing models.
- In the Philippines, where electricity costs are higher compared to other countries, utilizing solar power not only contributes to SDGs but also achieves high cost-effectiveness.
- We have been conducting data analysis to optimize power generation efficiency for over 20 years on the solar power equipment at more than 140 NTT data centers worldwide. Utilizing this data analysis and operational know-how, we provide consulting proposals for the optimal panel layout.

Actual Result and Example

- Track Record
 - Implementations across the Philippines
 - System Size: About 500kW to 3MW
- Future Implementation Plans
 - Japanese retail businesses
 - Philippine data center operators



Contact Point

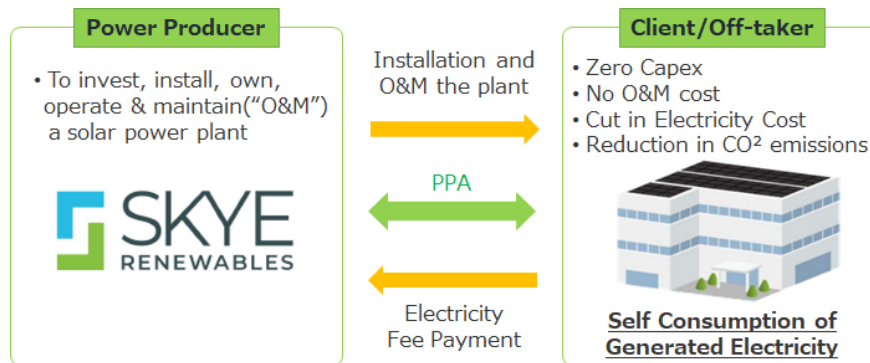
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Skye Renewables Philippines Inc.

Product and service outline

- Skye Renewables Philippines Inc. ("Skye") is a developer of renewable energy in South East Asia and an affiliate of Idemitsu Kosan Co. Ltd. and the British International Investment.
- Skye provides long term rooftop and offsite renewable power contracts to reduce a client's electricity costs and address their sustainability goals
- Skye has already developed >10,000kWp of capacity over 18 sites in the region since its founding in 2021



Sample projects

- Client: Honda Philippines Inc.
- Business: Motorcycle parts manufacturing
- Capacity: 1,057.32 kWp
- Energy Produced:
 - 14 Million kWh (over 10 year Contract)
 - 10,416 Metric tons of Co2 saved
 - 36.9 Million PHP in Electricity Savings
- Status: Operational



Client: Decathlon
Capacity: 225.06 kWp



Client: Fast-Koldstor
Capacity: 503.05 kWp



Client: AM-Europharma
Capacity: 115.2 kWp

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TeaM Energy Corporation



Product and Service outline

- Marubeni Corporation and JERA Co., Inc. have established a 50-50 joint venture, TeaM Energy Corporation, which supply electricity and International Renewable Electricity Certificates (I-RECs) to commercial and industrial customers as Retail Electricity Supplier.
- We also own and maintain/operate solar power generation facilities on the premises of commercial and industrial customers. These solar power supply green power under power purchase agreements with customers for up to 25 years. For customers, no upfront cost, fixed electricity rates based on consumption, high-quality solar PV components, and end-to-end project management.

Implementation Record (Distributed Solar Power)

- Implementation Record
 - Coca-Cola Beverages Philippines INC
 - Type: Rooftop Solar Power Plant
 - Capacity: 1,521 kWp
 - Operation Start : March 2021
 - Mariwasa Siam Ceramics Inc
 - Type: Rooftop Solar Power Plant
 - Capacity: 3,146 kWp
 - Operation Start: June 2023
- Planned Implementations
 - Discussing with multiple commercial and industrial customers regarding the development of decentralized solar power plants.

Contact Point

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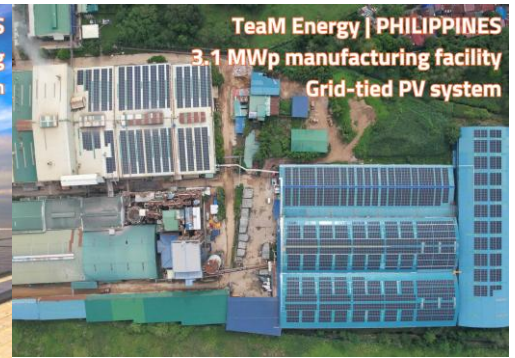
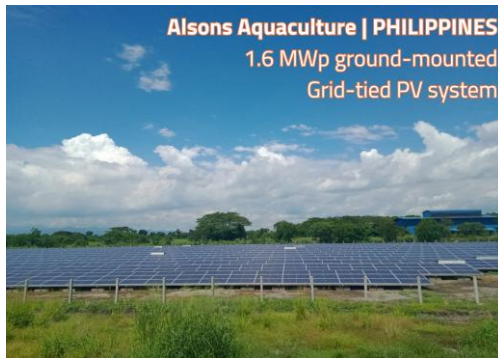
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TRANSNATIONAL UYENO SOLAR TWO CORPORATION



Product and Service outline

- We offer end-to-end solutions from **design & engineering, procurement**, installation for solar rooftop and Ground Mounted Installations for Commercial, Industrial and Utility Scale segments. In addition, we also provide **operation and maintenance, and development** of solar PV systems.

Actual Result and Example

- A leading solar energy company with an extensive portfolio and strong track record in the C&I market with a professionally trained team.
- To date, there are **more than 43MW** of installed capacity of renowned multinational, Japanese and Filipino companies in the Philippines.
- We have installed several firsts in the country like the 1st ever solar photovoltaic carpark located in Laguna, Philippines, 1st eco-friendly airport located at Bohol-Panglao Airport, Philippines and the 1st solar powered Starbucks store in Asia located at Quezon City, Philippines.
- TUSC is an approved EPC of **Japan's Global Environment Centre Foundation (GEC)** for **Joint Crediting Mechanism (JCM)** projects in the Philippines. To name a few are the installations for Aikawa, Enomoto, Kanepackage, Fujisash, Daiki OM and HKT Philippines.

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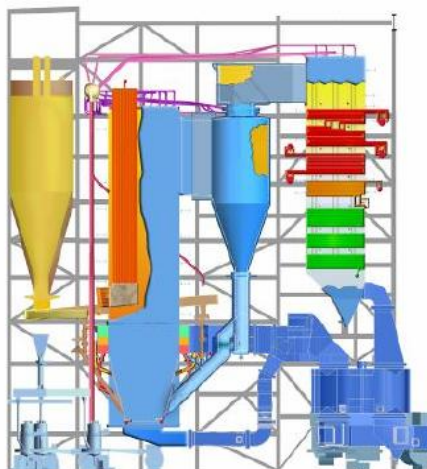
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SUMITOMO HEAVY INDUSTRIES, LTD.

Product and Service Outline

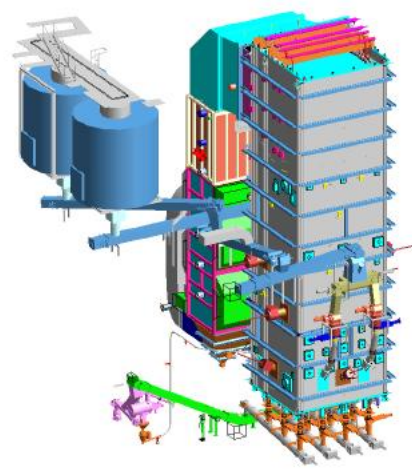
- Proven track records in installing BFB and CFB type boilers around the world using biomass fuels. Currently, our 300MWe biomass-only firing facility is undergoing its trial operation.
- Offers TMU services for the conversion of existing coal-fired boilers to biomass-fired boilers.
- In Southeast Asia, we conduct feasibility studies in collaboration with Electric Power Companies to convert coal-fired power plants to biomass-fired power plants.

<CFB Fuel Conversion>



A type of service that we provide to reduce coal usage by increasing the co-firing ratio of biomass fuels.

<Boiler Modification>



A type of service that we provide to existing PC boilers by converting them to BFB or CFB in order to utilize different biomass fuels thereby reducing coal usage.

TRACK RECORDS/ REFERENCES

No.	Country	Boiler Type	Year	Capacity (MWth)	Original Fuels	Current fuels
1	Bulgaria	CFB	2021	327	Bituminous Coal, Pet Coke	Agro Biomass 30%, Bituminous Coal
2	South Korea	CFB	2019	315	Coal, PKS	PKS, Demolition Wood, Wood Pellets
3	Finland	BFB	2018	110	Natural Gas	Various Biomasses
4	South Korea	CFB	2017	750	Coal	Coal, Wood Pellets
5	Thailand	CFB	2006	140	Coal, Lignite	Coal, Sludge 20%, Paper reject 20%, Bark
6	Finland	CFB	2002	81	Coal, Peat	Coal, Peat, Waste Wood

Note) SHI has more than 50 track record for this fuel conversion services.

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Energy Conservation

- ④ Asuene APAC Pte. Ltd.
- ④ Enebloom Inc.
- ④ Epson Philippines Corporation
- ④ MELCO Factory Automation Philippines Inc.
(Mitsubishi Electric)
- ④ Mitsubishi Heavy Industries Ltd. Philippines
- ④ NYK IDEMITSU Green Solutions Co., Ltd.
- ④ Sakikage Semiconductor Co., Ltd.
- ④ Sumitomo Heavy Industries, Ltd.
- ④ Toyota Tsusho Philippines Corporation
- ④ Zeroboard Inc.

Asuene APAC Pte. Ltd.

No.1 *1 CO2 Accounting Platform
serving Japan, Asia and the US

Honored by
Ministry of Environment
Environment Startup Award in 2023

J-Startup
Ministry of Economy,
Trade and Industry



Product and Service outline

- Asuene" easily calculates CO2 emissions of companies and municipalities, and reduces man-hours required for decarbonization management by up to 70%. It collects and calculates data on CO2 emissions not only for the company itself, but also for its entire supply chain (Scope 1-3) , and visualizes the data automatically using AI-OCR technology.
- Calculation of carbon footprint (CFP) , water security, waste, and energy management can also be completed with "as-energy" alone.
- Furthermore, our strength lies in the fact that we offer a diverse range of one-stop solutions for decarbonization, including ESG assessment of supply chains, carbon offsetting through the trading of carbon credits, and switching to renewable energy.

Actual Result and Example

Track record

- Over 10,000 companies have adopted the system, making it the No.1 product in its industry in Japan and Asia
- The system has been adopted by a wide range of industries, including manufacturing, construction, real estate, logistics, transport and finance

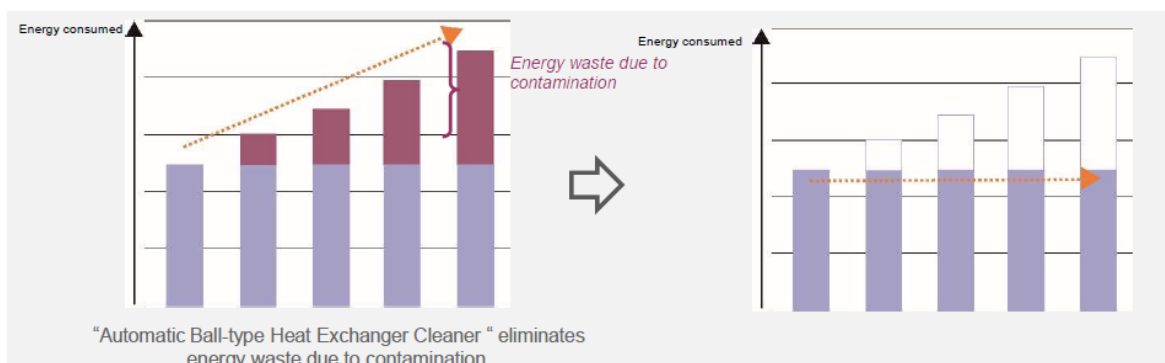
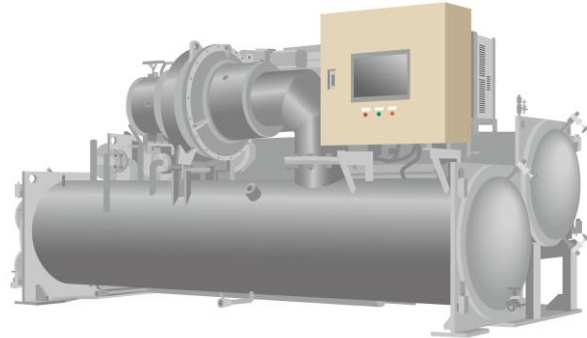
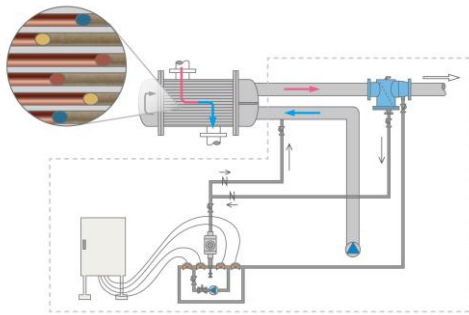
Case studies

- By scanning invoices and other documents using AI-OCR, the company was able to reduce the man-hours required for data entry by 70%, while at the same time ensuring the accuracy of the input data. (Retail industry)
- The supply chain management function enables the integrated management of GHG calculations, including data from global subsidiaries and business partners. (Food and manufacturing industry)

Contact Point

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Enebloom Inc.



Product and Service outline

- This device uses a proprietary electrolysis technology to generate molecular clusters of water to clean cooling pipes and other equipment. It can be used not only for molds, but also for cleaning water pipes of under-hoppers of injection molding machines, oil coolers, temperature controllers, chillers, etc.

Actual Result and Example

- Installed in the Philippines
Five Japanese factories have installed our products.
(Pampanga 1 company, Laguna 3 companies, Cebu 1 company)
- Installed in Japan: more than 400 units

Contact Point

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Business Inkjet Printers ~Heat Free Technology built for the environment~

Epson Philippines Corporation



Up to
85%

less **power** consumption
vs laser printers¹

Up to
85%

less **CO₂** generated
vs laser printers¹

Up to
59%

less **replacement** parts
vs laser printers¹

Product and Service outline

- Epson, which has been deeply involved in paper printing, believes that one way to combat the environmental impact is to promote the widespread use of printers that "do not use heat" to eject ink. Epson's Heat-Free Technology ejects ink without using heat, achieves both low power consumption and high productivity with a simpler printing process than laser methods. In addition, there are fewer replacement parts, which contributes to high productivity in offices while reducing the environmental impact.

Actual Result and Example

- We have a sales and service network throughout the Philippines, and our products have been widely adopted by central and local government agencies and private companies.
- We can offer both leasing (Click-charge) as well as outright purchase. When it's time to update your current printer or copier, we encourage you to consider switching to an inkjet printer, which has less of an environmental impact than a laser printer

*1. Tested by Keypoint Intelligence, please contact us for details

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Energy-Saving Solutions

~Discovering and reducing energy loss for decarbonation~

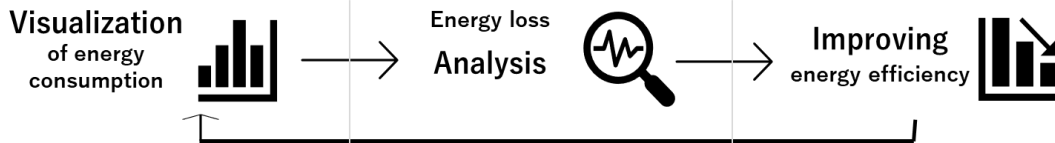
MELCO Factory Automation Philippines Inc. (Mitsubishi Electric)



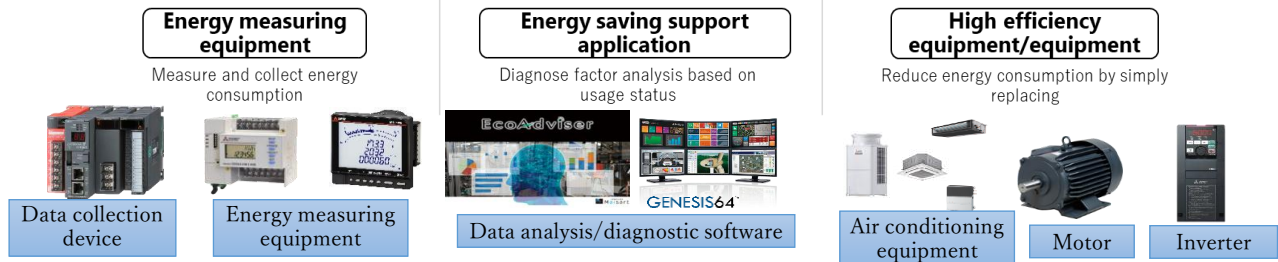
A Group Company of



<PDCA process for factory energy saving>



<Main equipment used for factory energy saving and operational improvement>



Product and Service outline

We support the reduction of CO2 emissions by promoting energy conservation in buildings, factories, etc. We have a variety of equipment and applications necessary for this purpose.

Actual Result and Example

- CEBU MITSUMI, INC. uses our SCADA (GENESIS64) system as an energy monitoring and control system. Based on the data visualized by this monitoring system, CEBU MITSUMI implemented optimal control of the chiller and clean dry air (CDA) system. As a result, the system contributed to a reduction in energy consumption of approximately **3.7 million kWh (equivalent to approximately 24 million PHP)** in the 8 months following its introduction.

*CEBU MITSUMI website:

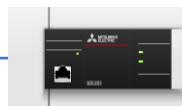
https://www.minebeamitsumi.com/english/corp/company/factories/philippines/1200049_7932.html

<System configuration>

MinebeaMitsumi
Passion to Create Value through Difference



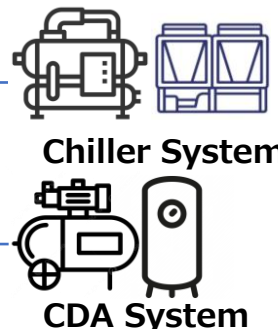
GENESIS64™



PLC



Power Meter



Chiller System

CDA System

Contact Point

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Low Carbon Solution for Industry

~EMS, High-Efficiency Power Generator, High-Efficiency Chiller, Waste Heat Power Generator, CO2 Capture Technology~

Mitsubishi Heavy Industries Ltd. Philippines

Product and Service outline

- ▶ Mitsubishi Heavy Industries (MHI) Group offers a wide range of technologies and solutions to realize decarbonization and low carbon society (energy transition, energy saving, electrification, CO2 capture, etc.), that meet customer needs.
- ▶ CO2 emission reduction has become an important managerial issue for each industry and factory in Philippines. Although, Implementation of rooftop PV system is progressing, it is not necessarily effective depending on conditions such as limitation of power generation capacity and output fluctuation.
- ▶ CO2 emission source is different for each industry and factory; therefore, it is the most important to analyze current conditions by each Scope and select appropriate solutions for CO2 reduction. MHI Group supports CO2 emission reduction on each Scope with the following solutions.

Scope-1 (direct emission) CO₂ capture unit

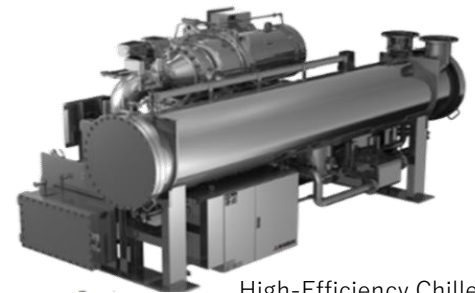
Scope-2 (indirect emission) Energy saving operation by EMS※1, high-efficiency chiller, high-efficiency power generator by gas engine, power generation by waste heat recovery with ORC※2, steam/hot water production with LHP ※3, and triple hybrid power generator (EBLOX).

- ▶ Furthermore, MHI Group offers solutions in view of future utilization of hydrogen and ammonia for in-house power generation.

※1 Energy Management System ※2 Organic Rankine Cycle ※3 Large Heat Pump



EMS (Energy Management System)



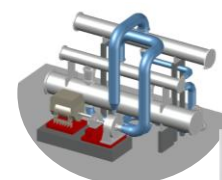
High-Efficiency Chiller



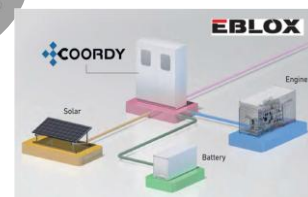
High Efficiency Power Generator (Gas Engine) / Compact CO₂ Capture Unit



Waste Heat Power Generation (ORC)

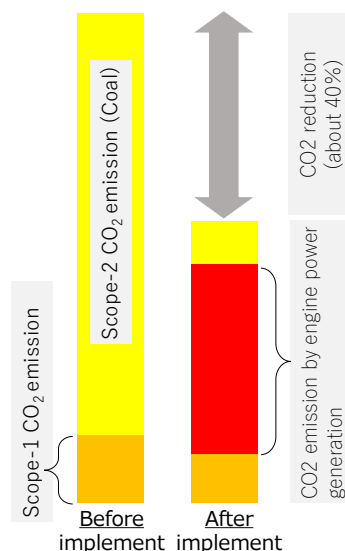


Large Heat Pump (LHP) / Triple Hybrid Power Generator (EBLOX)



Experience and example

- MHI Group has been offering low carbon solutions that suit diverse needs of various customers .
- The figure on the right shows an example that our customer achieved around 40% of CO₂ emission reduction by applying our engine power generation.
- In addition to engine power generation, MHI Group can offer established and reliable technologies and solutions shown below. With these technologies, MHI Group realizes CO₂ emission reduction and economical efficiency improvement of customers considering their ICP※5, an increase of electricity consumption and an introduction of PV system in the future.



EMS : Control system used for thermal power plants which MHI Group constructed.

High Efficiency Power Generator/High-Efficiency Chiller : Has a major share in the Japanese market

CO₂ Capture : Has top market share in the world, and has constructed world's largest plant in the US

ORC : Abundant delivery records such as geothermal power plants, biomass power plants and waste heat recovery from factory furnace, etc.

LHP : Expanding as a means of heating and waste utilization in Europe.

※5 Internal Carbon Pricing

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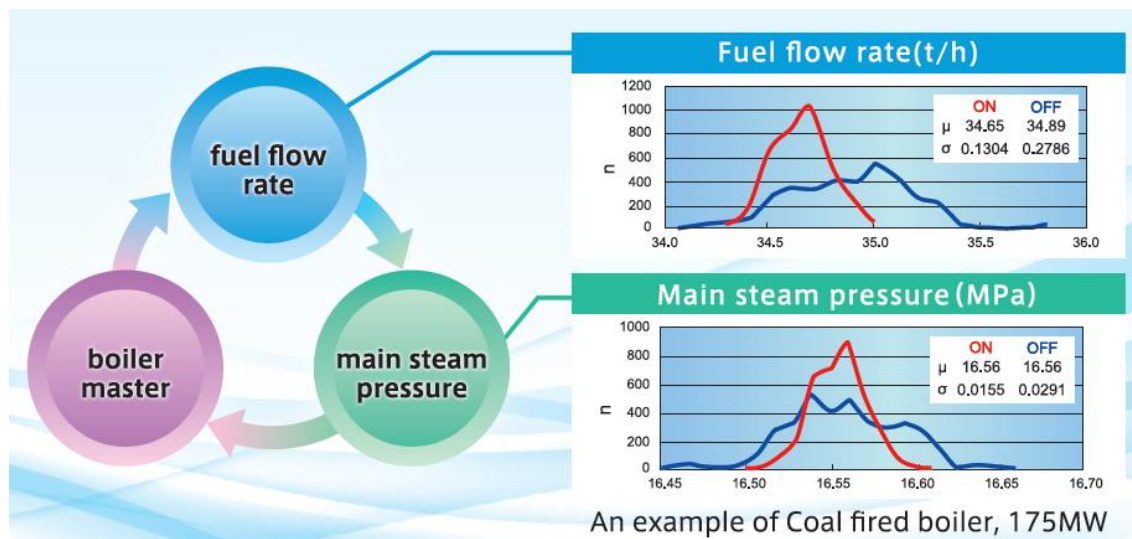
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ULTY-V plus AT

~ This equipment optimizes your boiler control ~

NYK IDEMITSU Green Solutions Co.,Ltd.



Housing : W 700mm D 720mm H 1700mm

Product and Service outline

- The equipment is applicable to various boiler types and fuel types which can be retrofit installed to your existing boiler control system.
- It optimizes fuel control by self-learning AI and stabilizes the plant controllability to reduce by 0.5 ~ 1.5% of fuel consumption and CO₂ emission.
- It can be implemented on a variety of boilers, such as supercritical (or ultra-supercritical) variable-pressure once-through boilers, subcritical boilers, circulating-fluidized-bed boilers.
- In terms of fuel types, it is compatible with boilers that burn coal and other fossil fuels and also boilers that use biomass, RPF, byproduct gas-heavy oil mixtures, etc.

Actual Result and Example

- As of end-June 2024, 118 units have been installed commercially in Asia.
- Winner of Innovative Power Technology of Asian Power Awards 2023 and Decarbonizing Industrial Machinery Awards by JPN government in 2022

<Planned introduction>

- An industrial power generator in Mindanao in 2024



**ASIAN
POWER
AWARDS
2023**



**Director-General of
Agency for Natural
Resources and Energy
Award of JFY 2021**

Contact Point

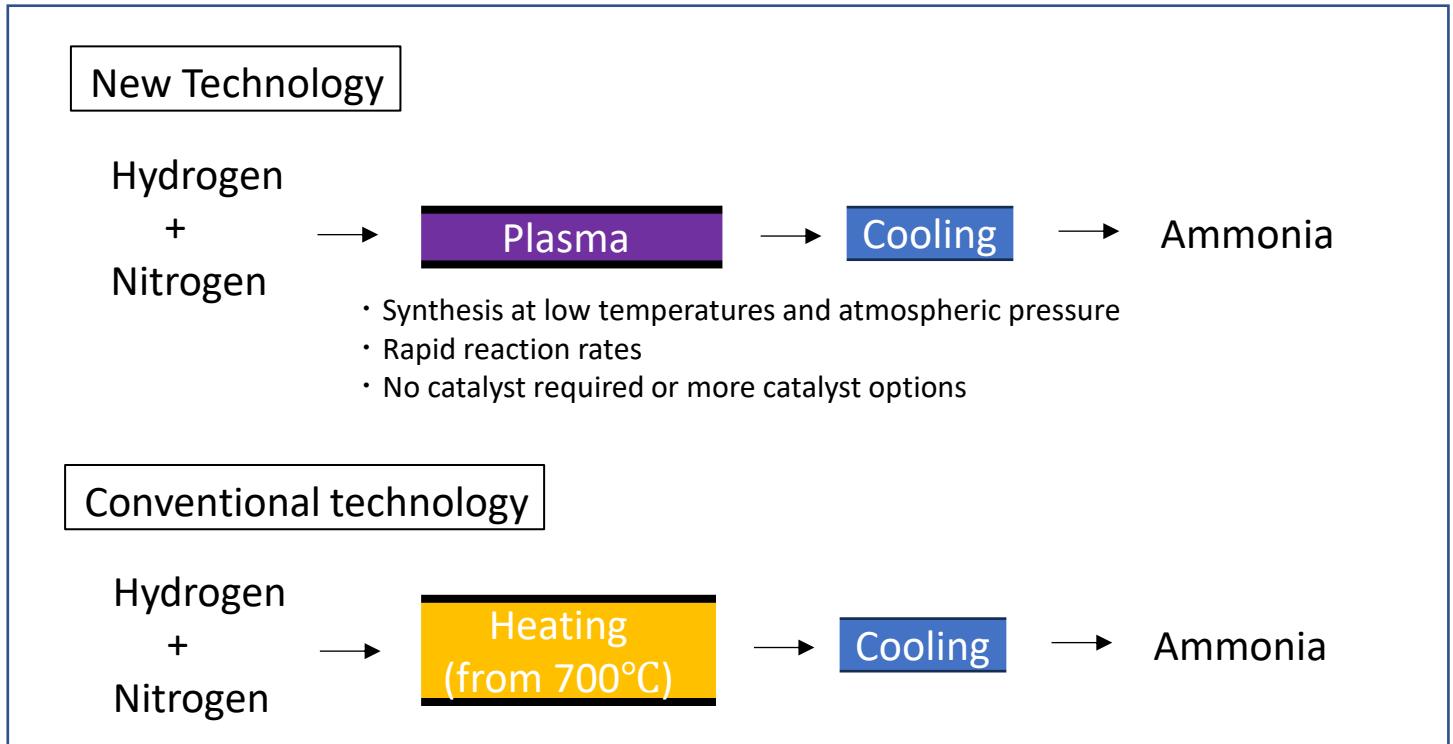
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Efficient Ammonia Synthesis Using Plasma Technology

~ From Hydrogen and Nitrogen to Ammonia ~

SAKIGAKE-Semiconductor Co., Ltd.



Product and Service Outline

- Our plasma technology offers a next-generation solution for efficiently synthesizing ammonia from hydrogen and nitrogen under low-temperature and atmospheric-pressure conditions. Compared to conventional high-temperature and high-pressure processes, this technology significantly reduces energy consumption and allows for catalyst-free operation or the use of low-cost catalysts. Furthermore, it enables carbon-neutral ammonia production by integrating with renewable energy sources.

Actual Result and Example

- Our plasma technology has extensive experience in gas-phase reactions under low-temperature and atmospheric-pressure conditions. Specifically, we have achieved practical results in applications such as removing cigarette smoke and eliminating unpleasant odors through chemical reactions in the atmosphere. These achievements demonstrate the potential of plasma technology as an efficient and environmentally friendly solution, laying the foundation for future applications in ammonia synthesis technology.

Contact Point

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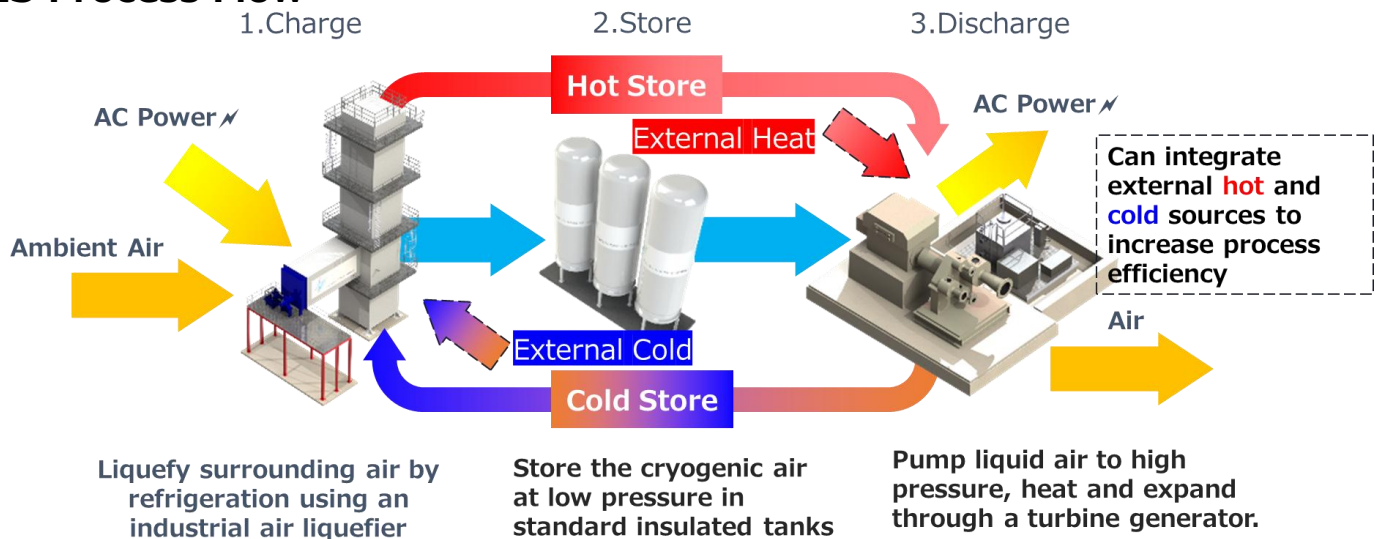
Liquid Air Energy Storage (LAES) System

~Utilizing ambient air to secure green sustainable power supply~

Sumitomo Heavy Industries. Ltd.

Product and Service Outline

■ LAES Process Flow



■ Special Features

1. 30~40 years product lifetime with no performance degradation and no major replacements/overhauls required
2. Utilizing only proven equipment and processes
3. Minimal site limitations
4. Integration with external sources of heat or cold such as LNG terminals to increase efficiency

■ Applications

1. Energy Shifting (Intra-day, Inter-day, Weekly storage)
2. Grid Stability Services from AC power (Capacity, Inertia, Frequency support, Voltage support, Reactive power, Spinning reserve)
3. Supporting decarbonization and energy security of off-grid and island grid operations

References



Heathrow (UK)
Startup : 2011
Capacity : 350kW,
2.5MWh
Pilot Demo



Manchester (UK)
Startup : 2018
Capacity : 5MW,
15MWh
Commercial Demo



Hiroshima (Japan)
Startup : 2025
Capacity : 4.99MW,
20MWh
Commercial Demo
(inc. LNG terminal integration)

**World's first full spec LAES plant.
Demonstrating added value gained
with cold utilization from integration
with LNG terminal***

*Project partner : Hiroshima Gas Co., Ltd.

Contact Point

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TOYOTA TSUSHO PHILIPPINES CORPORATION**Product and Service outline**

- With plus static electricity charge in air conditioner, [heat exchange efficiency] will be lowering because the air flowing won't become an airflow following the turbulence design, so it will spend some amount of electric power (electric power loss about 20%). By installing [continewm] to the existing air conditioning equipment (AC), the static electricity charge will be decreasing and then the heat efficiency will improve, it can preserve the temperature faster and longer on the set temperature, and finally, the compressor burden is lowering and that is the idea.
- During installation there is no need to reconstruct the existing equipment, only cleaning will be carried out and the installation or removal is easy. Moreover, after installation, there will be only periodic cleaning without running cost. The product durability will be years and for indoor use, it can be around 10 years (but it is no longer applied if there is a heat or pressure burden and used while bending).

Actual Result and Example

<Japan> some selection

- Denso Co., Ltd
- Totsuka densi Co. Ltd
- Komatsu Co., Ltd
- Nippon mektron Co., Ltd
- Coca cola bottlers Japan Co., Ltd
- Toyota museum
- NTT east Japan Co., Ltd

<Overseas>

- Toyota Motor Europe (Belgium)
- PT. Toyota Motor Manufacturing Indonesia (Indonesia)
- PT. Toyota Tsusho Mechanical & Engineering Service (Indonesia)
- Toyota South Africa Motors
- Aisin Anqing Automotive Parts (China)
- Denso (Changzhou) Fuel Injection System (China)

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Zeroboard Inc.



The calculation and visualization of greenhouse gas (GHG) emissions not only improves corporate value but also contributes to cost reductions. Zeroboard is a cloud service that calculates GHG emissions according to international rules and manages efforts to reduce GHG emissions.

- Reliable

- Verified to follow ISO14064-3 calculation standards
- Zeroboard is ISMS (ISO27001) certified

■ Track Record and Usability

- With over 12,500 companies already using our product, zeroboard has a solid reputation for ease of use based on customer feedback.

- Network Effect

- Ability to acquire and link primary data from suppliers, harnessing the network-effect to create a rapidly growing ecosystem.

Actual Result and Example

- Zeroboard is used by a wide range of companies ranging from large cap to SMEs.

Contact Point

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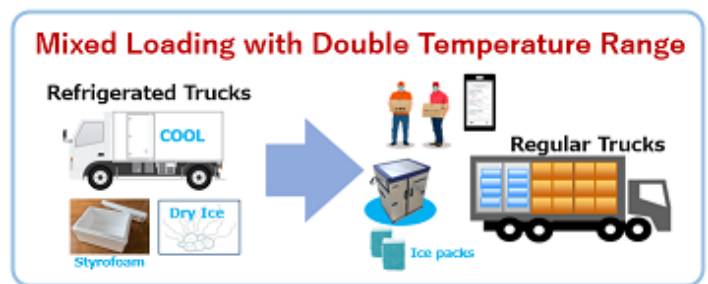
Transportation and Vehicles

- ④ 3Q Dash Technology, Inc. (Dai Nippon Printing Co., Ltd.)
- ④ NEC
- ④ Komatsu
- ④ Toyota Motor Philippines Corporation

Eco-friendly Cold Chain Solution

~Temperature-controlled delivery without the need for a power source~

3Q Dash Technolox, Inc. (Dai Nippon Printing .Co., Ltd.)

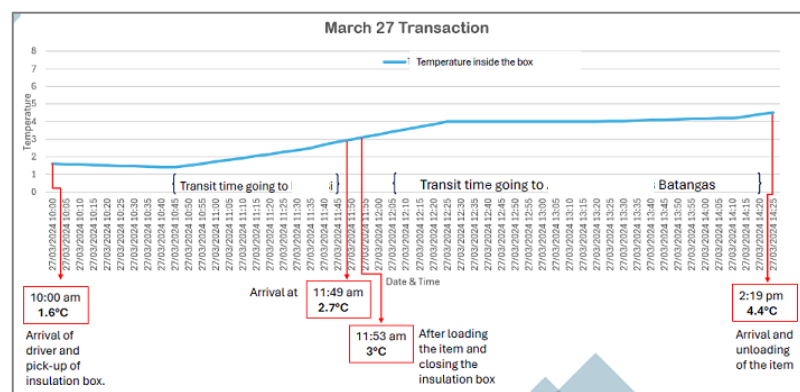
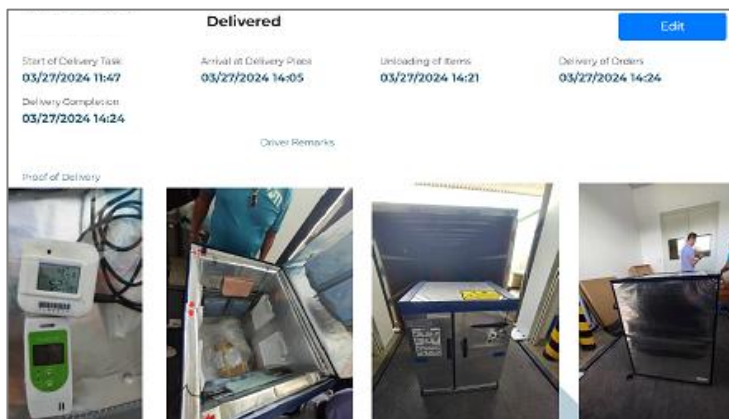


Product and Service outline

- Realize temperature-controlled delivery by regular trucks
- [Waste Reduction] Reduce use of Disposable Styrofoam
- [Reduction of CO2 emissions] Reduce use of Dry Ice
Doesn't use the cooling systems of refrigerated vehicles
Reduce separate arrangements of Refrigerated and Regular Trucks
- [Cost Reduction] Reduce disposable Styrofoam and Dry Ice
Reduce separate arrangements of Refrigerated and Regular Trucks
Reduce Operational Burden by digitalized delivery management

Actual Result and Example

- Since March 2024: In operation for pharmaceutical transportation (temperature 2°C-8°C, between Manila Airport and Batangas) on order
- April 2024 Test of frozen meat delivery (controlled temp. -18°C or lower)
- May 2024 Test of industrial adhesives (frozen/refrigerated temp. range)
- June 2024: Test of leafy vegetables (controlled temp. range: 1°C to 4°C)
- July 2024: Test of chocolate confectionery (controlled temp. of 18°C to 22°C)
- July 2024 Test of frozen food (controlled temp. of -18°C or lower)
- Aug 2024 Actual operation for Catering desert (controlled temp. of 0°C to 5°C)
- Oct 2024 Test of Vegetables and fish (controlled temperature of 5°C to 10°C)
- Oct 2024 Test of chilled and frozen chicken (controlled temp. of 0°C to 5°C, -5°C or lower respectively)



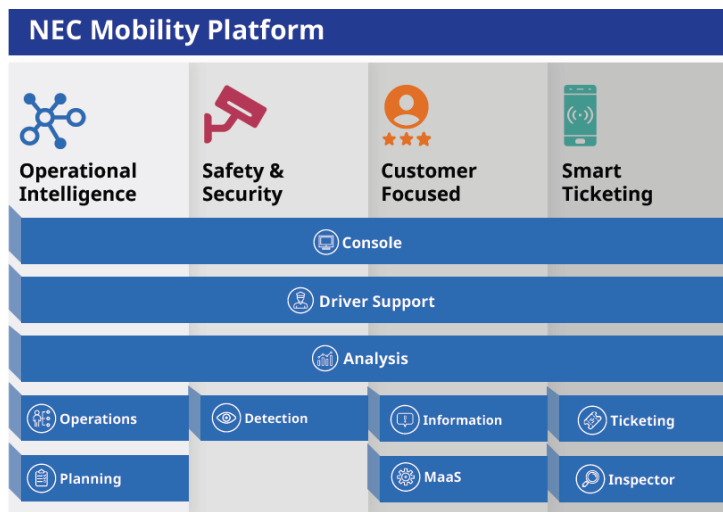
Company: 3Q Dash Technolox, Inc.
Address: 6TH Floor Electra House Bldg. 115-117 Esteban St. cor. V.A. Rufino St., Legaspi Village, Makati City, Metro Manila, Philippines 1229
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Smart Transport Solutions

~ for more advanced public transport operation ~

NEC Corporation/ NEC Philippines, Inc.

NEC Mobility Platform (SaaS platform for transport operators and authorities)

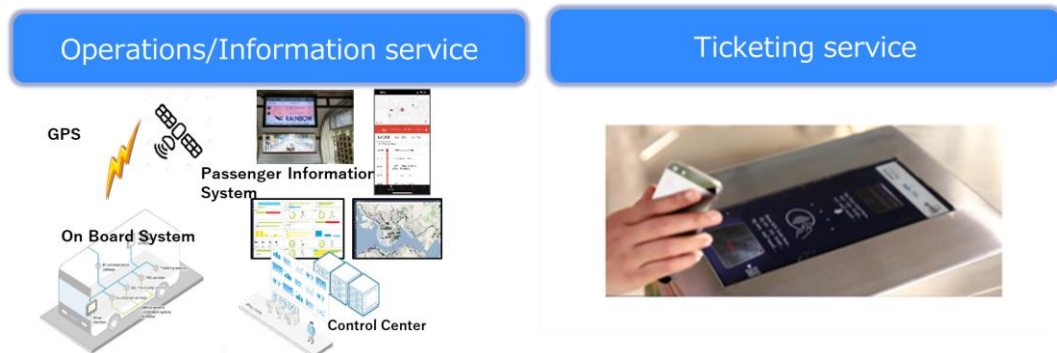


• **10 core modules** “Ready out the Box” providing services for

- **Operational intelligence** for operators and authorities
- **Safety and security** for staff and passenger
- **Customer Focused Passenger Information Services**
- **Smart Ticketing**

• All working together on a common platform through a single operational interface

Main modules (Service)



Product and Service outline

- **Operations/Information service**
 - GPS based location system, which can provide accurate ETAs for both passengers and Operators.
- **Ticketing service**
 - Cashless payment solution, with Usage of IC card / QR code / credit card etc).

Actual Result and Example

- Ongoing project for metro AFC etc.

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Hybrid Excavator HB365LC-1

~35t class excavator with low fuel consumption / low CO2 emission~

Komatsu Ltd.

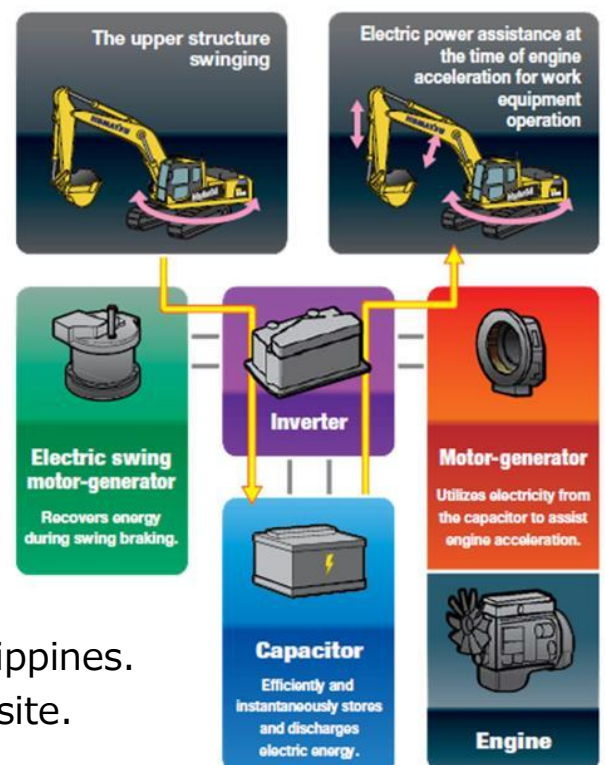
HB 365LC-1 HYBRID EXCAVATOR

Promotion
video



Product and Service outline

- **Reduced fuel consumption:** HB365LC-1 is equipped with Komatsu's unique hybrid system. While maintaining performance, **fuel consumption is significantly reduced by 20%** compared to our conventional machines.
- **Electric swing motor convert swing energy into electricity** and store it to capacitor. This electricity is reused to reduce fuel consumption.
- **Motor generator assists engine during acceleration**, and generates power when the capacitor power is depleted.
- Designed for quarry and heavyduty job, **arm and boom has been reinforced**.
- "KOMTRAX" enables user to **check machine operation and condition remotely**.
- No special investment is required. **You can reduce CO2 emission simply by replacing conventional model to hybrid.**



Actual Result and Example

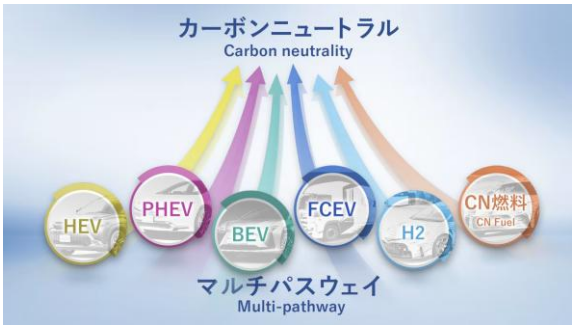
- 16 units has been delivered to jobsite in Philippines. Fuel saving effect has been confirmed at jobsite.

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All-Encompassing Electric Vehicle Strategy for CN (Carbon Neutral) ~Electrification designed to regional needs with Multi Pathway~

Toyota Motor Philippines Corporation



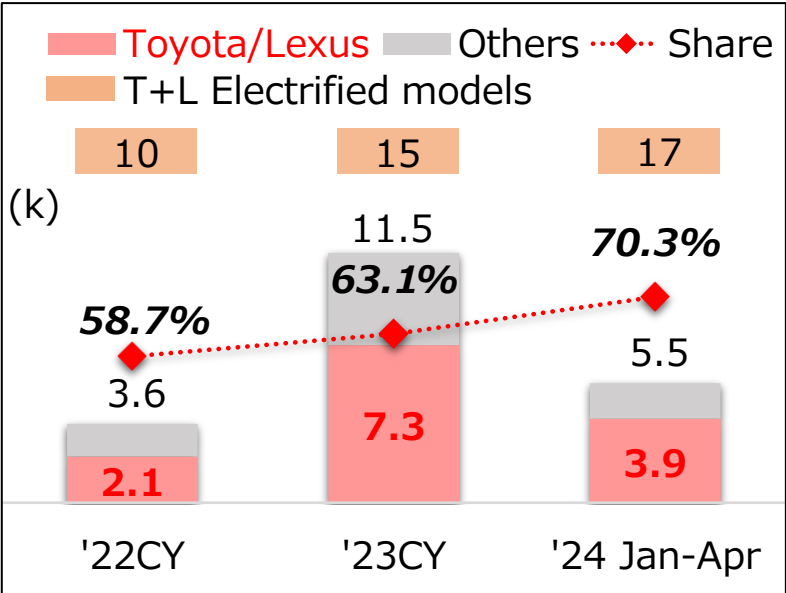
Product and Service outline

- Toyota is committed in realizing Carbon Neutral society through continuation of our multi-pathway approach. Taking full advantage of the diverse range of options including GAS, HEV, PHEV, BEV, FCEV, H2 Vehicle and CN fuel vehicles, we aim to achieve global carbon neutrality while leaving no one behind.
- In Philippines, HEV and BEV models are introduced to best cater to the customer characteristics and the local infrastructure. We are focusing on expanding the HEV model to steadily reduce CO2 immediately.
(Center photo: Latest HEV: Corolla Cross HEV / Right: BEV model RZ)

Actual Result and Example

- Industry leading electrified lineup with total of 17 models (15 HEVs and 2 BEVs).
- The electrified market surpassed 11.5K in '23CY . As of Apr '24 YTD, Toyota accounts for 70.3% market share in continuing electrification.
- By 2030, the goal is to achieve 30% of Toyota sales to be electrified.
(Jan-Apr '24: 2.6%)

Fig1. Electrified market



Contact Point

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Agriculture and Forestry Sector

- 🔍 Green Carbon Inc.
- 🔍 Sagri Co., Ltd.

Carbon Credit Project Development

~Creation of businesses focusing on agricultural and forest-based~

Green Carbon Inc.

Business Models



AWD in paddy fields Mangrove plantation

*Alternate Wetting and Drying



Product and service overview

- With a corporate philosophy of 'Saving the planet with the power of life', We are responsible for for agriculture and forests related carbon credit.
- We provide one stop service as carbon credit project developer.
- The company plans to be the first in the world to create credits for agriculture, utilizing the Ministry of the Environment's Bilateral Credit Mechanism (JCM), and will contribute to the fight against global warming.
- Also offer ESG consulting services to companies and create credits outside the agricultural and forest sectors.

Achievements and case studies

- 62,000 ha AWD project in Vietnam is on-going.
- In Japan, appr. 40,000ha is being owned, 100,000t of J-credit this year.
- Australia is as Research and development base to reduce methane gas emitted from rice farmers and cattle burping is being conducted in collaboration with various universities in the several Asian countries.
- Aiming to generate 10 million tons of carbon credit by 2026 to achieve 100 Million tons in 2030 through irrigated agriculture, cow burp, biochar, mangrove plantations, etc.

Contact Point

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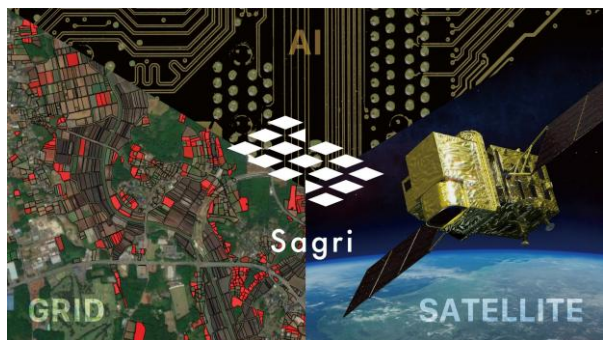
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~ Soil analysis, water detection and carbon credit generation

Sagri Co., Ltd



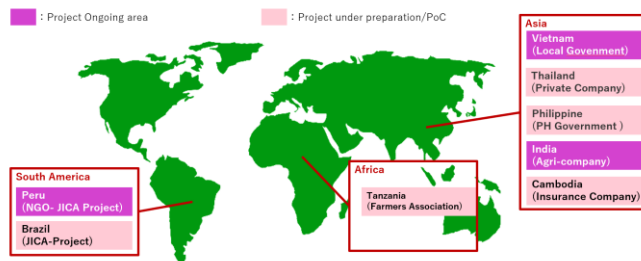
Product and Service outline

- Utilizing advanced technology in soil analysis and water detection, the farmland decarbonization opportunities will be seized from satellites and AI.
- This data will be available as GHG emissions tracking data that will be shared with stakeholders for large companies.
- These data can also serve as the basis for the generation of carbon credits via carbon farming, and the profit can be shared with farmers after the credits are sold to large Japanese corporations.

Actual Result and Example

- Achieved over 100 customers in Japan
- With the branch in India and Singapore, Sagri has been working in India, Thailand and Vietnam before entering Philippines market. Our customers are agricultural companies, cooperatives and governments.
- In Philippines, Sagri plans to start the pilot of carbon credit with UPLB this year. Also, Sagri already agreed to start pilot test of soil analysis with Department of agriculture this year.

Sagri goes Global beyond ASEAN to save more farmers and planet!



Trusted by many partners

	Government agencies	Research institutions	Private Companies
Japan	   		 
	 	 	 
Global	  	  	 

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Waste Management

- 🔊 Hitachi Asia Ltd. – Philippine Branch
- 🔊 Kubota Kasui Philippines Corp.

Hitachi Asia – Philippine Branch

ONE STOP SOLUTION FOR WATER MANAGEMENT

HITACHI
Inspire the Next



Product and Service outline

Hitachi, as a comprehensive service provider in the water and environment field, aims to solve client's problems and increase green-value by providing a wide range of products, systems and services, including water supply and sewage treatment, seawater desalination and advanced wastewater treatment, combining the operation technology(OT) and product track record and know-how that has been cultivated over decades with IT knowledge and experiences.

Actual Result and Example

- Rehabilitation of The Balara Water Treatment Plant
- Water Supply System Improvement Project for Metro Cebu Water District
- Sewage Treatment Upgrading work for Company A
- Desalination project for Company B
- Other Desal/Recycling/Upgrading projects.



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For Earth, For Life

Kubota



Septic Tank

- ✓ Mainly generated methane gas with 28 times of Global Warming Potential (GWP-100) against CO₂ due to Anaerobic Treatment
- ✓ GHGs Emission 200kg-CO₂Eq/capita·y
- ✓ Partly removed BOD but almost remained nitrogen

50% of GHGs
emission reduction

Significantly improved
effluent quality

Kubota Johkasou

- ✓ Although generated CO₂ from electric consumption for aeration blower etc. since it applies Aerobic Treatment and also N₂O through denitrification process yet, GHGs emission becomes half.
- ✓ GHGs Emission 100kg-CO₂Eq/capita·y
- ✓ Complied with New Effluent Standard in the Philippines

Product and Service outline

- By replacing from septic tanks that have been installed in many Southeast Asian countries to Johkasou made in Japan, significantly reduced methane generation and reduced Greenhouse Gases.
- Complied with Class A of the new effluent standard in the Philippine (DENR Administrative Order 2016-08 and 2021-19)
- Good for hospitals, office buildings, train stations, public facilities, etc.
- Lower construction cost than centralized sewage treatment system especially in areas where not available sewage system and where difficult to connect sewer pipe.
- Lineup Membrane Bioreactor (MBR) system using Kubota Submerged Membrane Unit® (SMU). Also available 10-year warranty system (option).

Actual Result and Example

- More than 2,000 units installation records in Southeast Asian countries
- Major installation records in the Philippines;
 - Metro Manila: Sewage Treatment Plant 410m³/day
(the largest Johkasou in the Philippines)
 - Butuan: Airport 6m³/day/unit×3units

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Finance Sector

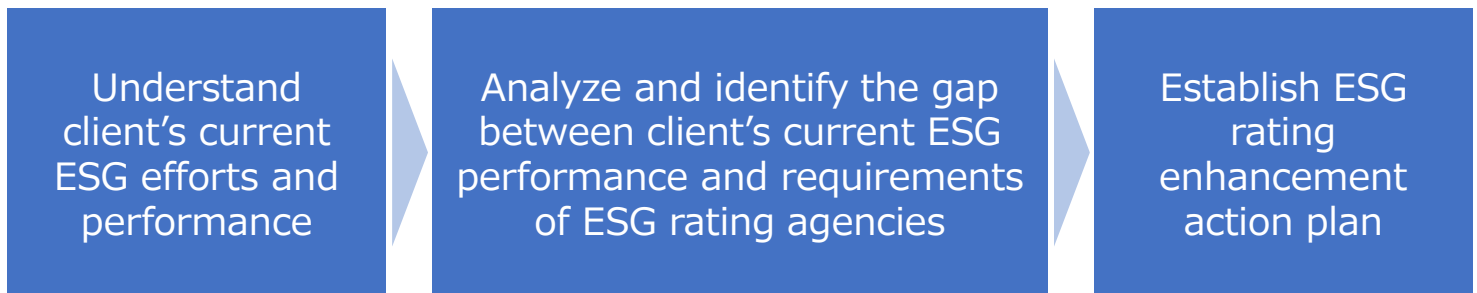
- 📍 Mizuho Bank
- 📍 Sumitomo Mitsui Banking Corporation



Product and Service outline

- ESG Rating offers a structural approach to measure corporates' ESG performance and is mainly used by investors to assess and engage with corporates
- Mizuho Bank assists corporate clients to comprehend and improve their performance under various ESG Rating models

(Process of ESG Rating Advisory Service)



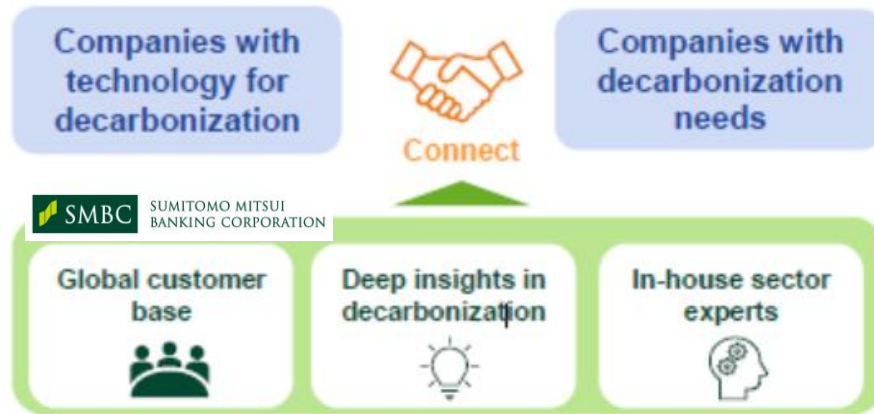
Actual Result and Example

- Mizuho Bank has provided ESG Rating Advisory to corporate clients in APAC exclude Japan
- ESG Rating Advisory solution is applicable to corporates which have sustainability strategy, track major non-financial dataset, in order to obtain ESG Rating from ESG rating agencies, or optimize their existing ESG Rating
- ESG Rating Advisory solution is only provided in English

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Sumitomo Mitsui Banking Corporation



Product and Service Outline

- To achieve a decarbonized society, we need to transition our energy sources from fossil fuels to renewable or sustainable energy. In addition to longstanding demands from shareholders, investors, NGOs, and governments, there is increasing pressure from trading partners to reduce GHG emissions.
- However, there are various challenges that need to be overcome in energy transition. These include technology, costs, and fuel procurement. Hence, it is important to collaborate with companies that have decarbonization technologies.

Actual Result and Example

- SMBC supports our customers' decarbonization initiatives with SMBC Group's worldwide network.
- SMBC promotes business co-creation by introducing companies to energy-saving or renewable solutions for reducing GHG emissions.

<Case Study in the Philippines>

- Company : Renewable energy company and manufacturing company
- Collaboration : Introduction of solar power generation system
- Purpose : To reduce electricity consumption and CO2 emissions in plants

<Case Study outside of the Philippines>

- Company : Climate tech company and manufacturing company
- Collaboration : Calculating the GHG emissions of the manufacturing company and its entire supply chain
- Purpose : To set the company's KPIs through calculation and visualization of GHG

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- For any feedback or concerns about a product, procedure or our service, you may reach us via phone at +63 2 8880 -7100 or email to smbc_customersupport@ph.smbc.co.jp.
- Sumitomo Mitsui Banking Corporation – Manila Branch is an entity regulated by the Bangko Sentral ng Pilipinas (BSP). <https://www.bsp.gov.ph>

Consulting for decarbonization

- 🔊 Fujitsu Limited
- 🔊 Green & Blue Planet Solutions Co., Ltd.
- 🔊 Nippon Koei Co., Ltd.
- 🔊 Yuasa Trading (Philippines) Inc.

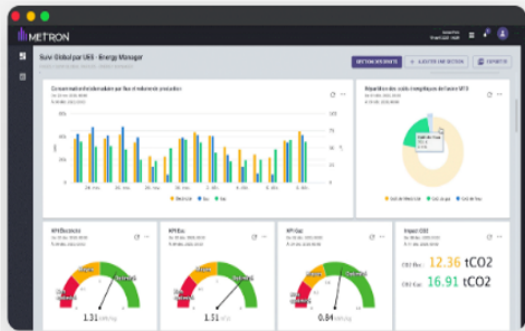
Fujitsu Energy Consumption Optimization

~Supporting Data Collection, Visualization, Analysis, and Optimization~

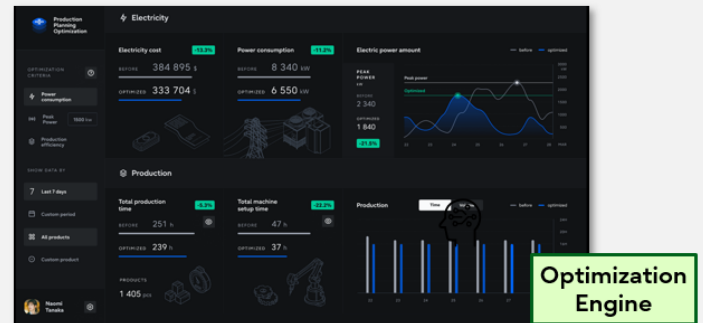
Fujitsu Limited

Contributing to Carbon Neutrality by Reducing GHG Emissions

A. Energy Visualization & Analysis



B. Balancing Efficiency & Energy Use in Production



1. Understanding Energy Consumption in Factory Facilities
2. Monitoring, Analysis, and Improvement Proposals

3. Rapidly Formulating Production Schedules that Balance QCD Maintenance/Improvement and Energy Cost Minimization

Product and Service outline

We provide an end-to-end energy consumption optimization service that supports data collection, visualization, analysis, and optimization for factories and offices in all industries.

- 1. Energy Visualization SaaS:** This SaaS service visualizes, manages, and analyzes detailed energy information used in factories and other facilities. By leveraging this service, you can grasp and analyze the balance between energy consumption reduction and production efficiency improvement.
- 2. Energy Optimization Consulting:** We support data collection methods, identification of energy hotspots, optimization of energy use, and development of energy roadmaps.
- 3. Production Schedule Optimization:** Utilizing Fujitsu's "Digital Annealer" technology, inspired by quantum phenomena, we can create optimal production schedules that balance energy consumption and productivity.

Actual Result and Example

Steam Network Optimization for Food Factories:

- Reduced steam consumption by approximately 9% per year
- Reduced CO2 emissions by approximately 1,200 tons per year
- Reduced workload by approximately 2 person-days

Production Schedule Optimization for Steel Pipe Processing Factories:

Based on simulation results, simultaneously reduced power consumption and total production time by approximately 5-8%

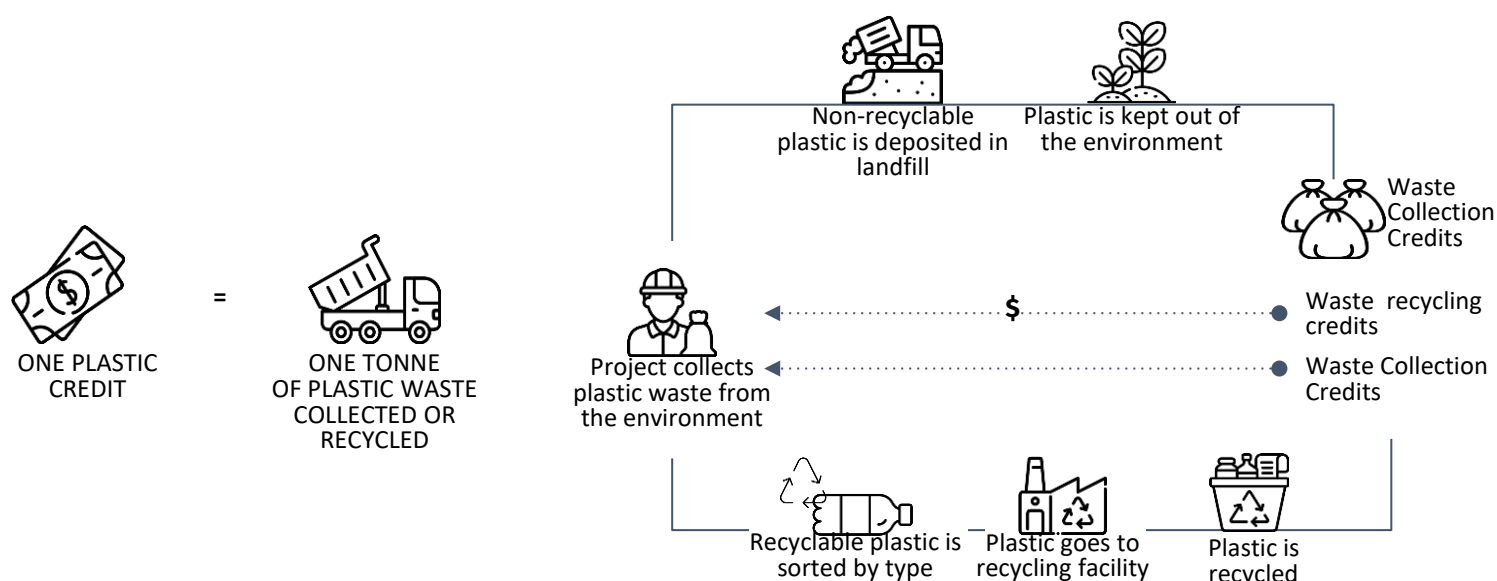
Contact Point

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Creation of Environmental Credits

~ Renewable Energy Certificates, Carbon Credits, Plastic Credits~

Green & Blue Planet Solutions Co., Ltd.



Product and Service outline

- Green & Blue Planet Solutions, a Japanese environmental research and consulting company based in Bangkok, Thailand, supports decarbonization and/or environmental projects by creation of environmental credits with our corporate core value "Sustainability without Borders"
- As an environmental credit project developer, we provide one-stop service from feasibility study, project registration, monitoring, issuance of credits to trading of the credits. Our service covers renewable energy certificates, carbon credits and plastic credits.

Actual Result and Example

- A total of 32 renewable power plants (total capacity: 176MW) in Thailand has been registered in the registry of International Renewable Energy Certificate, including solar, wind, biomass and biogas technology. Approx. 600,000 MWh/year of environmental attributes has been issued and sold.
- Under registration of rice husk based biomass power plant in Thailand to the Global Carbon Council registry. Annual carbon reduction and credit issuance of 24,000 CO2 ton is estimated.
- Under development of plastic credit project from the activity transforming industrial plastic waste to refuse-derived fuel (RDF) in Lao PDR. Annual plastic waste reduction and credit issuance of 1,200 ton is estimated.

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One-stop consulting services for decarbonization

- Decarbonization business proposals using JCM and public funds -

Nippon Koei Co., Ltd.



No.1 in sales
among civil engineering
consulting firms in Japan



Operations in
160 countries



Over **75 years**
in business

Product and Service outline

- Being established in 1946, as an “Engineering Consultant”, involved in various infrastructure project in developing countries (mainly in study/survey, design, Tender Management and Construction Supervision)
- We have been providing consulting services in the field of **climate change and decarbonization**, working with Japanese ministries and other public agencies since the earliest stages of the **JCM (Bilateral Crediting Mechanisms)**.
- We have local office and subsidiary (**Philkoei International, Inc.**) and can provide support in Japan and Philippines. Please contact us for business development, finding local partners, obtaining credits, etc.

Actual Results and Examples

- Founded in 1989, Philkoei International, Inc. has more than **200 professionals and engineers** serving both the public and private sectors
- Surveys, demonstration projects, and subsidized projects related to **JCM**
- **City-to-City Cooperation Program**: collaboration between cities in Japan and abroad, including cities in the Philippines, for decarbonization
- JCM model projects(**subsidy for initial costs of installing equipment**) : 30+ experience, including thermal/solar powers in the Philippines
- **Support for JCM projects** : methodology, project design document (PDD), project registration, monitoring report (MR), and credit issuance
- **Survey for obtaining carbon credits**, including JCM (multiple track record in the Philippines)
- F/S studies, pilot projects related to carbon credits



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Yuasa Carbon Neutral One-Stop Solution ~We provide one-stop support for corporate decarbonization~

YUASA TRADING (PHILIPPINES) INC.

“YUASA one-stop solution for achieving carbon neutrality”

1. Managing of CO2 emissions

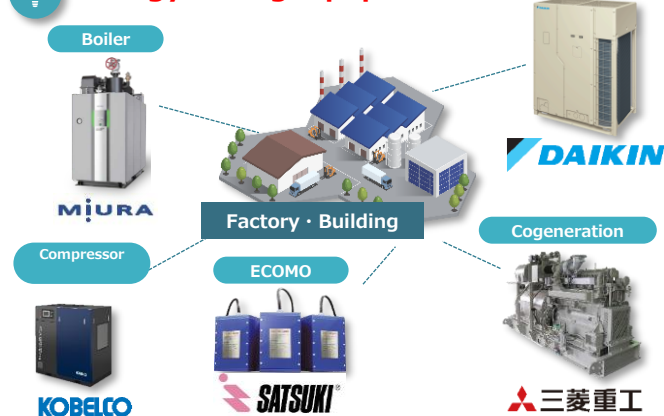
2. CO2 reduction targets

3. Plan and Action

Energy saving(Co2) diagnosis



Energy saving equipment



Renewable energy(solar power equipment)

- Regarding self-consumption type solar power generation equipment, We can support you from design to installation.

Rooftop



Field



Carport



- Proposals for Storage battery systems

- ✓ As an emergency power
- ✓ Reducing electricity costs through peak cuts



- Choosing a deployment scheme

- ✓ PPA model
- ✓ Lease
- ✓ EPC

We can propose an implementation scheme tailored to your needs.

Product and Service outline

- Energy saving/CO2 reduction diagnosis: **A specialized Japanese team will conduct** an on-site survey using cameras.
- We can provide **one-stop** proposals for carbon neutrality.
- We can handle everything from detailed design and simulation to on-site construction.
- We can support equipment installation by **utilizing the JCM system**.

Actual Result and Example:JCM System Utilization Examples

partner country	Thailand
Business year	2016
Industry	Precision parts
Equipment	Air-con control System
Planned CO2 reduction amount	2,493 tCO2/year



partner country	Mexico
Business year	2023
Industry	Auto parts
Equipment	Solar power generation system
Planned CO2 reduction amount	392 tCO2/year



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Construction and Real Estate

- 🕒 Nishimatsu Construction Co., Ltd.
- 🕒 Sojitz Corporation
- 🕒 Waquo Industry Co., Ltd.



Product and Service outline

- We specialize in large-scale civil engineering and have expanded into high-rises, real estate, schools, hospitals, and renewable energy. With 50+ years of global experience, we have a growing presence in Southeast Asia (in the Philippines, Thailand, Viet Nam, Laos, and Malaysia).
- We drive renewable energy projects—solar, biogas, and hydropower—to build “sustainable, low-carbon, circular cities” and address regional challenges.

Actual Results and Examples

- In 2022, we were awarded the Metro Manila Subway Project Contract Package 102: Two Underground Stations (Quezon Avenue and East Avenue) and Tunnels by the Department of Transportation (Philippines). This project covers approximately 3.2 km, from North Avenue Station through Quezon Avenue Station to East Avenue Station. The subway will ease traffic, reduce pollution, and support climate change mitigation. We are committed to its successful delivery with the highest standards.
- We plan to expand beyond construction and collaborate with Philippine partners to advance renewable energy solutions to address local challenges.

Contact Point

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Environmentally Considerate Energy-Saving Office Building

~ Compatibility of Energy Saving and Comfortable Workplace ~

Sojitz Corporation (The Yuchengco Centre)



Product and Service outline

- The Yuchengco Centre in Makati City to emerge as a new-generation office building that considers the environment, with its energy-saving performance and flexibility for future renewal.
- Located in the heart of Makati City, leveraging the former Mapua Institute of Technology site, with greening plan considering urban landscapes including rooftop gardens.
- Featuring a high-design aesthetic by Nikken Sekkei, incorporating local traditional culture, with facilities and specifications prioritizing environmental considerations, comfort, and safety for workers.
- Being a new-generation environmentally friendly office building, offers one of the largest rental space in Makati and security with 24/7 backup power.

Actual Results and Examples

- Environmental measures in both hardware and operations enable the building to achieve LEED & WELL certification standards.
- Achieving CO2 emission reductions in large tenant buildings.
- Utilizing renewable energy for building power through rooftop solar power generation.

■ LEED (Gold) Certification
International environmental consideration certification system for buildings and site utilization.

- WELL Certification
✓ A performance evaluation system focusing on health and wellness, assessing the environment of buildings that support human health and well-being.



Contact Point

Please contact us if you are considering relocating or establishing a new office.

Sojitz Philippines Corporation

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WAQUO INDUSTRY CO., LTD.



Product and Service outline

We support the creation of a decarbonized society for a sustainable future by reducing environmental impact through maintenance that enhances equipment efficiency and eliminates waste.

Installation, Inspection, Repair, and Sales of Industrial Valves and Pumps

- We provide not only maintenance during plant shutdowns but also emergency repair services.
- Flexible support is available regardless of manufacturer, type, or size.

Valves: Safety valves, gate valves, globe valves, ball valves, butterfly valves, check valves, automatic control valves, and more.

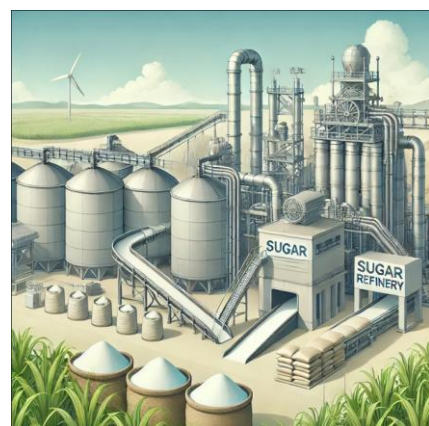
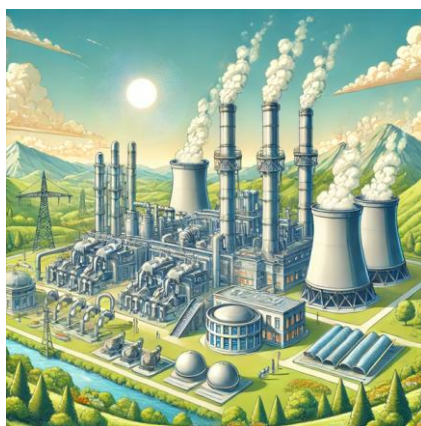
Pumps: Positive displacement pumps (diaphragm, gear, vane, etc.), centrifugal pumps (single, multi-stage, etc.).

Additionally, we also handle blowers, turbines, and other related equipment.

Actual Results and Examples

We have a track record of work at the following plants:

- Power plants
(Fossil Fuel, Gas, Geothermal)
- Oil and Gas Refining
- Chemical
- Paper and pulp manufacturing
- Water treatment
and purification facilities
- Beverage
- Sugar refineries



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Manufacturing



 JFE Steel Corporation

JFE Steel Corporation



Product and Service outline

- In the first half of FY2023, JFE Steel began supplying JGreeX™, a green steel product that significantly reduces GHG emissions in the manufacturing process compared to conventional products.
- JGreeX™ applies the steel mass balance approach, calculating emission factors and reduction amounts based on ISO standards. It ensures transparency and additionality through third-party certification.

Supply Availability	Approximately 500,000 tons(FY2024)
Certification Body	ClassNK (Nippon Kaiji Kyokai)

JFE Steel Website: "About Green Steel 'JGreeX™'"

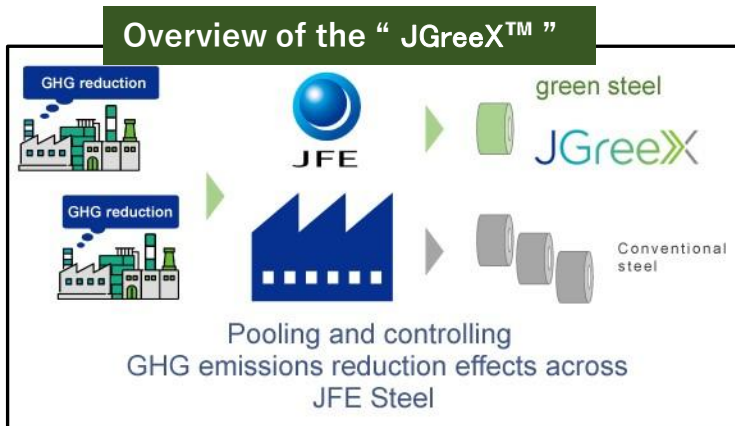
[JFE Steel Corporation | Products | About JFE's green-steel "JGreeX™"](#)

The Japan Iron and Steel Federation Website: "Overview of the Steel Mass Balance Approach"

https://www.jisf.or.jp/en/activity/climate/documents/ENMassB-GS_eng_2s.pdf

Applicable ISO Standards ISO 20915 ISO 14064 ISO 22095

Key Points of Decarbonization and Sustainability



STEP.1

Calculate the emissions intensity of any steel product to apply this approach

STEP.2

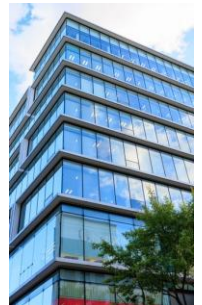
Identify emissions reduction projects and determine their emissions reduction levels

STEP.3

Issue a reduction certificate based on the determined reduction level, grant the certificate, and supply steel materials.

Actual Results and Examples

- Ships, Bridges,
- Buildings (Office Buildings, Logistics Warehouses)
- Industrial machinery, Transformers, and Cans (badges)



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JETRO Manila

Decarbonization Realization in the Philippines
Business Catalog of Japanese Companies

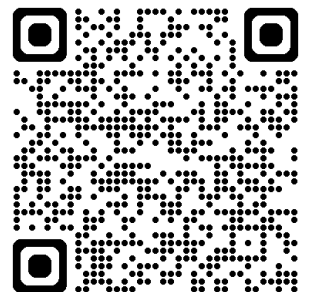
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