

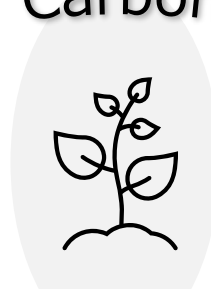


Toward Carbon Neutrality in Vietnam

~ A Collection of Decarbonization
Initiatives by Japanese Companies ~



Carbon



Neutral



Table of contents

I. Introduction	03
II. Products and Service of Japanese company	04
1. Renewables Energy	06
2. Energy Efficiency	17
3. Hydrogen / CCUS	27
4. Biomass	28
5. Transportation Mobility	32
6. Agriculture	35
7. Finance	37
8. Others	40
III. Interview	46

I | Introduction

The Vietnamese government aims to achieve carbon neutrality by 2050. They have established the "National Strategy for Climate Change until 2050," designating key areas such as renewable energy, energy conservation, and hydrogen, and are strengthening efforts towards energy transition.

The Japanese government launched the Asia Zero Emission Community (AZEC) in March 2023 to support the decarbonization of ASEAN countries. In Vietnam, public-private initiatives are advancing, including the agreement in March 2025 on the first Japan-Vietnam cooperation project under AZEC.

This business catalog compiles products and services from Japanese companies' products and services for decarbonization in Vietnam, such as the introduction of renewable energy and energy conservation in industrial sectors. It is widely introduced to the Vietnamese government, companies, and others. We hope to contribute to the creation of new business opportunities and to the decarbonization efforts in Vietnam.

JETRO Hanoi Office

II | Products and Service of Japanese company

1 | Renewables Energy



• Daiichi Jitsugyo Vietnam Co., Ltd.	06
• DEEP C Industrial Zones	07
• JFE Engineering Vietnam Company Limited	08
• Kanadevia VIETNAM CO.,LTD.	09
• MARUBENI GREEN POWER VIETNAM CO., LTD.	10
• Mitsubishi Heavy Industries Vietnam Company Limited.	11
• RENOVA,inc	12
• Sojitz Osaka Gas Energy Company Limited	13
• Sumitomo Forestry Vietnam Co., Ltd.	14
• Thang Long Industrial Park Corporation	15
• Toyota Tsusho Vietnam Co., Ltd	16

2 | Energy Efficiency



• KURITA-GK VIETNAM CO., LTD	17
• KDDI Vietnam Corporation	18
• KUBOTA KASUI VIETNAM CO.,LTD	19
• LIXIL Global Manufacturing Vietnam Co., Ltd.	20
• MITSUBISHI ELECTRIC VIETNAM CO.,LTD.	21
• Panasonic Electric Works Vietnam Co.,Ltd.	22
• PGT HOLDINGS JOINT STOCK COMPANY	23
• TOYOTA MOTOR VIETNAM CO., LTD	24
• VIETNAM RECOMM CO., LTD.	25
• Yuasa Trading Vietnam Co.,Ltd	26

3 | Hydrogen / CCUS



• IHI Corporation	27
-------------------	----

4 | Biomass



- | | |
|---------------------------------|----|
| • Becamex Tokyu | 28 |
| • erex Co., Ltd. | 29 |
| • KOBELCO ECO-SOLUTIONS VIETNAM | 30 |
| • Sojitz Vietnam Company Ltd. | 31 |

5 | Transportation Mobility



- | | |
|---------------------------------------|----|
| • Becamex Tokyu Bus Co., Ltd | 32 |
| • MLC ITL LOGISTICS CO., LTD | 33 |
| • NX Vietnam (NIPPON EXPRESS VIETNAM) | 34 |

6 | Agriculture



- | | |
|-------------------|----|
| • Faeger Co. Ltd. | 35 |
| • Sagri Co., Ltd. | 36 |

7 | Finance



- | | |
|---|----|
| • Mizuho Bank | 37 |
| • MUFG Bank Ltd.,
(Hanoi Branch and Ho Chi Minh City Branch) | 38 |
| • Sumitomo Mitsui Banking Corporation,
(Ho Chi Minh City Branch) | 39 |

8 | Others



- | | |
|---|----|
| • ABeam Consulting (Vietnam) Co., Ltd. | 40 |
| • JNK Environmental Research & Consulting CO.,LTD | 41 |
| • MZ VINA COMPANY LIMITED | 42 |
| • NIPPON KOEI CO.,LTD. | 43 |
| • SATO VIETNAM SOLUTIONS CO., LTD | 44 |
| • Zeroboard Inc. | 45 |

Daiichi Jitsugyo Vietnam Co., Ltd.

Overview of product / Service

- Daiichi Jitsugyo Vietnam is a general trading company for industrial machinery and provides technologies that lead to decarbonization.
- We handle equipment procurement both domestically and overseas, as well as on-site installation work.
- By installing high vacuum panels manufactured by TVP Solar (TVP) we help our clients reduce their carbon emissions by reducing fuel consumption for thermal processes, like pasteurization, clean-in-place, drying. It's like installing a solar boiler.
- TVP high vacuum solar panels are ISO certified, reliable for long periods of time, and are certified to supply up to 200°C. Over installed lifetime, these panels can cut an equivalent of 6 t CO₂ per m² of panel vs. diesel.
- TVP panels have over 110,000 m² installed worldwide, contributing to reducing CO₂ emissions by more than 14,800 tons per year.



Achievement

- Installed 37 MW in a solar district heating facility in the Netherlands. 48,000 m² of TVP panels generate 25 GWh/year of heat to replace natural gas, and reducing the city's CO₂ emissions by 6,000t - CO₂ per year.
- Installed 4.7 MW in a solar district heating plant in Germany. 6,100 m² of TVP panels generate 3.2 GWh/year of heat to replace natural gas, reducing the city's CO₂ emissions by 850t - CO₂ per year.



- Installed 1.2 MW in at a factory in Brazil for a multinational F&B company. 1,200 m² of TVP panels generate 1.2 GWh/year of heat to replace fuel use and reducing the plant's CO₂ emissions by 290t - CO₂ per year.
- Contributes to reducing CO₂ emissions in steam and hot water production in Vietnam in the future.



DEEP C Industrial Zones

Overview of product / service

- One of the largest industrial zone in Vietnam, developed by Belgian investment, located in Haiphong and Quang Ning
- 20 Japanese companies such as Bridgestone, Shin-Etsu, IHI, ENEOS have selected this industrial zone
- Aggressively investing in renewable energy and issuing green energy certificates to tenants
- The only industrial zone in Vietnam that owns and operates a wind turbine



Achievement



Promoting rooftop solar power generation

- Total land area of 3,400 hectares
- Investments from more than 130 companies world wide
- Tokyo Electric Power Company (TEPCO) invests in the power business of DEEP C Industrial Zones

DEEP C 
INDUSTRIAL ZONES



Contact Point
Mr. Tsuchiya

+84 90 159 5225
info@deepc-jp.com
<https://www.deepc.vn/en/>

JFE Engineering Vietnam Company Limited

Overview of product / Service

- Waste to Energy Plant:

The heat obtained from the incineration of waste is used to generate electricity. In addition, by incinerating waste, the amount of waste that ends up in landfills can be reduced, which is one of the solutions to the waste problem that is expanding with urbanization, such as reducing environmental impact and improving sanitation.

- Biomass Power Plant:

We generate electricity using biomass fuels such as wood chips, PKS, or other biomass materials that would otherwise be discarded. It is considered as one of the renewable energies because it can be sustainably produced by recycling and regenerating biomass resources.



Achievement

- In Japan, we have many achievements in both waste-to-energy plants and biomass power plants. In Vietnam, we built a waste-to-energy plant in Bac Ninh Province. The plant will process 500 tons of waste per day and power output is 11.6 MW.
- We are also participating as an owner of the plant, by establishing a special purpose company jointly with Vietnamese partner. In Vietnam, landfill disposal of waste is the mainstream, causing deterioration of public health and environmental pollution. Under our purpose of "Just For the Earth, which 'creates,' 'bears,' and 'connects' the foundation of our lives," we will continue to develop our business in this model.



Waste-to-Energy (WTE) System / Energy Free Carbonizing for Resource recovery (EFCaR) System



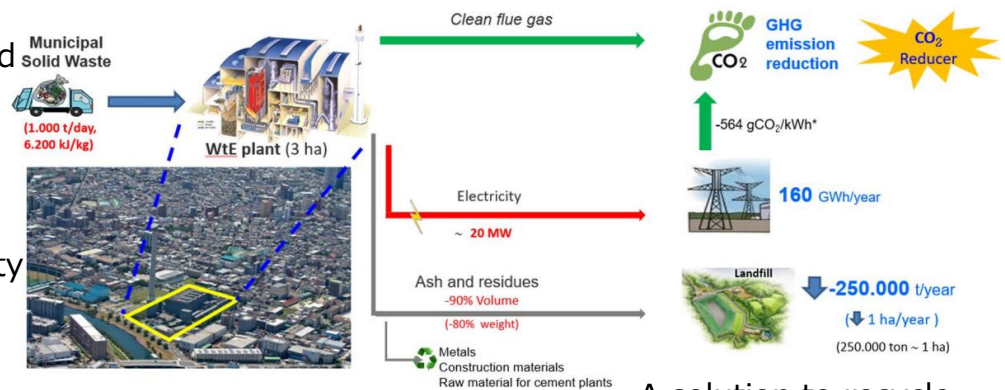
Kanadevia VIETNAM CO.,LTD.

Overview of product / service

■ Waste to Energy Plants

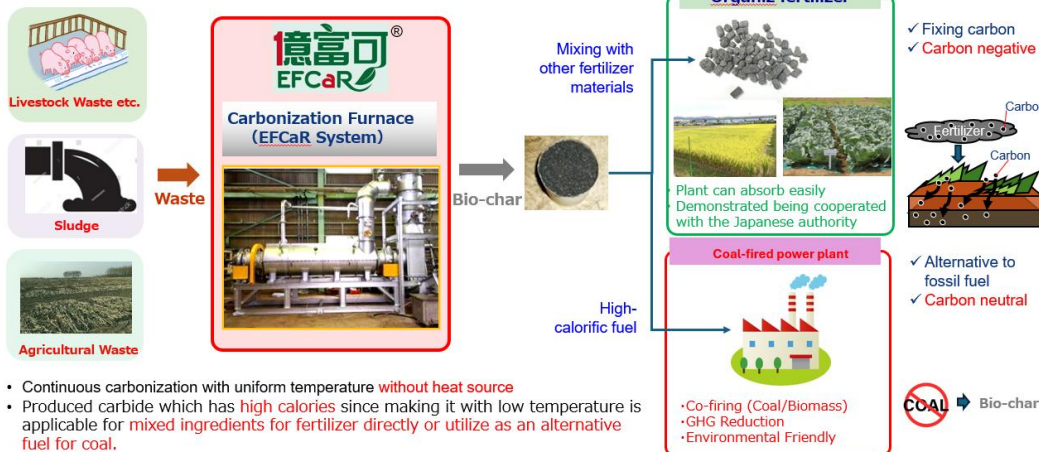
This facility burns waste and treats it hygienically, while at the same time generating electricity as an important energy resource.

Waste is burned while moving on top of a combustion device called a stoker in an incinerator. The incinerated waste is then discharged as ash. The energy of exhaust gas generated by combustion is recovered as steam by the boiler, and electricity is then produced by the steam turbine generator. The generated electricity is also sent outside the facility.



■ EFCaR (Energy Free Carbonizing for Resource Recovery)

Energy Free Carbonizing for Resource recovery (EFCaR®)



A solution to recycle sludge and livestock waste into Biochar – a renewable resource that can be directly utilized as fertilizer or used as an alternative fuel to coal. EFCaR also contributes to the degradation of antibiotics and pesticides in waste and the prevention of viral and bacterial diseases in animals.

Achievement

- In the field of waste incineration and energy generation facilities, Kanadevia Group has built Waste to Energy plants for various clients around the world. Kanadevia Group and licensees have received orders for 1570 plants, comprising 556 in Japan and 1014 outside Japan. (As of August, 2024)
- In the field of energy independent carbonization systems (EFCaR), In 2021, a demonstration experiment to recover phosphorus for fertilizer use from pig manure was selected as a Japan-China collaborative project run by the Japan International Cooperation Agency (JICA) and the Ministry of Science and Technology of China, and a demonstration plant capable of producing 4.8 tons per day was constructed.



Contact Point

Yoshihiko Koga



+84 28 3825 1040



koga_yo@kanadevia.com



<https://www.kanadevia.com/>

MARUBENI GREEN POWER VIETNAM CO., LTD.

Overview of product / Service

■ Rooftop Solar PPA Business

Introduce solar power generation with zero initial investment. Utilize your roof to implement environmentally friendly energy at an affordable price.



Rooftop Solar PPA Business

■ I-REC (International Renewable Energy Certificate) Sales

Provide a comprehensive service from I-REC procurement to redemption for customers.



Energy Management Service

■ Energy Management Service with BESS:

Electricity cost reduction service using container-type batteries. Charge during low-cost electricity hours and discharge during high-cost times to reduce electricity bills. Currently conducting a demonstration project in Nha Trang, Khanh Hoa Province, with plans for business expansion in the near future.

■ Participation in Direct PPA Mechanism

Offsite PPA business utilizing the Direct PPA system being established by the Vietnamese government. Develop renewable energy sources tailored to customer needs and provide "renewable energy value."

Achievement

■ Rooftop Solar PPA Business: Contracts signed for 18 projects (80% Japanese companies, 20% foreign companies), accumulating to 26.5MWp. 10 solar installations are currently operational and running safely and stably.

■ I-REC (International Renewable Energy Certificate) sales: Multiple successful sales to Japanese companies. Numerous inquiries received since the second half of 2024.

■ Energy Management Service with BESS: Developed Vietnam's first battery storage project in Nha Trang, Khanh Hoa Province, with commercial operations starting in November 2024. Aiming for business expansion during fiscal year 2025.

■ Participation in Direct PPA Mechanism: Planning to immediately begin development of renewable energy sources and service provision for offsite PPAs under the Direct PPA system.

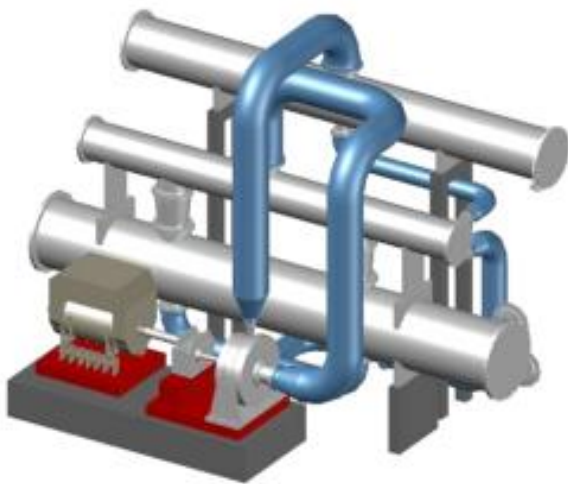


Mitsubishi Heavy Industries Vietnam Company Limited.

Overview of product / Service

■ ORC

ORC units can generate electric power efficiently by recovering residual heat sources of the middle low temperature. ORC generators, for the combined generation of electric power and heat, employing heat recovery from industrial processes, engines and gas turbines, particularly well-suited for clean and stable generation. ORC system is applied to waste heat recovery systems in cement, steel, glass, biomass pellet production plants and more.



■ LHP

LHP is utility scale heating plant, designed to transfer large quantities of heat from a lower temperature source to a higher temperature heat user, such as district heating grid or industrial process and combines them with minimal electrical energy to efficiently supply large amounts of steam or hot water for industrial processes.

Achievement

- Although we do not yet have any delivery records or case studies in Vietnam, we are considering aiming for our first project in the cement, steel, and glass industries over the next three years, as these sectors are setting decarbonization targets.



Contact Point

Kohei Kamo



+84 90 462 4009



kohei.kamo.x7@mhi.com



<https://www.mhi.com/>

RENOVA,inc

Overview of product / service

- Onshore wind power generation in Quang Tri Province, Vietnam.



Achievement

- Quang Tri Wind Power Projects are RENOVA's first renewable energy power project outside Japan, and its first onshore wind power project. The projects consist of the following sections: Lien Lap (48.0 MW), Phong Huy (48.0 MW), and Phong Nguyen (48.0 MW). Generated electric power will be sold in accordance with Vietnam's FIT (Feed-in Tariff) scheme.
- RENOVA started evaluation of the projects in 2019, and has been developing the project jointly with Power Construction Joint Stock Company No.1, a power producer based in Vietnam. In May 2021, each of the project companies entered into green loan project financing agreements with financial institutions including Asian Development Bank (ADB), Export Finance Australia and Japan International Cooperation Agency.

Creating our future with renewable energy.





Sojitz Osaka Gas Energy Company Limited

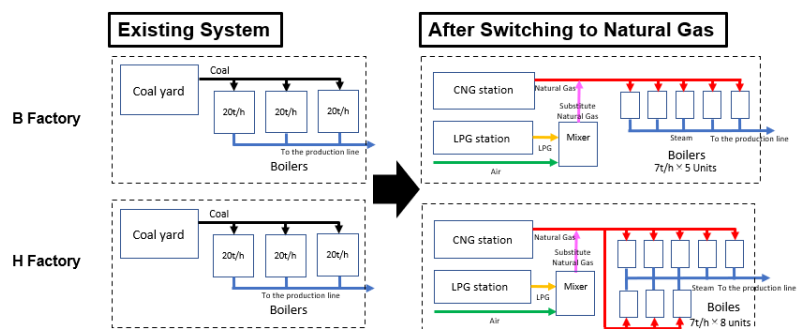
Overview of product / Service

- Our subsidiary, SOL Energy, proposes installing solar power generation systems on the roofs of factories and commercial facilities, supplying the generated electricity under long-term contracts. This enables cost savings on electricity without the need for initial investment while contributing to decarbonization and environmental impact reduction.
- The Energy Services Business provides efficient and sustainable energy solutions through services such as natural gas supply, steam supply, and energy-saving proposals. With advanced technology and attentive, tailored service, we support companies in reducing energy costs and minimizing environmental impact. Our reliable supply system ensures the delivery of solutions customized to our customers' needs.

Achievement

*Total Contracted Power Generation Capacity

- In the Long Duc Industrial Park in Dong Nai Province, southern Vietnam, we utilized the JCM equipment subsidy program to install solar power generation facilities with a total capacity exceeding 10,000 kW* at our customer's site.
- Focusing on southern Vietnam, we have a track record of supplying gas to 15 customers. Notably, we provide various support services to users who currently use conventional fuels such as coal and oil to switch to natural gas.
- For example, in a coal-to-natural-gas conversion project for a food company, we participated as a joint implementation partner in the JCM equipment subsidy program, contributing to reducing GHG (greenhouse gas) emissions.



Fuel switching Case Study for Food Company



Contact Point

Yukinaka Fujimoto



+84 28 3822 1880

contact@sogec.com.vn

Sumitomo Forestry Vietnam Co., Ltd.

Overview of product / Service

- Sumitomo Forestry Group established a joint venture, CME-SFV Co., Ltd. (hereinafter, CME-SFV), with CME Solar Investment (hereinafter, CME Solar), Vietnam's largest on-site solar power generation operator. The company supports decarbonization through rooftop solar power generation for industrial and commercial power consumers in Vietnam.
- CME-SFV will handle everything from equipment design, procurement, construction, and operation and maintenance after completion, enabling consumers to reduce their initial investment, CO2 emissions, and electricity bills.
- CME's extensive implementation track record allows it to obtain permits quickly and has strong cooperative relationships with EPC companies, allowing power generation to begin within three months of signing a contract.



Achievement

[Solar power installation track record in Vietnam]

*The following are the track records of CME Solar and CME-SFV.

- Solar farm / 140MWp *Already transferred
- Several Korean manufacturers / Total 23MWp
- Major Taiwanese electronics manufacturer / 29MWp
- Saigon Cargo Service Corp. in Tan Son Nhat Airport / 1.2MWp
- AEON MALL HUE store / 2MWp

We have installed solar power in over 60 companies, including
: (As of November 2012, we have installed solar power in over 260MWp)



Contact Point

Koki Sumiya



+84 901755006



sumiya.koki@sfv-hcm.com




<https://cmenergy.vn/> (CME Solar website)

Thang Long Industrial Park Corporation

Overview of product / Service

- We implement the rooftop solar on the factory's roof. We invest in equipment and we fully take care it even after the installation. Customer doesn't need to bear any cost or maintain the facility. Our Japanese PIC will support the review of design and contract until the installation.
- 
- We provide the renewable energy certificate to the customer inside/outside Thang Long Industrial Park. Sumitomo Corporation, our parent company can provide the competitive renewable energy certificate. We can customize the conditions flexibly according to the demand of customer's group, headquarter and client.

Achievement

- We installed our rooftop solar to more than 40 tenants in Thang Long Industrial Park. Total capacity is around 70MW. Annual power generation is around 80,000MWh. In FY2025, we aim to expand it up to 100MW.
- 
- We have more than 200,000 MWh of sales record in Thang Long Industrial Park. We introduce our service to the customers outside our industrial park.



Contact Point

Yotaro Horimoto



+84 97 1364088



yotaro.horimoto@tlipgroup.com



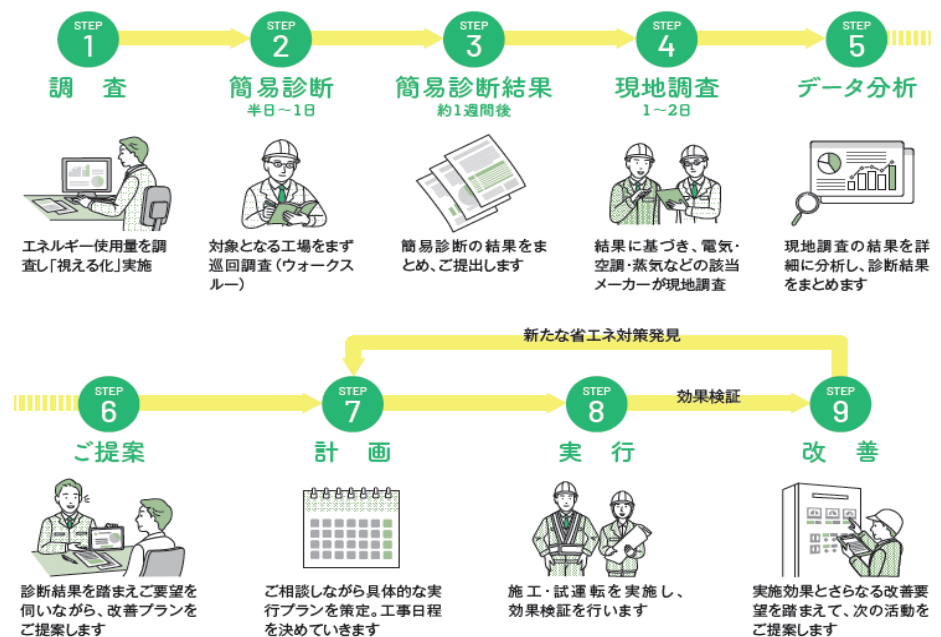
<https://tlip1.com/>

Toyota Tsusho Vietnam Co., Ltd

Overview of product / Service

- I-REC contribute CN Scope 2 achievement of the factories and offices by neutralizing its electricity consumption. We supply assured and affordable RECs from renewable power station owned and operated by ourselves.

- Implement a factory diagnosis by the energy-saving consultant from our affiliated company. Also sell energy-saving products from our global network.

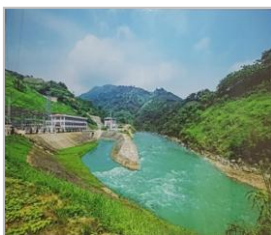


Achievement

- Over 80 entities from manufacturing industry to offices

Offset CO2 emission Scope2

I-REC (International Renewable Energy Certificate)

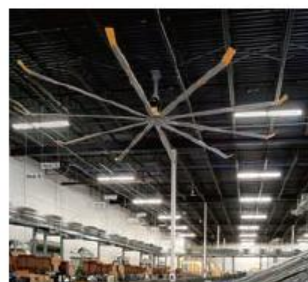


Ngoi Phat Hydropower Plant funded by Toyota Tsusho

- Energy-saving diagnosis results
(5 cases in the north, 1 case in the south) 50 cases of energy-saving product sales

空気を対流させる超大型ファンで快適空間を創出

米国製超大型ファン「ビッグアスファン」



最大直径7.3mの羽根で工場や物流センターなどの大規模空間に空気の対流を創出。1台で最大2,500㎡に風を届け、夏の暑熱対策、熱中症予防、空調費用のピークカットのほか冬は暖気を下ろすなど温湿度のムラを解消します。



Contact Point

Trinh Ngoc Chuc (日・越)



+84 90 620 9463



ngoc_chuc@vn.toyota-tsusho.com



<https://toyotsu.com.vn/>

Kurita Dropwise Technology

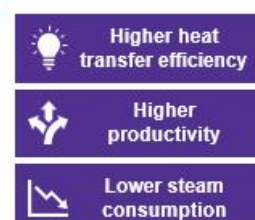
KURITA-GK VIETNAM CO., LTD

Overview of product / service

- Kurita Dropwise Technology is an energy-saving technology that can improve the heat transfer coefficient of heat exchangers beyond design in which steam condenses. Simply by continuously adding water treatment chemicals (KURITA DW-series) to the steam line, the water film that impedes heat transfer coefficient is removed and the steam is condensed in the form of drops. As a result, energy can be transferred efficiently.
- This improves the heat transfer coefficient by up to 30%, contributing to improved productivity, reduced boiler fuel costs due to lower steam usage, and reduced GHG emissions.
- To apply it, there is no need to shut down production facilities or make large capital investments.



During steam condensation, this technology transforms the water film acting as thermal barrier into droplets to increase heat transfer efficiency.



YouTube video

Achievement

- More than 400 applications have been completed in Japan and overseas including Vietnam. It doesn't interfere with existing water treatment chemicals and operations, and has been used at various manufacturing sites such as paper, textile, chemical plants, and power plants. For example, the steam consumption rate of the dryer process in paper mills has been improved by up to 10%, contributing to reductions in boiler fuel costs and GHG emissions.

Providing this technology to a larger number of users through pay-per-performance package agreements.



- To apply it, KURITA water treatment engineers will first conduct a survey of the target facilities and estimate the benefits by data diagnosis. After that, KURITA offers a package contract on a performance-based fee by the actual energy savings and operating cost reductions achieved through chemical selection, installation of dosing equipment, trials, data analysis, and evaluation.



Contact Point

Atsushi Matsuyama



+84 90 1761 228



a.matsuyama18@kurita-water.com



<https://www.kurita.co.jp/english/>

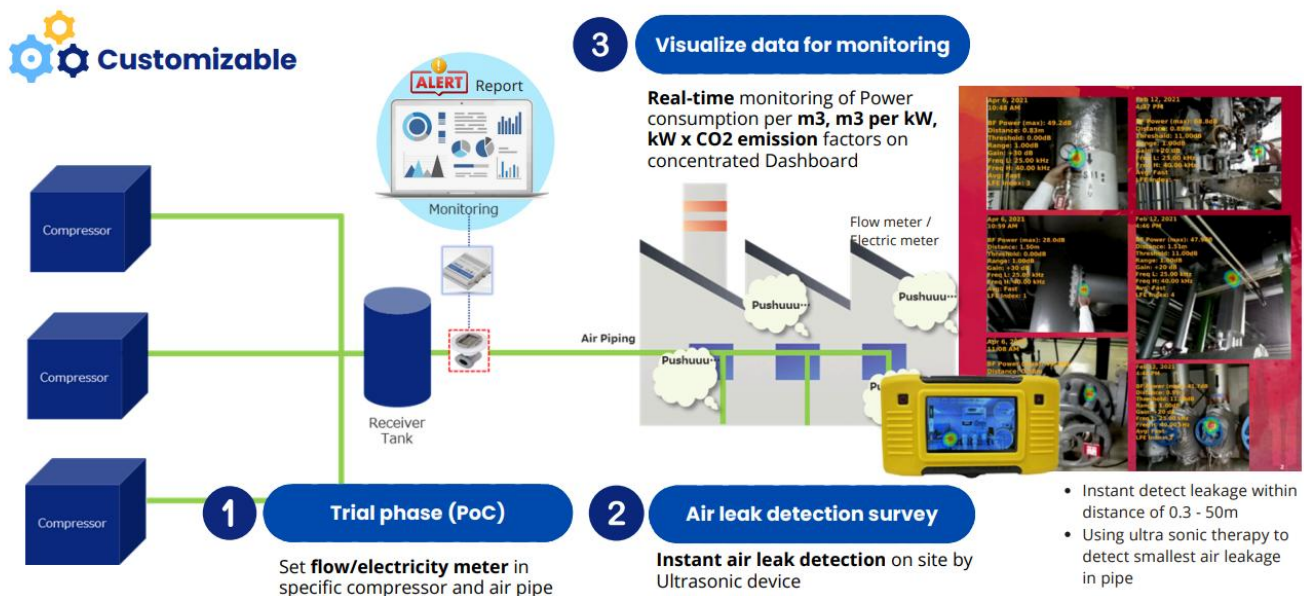
KDDI Vietnam Corporation

Overview of Solution

- The air-leak visualization and monitoring solution from KDDI Vietnam can help quickly to identify and measure air leaks.
- Air compressors consume a lot of electricity, and air leaks cause energy waste, leading CO₂ increase.
- Recently factories have been required actions towards carbon-neutral.
- This enables factories to determine appropriate measures to achieve energy savings, CSR goals and 2050 Net-zero target in Vietnam.

SOLUTION On Premise / On Cloud

By installing a flow meter and electricity meter for each compressor, **air leak visualization and monitoring solution** help to real time tracking air leak situation to **utilize energy usage , machine maintenance & operation effort**.



Achievement

- KDDI Group has experience in providing air leak visualization and monitoring service to manufacturers, having initiated this service in Vietnam since 2024.
- Through visualization, a large-scale manufacturing company (Thailand) discovered that there were over 10 million yen in wasted costs per year.



Contact Point

■ Hanoi

+84 (0) 24 3826 2001 (8:00-17:00)

hni-sales@kddivietnam.com

<https://vn.kddi.com/ja/>

■ Ho Chi Minh

+84 (0) 28 3820 1191 (8:00-17:00)

hcm-sales@kddivietnam.com

Wastewater treatment by Membrane Bioreactor (MBR) ~Space-saving and Reduction of greenhouse gases~

KUBOTA KASUI VIETNAM CO.,LTD

Overview of product / Service

- The Membrane Bioreactor (MBR) uses Kubota Submerged Membrane Unit® (SMU) and has the following 4 advantages compared to the conventional water treatment:

1. Safe & Clean Treated Water

MBR treatment removes suspended solids via the physical barrier of a membrane filter, making MBR effluent extremely safe and clear.

2. Easy Maintenance

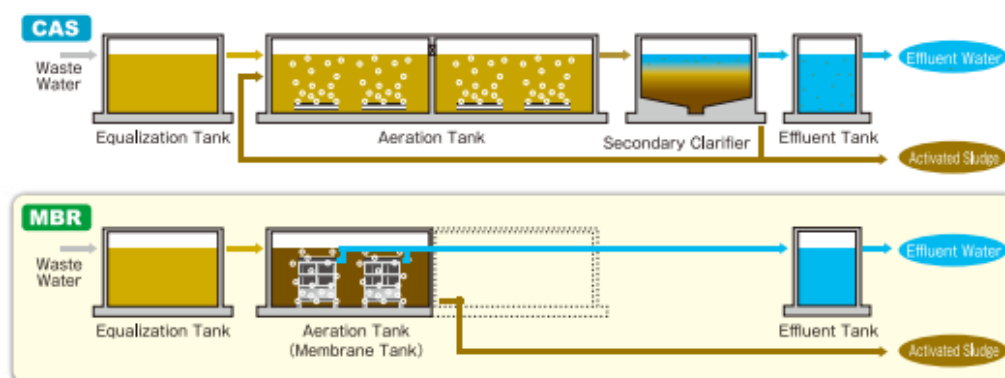
Fewer things to manage and simpler maintenance compared to the traditional method.

3. Space-saving

No need for "Sedimentation tank", and also "Aeration tank" can be design smaller, thereby small footprint. .

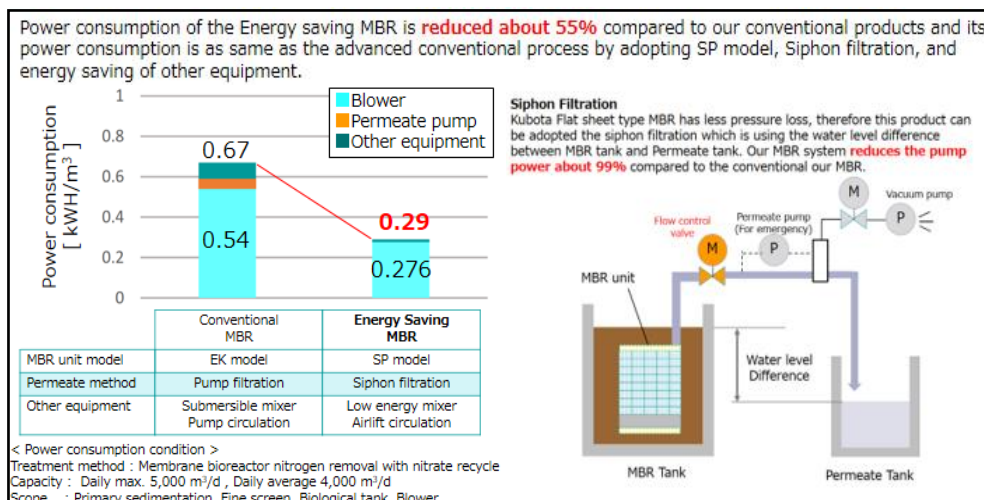
4. Lower Greenhouse Gases

It can reduce greenhouse gas emissions from the water treatment process.



Achievement

- The implementation of this technology has resulted in over 7,200 installations both in Japan and overseas.
- In addition to the features of the MBR, such as advanced treated water quality, easy maintenance, and small footprint, but it has also recently become more energy-efficient and been reducing to levels comparable to conventional advanced treatment.
- Moreover, the MBR ensures stable nitrification and denitrification under high concentrations of activated sludge, so measured data confirm that nitrous oxide (N₂O) emissions, which have a high global warming potential and are generated during incomplete nitrification or denitrification, are suppressed to less than 1/280 of conventional. Therefore, MBR contributes to greenhouse gas reduction.



Contact Point
Shinichi Baba



+84 274 3 790521



shinichi.baba@kubota.com



<https://www.kubota.com/products/solutions/index.html> 19

LIXIL Global Manufacturing Vietnam Co., Ltd.

Overview of product / Service

- LIXIL is proactively driving efforts to recycle aluminum used in many of our products, as one of our efforts to contribute to a decarbonized, circular economy. Smelting new ingots requires a significant amount of electricity. Recycled aluminum can reduce 97% of CO₂ emissions from this process. LIXIL has developed recycled low-carbon aluminium "PremiAL" series using world-leading recycled aluminum technology. Launched "PremiAL R100" using 100% recycled aluminum and "PremiAL R70" with 70% recycled aluminum.
- "PremiAL" series have obtained the "SuMPO EPD" (formerly EcoLeaf) third-party verification. It has been acclaimed for its environmental impact and used for constructing various facilities and stores and for interindustry use in industrial products.



※It complies with the international standard "ISO14025 Type III Environmental Declaration (EPD)", which is an environmental information disclosure method operated by the "Sustainable Management Promotion Organization (SuMPO)".

Achievement

Aluminum recycling rate	Total CO ₂ Reductions by product	CO ₂ reduction rate
100% (PremiAL R100)	Approx. 2.9kg -CO ₂ <small>※1</small>	▲80%
70% (PremiAL R70)	Approx. 6.8kg -CO ₂ <small>※1</small>	▲55%
0% (new aluminum ingots)	Approx. 15.1kg -CO ₂ <small>※2</small>	—

※1 This has acquired the environmental label program "SuMPO EPD".
 ※2 Based on internal calculations.

【Activity Achievements 2024】

- Taisei Corporation Group, Next-Generation Technology Research Institute (R70)
- 7-Eleven, Misato Kamihikona Store (R70)
- Koizumi Lighting Technology, Light Bar Indirect Lighting Middle Power (R70)
- Thai Electronics Manufacturer, Air Conditioner Heat Sink (R70)
- Sumitomo Forestry Company Dormitory "Midori no Shataku" (R100)
- 7-Eleven, Fukuoka Momochi Store (R100)
- 2024 7th EcoPro Awards, Encouragement Award (R100)

By adopting the "PremiAL" series, you can contribute to improving the environmental value of buildings and products. We will continue to work with various stakeholders to create environmental impact and further develop society through the spread of "PremiAL" series.



Contact Point

Ms. Huynh (Annie)



+84-0908-907-117



huynh2.nguyen@lixil.com



<https://lixilvina.com.vn/en/>

MITSUBISHI ELECTRIC VIETNAM CO.,LTD.

Overview of product / Service

- 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.

Visualization

of energy
consumption



Energy loss
Analysis



Improving
energy
efficiency



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

Energy measuring equipment

Measure and collect
energy consumption



Data collection
server

Energy measurement
equipment

Energy saving support application

Diagnose factor analysis
based on usage status



Data analysis and diagnostic software

High efficiency equipment/equipment

Reduce energy consumption
by simply replacing



Air conditioning
equipment

IPM

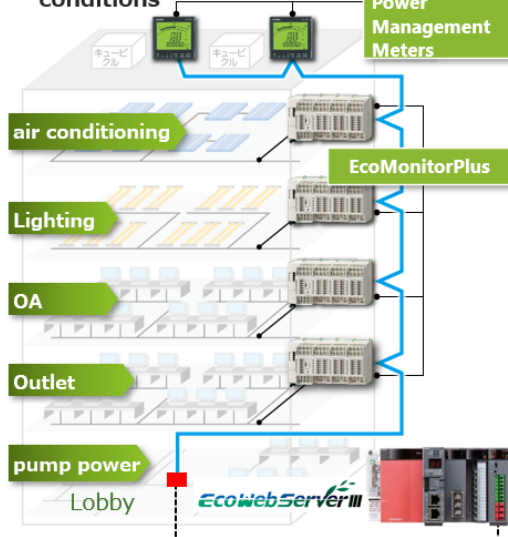
Inverter

Achievement

- Example of Energy saving management system configuration
※Case Study of Mitsubishi Electric Corporation - Fukuyama

Ex. For office buildings

- Easy management with EcoWebServer
- Automatic control according to usage conditions

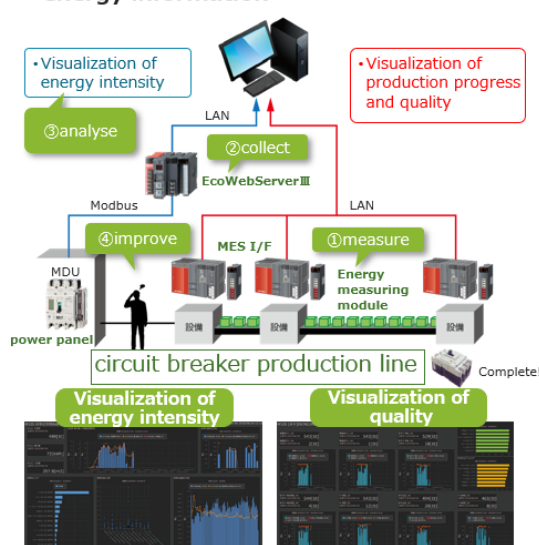


Example of
effect

Office power
consumption reduced
by 24% (2.8t-CO2)

Ex. For production line

- Collect detailed production and
energy information



Example of
effect

Energy intensity
reduced by 30%



Contact Point

Yuta Ito



+84 93 270 8228



yuta.ito@mevn.com.vn



<https://mitsubishi-electric.vn/en/tu-dong-hoa-cong-nghiep>

Panasonic Electric Works Vietnam Co.,Ltd.

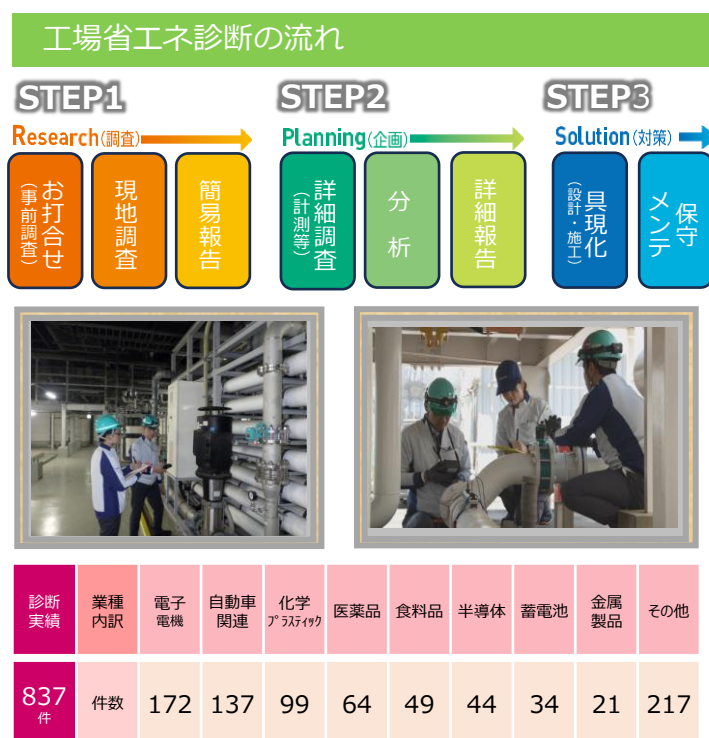
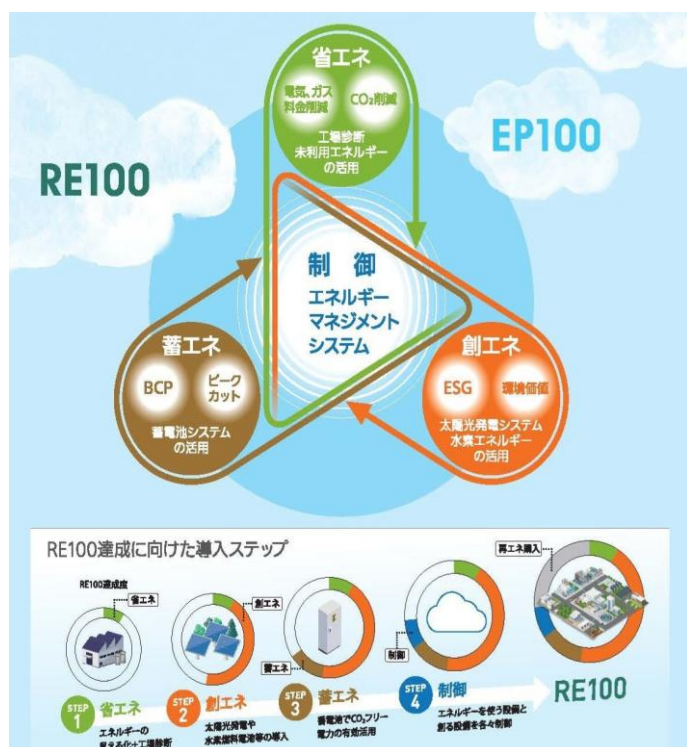
Overview of product / Service

■ Energy saving diagnosis/improvement proposal

We propose cost reduction and optimization of ancillary equipment for production line that will lead to improved productivity. Based on interviews and preliminary surveys, we conduct a simple diagnosis on-site for about half a day to one day to understand the energy usage status of the target of diagnosis. After confirming the site design drawings, energy data, equipment operating status, etc., we will refer to our database and propose ways to improve areas that can save energy and improve efficiency, according to your requests.

■ Solar Photovoltaic generation system

From installation to maintenance, we support continued operation while keeping total costs down.



Achievement

■ Energy saving diagnosis/improvement proposal

Conducted energy saving surveys and proposals for over 800 companies in Japan and overseas for over 15 years (Industry: Automobiles, pharmaceuticals, electronic parts, chemicals/plastics, precision instruments, etc.)

■ Proposal, installation work, and maintenance of Solar Photovoltaic generation system

Many projects mainly in Japan and Southeast Asia.



PGT HOLDINGS JOINT STOCK COMPANY

Overview of product / service

- "Ecomomo" is a power-saving product patented as a "power improvement device" with a proven track record of reducing power consumption by 3-15% (an average of 7%). It has been installed in over 2,000 locations.
- The device is easy to install and relocate, and it incurs no running costs. Investment recovery is typically achievable within 3 to 5 years. Since power savings can be realized for each transformer, it allows for energy savings across the entire facility.
- Even companies that have previously focused on energy conservation can further reduce costs with "Ecomomo". By lowering electricity consumption, CO2 emissions are also decreased, contributing to two of the Sustainable Development Goals (SDGs). "Ecomomo" not only reduces operational costs but also addresses environmental concerns. Please contact us for more information!



Achievement

- The Japanese company "Hayabusa Holdings Co., Ltd." began manufacturing and selling Ecomomo in 2013.
- Manufactured in a factory in Japan, it is currently installed in over 2,000 locations, including factories, supermarkets, commercial facilities, hospitals, office buildings, and hotels.
- The number of customers continues to increase, supported by the current trends emphasizing high safety, ease of installation, and environmentally friendly corporate management.
- The Vietnamese government has announced its goal to achieve carbon neutrality by 2050, and we have a track record of contributing to carbon neutrality in Vietnam starting in 2022.
- We at PGT Holdings have initiated activities to introduce "Ecomomo" in 2024. If you are a company interested in contributing to Vietnam's environmental sustainability and saving electricity, please feel free to contact us.



Contact Point

HARUKO NOMURA



+84 28 668 40446



nomura@pgt-japan.com



<http://pgt-holdings.com/>

Vehicle equipped with Toyota Hybrid System (THS)
: Camry / Corolla Cross / Yaris Cross etc.



TOYOTA MOTOR VIETNAM CO., LTD

Overview of product / Service

- Hybrid Electric Vehicle (HEV) provides flexibility to use both electric motor and gasoline engine.
- Effectively reduce both fuel consumption and carbon emission, without the necessity of a charging station.
- Toyota Hybrid System (THS), provide responsive performance, with reliability and low maintenance cost.



Achievement

- Currently both Toyota & Lexus Brand introduced more than 10 models with THS in Vietnam Market



Camry



Corolla Cross



Yaris Cross



VIETNAM RECOMM CO., LTD.

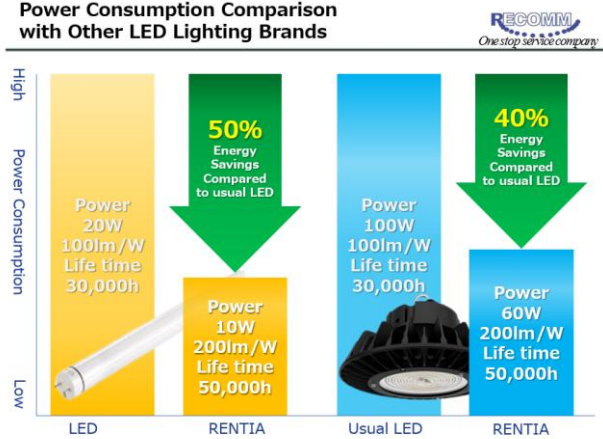
Overview of product / Service

- High-efficiency LED lighting
Tube types are available from 10 W and HB types from 60 W. Switching from LED lighting to ours can reduce electricity fees by approximately 50%. Long-term warranty (5 years) for peace of mind.
- Inverter air conditioner + SPACECOOL
By upgrading to an inverter air conditioner & attaching SPACECOOL (a radiant cooling sheet) to the outdoor unit, the electricity fee can be reduced by over 40% compared to non-inverter types.
- MIRACOO
Stain resistance and longer-lasting thermal barrier effect than other companies' products. Reduces the roof's surface temperature by approximately 20°C compared to a roof without paint.

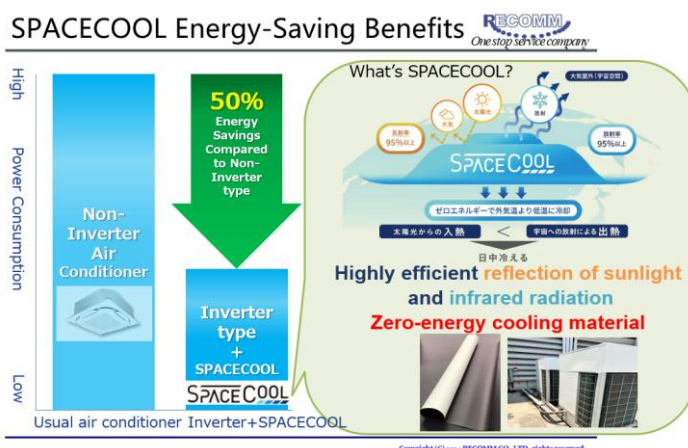
Achievement

- High-efficiency LED lighting
More than 300 companies in Vietnam have installed it. Mainly proposes tube type 10W and HB type 60W, with a track record of 40-80% electricity fee reduction.
- Inverter air conditioners + SPACECOOL
As an air-conditioning consultant, we propose updating to the latest and most suitable DAIKIN inverter air conditioners. Using SPACECOOL in combination with them can increase energy efficiency and protect outdoor units.

Power Consumption Comparison with Other LED Lighting Brands



SPACECOOL Energy-Saving Benefits



- MIRACOO
As part of the maintenance of the deteriorated roof, we proposed the installation of MIRACOO, which reduces the roof temperature by nearly 20°C. The four-layer coating also increases durability.



Contact Point

Ai Kodate



+84 094 120 4834



a.kodate@recomm.co.jp

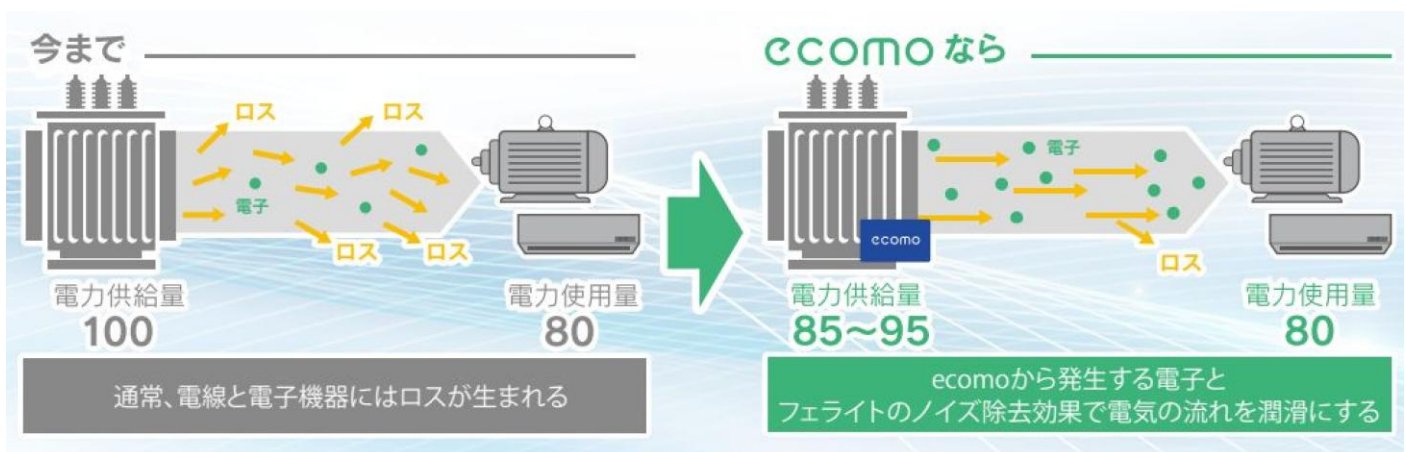


https://recomm.vn/

Yuasa Trading Vietnam Co.,Ltd

Overview of Product / Service

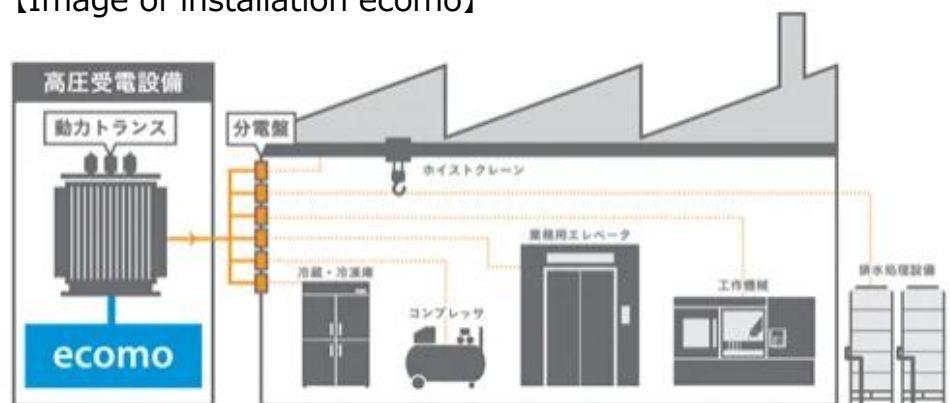
- ECOMO is composed of tourmaline which is mineral that naturally has a charge of 0.06mA approximately, and ferrite, which has noise reduction effects. By simply installing ECOMO on the busbar of the secondary side of the power transformer, it is possible to reduce the overall power consumption of the equipment by 5-15%.
- Clients submit preliminary data and we simulate before installing.
- Yuasa Trading Group has signed an exclusive sales agreement and acquired exclusive distributorship rights in 10 countries, including Vietnam, to conduct sales.



Achievement

- We have installed our products to over a dozen companies in Vietnam, and those are various manufacturing industries.

【Image of installation ecomomo】



- Joint planning of "Decarbonization Road Map" for customers existing coal fired power plants
- Reducing CO2 of coal fired power plant through "Ammonia firing / Biomass firing technologies"

IHI Corporation

Overview of product / Service

- Joint planning of "Decarbonization Road Map" for customers existing coal fired power plants
IHI will support planning customer's decarbonization road map to reach customer's goal for carbon neutral by showing When/Where(which power station)/How (which technology, Ammonia / Biomass) through understanding customers carbon reduction plan and owned power plants.
- Reducing CO2 of coal fired power plant through "Ammonia firing / Biomass firing technologies"
IHI will modify the coal fired power plant to apply "Ammonia firing / Biomass firing" technologies. Modified powerplant will be able to use Ammonia fuel / Biomass fuel and CO2 amount will be reduced through the operation.

Achievement

- Joint planning of "Decarbonization Road Map" for customers existing coal fired power plants
IHI is already providing this joint planning activities to various customers in Southeast Asia including Vietnam.
- Reducing CO2 of coal fired power plant through "Ammonia firing / Biomass firing technologies"



Ammonia firing image

Regarding Ammonia firing, 20% fuel ammonia substitution demonstration testing has completed at Hekinan Thermal Power Station of JERA (JAPAN) in June 2024. IHI will keep developing to establish an improved combustion technology like increasing the ammonia ratio to more than 50%. Regarding biomass firing, IHI has multiple biomass conversion experiences in Japan.

Many customers in Southeast Asia including Vietnam already have showed an interest to these firing technologies and IHI will keep progress these discussion for future implementation.



Contact Point

Konosuke Yoshii



+84 24 3934 5305



yoshii7093@ihi-g.com



<https://www.ihi.co.jp/en/>

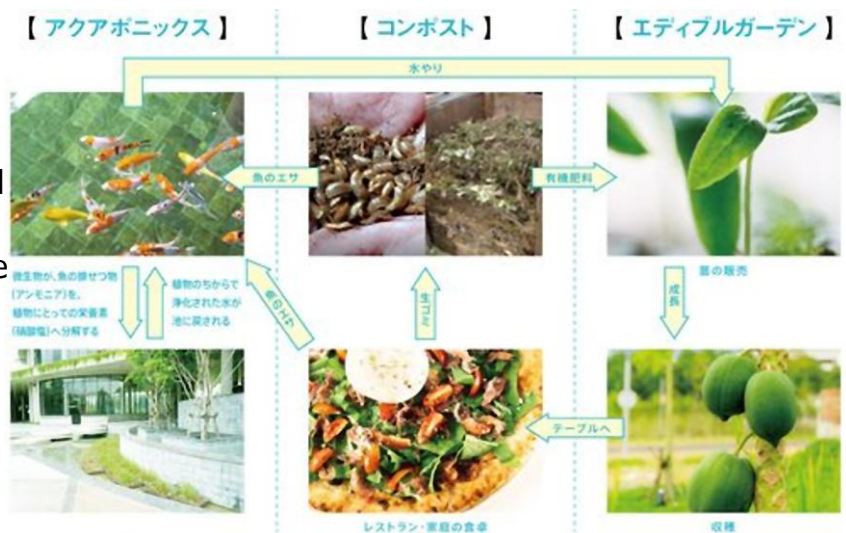
Becamex Tokyu

Overview of product / Service

- Hikari is a commercial facility centered on food and beverage that aims to provide customers with a richer and more comfortable lifestyle under the brand concept of “Made to Enlighten”. The facility offers a variety of services centered on cafes and restaurants.
- The facility is located adjacent to Binh Duong Province in the heart of the new city, offering services that enrich the lives of government agencies, people in nearby industrial parks, and local residents.
- In addition to offering a wide variety of cuisines, Hikari is the only facility in Vietnam that embodies sustainability by creating an eco-system in which waste from each restaurant is used to grow plants. Residents and businesses alike have come together to create an environmentally friendly city.

Achievement

- As a model for implementing sustainable practices, we have developed the following sustainability projects
- ✓ **Composting:** Food waste from restaurants is composted in the facility to achieve recycling-oriented waste management.
- ✓ **Aquaponics:** A recycling-oriented agriculture system that utilizes excrement from fish farmed in the facility's ponds to cultivate plants.
- ✓ **Edible Garden:** The plantings in the facility are designed with edible plants, promoting a design that combines the beauty of the landscape with practicality.
- The facility allows visitors to experience a series of eco-systems in which waste from each restaurant and café is transformed into vegetables and fruits that are harvested through Black soldier fly (BSF) and the power of living organisms. These efforts have attracted a great deal of interest and have welcomed many visitors from home and abroad, including schools in Binh Duong Province and Japanese schools in Ho Chi Minh City, as well as students on school trips from overseas and corporate and local government officials. Going forward, we will continue to work closely with local communities to realize sustainable urban development.



Biomass power plant, pellet factory

erex Co., Ltd.

Overview of product / Service

■ Biomass power plant

We are developing a biomass power plant that uses biomass such as wood residues and rice husks produced in Vietnam. It is a stable renewable energy power source that is not affected by the weather. The first plant (selected as a “JCM Model Projects” by Ministry of the Environment, Japan) fueled by rice husk, with a capacity of 20 MW has been completed in Hau Giang Province. It is Vietnam's first commercial biomass power plant and has been selling power to EVN since March 2025.



■ Pellet factory

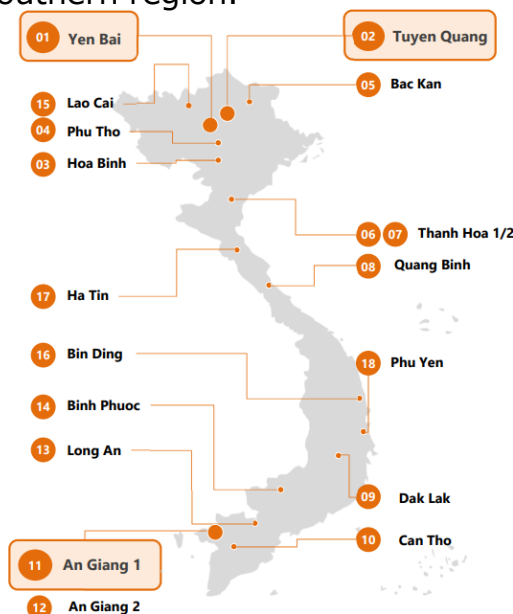
In Tuyen Quang Province, we started operation of a wood pellet plant with an annual production of 150,000 tons, and we will export internationally certified pellets to Japan and other countries from FY 2025.

Achievement

- Biomass power plants are planned at 18 locations. We will also contribute to the development of the local economy by using locally sourced fuels such as wood residues in the northern region and rice husk in the southern region.

In particular, the construction of power plants in the provinces of Yen Bai and Tuyen Quang (selected as a “JCM Model Projects” by Ministry of the Environment, Japan) started in October 2024, and the construction of An Giang is planned to start in fiscal 2025. The construction period of these plants is approximately two and a half years.

- In order to proceed decarbonization of existing coal-fired power plants, we will also work on fuel conversion from coal-fired power plants using biomass fuel. We plan to start with a test co-firing at a coal-fired power plant of the Vinacomin Group in 2025.



Contact Point

Investor & Public
Relations Dept.



+81 3 3243 1167



pr.info@erex.co.jp

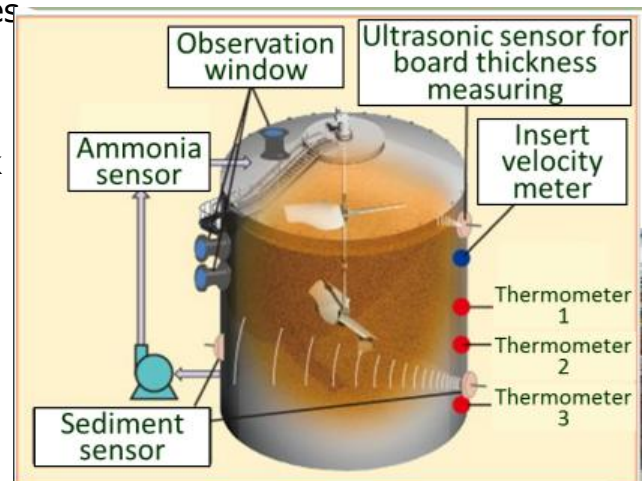


<https://www.erex.co.jp/en/>

KOBELCO ECO-SOLUTIONS VIETNAM

Overview of product / Service

- By using various sensors to make the internal operating status visible, it can be used to prevent problems and identify their causes, thereby supporting the operation of the digestion equipment.
- The steel plate body of the digestion tank can be prefabricated in a factory in parallel with civil engineering work. Compared to concrete tanks, less civil engineering work is required underground and there is no need for a curing period for the tank walls, shortening the construction period.
- The use of an impeller-type agitator achieves low power consumption.
- The service life of the steel plate digestion tank is approximately 20 years (for the tank body only). However, with proper maintenance and interior repairs, its lifespan can be extended. Additionally, the tank can be easily modified or upgraded to accommodate social trends, population shifts, technological advancements, etc.



Achievement

- Yahagigawa Sewage Treatment Plant in Aichi Prefecture (capacity:5,800m³), Harada Sewage Treatment Plant in Hyogo Prefecture (capacity:6,000m³)



Sojitz Vietnam Company Ltd.

Overview of product / Service

- Green Polyethylene, Green EVA are eco-friendly and easy to recycle plastic resins derived from sugarcane blackstrap molasses, manufactured exclusively by Braskem (located in Brazil).
- The biggest benefit from using those Green Plastics is the feature of “carbon negative”. Sugarcane absorbs CO₂ in its growing process more than CO₂ emission in subsequent processes such as polymerization, compounding, processing, and logistics. Thus, they contribute to carbon neutrality by serving as an alternative to petrochemical based, without sacrificing the benefits and physical properties of traditional plastics.
- Sojitz is the “Asia / Oceania Region Distributor” of Green Polyethylene since 2012 and Green EVA since 2023. Sojitz offers stock operation in Vietnam & Thailand from 2024. You can have JIT delivery arrangement in Vietnam & Thailand.



Achievement

- Green polyethylene
Already used by many global companies (mainly brand owner). Actual used applications are packaging material, shopping bag, garbage bag, bottle, cap, food container, kitchen products, cutlery, artificial grass and non-woven fabric.
- Green EVA
Mainly applied to shoe sole (mid sole) of Global brand owner. Other applications are Toy, Yoga-mat, Basketball, Soccer ball, Backpack (cushion material) and Solar panel encapsulant.



Contact Point

Shinichiro Nakayama



+84 938 761 782



nakayama.shinichiro@sojitz.com



<https://www.sojitz-planet.com/products/gpe/en/> 31

Choose Eco-Friendly Transportation for Your Commute: Clean CNG Buses



Becamex Tokyu Bus Co., Ltd

Overview of product / Service

- As part of the urban development project for Binh Duong New City led by Becamex Tokyu, Vietnam's first Japanese-operated public transportation system, Becamex Tokyu Bus, began operations in 2014. Our goal is to promote a "modal shift," encouraging a transition from motorbikes and private cars to environmentally friendly public transportation. This initiative aims to alleviate traffic congestion, reduce accidents, prevent environmental degradation caused by exhaust emissions, and create new lifestyle values in Vietnam.
- Leveraging the expertise in bus operations cultivated in Japan, we currently operate 8 routes and 12 services connecting Binh Duong New City with major cities in the province. These services are widely used by students, government employees, and many others.



Achievement

- We use "CNG buses" fueled by clean compressed natural gas (CNG), which emit significantly lower levels of nitrogen oxides (NOx) and produce no sulfur oxides (SOx), black smoke, or particulate matter (PM).
- Compared to diesel vehicles, these buses can reduce CO2 emissions by approximately 20–25%, significantly lessening environmental impact.



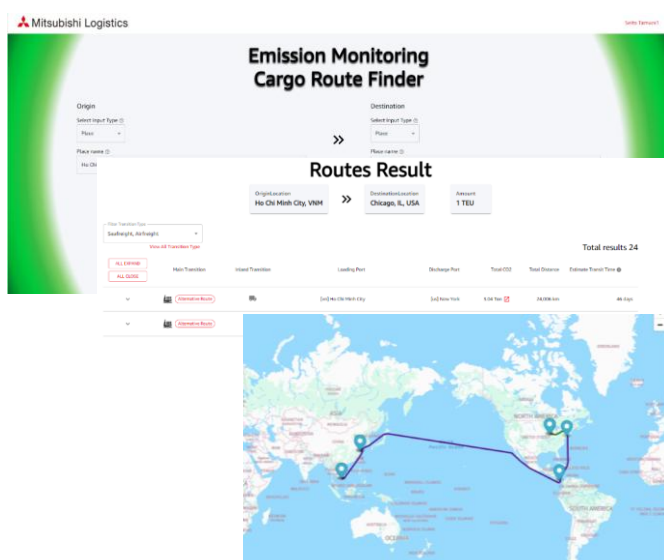
- Our vision is to transform Vietnam's motorbike-centric society into one where public transportation is a convenient and accessible option. Moving forward, we will continue to develop and expand bus routes centered around Binh Duong New City, supporting the creation of environmentally friendly urban spaces.



MLC ITL LOGISTICS CO., LTD

Overview of product / Service

- We offer barge transportation between Hai Phong port and near Hanoi city (Tri Phuong port). Using this barge service, our client can achieve less Green House Gas emission and improvement cost efficiency compared with all trucking service. Tri Phuong port is planned to expand its capacity and attracting more attention on this service recently.



- We developed "Emission Monitoring/Cargo Route Finder". Now you can look up various realistic transport routes combining several modes such as sea, air, rail, barge and road by inputting origin, destination place and cargo volume only. As a result, you can compare various routes based on GHG emissions, transit time, and transport mode etc. Also, you can simply use it as a route simulator.

※Search for " MLC ITL LOGISTICS Emission" !

Achievement

- About 70,000 containers per year are used for barge transportation between Hai Phong and Tri Phuong port.
- Tri Phuong port is planned to expand to 10 ha and the number of barges in operation will be increased to meet the growing demand for barge transport in the northern region.
- Emission Monitoring Cargo Route Finder is available worldwide. Both Japanese and non-Japanese company use this service to check Green House Gas emission volume among various transportation mode.



Contact Point

Yusuke Maeda



+84 28 7305 4688



maeda@mlc-itl.com



<https://www.mitsubishi-logistics.co.jp/english/>

NX Vietnam (NIPPON EXPRESS VIETNAM)

Overview of product / Service

- NX Vietnam launched a railway transportation service connecting Hanoi and Ho Chi Minh City in June 2024. This service covers a distance of approximately 1,700 km in about 48 hours. With the rapid growth of the Vietnamese economy, logistics needs have increased, particularly for routes connecting the north and south. However, road traffic congestion and rising costs of truck transportation have become significant challenges. Additionally, the new environmental protection law enacted in 2022 requires efforts to reduce environmental impact. NX Vietnam's railway transportation service enables large-scale transport and significantly reduces CO2 emissions compared to truck transportation, contributing to the reduction of environmental impact.



<https://www.nipponexpress-holdings.com/en/press/2024/05-Jul-24-1.html>

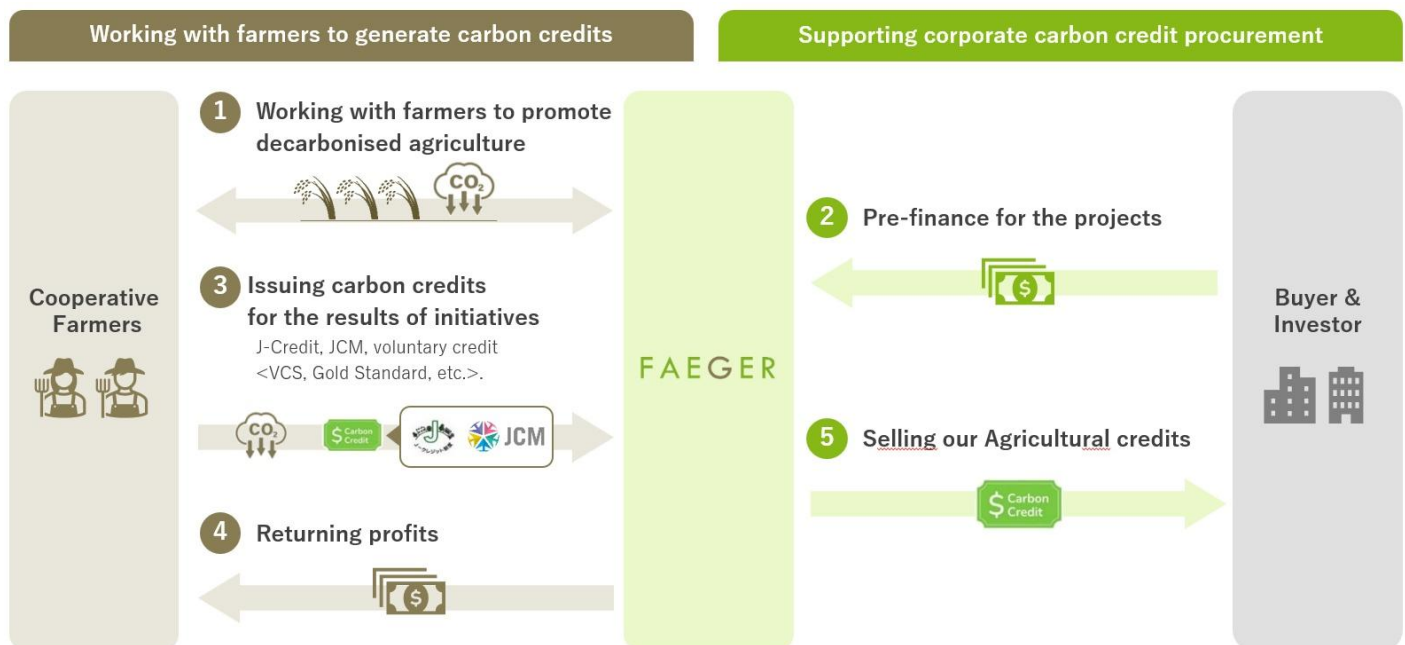
Achievement

- We have received significant interest from environmentally conscious customers and are currently providing services to several of them.
- Our customers highly appreciate the many benefits of railway transportation, including its stability, cost efficiency and reduced environmental impact. In particular, our rail transportation service is recognized as the optimal choice for customers seeking sustainable logistics solutions.

Faeger Co. Ltd.

Overview of product / Service

- We are promoting sustainable decarbonized agriculture while providing farmers with new income opportunities by utilizing carbon credits, including JCM and voluntary credits, to reduce GHG emissions from paddy fields, mainly through AWD.
- We are one of Japan's largest carbon credit developers with the largest returns to farmers in Japan, and we are also promoting initiatives in Vietnam, including experiments and tests in various provinces across the country. We have experts with PhDs in agriculture in various regions of Vietnam, providing not only AWD techniques but also the optimized farming methods and knowledge tailored to local agriculture to improve crop yields and quality.



Achievement

- We are currently preparing to implement carbon credit projects in Vietnam while conducting experiments and tests in various provinces across the country.
- The Vietnamese government is currently in the process of developing a law on carbon credits and we are waiting for the project to become available for registration.
- We will continue to conduct further studies and large-scale pilot tests in various regions and will be ready to implement the project as soon as the legal system is in place.
- We are also looking for investment in our carbon credit projects, so please contact us if you are interested.



Contact Point

Yusuke Takai



+84 3 9511 4006



yusuke.takai@faeger.co



<https://faeger.company/en/>

Carbon Credit Generation from Farmland using satellite data



Sagri Co., Ltd.

Overview of product / service

- Utilize satellite data and AI to decarbonize farmland and generate carbon credits. Carbon credits will be generated by reducing methane from rice crops through alternate wetting and drying (AWD) or by increasing carbon sequestration through fertilizer management.



- The use of Sagri's satellite and AI-based water detection and soil analysis technology eliminates the challenges of data integrity and wide-area scaling in these creation efforts.
- The carbon credits generated will be used by Japanese companies for carbon offsets, and a portion of the sales profits serves as supplementary income for local farmers.

Achievement

- We have introduced the services in several countries, including Vietnam, and are developing the business in collaboration with companies that own farmer networks and local governments.
- Vietnam: AWD demonstration is underway in 4 provinces in the Mekong Delta region in collaboration with Can Tho University, local government (DARD), and an agri-tech company. In addition, voluntary credit project is proceeding in collaboration with a sugarcane company in the northern part of the country and Idemitsu Kosan.
- Other ASEAN countries: AWD projects are underway in the Philippines, Cambodia, and Thailand.



Contact Point

Hiroya Itshitsubo



+81 80-5501-7931



ishitsubo-hiroya@sagri.co.jp



<https://sagri.tokyo/en/>

Mizuho Bank

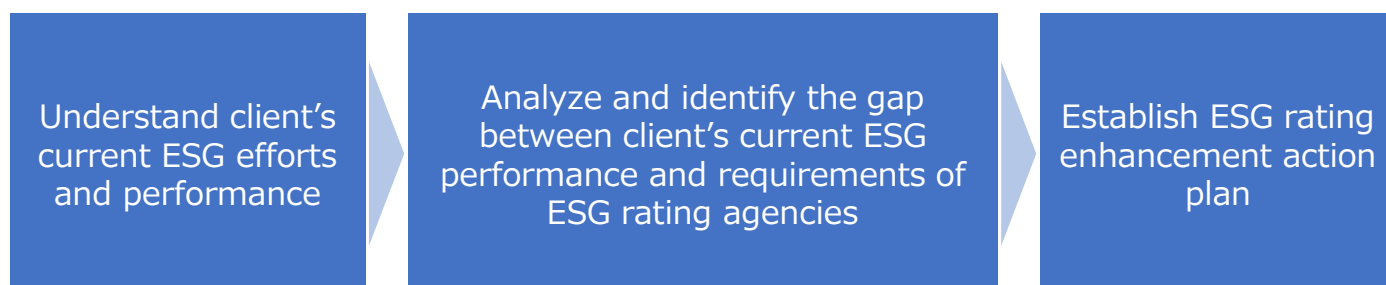


Innovating today. Transforming tomorrow.

Overview of product / Service

- An 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 better understand and improve their performance under various ESG rating models

Process of ESG Rating Advisory Service



Achievement

- Mizuho Bank has provided its ESG Rating Advisory solution to various corporate clients in the APAC region (excluding Japan)
- The ESG Rating Advisory solution is applicable to corporates which have a sustainability strategy and/or track major non-financial datasets, in order to obtain an ESG rating from ESG rating agencies, or to optimize their existing ESG rating
- The ESG Rating Advisory solution is only provided in English



Contact Point

Yo Toyosaki



+84 24 3266 3595



yo.toyosaki@mizuho-cb.com



<https://www.mizuhogroup.com/asia-pacific>

ESG Finance Products

MUFG Bank Ltd.,
Hanoi Branch and Ho Chi Minh City Branch

Overview of product / service



1	<ul style="list-style-type: none"> Providing thematic and tailored advice, such as KPI benchmarking and establishment of ESG financing framework 	ESG Structuring	4	<ul style="list-style-type: none"> Green, Social, Sustainability Bond Sustainability-Linked Bond Transition Bond 	Bond
2	<ul style="list-style-type: none"> Green, Social, Sustainability Loan Sustainability-Linked Loan Transition Loan 	Loan	5	<ul style="list-style-type: none"> Sustainability-Linked Derivatives Green Derivatives – derivatives instruments for underlying green loans 	Derivatives
3	<ul style="list-style-type: none"> Green Deposit: notionally matched against a Green Loan Sustainable Deposit: notionally matched against Sustainability linked loan (SLL) or Social loans 	Deposit	6	<ul style="list-style-type: none"> Green Trade Financing – financing green use of proceeds for trade flows Sustainability-Linked Trade Financing 	Trade Finance

Achievement

■ ESG Loan track record

Borrower	Financial Institution	Real Estate Company	Steel Manufacturing Company
Facility	Bilateral Green Trade Facility	Bilateral Green Loan	Bilateral Green Trade Facility
Month	February 2024	January 2024	December 2023 etc...

■ ESG Deposit track record

Depositor	Logistic Company	Construction Company	Electric Related Company
Term	1 year	6 months	3 month
Date	April 2024	August 2024	June 2024 etc... (more than 30 companies)



Contact Point

Hanoi Branch
Yosuke Shibata



+84 24 3946 0600



yosuke_shibata@vn.mufg.jp



https://www.bk.mufg.jp/ippan/tempo/network/asa_ose.html

Sustainable Finance Initiatives for a Sustainable Future

Sumitomo Mitsui Banking Corporation,
Ho Chi Minh City Branch

Overview of Product / Service



- **Project Finance**
Financing for renewable energy-related projects.
- **Real Estate Finance**
Financing related to real estate that has obtained green building certification.
- **Green Loans**
Loans that are limited to "green projects" in line with the LMA/APLMA "Green Loan Principles".
- **Social Loans**
Loans that limit the use of funds to "social projects" in line with the LMA/APLMA "Social Loan Principles".
- **Sustainability-Linked Loans (SLLs)**
Non-restricted loans with Sustainability Performance Targets "SPTs", in line with the LMA/APLMA Sustainability-Linked Loan Principles and aligned with the client's business strategy.
- **ESG-related Trade Finance**
Green, social, and sustainability-linked trade finance.
- **Green Deposits**
Deposits entrusted to us by customers for allocation towards green financing opportunities.
- **Key points of decarbonization and sustainability**
We offer a wide range of sustainable finance products to support the sustainable growth of our customers and contribute to the decarbonization of the real economy. The availability of products may change without prior notice. Each banking facility or service will be subject to internal approval by SMBC and terms and conditions are to be separately agreed. For more detail, please contact our person in charge.

Achievement

- **Contributing to a more sustainable society through sustainable financing in Vietnam**
In Vietnam, we have provided social loans to several companies as part of our sustainable financing initiatives. For example, social loans for Companies A and B are used for leasing and financing to SMEs, farmers, and low-income groups to support local decarbonization and economic development. In this way, we help support the growth of companies and contribute to the creation of social value, as well as the realization of a more sustainable society in Vietnam.



Contact Point

La Hong Hoa



+84 28 3520 2525 (0179)



JBAP_HCMG_Hoa_Team@vn.smbc.co.jp



<https://www.smbc.co.jp/asia/vietnam/>

ABeam Consulting (Vietnam) Co., Ltd.

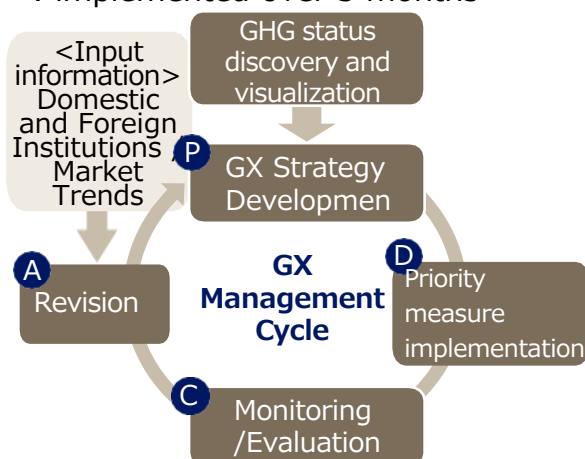
Overview of product / Service

- We provide one-stop support that includes not only the development of long-term GX strategy and a GHG reduction roadmap, but also the following services to help actualize a GX management cycle for evaluating and revising plans.
- ◆ GHG status discovery and visualization service
Determining the data to be collected and its extent within each Scope / Calculating GHG emissions and performing theoretical verification.
- ◆ GX Strategy and Policy Development Service
Climate change-related information disclosure (TCFD, financial reporting), goal setting, selection of priority measures, evaluation of implementation effectiveness and development of roadmap and action plan (long and short term).
- ◆ GX Solution Implementation Service
Introduction of various GX solutions for reduction and offset (renewable energy, certification, credits, EV, energy saving, new energy, CCUS, etc.)
- ◆ GHG Emissions Management Cloud Service
GHG emissions management cloud services that include your company and supply chain

Achievement

The Case of a Food Manufacturing Company

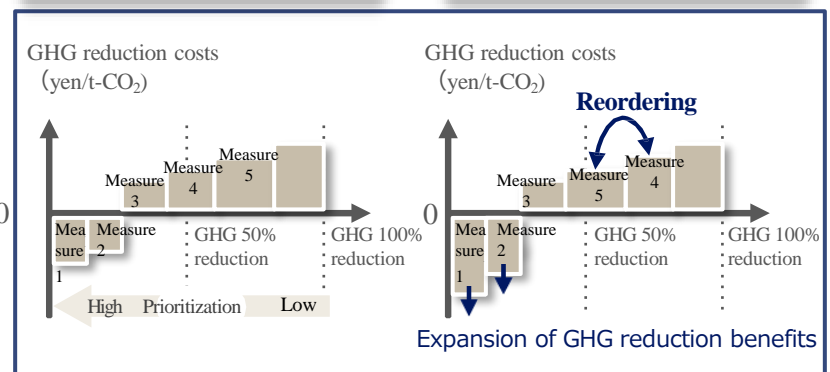
- GHG status discovery and visualization
: Calculated over 2 months
- GX strategy and policy development
: Strategy development and priority setting over 3 months
- GX solution implementation
: Parallel implementation of multiple measures such as PV, credits, etc.
- GHG emissions management cloud service
: implemented over 3 months



*PDCA: Plan-Do-Check-Act

Priority assessment for implementation of measures

Review of priority measures and roadmap



Scope 1,2 Reduction Roadmap

	202x~	2030~	2040~	2050
Measure1	Plan	Implementation	Operation	
Measure2		Plan	Implementation	Operation
Measure3			Plan	Implementation



Contact Point

Hiroshi Ohno



+84 862 852 442



hirosohn@abeam.com



<https://www.abeam.com/vn/en/>

JNK Environmental Research & Consulting CO.,LTD

Overview of product / Service

- We provide support for complying with environmental laws and regulations (such as obtaining environmental licenses) when conducting business activities in Vietnam. We provide consulting services such as creating inventories of greenhouse gases emission and energy consumption at office and factories, proposing measures to reduce these, supporting the formulation of medium- to long-term plans, and implementation.
- Imports and sells products that help protect the environment, such as water-soluble paints

Achievement

- We acts as a representative in Vietnam for the Co-benefit Project and the Inter-city Cooperation Project conducted by the Japanese Ministry of the Environment, providing support to ensure smooth implementation and results of the projects. The Co-Benefit Project is an initiative to reduce fuel consumption and prevent air pollution while improving energy efficiency in factories.
- We observe factories to review the current situation and propose specific solutions for energy conservation and GHG emission reduction, as well as JCM projects to companies in Vietnam.
- We also assist Japanese companies with local surveys, assessments, and preparation of application documents to obtain environmental licenses required for business operations.



[Image]

Collect and analyze waste used as fuel to assess its decarbonization effect.



Contact Point

Keita Uchida



+84 911 184 554



uchida@jnk-vn.com / jnk-sales@jnk-vn.com

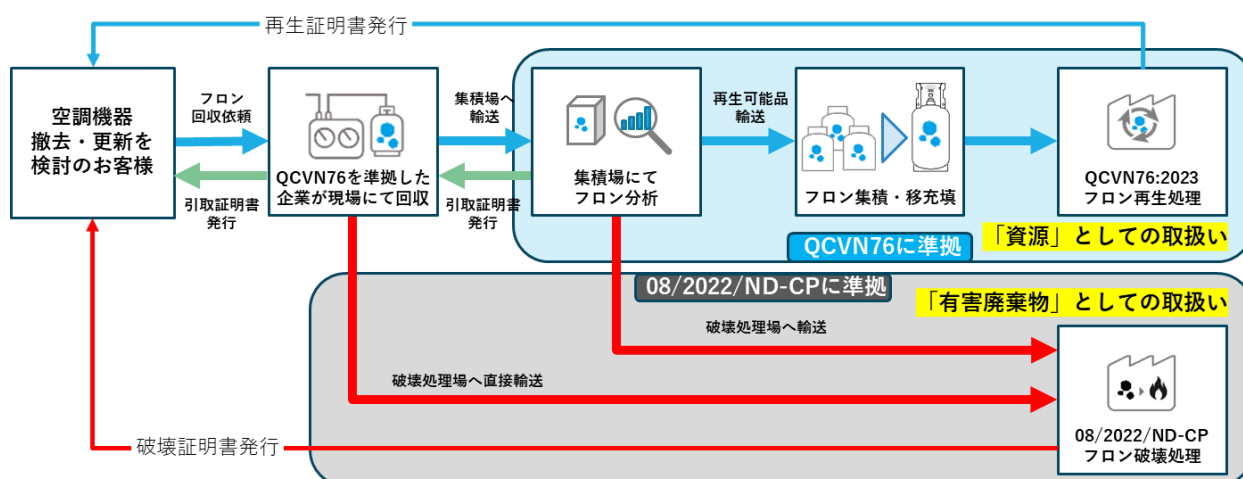


<https://jnk-vn.com/en/home-page/>

MZ VINA COMPANY LIMITED

Overview of product / service

- Decree 06 of 2022 was issued, and the obligation to recover fluorocarbons has been implemented since January 1, 2024. Circular 20/2023 (QCVN76) of 2024 was issued, and the recovery, transportation, storage, and reclaimed refrigerant quality of fluorocarbons have been applied since May 30, 2024.
- By recovering and properly disposing of fluorocarbons rather than releasing them into the atmosphere, we aim to protect the Earth's ozone layer and prevent global warming. We are carrying out the above-mentioned processes of recovery, transportation, storage, reclamation, and destruction of fluorocarbons properly.



Achievement

- We recover fluorocarbons when updating and maintaining air conditioners and refrigeration equipment, mainly for Japanese companies.
- The recovered fluorocarbons are reclaimed and destroyed, resulting in a significant reduction in CO2 (GHG) emissions compared to releasing fluorocarbons into the atmosphere.



【On-Site Collection Briefing for Equipment Owners and Facility Operators】



【Local equipment supplier recovery briefings】



NIPPON KOEI CO.,LTD.

Overview of product / Service

- With the increasing integration of renewable energy ("RE"), the demand for battery energy storage systems ("BESS") to stabilize the power grid and balance supply and demand is growing. Leveraging the technology and expertise we have cultivated in Europe and Japan, we support our clients in every phase of BESS projects, including development, investment, construction, and operation.



Achievement

- Joint development of grid-connected battery storage projects, along with development support, due diligence during investment, and owner's engineer work during construction and post-operation,
- Maximizing electricity sales volume for existing or new renewable energy power plants, including mitigation of curtailments,
- Maximizing renewable energy integration in factories, industrial parks and commercial facility, reducing of electricity costs through peak shifting, and peak shaving.



Contact Point

Daiki Abe



+84 70 545 3397



abe-dk@n-koei.jp



<https://www.n-koei.co.jp/consulting/english/>

SATO VIETNAM SOLUTIONS CO., LTD

Overview of product / Service

- As a measure to address one of the social issues of decarbonization and labor shortage, we will contribute to our customers' productivity improvement by providing solutions that enable automation and efficiency through the use of RFID technology and automatic label attaching equipment.

サトーのオリジナル RFID タグの環境優位性

タグの構造

プラスチック素材を使わない、完全紙ベースのRFID
一般的なRFIDラベル サトー製RFIDラベル

通常の製造方法
アルミエッチング方式

- ① アルミ箔 + PET 貼り合わせ基材
- ② アンテナパターンのマスク印刷
- ③ 酸の槽でアルミを溶かしてエッチング処理
大量の酸を破壊する必要がある
- ④ マスクの洗浄 (アンテナの出来上がり)

サトーの製造方法
型抜き方式

- ① ベース基材：紙 + アルミ箔
- ② アンテナパターンの型抜き
酸を使用しない
- ③ 余分な箔の取り除き (アンテナの出来上がり)
取り除いたアルミを再生アルミ製品としてリサイクル

PICK UP

マークダウンラベル

マークダウンラベルは、食品などの廃棄ロス削減に貢献します。また、ノンセバを採用し、ノンセバマークダウンラベルとしてお客さまに提案することで、CO2削減という環境負荷低減へも関連付けることができます。

Achievement

- SATO Vietnam Solutions has been operating in Ho Chi Minh City, Vietnam since September 2012 as a sales subsidiary of the Sato Group, which is engaged in automatic identification systems, and has already provided "accuracy, labor saving, resource saving, security, and safety" to over 1,000 customers in Vietnam.



Zeroboard Inc.

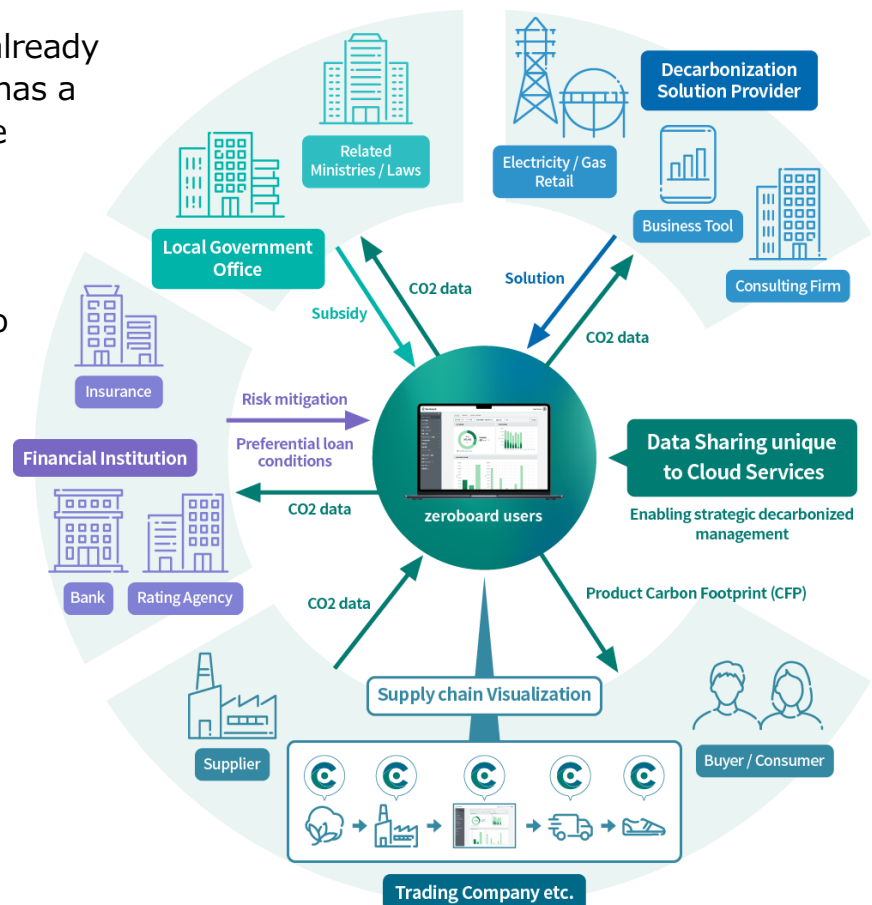
Overview of product / service



- 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 standards and manages efforts to reduce GHG emissions.
- Our services go beyond calculating GHG emissions at the organizational and product levels. By collaborating with over 100 partner companies, we propose optimal GHG reduction solutions tailored to our customers' specific challenges.

Achievement

- With over 13,000 companies already using our product, Zeroboard has a solid reputation for ease of use based on customer feedback.
- Our product is utilized not only by listed companies required to disclose Scope 1-3 emissions but also by a wide range of businesses, including medium-sized and small enterprises.



Contact Point

Shintaro Suzuki



shintaro.suzuki@zeroboard.jp



<https://www.zeroboard.jp/>

III | Interview

We had the opportunity to interview the following Vietnam-based companies, who are users or business partners of the Japanese companies featured in this catalog. During the interviews, they shared insights into the beginnings of their collaborations, the effectiveness of the products, and their initiatives related to green transformation (GX).

User / Receiving partner

provider / Primary partner

DENSO Vietnam Co.,Ltd

Toyota Tsusho Vietnam Co., Ltd

Marou Chocolate Co.,JSC

Becamex Tokyu

Pizza 4P's JSC

Becamex Tokyu

**Dang Khoa Logistics
Transportation Services
Trading Company Ltd.**

MLC ITL LOGISTICS CO., LTD

Vietin Bank

MUFG Bank Ltd.,

SINO Corporation

SATO VIETNAM SOLUTIONS
CO., LTD

International Renewable Energy Certificate Factory diagnosis and energy saving equipment (Provided by Toyota Tsusho)

- ✓ DENSO Vietnam is aiming for carbon neutrality by 2035 by applying advanced, breakthrough energy efficiency technologies, while fully transitioning to renewable energy.
- ✓ Toyota Tsusho supports DENSO Vietnam in evaluating energy status and consulting over 20 green projects, helping the company exceed its emissions reduction target, achieving a 7.5% - 8% annual reduction in emissions.



Mr. Mai Van Phuc
Facility Manager.
Carbon Neutrality
Lead

DENSO Vietnam, a subsidiary of DENSO Corporation (Japan), specializes in manufacturing automotive parts and components with its production facility located in the Thang Long Industrial Park, Hanoi. Since 2021, the company has intensified investment in green transformation activities, setting a target for carbon neutrality across its entire value chain by 2035.

We had a discussion with Mr. Phuc and Mr. Hoang, executive managers at DENSO Vietnam's factory, about the benefits of energy-saving solutions at the factory and the significance of their partnership with Toyota Tsusho.

What led to the partnership?

Toyota Tsusho has been with DENSO Vietnam since the early stages of their green transformation journey, serving as a strategic consulting partner, providing technical solutions, and offering I-REC renewable energy certificates.

DENSO Vietnam highly values Toyota Tsusho for its particularly competitive pricing for I-REC certificates, which is most cost-efficient than other providers. Additionally, the company appreciates Toyota Tsusho's ability to provide stable renewable energy supply, with a long-term commitment and scalable capacity

What value has Toyota Tsusho brought to DENSO Vietnam?

Toyota Tsusho has supported DENSO Vietnam in evaluating the energy status at their factory and consulting on over 20 green projects, expanding across the entire supply chain. In recent years, as green transformation solutions have been widely applied, DENSO Vietnam particularly values the innovative initiatives from Toyota Tsusho.

These initiatives expand DENSO Vietnam's applications, supporting their goal to reduce total carbon emissions from electricity consumption by 35% during the 2021-2025 period, equivalent to a 7% reduction per year. Currently, DENSO Vietnam is exceeding the target, achieving an annual emission reduction of 7.5% to 8%.



Mr. Ngo Minh Hoang
Facility Manager

Plan to expand GX solutions?

The company will place special emphasis on applying advanced technologies to optimize energy consumption and fully transition to renewable energy. Additionally, DENSO Vietnam is looking into the newly proposed direct renewable electricity trading mechanism (DPPA) in Vietnam as a potential solution in their sustainable development strategy.

Hikari - Sustainable Urban Development in Binh Duong New City (Provided by Becamex Tokyu)

- ✓ Marou is one of the tenants at Hikari Complex in Binh Duong, which is a facility centered on food and beverage that aims to provide customers with a richer and more comfortable lifestyle under the brand concept of “Made to Enlighten”.
- ✓ Hikari is the only facility in Vietnam that embodies sustainability by creating an ecosystem in which waste from each restaurant is used to grow plants.



Mr. Vincent Mourou
Chief Executive Officer (CEO)

Marou was established in 2011 with the idea of making the best chocolate possible in Vietnam. The brand aims to reverse the traditional model by working directly with farmers to produce, sell chocolate within Vietnam and export internationally. As the pioneer in the bean-to-bar chocolate-making movement, Marou has grown significantly and now operates 19 shops across Vietnam.

The company's focus on sustainability extends not only to its people through training and internal promotion opportunities, but also to its supply chain, which is intentionally kept short by sourcing local ingredients.

We had the opportunity to discuss with Mr. Vincent, CEO of Marou about the company's sustainability practices and the collaboration between Marou and Hikari.

What led to the partnership?

Marou decided to open a new shop in the Hikari Complex two years ago after being endorsed by a Pizza 4P's management member. The decision to choose Hikari was influenced by several factors, one of which was the project's green urban design, aligning with the brand's commitment to sustainability.

How has the collaboration with Hikari supported Marou?

Mr. Vincent emphasized that the core success of Hikari Complex lies in its sustainability components, as well as the high quality of its design and layout. He also highlighted that the project has added significant value to Vietnamese local brands by showcasing the best-in-class Vietnamese offerings.

Mr. Vincent also suggested further enhancement opportunities for Hikari, particularly through the development of solar and thermal energy within the building to strengthen its sustainability impact.

Marou's plans for sustainability?

As a vertically integrated company, Marou is committed to implementing sustainability practices across its value chain from farm to shop. The company is paying attention to innovative water and soil treatment solutions in cacao production to address the challenges posed by extreme droughts and heavy rainfall at different times of the year in southern Vietnam.



Hikari - Sustainable Urban Development in Binh Duong New City (Provided by Becamex Tokyu)

- ✓ Hikari has helped Pizza 4P's recycled 5 tons of food waste into compost for its edible garden, and repurposing food waste into fish feed to promote a circular ecosystem.
- ✓ Pizza 4P's will continue driving sustainability through regenerating nature, energy efficiency & eco-friendly operations, and people-centric happiness, ensuring positive environmental and social impact across its value chain.



Ms. Thu
Sustainability
Manager

Pizza 4P's is a value-driven company guided by the philosophy of "Oneness", fostering deep connections between people, society, and nature. Guided by this vision, Pizza 4P's integrates sustainability across its value chain. As an early pioneer of the farm-to-table concept, Pizza 4P's established its own cheese farm while actively collaborating with local, organic, and regenerative farms. Its first concept store in Thao Dien embraced sustainability through solar panel energy, waste composting, and an edible garden, a model now expanded across its restaurant network.

We had the opportunity to discuss with Ms. Thu, Sustainability Manager of Pizza 4P's, about the company's sustainability practices and the collaboration between Pizza 4P's and Hikari.

What led to the partnership?

The shared commitment to innovation and a sustainable society fostered the collaboration between Pizza 4P's and Hikari. From the early stages of GX solution development, the two companies have supported each other through continuous learning and experimentation. Pizza 4P's believes that green transformation should not be a standalone effort but a resilient, collaborative partnership that drives sustainability across society.

How has the collaboration with Hikari supported Marou?

The collaboration with Hikari enables Pizza 4P's stores to embrace sustainability down to the smallest details—from buildings to furniture made with recycled materials. On an operational level, Hikari serves as Pizza 4P's food waste recycling partner, processing 4 types of food waste into

compost. This compost is then reintegrated into Pizza 4P's own edible garden, closing the loop on sustainable food production.

Over two years of partnership, Pizza 4P's has successfully recycled 5 tons of food waste, preventing approximately 8–10 metric tons of CO₂ emissions—equivalent to taking two cars off the road for a year. Additionally, part of the recycled food waste is repurposed into fish feed, which is used for Pizza 4P's fishpond at Hikari, reinforcing a harmonious cycle between people and the planet.

Marou's plans for sustainability?

Pizza 4P's advances sustainability through three priorities: Regenerating Nature (carbon capture and soil health), Eco-Friendly Operations (energy efficiency and green practices), and People-Centric Happiness (enhancing well-being and community connections).

Barge service between Bac Ninh and Haiphong, Emission Monitoring Cargo Route Finder (Provided by MLC-ITC Logistics)

- ✓ The barge solution improved operational efficiency, reduced costs, and cut emissions by 30-50% compared to traditional road transport.
- ✓ Dang Khoa Logistics aims to further leverage their barge transportation in near future.



Mr. Trong Dam
Director

Dang Khoa Logistics specializes in providing freight transportation solutions for businesses in the Hanoi, Thai Nguyen, Bac Giang – Bac Ninh – Hai Phong region. Since 2020, the company has adopted a green transportation model utilizing barges, in combination with road transport. With an increasingly expanding scale, Dang Khoa Logistics partnered with ITL Logistics (Mitsubishi Logistics group company) in 2024 to optimize this transport model.

We had the opportunity to discuss with Mr. Trong Dam, CEO of Dang Khoa Logistics, about the benefits of sustainable transport solutions and the significance of the partnership with ITL Logistics.

What led to the partnership?

Mr. Dam shared: "As our business expanded, we turned to ITL Logistics because of their ability to provide two-way barge services at a larger scale and more competitive costs compared to other partners in the market."

What value has ITL logistics brought to Dang Khoa Logistics?

The adoption of ITL Logistics barge transport solutions has significantly improved Dang Khoa Logistics' operational efficiency, ensuring precise delivery schedules that meet customer plans. Optimizing barge transport not only reduces costs but also maintains stable profitability, thereby strengthening the company's competitive edge: Reliable, flexible service at low cost.

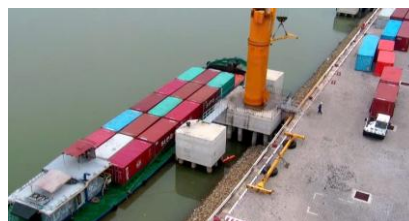
From a sustainability perspective, this solution reduces greenhouse gas emissions by 30-50% compared to road

transport. Specifically, a single barge can carry up to 50 containers per trip, compared to just one container per truck.

Plan to expand GX solutions?

In the future, the company expects to scale up its annual barge transport operations, projecting a growth rate of approximately 40% in barge transport volume in 2025-2030.

Dang Khoa Logistics foresees robust growth in barge transport in the coming years, driven by ongoing projects to develop and expand deep-water ports in northern Vietnam. These developments will support the expansion of barge networks and further optimize transportation costs for this method.



Sustainable Financing

- ✓ MUFG provides advisory and technical support to VietinBank in developing green financial solutions and strives to support VietinBank to mobilize up to USD 1 billion to support sustainable development projects in Vietnam.
- ✓ In the coming years, VietinBank will focus on diversifying its sustainable finance solutions.



Mr. Le Thanh Tung
Board Member

VietinBank (Vietnam Joint Stock Commercial Bank for Industry and Trade) is one of Vietnam's largest banks. Since 2023, the bank has emphasized sustainable finance by establishing a dedicated governance department and sustainability teams across all branches. In 2024, VietinBank completed the development and implementation of its Sustainable Finance Framework to guide the financing and management of sustainable loans.

Mr. Le Thanh Tung, Director of VietinBank, has shared with us about VietinBank's sustainable finance solutions and their collaboration with MUFG.

What led to this partnership?

In recent years, ESG and sustainable finance have been one of the key areas of cooperation between VietinBank and MUFG. Climate change issues, national policies, economic impacts, and strategic directions of both banks are regularly discussed at leadership meetings.

How has the collaboration with MUFG supported VietinBank?

As one of the world's largest financial institutions with extensive ESG experience, MUFG has provided technical assistance to VietinBank in developing policies, financial products, and initiatives tailored to the Vietnamese market.

Specifically, MUFG has advised and supported VietinBank in launching the "Green Deposit" product and the "Sustainable Finance Framework". At COP28, VietinBank has signed an MOU with MUFG. Following this agreement,

MUFG strives to support VietinBank to mobilize up to USD 1 billion for sustainable Projects in Vietnam. After COP28, MUFG has been actively assisting in securing funding from major international financial institutions and organizations.

VietinBank's plans for sustainable finance?

Moving forward, VietinBank will focus on diversifying its sustainable finance solutions to support Vietnam's green growth objectives while actively responding to customer needs.

To achieve these goals, VietinBank looks forward to extend their collaboration with MUFG in:

- Mobilizing international resources.
- Sharing expertise to enhance VietinBank's capacity in addressing new ESG-related customer demands.
- Strengthening business cooperation between the two banks.

Solutions for solving on-site issues using AUTO-ID technologies such as barcodes and RFID (Provided by SATO Vietnam Solutions)

- ✓ SATO collaborates with SINO to optimize operations through Auto-ID (RFID, barcodes,..), which enhance efficiency, reduce waste, and ensure data accuracy.
- ✓ SINO aims to develop AI-integrated AUTO-ID solutions for big data analytics in business operations and production management, facilitating governance and expanding technology applications across various industries.



With more than 30 years of experience, SINO is among the leaders the market in providing comprehensive solutions, from mobile computers, barcode scanners, and printers to RFID devices, software, and support services.

We had a discussion with Mr. Nguyen Quyet Thang, CEO of SINO, about sustainable solutions and the significance of the partnership with SATO Vietnam.

Mr. Nguyen Quyet Thang
Chief Executive Officer (CEO)

What led to the partnership?

SINO has partnered with SATO since SATO first entered Vietnam over 12 years ago. Beyond offering standardized integrated solutions that automate logistics operations, SATO also works with SINO to develop customized solutions tailored to customer needs, helping them maximize operational efficiency with Auto-ID technology.

What value has SATO Vietnam Solutions brought to SINO?

The integrated solutions between SATO and SINO enable smart data connectivity, driving automation in warehouse management, retail, manufacturing, and healthcare.

- **Manufacturing:** Barcode solutions automate material weighing, reducing material losses by 15-18%, cutting energy consumption by 5%, and improving workforce efficiency.

- **Healthcare:** SINO and SATO developed RFID wristbands for patient tracking in operating rooms, ensuring 100% accuracy in patient information.
- **Logistics:** RFID is increasingly adopted, allowing real-time tracking of goods from pickup to delivery, optimizing operational efficiency.

Plan to expand GX solutions?

SINO is focused on developing AI-integrated AUTO-ID solutions for big data analysis. Additionally, SINO will continue their partnership with SATO to broaden technology applications across multiple business sectors, enhancing supply chain efficiency and sustainability.



Copyright © 2025 JETRO. All rights reserved.

This business catalog is published on the website of the Japan External Trade Organization (JETRO).

Inquiries regarding this catalog

Japan External Trade Organization (JETRO) Hanoi Office
VHA@jetro.go.jp

Disclaimers:

- Information in this catalog is valid as of the published date and is subject to changes any time after its publication.
- JETRO will not be held responsible for any losses or damages arising directly and indirectly from the use of this catalog or any information thereof.
- Any form of diversion or appropriation of this catalog to a third part for the purpose of profit is prohibited.

Japan External Trade Organization (JETRO) Hanoi Office

CornerStone Building, 9th Floor, 16 Phan Chu Trinh Street,
Hoan Kiem District, Hanoi, VIETNAM