



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



STePP

Sustainable Technology Promotion Platform
Technologies from Japan



As of December 2022



UNIDO ITPO Tokyo's Sustainable Technology Promotion Platform (STePP) is designed to share information on Japanese technologies that contribute to inclusive and sustainable industrial development.

Concept

UNIDO ITPO Tokyo promotes selected sound and productive Japanese technologies in order to accelerate the transfer of such technologies to developing and emerging countries.

Technologies registered on STePP tackle many issues and challenges faced by current societies striving for inclusive and sustainable industrial development. This includes energy technologies, environmental technologies, agribusiness technologies, human health technologies and disaster management technologies, all of which are provided by Japanese companies seeking to implement their technologies in developing and emerging countries.

STePP aims to become a platform where Japanese technology providers and governments/companies in developing and emerging countries can find partners for collaboration to achieve effective and sustainable technology transfer.

Criteria for Registration

The technologies are evaluated for registration on STePP by the UNIDO STePP Evaluation Committee based on the following criteria;

1. Applicability in Developing and Emerging Countries
2. Competitive Advantage
3. Conformity with UNIDO's Mandate of Industrial Development
4. Contribution to Sustainability
5. Technical Maturity

Categories of technologies promoted are listed in the next page. Foreign Direct Investment (FDI), Joint Ventures (JV), and licensing of technologies, etc. are some of the ways by which the technologies can be transferred.

Any organizations in developing and emerging countries, such as governmental organizations, private enterprises, institutions or NGOs, are welcome to approach the technology providers on STePP through the contact person listed below each technology.

Categories of UNIDO ITPO Tokyo's STePP

Energy Technologies

- Renewable energy (ex: solar, wind, geothermal, small hydro, biomass)
- Energy saving and energy storage (ex: co-generation, storage batteries, energy saving)
- Utilization of unused resources (ex: high-efficiency and low-emission fossil fuel utilization)

Environmental Technologies

- Pollution prevention and control (ex: pollution prevention of air, water and soil)
- Waste treatment and management (ex: industrial and municipal waste treatment)
- Circular economy (ex: 3R (reduce, reuse, recycle) related technologies)

Agribusiness Technologies

- Food value chain*¹ (ex: processing and quality control of food and drinks)
- Production enhancement (ex: soil conditioner)
- Adaptation to climate change (ex: drip irrigation system)
- Water resource management (ex: desalination, fresh water storage)

Human Health Technologies*²

- Public health (ex: drinking water supply, prevention of infection, toilets)
- Monitoring and diagnostic equipment (ex: simple equipment for health monitoring in remote areas)

Disaster Management Technologies

- Disaster alert system (ex: alert for earthquakes, lightning strikes or floods)
- Disaster prevention and preparedness (ex: Slope collapse prevention, damping devices*³, lightning arresters)
- Disaster emergency response*⁴ (ex: temporary accommodation and related equipment, logistic systems for relief goods)

*1: Processing, transportation, preservation or quality control of acceptable, except for real foods and drinks (beverages).

*2: It excludes pharmaceuticals, highly invasive medical devices for the human bodies, and folk remedies, etc.

*3: It excludes earthquake-resistant housing.

*4: Production of drinking water and hygiene materials are classified into 'D) Human Health Technologies'.

UNIDO ITPO Tokyo

UNIDO's Investment and Technology Promotion Office, Tokyo (UNIDO ITPO Tokyo) was established in March 1981 and is one of 9 offices worldwide belonging to UNIDO's ITPO Network.

UNIDO ITPO Tokyo's mission is to help developing countries and economies in transition in their efforts to achieve inclusive and sustainable economic development by promoting foreign direct investment (FDI) and technology transfer from Japan, through various promotion activities in Japan and also in recipient countries using UNIDO's private and public sector networks.



Disclaimer UNIDO ITPO Tokyo's STePP is provided "as is" without any guarantees of any kind regarding the technologies and information featured. UNIDO ITPO Tokyo does not accept any liability, whether direct or indirect, arising from any person(s) relying, whether wholly or partially, upon any of the information, product or services contained or linked from STePP.

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Energy Technologies

- » **Renewable energy**
(e.g. solar, wind, geothermal, small hydro, biomass)
- » **Energy saving and energy storage**
(e.g. co-generation, storage batteries, energy saving)
- » **Utilization of unused resources**
(e.g. high-efficiency and low-emission fossil fuel utilization)

Bamboo Chemical Laboratory, Ltd.

Renewable energy

3 Types of Small Hydropower Generator

Target Area

Rural electrification

Technology

The company's three types (Pelton, screw, undershot) of small-scale hydroelectric power generators are optimally applicable corresponding to the locational conditions such as water flow and head. The range of power generation output is 10kW or less. Compared to large-scale type, the initial cost and operation cost are relatively inexpensive. In general, it is appropriate to install in small and medium-sized irrigation canals.

Sample Projects

In total, 23 hydropower units of the three types have been installed. In developing countries, 1 unit of Pelton type in El Salvador, 3 units of screw-type in Myanmar and 1 unit of screw-type in the Philippines have been operating.



Website: www.pikara.ne.jp/bamboo906/

Contact: Mr. Masayuki TSURUHA m-tsuruha@mb.pikara.ne.jp

BGCT JAPAN K.K. / Creative Co., Ltd.

Renewable energy
[Environmental Technologies: Circular Economy]

Solid Recovered Fuel 'Green Coal' - RPPWF™

Target Area

Fossil fuels; Carbon dioxide emissions

Technology

"RPPWF™" is a promising alternative fuel resource to coal and oil, produced entirely from waste materials. It is made from non-hazardous, non-recyclable papers, plastics/plants and wood waste, and other household and industrial waste. Because RPPWF™ contains a lot of biomass, CO₂ emissions can be mostly reduced to zero. Also the combustion efficiency is much higher than coal and oil.

Sample Projects

Pilot production of RPPWF™ was successfully completed at the company's test plant.



Website: www.bgct.jp

Contact: Mr. Michihiro KIYAMA

info@bgct.jp

Biomaterial in Tokyo Co., Ltd.

Renewable energy

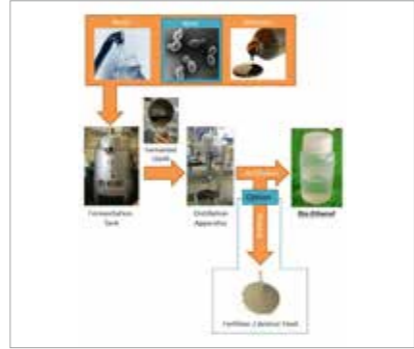
Ethanol Production through Yeast Fermentation

Target Area
Ethanol production

Technology
The company's strains of yeast used in fermentation process for converting sugars into ethanol have the advantages of being active in high sugar concentrations, low levels of impurities, and resistance to high temperatures.



Sample Projects
Several studies have been done at various universities in Japan and the tolerance of the yeasts to high temperatures has been tested in collaboration with the Starch Technology Center at the Agency for the Assessment and Application of Technology in Indonesia.



Website: https://biomt.co.jp/
Contact: Mr. Motoi YAMANAKA bits@biomt.co.jp

Renewable energy
[Environmental Technologies: Circular Economy]

CR-POWER LLC

Biofuel and Waste Management: C-POWER PLANT

Target Area
Waste disposal; Energy production

Technology
C-POWER plant thermally decomposes organic carbon such as municipal solid waste and various biomass to produce fuel gas which can be utilized for electricity generation and chemical feedstock, in a continuous process.



Sample Projects
Starting with the development of the U-turn kiln in 2000, CR-POWER LLC proceeded to the construction of the pilot plant in 2004. In addition, the company invented the Hybrid kiln to enforce gasification reaction in 2012.



Website: www.cr-power.jp/eng
Contact: Mr. Akimichi HATTA hatta@cr-power.jp

NEW

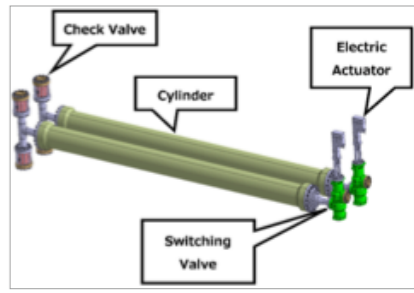
DMW Corporation

Energy saving and energy storage

DeROs®: Energy Recovery System for RO (Reverse Osmosis) Desalination Plant

Target Area
Energy saving for high pressure pump

Technology
DMW corporation provides an effective solution to this problem by the advanced mechanical device to recover fluid pressure of brine and reuse it for the suction pressure of a high-pressure pump.



Sample Projects
This product operates in India, Singapore and U.A.E., mainly exported to the areas suffering from fresh water shortages.



Website: https://www.dmw.co.jp/en/
Contact: Mr. NAGASAWA Email: DeROs@dmw.co.jp

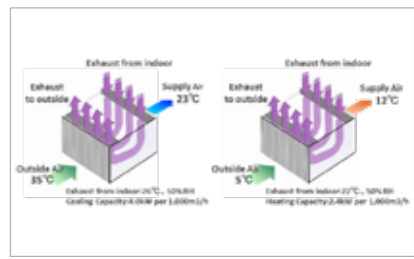
Energy saving and energy storage
[Agribusiness Technologies: Food value chain]

Earth Clean Tohoku Co., Ltd.

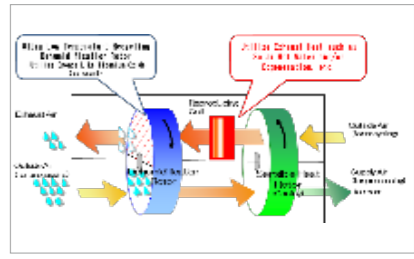
Energy Saving Air Conditioning without Freon "DESICCANT • MEGACOOOL®"

Target Area
Air conditioning with no freon

Technology
DESICCANT•MEGACOOOL® is a new air conditioning system which has basic functions of cooling, heating, dehumidifying, ventilation, humidifying, removing bacteria, deodorization, and air purification.



Sample Projects
Both DESICCANT unit and MEGACOOOL® have been delivered to various places across Japan such as supermarkets, food production factories, hospitals, etc.



Website: www.earthclean.co.jp/
Contact: Mr. Kenichi KONNO hyeasis@earthclean.co.jp

EiShin Co., Ltd.

Energy saving and energy storage
[Environmental Technologies: Waste treatment and management]

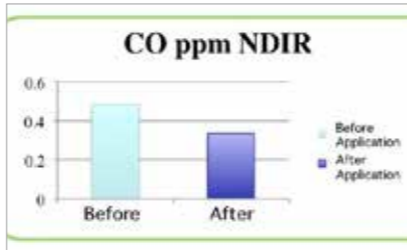
Energy Efficient & Eco-Friendly Automobile Filter Spray

Target Area

Emission reduction from vehicles

Technology

“eco-SPRAY,” allows cleaner combustion in the car engines which translates into improved power and fuel efficiency as well as reduced emissions. The spray is applied to car air filters every 5,000-6,000 km to reduce harmful emissions and increase gas mileage, typically from 8-20%, while decreasing air pollution.



Sample Projects

Distributed in 15 countries since 2012: China, Thailand, Canada, USA, UAE, Romania, Korea, Cambodia, Vietnam, Iran, Philippines, Bangladesh, Nepal, Taiwan and Japan.

Website: eishin-e.jp/en/
Contact: Ms. Mitsuko ISHINABE info@eishin-e.jp

NEW

ELIS CO., LTD.

Renewable energy

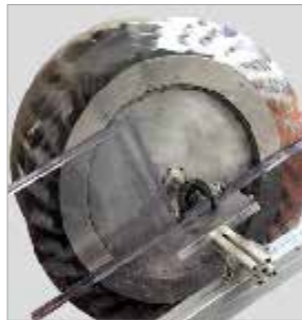
Micro-hydroelectric Power Generation with Breast-shot Wheel Type

Target Area

Off-grid hydropower

Technology

ELIS CO., LTD specializes in the clean and ecological generation of electricity. It provides thermal energy in the form of gas to develop new technology, mini hydroelectric power generation, based on solar panel electricity systems using recently developed power-generating technology.



Sample Projects

The product has been used in various places in Japan. It can also be utilised in developing countries where the stability of electric power infrastructure is low, facility maintenance of personnel is insufficient or when the weather conditions considerably fluctuate.



Website: <https://waterweco.com/en/>
Contact: Mr. Jun KUWAHARA kuwahara-jun@elis.tv

NEW

FujiClean Co., Ltd.

Production enhancement [Energy Technologies : Energy saving and energy storage]

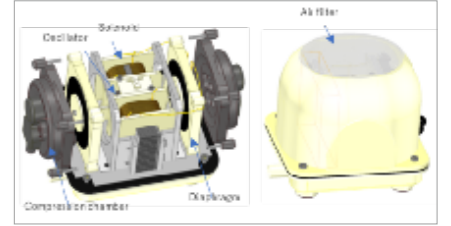
Magnetic Diaphragm Air Pump

Target Area

Aeration for aquaculture and biofilm formation

Technology

FujiClean Air Pump generates air flow by pushing a diaphragm (rubber membrane) through a reciprocating motion of an oscillator (magnet) caused by magnetic field when an electric current flows through a coil in the device. (see Figures below)



Sample Projects

In Australia and the U.S., we have shipped more than 1,000 units per year respectively as accessory equipment for our on-site Sewage Treatment Plant (STP). We also sell air pumps in aquaculture, ornamental fish breeding and wastewater treatment that is other than our STP, we have shipped approximately 15,000 units/year in North America and approximately 7,000 units/year in China, Indonesia, Vietnam, and other Asian countries.



Website: <https://fujicleanglobal.com/about/index.html>
Contact: Mr. Masayuki TSUGE kaigai@fujiclean.co.jp

FUMIN Co., Ltd.

Energy saving and energy storage

Coating for Ultraviolet and Infrared Ray Shielding

Target Area

Ultraviolet rays; Building and vehicle temperature control

Technology

The ultimate solar control coating technology called FUMIN COATING™ forms an ultra-thin transparent film of 1.5 microns thickness that shuts off about 90% of ultraviolet rays and 70% of infrared rays. It can be applied on any type of curved or bumpy surface glass and polycarbonate. Because 85% of visible light transmission is achieved, the exterior appearance and interior brightness are not affected at all.



Sample Projects

5,000 construction projects have been completed during the past 10 years. This coating was also selected for The National Art Center of Tokyo covering 4,700 square meters glasses. In Singapore, it was verified that this technology reduced the temperature within an elevator by 2 degrees Celsius (20% energy saving).



Website: www.fumin.jp/index_en.html
Contact: Mr. Katsuo YAGISAWA k-yagisawa@fumin.jp

GAINA Pro Co., Ltd / NISSIN-SANGYO CO., LTD.

Energy saving and energy storage

A Multi-functional Ceramic Coating Material

Target Area

Energy efficiency

Technology

GAINA is a unique paint that can provide strong insulation effect just by painting it. By providing insulation, it helps to reduce energy cost. The product originated from the technology developed at the Japan Aerospace Exploration Agency (JAXA) for H-IIB type rocket development.



Sample Projects

The shipping of GAINA started in 1999, and the cumulative shipping quantity is 627,390 cans in 2018.



Website: www.gaina.com/
Contact: NISSIN-SANGYO., LTD. Inquiry@gaina.co.jp

NEW

Hikariyane Corporation

Energy saving and energy storage

Energy-efficient Lighting Fixture by the Application of Sunlight Diffusion and Solar Panel

Target Area

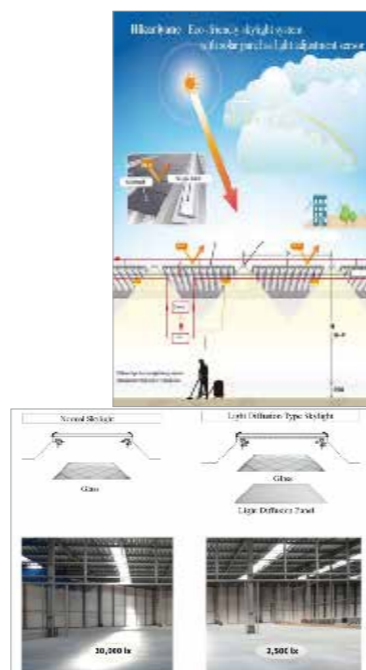
Energy saving lighting

Technology

Eco-friendly skylight system with solar panel as light adjustment sensor. Light diffusion panels beneath skylight windows convert direct sunlight into uniform light into indoors. Solar panels work as a unique sensor which gives trigger signal to LED light devices in order to compensate insufficient illuminance in the evening or when weather is cloudy or rainy. Utilizing diffused sunlight through skylight windows and switching OFF lighting fixtures (LED light etc.) can save 60-80% of energy. If Hikariyane system is adopted in big factories / warehouses, it can become a better solution than PV electricity consumed on lighting devices.

Sample Projects

Since this technology is new (the patent was granted in April 2019), there are 2 systems adopted at customers' facilities so far. The system works with stable and reliable quality due to the several QC tests prior to the start of production.



Website: <https://hikariyane.com/>
Contact: Contact: Susumu Yamakawa yamakawa.susumu@hikariyane.com

Hitachi Metals, Ltd.

Energy saving and energy storage

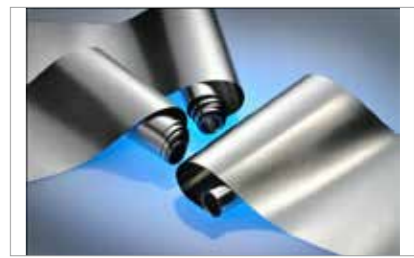
Amorphous Energy Efficiency Distribution Transformer

Target Area

Energy loss in conventional transmission and distribution system

Technology

Metglas® amorphous metal distribution transformers (AMDTs) with up to 80% lower core loss than conventional ones increase efficiency of energy transmission and distribution. They contribute to energy saving of distribution grids and reduction of CO₂ emissions.



Sample Projects

This technology was developed in the 1970s, and AMDTs started to be used in the 1980s. They have been used in many countries such as Japan (410,000 units), USA (420,000 units), China (385,000 units), India (800,000 units), Mexico (65,000 units), Brazil (60,000 units) and the Republic of Korea (80,000 units).



Website: www.hitachi-metals.co.jp/e/index.html
Contact: Ms. Kazue HORI kazue.hori.jm@hitachi-metals.com

Energy saving and energy storage
[Agribusiness Technologies: Food value chain]

HORIBA, Ltd.

Accurate and Fast Non-contact Infrared Thermometer: IT Series

Target Area

Temperature control/monitoring

Technology

This series of thermometers allows for accurate, fast and efficient temperature measurement from a distance. Rotating and moving objects can also be measured. It can measure temperature safely and hygienically due to non-contact. This series would fit from household to industrial use and could be used to measure the temperature of automobiles, asphalt pavements, manufacturing process of food, etc.



Sample Projects

The series are sold in Japan and international markets such as the USA, UK, India, Singapore, Malaysia, China, and Indonesia.



Website: www.horiba.com/en_en/
Contact: Mr. Leo YASUKAWA leo.yasukawa@horiba.com

IHI Corporation

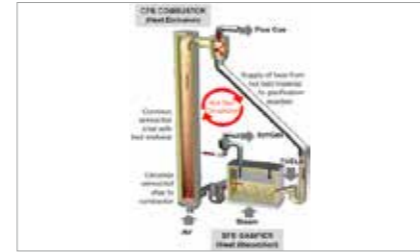
Renewable energy, Utilization of unused resources

Biomass Gasification Plant: TIGAR® (Twin IHI GASifier)

Target Area
Application of biomass

Technology
TIGAR® gasifies biomass resources such as wood chip and pellet to produce syngas (synthetic gas: hydrogen, carbon monoxide and other usable gases) by water-gas shift reaction. Syngas can be effectively utilized for various applications such as chemical feedstock and power generation fuel. By converting unutilized resources into a high-value product, TIGAR® reduces a large volume of CO₂ emission and provides a new clean energy solution.

Sample Projects
The installation and demonstration project to operate for nearly 6,000 hours completed. IHI Corporation is ready to export TIGAR® for commercial purposes.



Website: www.ihico.jp/en/
Contact: Mr. Takashi SAKANO sakano4687@ihi-g.com

JAG SEABELL CO., LTD.

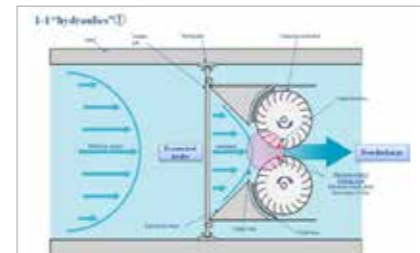
Renewable energy

Micro Hydropower System (ultra-low head)

Target Area
Hydroelectric power generation; Ultra low head environment

Technology
The STREAM is a run-of-river micro-hydropower generating system that can generate electricity especially in ultra-low head situations. Due to its compact size and ease of installation (typically two days of installation and commissioning in Japan), the system is especially suited for de-centralized power generation. Unlike conventional small hydropower schemes, a power channel, a powerhouse and penstock delivery are not necessary.

Sample Projects
Since 2008, the company has installed over 20 units in Japan and a pilot system in northern India.



Website: www.seabell.jp/english/index.html
Contact: Mr. Akira HIDESAWA hidesawa@jagseabell.jp

Japan Insulation Co., Ltd.

Energy saving and energy storage
[Environmental Technologies: Circular Economy]

Thermal Insulation Materials Using Biomass

Target Area
Waste reduction

Technology
The company has created a technology that uses biomass (rice husks) as a raw material and fuel in order to produce thermal insulation materials. The thermal insulator can cover the pipes and equipment contained in industrial plants, such as power, refinery and chemical plants. It keeps heat from escaping, improving the energy efficiency of the plant and helping the environment. Not only is the material non-combustible, but it is also lightweight and environmentally friendly.

Sample Projects
The factory in Vietnam to produce insulation materials using the technology was launched in May 2016, and has been supplying materials. We have also supplied materials in Malaysia, Singapore, Indonesia, Philippines and some other countries.



Website: <https://www.jic-bestork.co.jp/modules/smartsection/item.php?itemid=269>
Contact: Mr. Koji ANDO k-andou@jic-bestork.co.jp
 Mr. Takashi KAWAMOTO t-kawamoto@jic-bestork.co.jp

KITA MACHINERY Co.,Ltd.

Renewable energy

Engineering Design and Construction Method of Micro Hydropower System

Target Area
Regional electrification

Technology
A micro hydropower system developed by KITA MACHINERY is providing not only excellent machines but also the know-how in understanding the site conditions, selection of equipment and parts, design and installation method. Based on the know-how, we can make an optimal suggestion for local needs and conditions. Parts and equipment can be operated with less maintenance, which can help local people to operate by themselves. After installation, operating cost is very low.

Sample Projects
For the past 5 years, this micro hydropower system was installed in the Philippines (1 unit), Myanmar (5 units) and El Salvador (1 unit, for experimental use).



Website: www.kitakikai.co.jp
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 Ms. Haruka UENISHI haruka.uenishi@kitakikai.co.jp

Kokusaikan Corporation Japan / Japan Nano Coat Co., Ltd.
Miyako Roller Industrial Co., Ltd. / ef-initials Co., Ltd.
Nano-Science Laboratory Corporation

Energy saving and energy storage
[Human Health Technologies: Public Health]

Nanotechnology & Industrial Coatings

Target Area
Excessive temperature stress in building; Accumulation of dirt on roofs, walls and others

Technology
This product will reduce excessive temperature stress for people in buildings, households, and factories, and will protect crops in warehouses, goods in containers, and passengers in buses. Heat cutting paint will bring down temperatures by over 10°C on roofs and gas/oil tanks. Dust repelling function coated on painted surfaces will protect the heat cutting function from deterioration or accumulation of dust or dirt.

Sample Projects
The product has been in the market for 5 years and used by Japan Railways for 3 years.



Website: N/A
Contact: Ms. Setsuko TIMUR aladdintimur@gmail.com

KOMAIHALTEC Inc.

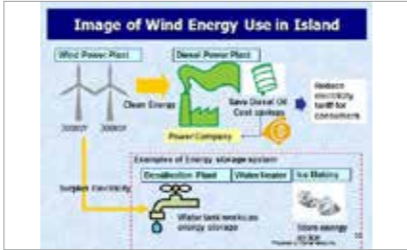
Renewable energy

Mid-Size Wind Turbine "KWT300" (300kW)

Target Area
Supply of electricity to power stations and existing facilities

Technology
The KWT300 is one of the very few high-spec, mid-size wind turbines available in the world. With 6.5m/s of annual average wind speed, one unit of wind turbine generates 600MWh/year, which is equivalent to the annual electricity use of 160 households. The KWT 300 is highly adaptable to the conditions of developing countries because of its flexibility (easy transportation, construction and various applications) and safety conscious design (strong, stable, and resistant to extreme winds, lightning and earthquakes).

Sample Projects
A prototype was installed in Japan and has been operational operational since 2006. In 2010, one unit and technical training services were provided to the Wind Energy Technology Center in Mexico, established by UNDP and the Electric Research Institution of Mexico. In 2012 and 2013, 3 more units were installed in Japan.



Website: www.komaihaltec.co.jp/english/
Contact: Renewable Energy Business Department renew@komaihaltec.co.jp

KYOCERA Corporation

Renewable energy

Photovoltaic Module / Solar Hybrid System

Target Area
Difficulties of managing hybrid renewable energy systems

Technology
The company provides a solar hybrid system that can integrate photovoltaic solar panels with diesel generators or other renewable energy sources. The key technologies are the reliable and durable photovoltaic modules and electrical control of the hybrid system.

Sample Projects
Since 2009, Kyocera has supplied photovoltaic power generation systems with a capacity of 3,000kW or more not only within Japan, but also in other countries. The company has introduced the system with a capacity of less than 1MW without batteries to Spain, Thailand, Mongolia, Syria, Palau, Djibouti, Maldives, Marshall Islands, Tajikistan, USA and Thailand.



Website: global.kyocera.com
Contact: Mr. Yusuke SATO yusuke.sato.sd@kyocera.jp

Nabell Corporation

Renewable energy

Portable Solar Power Charge and Storage System

Target Area
Electricity generation in remote areas

Technology
The nanoGrid is a portable solar power system that can generate and store electric power from sunlight and AC power supply. It features superior weather resistance and is ideal for non-electric power source areas.

Sample Projects
The solar power system which consists of nanoGrid_2 (solar panel) and FSP type1000 (lithium-ion battery) was installed to Japanese Red Cross Society.



Website: www.bellows.co.jp/en/
Contact: Mr. Toru WAKAMATSU nabell@bellows.co.jp

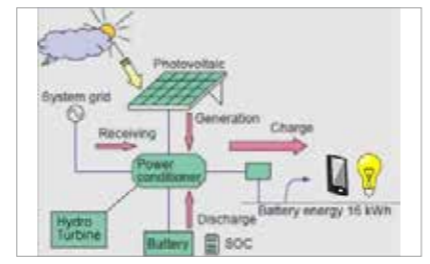
Nakayama Iron Works, Ltd.

Renewable energy

Pico and Micro Hydropower Systems

Target Area
Hydroelectric power generation

Technology
The micro turbine is a matured technology. This system features advantages such as low manufacturing cost, a reliable and stable electric control panel system, and reduced power generation cost, in comparison to conventional power generation systems.



Sample Projects
The company implemented small community development projects in Japan in 2012 and 2014. A more affordable technology was established and successfully implemented in collaboration with the Indonesian Small Hydropower Association. Additionally, the company has been proceeding with a small hydropower project in India since 2012 with JAG Seabell Co., Ltd. through OEM to provide turbines for hydropower generation.

Website: www.ncjpn.com/en/
Contact: Mr. Yoshinobu WATANABE overseas@nakayamairon.co.jp
 Ms. Sayaka OKA

NEW

NEC Corporation

Energy saving and energy storage

NEC HSS®: Hybrid Storage Solution for Optimizing Renewable Energy

Target Area
Configuration of renewable energy

Technology
NEC HSS® Hybrid Storage Solution is a flexible, configurable, and fully integrated turnkey solution with a modular and scalable design that can be rapidly deployed to enable Telecommunications Operators and Tower Companies to reduce costs and increase plant efficiency. It has multiple energy storage technology options and can be easily configured to meet customers' exact power and energy requirements.



Sample Projects
The product has been implemented in various countries such as South Africa, Nigeria, Kenya, and Tanzania with Government agencies, vehicle dealers, mobile networks, tower operators, and media companies.

Website: <http://www.nec.xon.co.za/>
Contact: Mr. Yosuke KOIDE ykoide@nec.com

NGK INSULATORS, LTD.

Renewable energy, Energy saving and energy storage

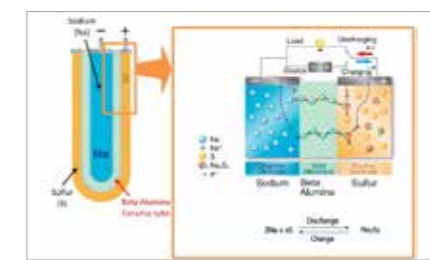
Sodium Sulfur Battery System

Target Area
Energy storage

Technology
Sodium Sulfur Battery System technology -- NAS® battery -- is currently the only commercially mature, large-scale energy storage technology that can be installed anywhere. It can be used for peak shaving, load leveling, and emissions reductions. From large capacity and high-energy density to long life and small size, there are many advantages to this technology.



Sample Projects
The current total worldwide installed capacity (including under construction) of NGK's NAS battery systems is approx. 525 MW (3,560MWh), as of March 2018, including 360MW in Japan, 37MW in Europe, 20MW in North America and 108MW in UAE.



Website: www.ngk.co.jp/nas/
Contact: Mr. Kenji TANAKA kenji-t@ngk.co.jp
 NAS Battery Sales & Marketing Overseas Department nas-battery@ngk.co.jp

Panasonic Corporation

Renewable energy

Rechargeable Solar LED Lantern

Target Area
Non-electrified area

Technology
This rechargeable solar LED lantern is a multifunctional portable lantern that can be used as lighting, as a battery charger and as a solar panel. It comes with a 3.5W solar photovoltaic panel, which can fully recharge the waterproof lantern in 6 hours in fine weather. The batteries can be recharged more than 1,500 times. The LED lifespan is more than 10 years.



Sample Projects
Recharging system of the lantern is performed by Panasonic's Ni-MH battery, which has been increasingly sold and distributed in Japan since 1990.



Website: <https://panasonic.net/sustainability/en/lantern/>
Contact: Mr. Junichi NAKAMURA Nakamura.jyunici@jp.panasonic.com

3ms Inc.

Energy saving and energy storage

Energy-Saving Ceramic Sheets for Air Conditioners

Target Area

Energy efficiency of air conditioners

Technology

The product, called Reidan-kun, is a ceramic sheet to be placed in the air conditioner. By enhancing the efficiency of heat exchange, it can reduce energy consumption by up to 26%.



Sample Projects

More than 13,000 sheets were installed in the first year from August 2016 in Japan.

Website: <https://3ms-inc.com/>

Contact: Mr. Shinya WATABE s-watabe@3ms-inc.com

Shinko Tecnos Co., Ltd.

Renewable energy
[Environmental Technologies: Circular Economy]

Plastic Changing to Oil Machine (BP-2000N/5000N)

Target Area

Plastic waste; E-waste; Medical waste; Energy needs

Technology

A thermal decomposition plant called the "plastic to oil machine" can manufacture liquid fuel, combustible gas, and carbonized products from plastic wastes, E-wastes, waste tires, waste toners, medical wastes and crude-oil derived products. The machine has the advantages of easy operation, low fuel consumption, and production of high quality heavy and light oils.



Sample Projects

This technology has been adopted by more than 15 plants in Japan and introduced to Vietnam since 2013, Saudi Arabia since 2014, Indonesia since 2014, and China since 2015.

Website: shinko-eng1.webnode.jp/

Contact: Mr. Kentaro NAGASAWA info@shinko-mfg.co.jp

Sumino Co., LTD

Renewable energy

Micro Hydraulic Power Unit (Spiral Type Pico-Hydro Unit "PicoPica10", "PicoPica500")

Target Area

Renewable Energy

Technology

Spiral PicoPica Hydraulic Power Unit is a promising pico-hydro power generation equipment which has potential for dissemination in non-electrified areas, with its characteristics including low-head generation and dust-resistance. "PicoPica10" is a small 10W unit, and "PicoPica500" is a 500W unit which generates enough energy for an average Japanese household.



Sample Projects

Since 2011 to date, 500 sets of PicoPica10 have been sold in Japan.

PicoPica500 was released on December 2017 and it has already been placed in Nikko City, Tochigi Prefecture, Japan.

Website: http://suminoseisakusho.jp/saisei_Eng.html

Contact: Mr. Masaya SUMINO s_info@suminoseisakusho.jp

Sumitomo Electric Industries, Ltd.

Renewable energy

Concentrator Photovoltaic (CPV) Power Generation System

Target Area

Solar power generation

Technology

The conversion efficiency for the Concentrator Photovoltaic (CPV) system by Sumitomo Electric Industries, Ltd. is twice that of a standard silicon solar module. This is achieved through tracking of the sun and through the use of special lenses that direct sunlight into a high intensity.



Sample Projects

The CPV system has been installed in Japan, Mexico and Morocco.

Website: global-sei.com/contact/

Contact: Energy System Division cpv-contact@info.sei.co.jp

Sumitomo Electric Industries, Ltd.

Energy saving and energy storage

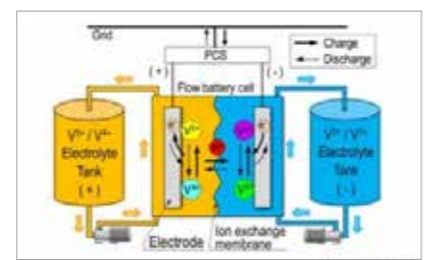
Vanadium Flow Battery System for Energy Efficiency

Target Area

Energy storage

Technology

The vanadium flow battery (redox flow battery), can absorb and stabilize the fluctuations of outputs predicated by renewable energy sources. Essentially, it's a large scale energy storage system featuring a vanadium flow battery that charges and discharges depending on oxidation and reduction of vanadium ions in electrolytes.



Sample Projects

One of the world's biggest flow battery of 60,000 kWh (15MW*4h) is installed in Hokkaido. The 8,000kWh (2MW*4h) flow battery demonstration project has started in California in 2017.

Website: global-sei.com/contact/
Contact: Energy System Division cpv-contact@info.sei.co.jp

TBM Co., Ltd.

Renewable energy
[Environmental Technologies: Waste treatment and management]

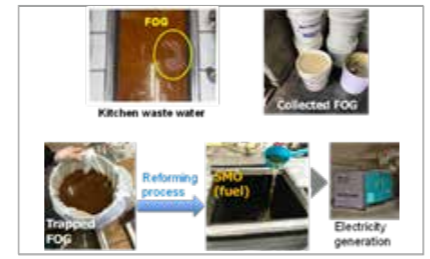
FOG-green Power Generation System

Target Area

Fats/Oil/Grease treatment from wastewater

Technology

Wastewater derived from daily preparation and consumption of foods contains a lot of fats, oils and grease (FOG). TBM Co., Ltd. has two innovative techniques to reuse FOG: 1) Technique for the perfect separation and collection of FOG from wastewater, 2) Reforming technique of collected FOG to produce a new bio fuel for electricity generators.



Sample Projects

Since its opening in April 2017, the FOG-green power generation system's power plant in Saitama prefecture generates 100KW x 24 hours x 365 days. In addition, we are proceeding the installation of our green power plants in various municipalities: Yokohama city, Tokorozawa city and Toshima-ku of metropolitan Tokyo.

Website: kankichikun.com/english/
Contact: Mr. Seigo HIGASHI info@kankichikun.com

Tsuji plastics Co., Ltd.

Renewable energy
[Environmental Technologies: Circular Economy (3R)]

Battery-free Innovative Solar Charger

Target Area

Off-grid

Technology

The device uses no batteries at all. Its life expectancy is 10 years and it has 8 USB ports for charging. Once the device is connected to solar panel, it can equalize and optimize electricity supply to charge mobiles, lights, etc. In addition, maintenance cost will be almost nothing since there is no cost of battery replacement.



Sample Projects

This solar charger is a new product launched in August 2019. Thus, it has only been tested and introduced in Uganda. However, other products which have similar structure have been sold for more than 20 years in Japan.



Website: www.tsuji-pla.co.jp/en/home-2/
Contact: Mr. Yoshikatsu TSUJI y.tsuji@tsuji-g.com

VPEC Inc.

Energy saving and energy storage

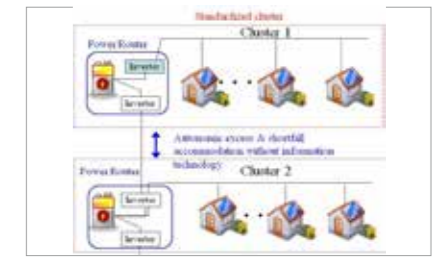
Power Router for ECONETWORK

Target Area

Energy loss in conventional electric distribution systems

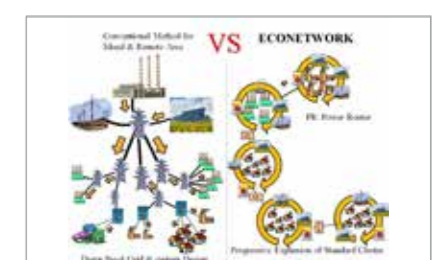
Technology

Power Router (PR) controls the electricity flow from one cluster to another cluster autonomously. ECONETWORK, which stands for Electricity Cluster Oriented Network, is a new architecture for electric distribution that makes the massive deployment of renewable energy sources available. PR consists of two inverters and a battery and accommodates the excess and shortfall of electricity transfer among clusters, without expensive telecommunication lines, thus contributing to the reduction of cost and complexity of electrification.



Sample Projects

Computer simulation with Waseda University showed that the concept worked as designed. Laboratory test of the twin inverters function has been conducted with Osaka Gas & Waseda University, and resulted in proving the concept & simulation.



Website: www.vpec.co.jp/index_e.html
Contact: Mr. Satoshi NAGATA s-nagata@vpec.co.jp

Environmental Technologies



- » **Pollution prevention and control** (e.g. pollution prevention of air, water and soil)
- » **Waste treatment and management** (e.g. industrial and municipal waste treatment)
- » **Circular economy** (e.g. 3R (reduce, reuse, recycle) related technologies)

*Pollution prevention and control
[Agribusiness Technologies: Water resource management]*

AGC Inc.

Electrodialysis Using Ion Exchange Membranes

Target Area

Water purification

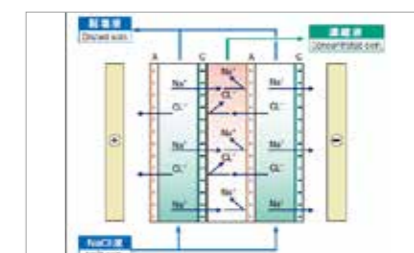
Technology

AGC Inc. has developed the ion exchange membrane SELEMION™, a FORBLUE™ family product, for electrodialysis. Electrodialysis can efficiently separate organic materials from salt because it only permits ionic materials to pass through the ion exchange membrane. Essentially, the technology provides desalination and nitrate removal from groundwater for generating drinking water.



Sample Projects

In the late 1990s, the system was installed at more than 10 sites in the Middle East.



Website: www.agc.com/en/
Contact: Mr. Masaaki OKABE

masaaki.okabe@agc.com

NEW

Biomass Resin Holdings Co., Ltd.

Food value chain [Environmental Technologies : Circular Economy (3R)]

Biodegradable and non-biodegradable Biomass Plastic Compound Technology Using Rice as a Raw Material (Neoryza & Rice Resin)

Target Area

Biomass plastic

Technology

The company provides two types of biomass plastics: biodegradable plastics that return to nature and non-biodegradable plastics that require strength and durability, using the main crops of the region or country as raw materials for biomass resins. Biomass plastic made from rice that is out of standard, omitted, or expired (i.e., discarded without being eaten) as a raw material for resin contributes to Micro-Plastics, Climate Change and Decarbonization issues, and more. In the late 1990s, the system was installed at more than 10 sites in the Middle East.



Sample Projects

The products have been implemented in China and Vietnam. Local biomass can be utilized to produce biomass plastics for local consumption. In addition, remote monitoring and operation systems are actively being introduced, making it easy to expand the system to multiple regions.



Website: <https://www.biomass-resin.com/>

Contact: Contact: Mr. Makihito DEGUCHI maki@biomass-mkt.com

CHUWA INDUSTRIAL CO., LTD. / M.K.D. Corporation

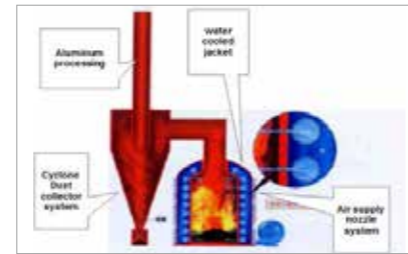
Waste treatment and management

Environment-friendly and Smokeless Incinerator: CHUWASTAR

Target Area
Waste Management

Technology
Chuha Industrial's "CHUWASTAR" is a highly durable waste incinerator for medical waste. Its durability allows the incinerator to treat waste with high calorific value such as plastic and rubber. Also it does not produce smoke because of the use of forced air supply method. On top of that, the body of the incinerator absorbs heat, which helps to keep the working environment safe.

Sample Projects
460 sets have been exported to 26 countries including the Democratic Republic of Congo and the Kingdom of Morocco.



Website: www.chuwastar.co.jp/en/
Contact: Mr. Kuniaki IMAO chuwa-kikou@chuwastar.co.jp
Mr. Kyoji SUGIURA

Donico Inter Co., Ltd.

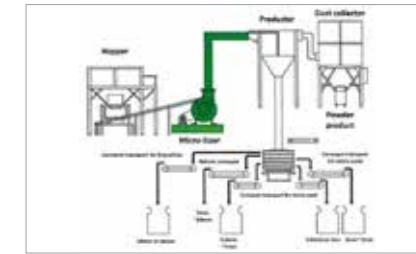
Waste treatment and management, Circular economy

Micro-Sizer: Glass Cullet Production Equipment

Target Area
Wasted glass

Technology
The Micro-Sizer is unique and more efficient equipment than the conventional hammer crusher and mill for crushing wasted glass because of its compact dry process, as well as efficient impurity separation process. The Micro-Sizer can produce about 2 tons of glass cullets per hour (up to the powder size of 0.05mm), resulting in glass cullets which can be used for multiple purposes; for example, as alternative materials for natural sand in beach areas suffering from coastal erosion, or as materials for making bricks, ceramics and blocks.

Sample Projects
Since 1995, the company has been successfully developing business especially in the USA and Japan. About 20 Micro-Sizers have been successfully installed in the USA. In the Japanese market, the company sold about 10 Micro-Sizers to various organizations including glass cullet manufacturers, glass-related companies as well as local governments.



Website: www.donico.co.jp
Contact: Mr. Kaneyuki INOKO kaneyukiinoko@gmail.com

COMOTEC Corporation

Pollution prevention and control

Cassette Type Black Smoke Removal Device "MoCobee CT"

Target Area
Diesel engine smoke

Technology
Cassette type Diesel Particular Filter (DPF) "MoCobee CT" is the retrofit device for black smoke removal attached on diesel engine, which can easily remove 99.9% of black smoke regardless of use condition and engine type. "MoCobee CT" can be semipermanently recycled by detaching from scrapped vehicles, versatile to use on various conditions and can be installed on various machineries.

Sample Projects
3,500 units have been sold for passenger vehicles, 3,000 units for forklifts, 50 units for construction machines, and 30 units for railway vehicles since 1999. In terms of export, 30 units of DPF for busses have been exported to Mongolia and China, and 30 units of DPF for forklifts have been exported to China, Taiwan and Thailand.



Website: www.comotec.co.jp/
Contact: Mr. Soichiro HOSHINO info@comotec.co.jp

Donico Inter Co., Ltd.

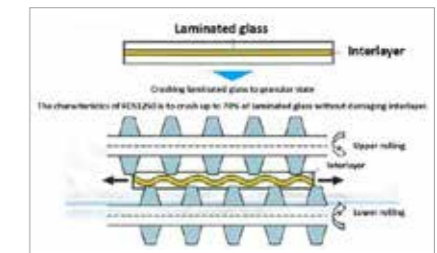
Waste treatment and management

Efficient Glass Interlayer Separation Equipment

Target Area
Waste laminated glass

Technology
The company's glass interlayer separation system consisting of crushing equipment (FDS650 and FDS1250) can efficiently separate laminated glass into glass and interlayer, for recycling. The equipment allows for the efficient recycling of laminated glass, thus contributing to reduce the energy consumption required during operation.

Sample Projects
Development of the equipment and the dissociation solution was completed in 2008. Since then, the company has successfully installed 12 crushing equipment (FDS1250) and has been improving the sales record.



Website: www.donico.co.jp
Contact: Mr. Kaneyuki INOKO kaneyukiinoko@gmail.com

EcoCycle Corporation

Pollution prevention and control

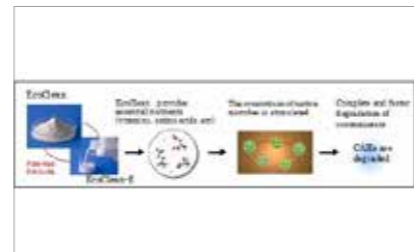
EcoClean and GreenClean Series for Bioremediation

Target Area
Soil and groundwater contamination

Technology
The bioremediation products "EcoClean" and "GreenClean" perform in-situ bioremediation or purification of soil and groundwater contaminated with chlorinated hydrocarbons and heavy metals, and petroleum hydrocarbons cyanide compounds respectively. Both products are diluted in water and injected into sub-surfaces to stimulate native microorganisms in a contaminated site. Most contaminated sites can be cleaned in the span of a few months, which requires low energy and mediation cost.

Sample Projects
Bioremediation products have been applied for cleaning over 170 sites contaminated with chlorinated aliphatic hydrocarbons, chromium (VI), petroleum hydrocarbons and cyanide in Japan, USA, Taiwan, and other Asian countries.

Website: www.ecocycle.co.jp/e_index.html
Contact: Mr. P. S. Reddy reddy@ecocycle.co.jp



Excelsior, Inc.

Pollution prevention and control [Human Health Technologies:Public health]

Mt. Fuji Toilet: Portable and ECO-friendly Hygiene Facility

Target Area
Portable toilet and hygiene tools

Technology
The technology is to sterilize excrement and remove bad odors with a special treatment agent. Chemical material to sterilize and deodorize the excrement (slaked lime, zeolite, etc.) and physical solidification (such as a water-absorbing polymer) can be combined and provided depending on different situations and purposes.

Sample Projects
This technology is introduced in many countries. In Bolivia, in cooperation with JICA's local office, the company conducted the mobile toilet demonstration test for tourists in mountainous areas and Uyuni Salt Lake.

Website: excelsior-inc.com/english/
Contact: Mr. Kanichi ADACHI kan-ichi@excelsior-inc.com



Waste treatment and management [Agribusiness Technologies: Food value chain]

Fermentation Co., Ltd.

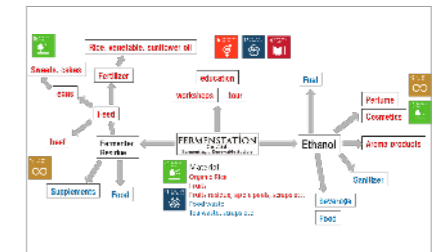
Integrated Ethanol Production System Utilizing Biomass

Target Area
Bioethanol production

Technology
The company's integrated fermentation/distilling production system allows for turning food scraps into ethanol thus creating new value from what was once considered as waste. This system allows for manufacturing of ethanol utilizing a variety of biomass not only limited to high sugar content materials such as corn and sugar cane. Besides, fermented materials obtained as byproducts can be utilized for animal feed and fertilizer. This technology can provide a sustainable resource recycling system that minimizes waste.

Sample Projects
The company conducted fermentation experiments with more than 10 types of biomass materials such as rice for non-human consumption or vegetable and fruit waste, all of which were successfully converted into ethanol. The rice ethanol production facility has already been under commercial operation in Japan. Ethanol derived products (aroma products and cosmetics) are sold in major department stores and cosmetic stores.

Website: fermenstation.co.jp/en/
Contact: Ms. Lina (SAKAI) WATANABE info@fermenstation.jp



NEW

FujiClean Co., Ltd.

Public health [Environmental Technologies : Pollution Prevention and Control]

Factory-made Onsite Wastewater Treatment System

Target Area
Wastewater treatment

Technology
FujiClean wastewater treatment system is an on-site wastewater treatment infrastructure. The product can be installed in a prioritized area quickly and cost-effectively. Compared to the large-scale on-site construction type wastewater treatment system, less shipping and installation costs and shorter construction schedules can be expected with the FujiClean system. The effluent from the FujiClean system can also be used for irrigation since the treated water is as clean as from a centralized wastewater treatment plant.

Sample Projects
More than 600,000 units have been installed for 13 years in Japan, Australia, the US, Germany, Vietnam, Philippines, Myanmar, etc.

Website: <https://fujicleanglobal.com/about/index.html>
Contact: Masayuki TSUGE kaigai@fujiclean.co.jp



Green Science Alliance Co., Ltd. (Fuji Pigment Co., Ltd. Group)

Waste treatment and management,
Circular Economy (3R)

100% Nature Biomass-based Biodegradable Resin: Nano Sakura

Target Area

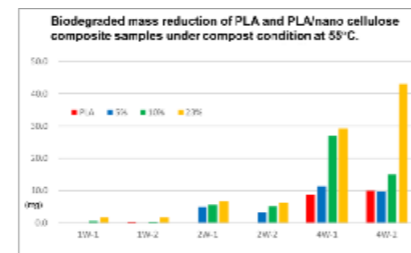
Biodegradable plastic

Technology

Nano Sakura is a biodegradable resin manufactured from '100% nature' raw materials and biomass. It consists mainly of biodegradable cellulose and/or starch, and/or PLA (polylactic acid). These biodegradable materials can properly be compounded with nano fibrillated cellulose and/or biomass waste. Combined with nanocellulose, it can increase mechanical strength, biodegradability, foaming property, molded property, crystallinity, heat durability, etc.

Sample Projects

Biodegradable resin products mainly as pellets form have been sold to over 70 customers in Japan and exported to ASEAN countries, Spain, the USA and other countries. Those sold products consist mainly of PLA and starch-based biodegradable resin composite with nano cellulose and biomass waste.



Website: www.gsalliance.co.jp/en/

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GUUN Co., Ltd.

Circular economy

Fluff Fuel Technologies Derived from Waste Plastics

Target Area

Plastic waste

Technology

The company recycles raw plastic materials to produce Fluff Fuels, which provide more eco-friendly, space-saving and affordable options as compared with other types of fossil fuels. Fluff Fuels are most often used as alternatives to coal or heavy oil in paper manufacturers in Japan and cement companies overseas.

Sample Projects

A pilot project to establish a recycling enterprise in Cebu, Philippines started in 2013. In 2015, the project was taken over by Cebu City. A commercial scale plant was completed in May 2017 in Cebu, Philippines with capacity of 50-75 ton per day.



Website: www.guun.co.jp

Contact: Mr. Keitaro IKEDA k_ikeda@guun.co.jp
Mr. Toshiaki KITAI t_kitai@guun.co.jp

HINODE SANGYO Co., Ltd.

Pollution prevention and control,
Circular economy

Elbic Series Solutions for Wastewater Treatment

Target Area

Wastewater treatment

Technology

The Elbic series are environmentally friendly microbial products for treating wastewater, especially in the food processing industry. Using microorganisms, the Elbic series can consistently reduce BOD to acceptable levels set forth by laws, assure stabilized and efficient wastewater treatment, and make the operation of wastewater treatment plants easier by reducing running costs.

Sample Projects

The company has supplied seven ElbicNEO System™ (microorganisms with incubator) units in the past.



Website: www.hinodesangyo.com/english/

Contact: Ms. Kaori FUJITA k-fujita@hinodesangyo.com

HINODE SANGYO Co., Ltd.

Pollution prevention and control,
Circular economy

Hinode Microbubble Generator (HMB)

Target Area

Waste water treatment using microorganisms

Technology

Dispersed-Microbes Process invented by HINODE SANGYO Co., Ltd. is a revolutionary technology that prevents "bulking" of sludge during the waste water treatment process. This process employs a device called Hinode Microbubble Generator (HMB), which generates microbubbles and efficiently dissolves oxygen in the water to enhance the activity of aerobic microorganisms.

Sample Projects

HMBs have been installed in a food-processing plant and several wastewater treatment plants.



Website: www.hinodesangyo.com/english/

Contact: Ms. Kaori FUJITA k-fujita@hinodesangyo.com

NEW

IGADEN CO., LTD.

Pollution Prevention and Control

“MICRO WATER SYSTEM®”: Electrolysis Type Wastewater Treatment Unit

Target Area

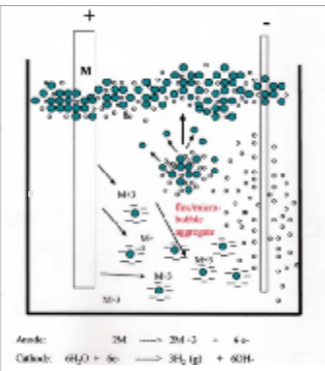
Water purification

Technology

Water quality improvement treatment system uses electro-physical chemical reactions with no additional agent. Using their self-developed electrode material, a few electrolytes with salt/ industrial salt/ seawater are used to flocculate pollutants using electric charges, and solid-liquid separation is performed. Another usage is to decompose and decolorize water that contains organic and nitrogenous compounds through the electrochemical oxidative decomposition process.

Sample Projects

The products have been implemented in China and Vietnam. Local biomass can be utilized to produce biomass plastics for local consumption. In addition, remote monitoring and operation systems are actively being introduced, making it easy to expand the system to multiple regions.



Website: <http://www.igaden.com/sp/index%20English.htm>
Contact: Contact: Mr. Satoru IGARASHI Email: idx@igaden.com

JTOP Co.,Ltd.

Pollution prevention and control

On-site Regeneration System of Activated Carbon Filtration Unit

Target Area

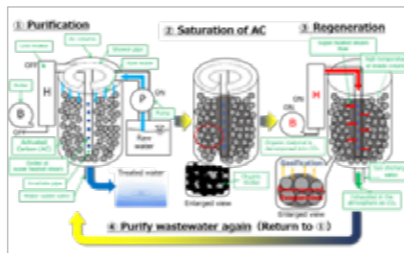
Water purification

Technology

JTOP Co.,Ltd. has developed an activated carbon filtration system equipped with the automatic regeneration device. During the operation, it regenerates the filtration material (activated carbon) by the injection of superheated steam, without taking out the filtration material from inside the tank. Even if the filtration material is not replaced, wastewater treatment (refractory organic matter treatment, COD treatment, decolorization treatment, etc.) and exhaust gas treatment can be steadily performed without deteriorating operation efficiency.

Sample Projects

This system has already been sold and delivered in Indonesia, as wastewater recycling equipment which purifies and processes dyed wastewater discharged from textile factories to colorless and odorless water.



Website: www.jtops.com/en/
Contact: Mr. Jiichi NAKAKI nakaki@jtops.com

KAIHO INDUSTRY CO., LTD.

Waste treatment and management, Circular economy

Eco-Friendly ELV Recycling System

Target Area

Recycling of end-of-life vehicles

Technology

The company offers a package solution for waste treatment and managing of ELV (end-of-life vehicles), which include recycling equipment, a business management system and training.

Sample Projects

The system was implemented in 5 countries including Thailand and Kenya. More than 70 foreign trainees were educated in the training center in 10 years.



Website: www.kaihosangyo.jp/english
Contact: Mr. Katsuya BAJI baji@kaiho.co.jp

KANEKA Corporation

Pollution prevention and control, Circular economy

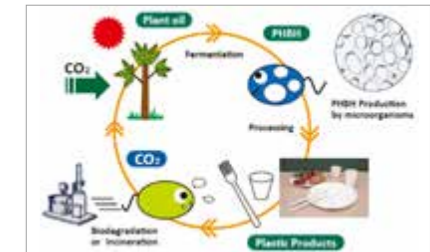
KANEKA Biodegradable Polymer PHBH™

Target Area

Marine plastic waste

Technology

PHBH™ is a novel biopolymer produced with sustainable raw materials. It is produced through Kaneka’s unique microbial fermentation process and it can be used in a variety of applications. Kaneka’s recent research shows that PHBH™ also has excellent biodegradable property in marine environment, which contributes to the reduction of marine plastic waste.



PHBH™ was launched to the market in 2008 and is currently used mainly in France and Germany for fruit & vegetable bags and compostable bags. Yearly sales of PHBH™ reached 1,150 tons in 2018.



Website: www.kaneka.co.jp/en/
Contact: Mr. Mitsutoshi MORO bdp_phbh@kaneka.co.jp

KAWATOKU CO., LTD.

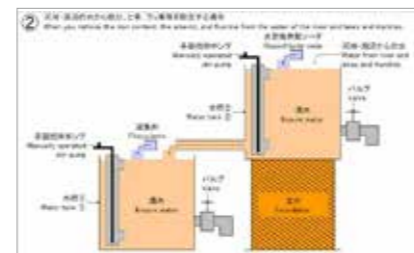
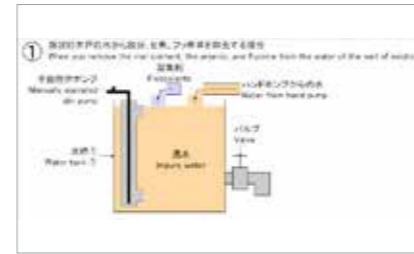
Pollution prevention and control

Removing Heavy Metals from Water

Target Area
Water treatment

Technology
The company's flocculating agents can purify turbid water into drinkable water by removing heavy metals, such as iron, arsenic, and fluorine, at low cost. This technology does not require electric power and it can be installed in existing tanks made of any materials. For a small amount of water to be processed, turbid water can be agitated manually by hand. With a manually operated stir pump, it can process up to 5 tons of water in one tank.

Sample Projects
The company has been working to remove fluorine from well water in Tanzania. In Myanmar, the company's flocculating agents have been used in a medical treatment facility to secure safe water for washing hands.



Website: N/A
Contact: Mr. Hirofumi SUGANO kawatoku@ivy.ocn.ne.jp

NEW

Kayama Kogyo Co., Ltd.

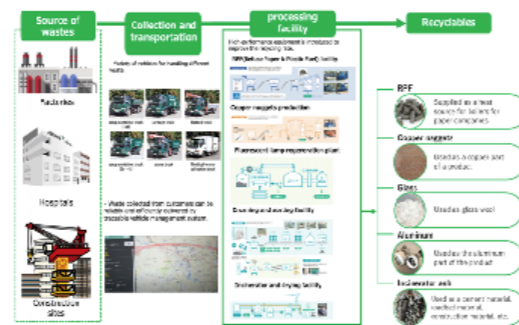
Waste treatment and management, Circular Economy (3R)

Operational Technology Related to Treatment of Industrial Waste (Including Hazardous Waste)

Target Area
Waste management

Technology
Kayama Kogyo has a sorting facility, an incinerator/drying facility, a solid fuel RPF facility, a copper nugget manufacturing machine, and a fluorescent lamp tube recycling plant to improve the recycling rate. It further provides a one-stop service for waste treatment by actively recycling high-mix, small-lot waste.

Sample Projects
The technology has been used in various prefectures in Japan and Vientiane city to deal with numerous sorts of industrial waste generated from the manufacturing industry and offices, the medical waste generated from hospitals, and the construction waste generated from construction sites.



Website: <https://www.kayama-k.co.jp/english>
Contact: Mr. Shinichi TABATA tabata@kayama-k.co.jp

KINSEI SANGYO CO., Ltd.

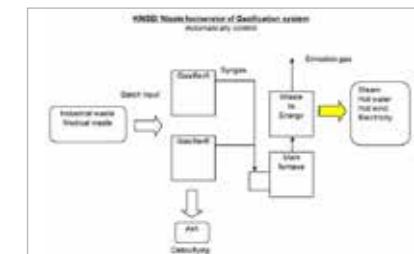
Waste treatment and management

Waste Incinerator of Gasification System

Target Area
Municipal solid waste; Industrial waste; Medical waste; Air pollution

Technology
This product provides an efficient and safe "waste incinerator of gasification system" and can completely detoxify hazardous industrial waste and medical waste to prevent any air pollution. Also, the system produces hot water, hot air, steam and electricity that can be used for various purposes.

Sample Projects
The company has been selling the KINSEI gasification system since 1980 and sold over 200 units. The product has been delivered in Japan, Korea, China, Taiwan, Thailand, and Indonesia.



Website: www.kinsei-s.co.jp/english/
Contact: Mr. Keiichi KANEKO kinsei@kinsei-s.co.jp

KITA MACHINERY Co.,Ltd.

Pollution prevention and control

Engineering Design and Construction Method of Sustainable Water Treatment

Target Area
Water treatment for local people

Technology
KITA MACHINERY offers the engineering service from design to installation of the water treatment system for industrial use and drinking use. This system is not a packaged product but designed for each site, which makes it possible to optimize piping structure and parameters on site, even in operation. The company also has a design, installation and operating know-how as temporary construction, which can reduce initial cost and it will be more reasonable than other conventional plants.

Sample Projects
KITA MACHINERY installed the water treatment system for producing drinking water from waterfall (aligned with small hydropower generation plant).



Website: www.kitakikai.co.jp
Contact: Ms. Tomoko KANAMURA kanamura@kitakikai.co.jp
 Ms. Haruka UENISHI haruka.uenishi@kitakikai.co.jp

NEW

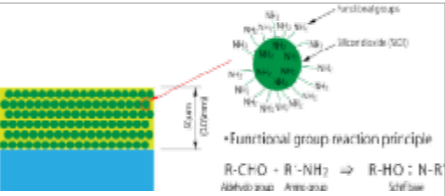
MARUSYO SANGYO CO., LTD.

Public health [Environmental Technologies : Pollution Prevention and Control]

Formaldehyde Removal Coating, Odor Eliminating Fluid "S-3T"

Target Area
Prevention of Sick Building Syndrome

Technology
The Solution for Indoor Air Pollution and Sick Building Syndrome to Protect Your Life from Formaldehyde Gas. S-3T was developed as the solution for indoor air pollution. In the several substances of indoor air pollution, formaldehyde is the most serious issues and effect our daily life directly. Formaldehyde is known as a cancer causing, nevertheless it is found in various products such as plywood, particleboard, building materials, insulation and those products are necessity for our life. S-3T absorb and eliminate formaldehyde gas very easily. The efficacy lasts for a long-term, such as several years once it applies.



Sample Projects
S-3T was developed in 2011. Since then, we have been providing many counties to protect against formaldehyde risk. As the most recent data, we exported S-3T as the materials for 800,000 m² area (as of annual 2021). Our main market is Southeast Asia and East Asia though, we would like to expand this great product S-3T to all over the world because formaldehyde problem is the social issue in the world.

Website: <https://odor.marusyosangyo.com/en/>
Contact: Mr. Takayuki Yoshikawa, Ms. Aya Sakata
yoshikawa@marusyosangyo.jp , sakata@marusyosangyo.jp

Mitsubishi Chemical Aqua Solutions Co., Ltd.

Circular Economy (3R)

Oil Absorbent DiaFellow™ DM

Target Area
Wastewater treatment

Technology
This composite material is a high-performance oil adsorbent that enables the separation of water from oil-containing wastewater, which was previously difficult to treat with conventional treatment processes. Wash wastewater at bus and taxi companies, train vehicle bases or hydroelectric power plants is just filtered by the adsorbent, then filtered water can be reused for washing water at sites. This method can help to reduce water consumption.



Sample Projects
The wastewater treatment systems utilizing DiaFellow™ DM are installed at over 1,200 sites in Japan as of December 2020.

Website: www.mcas.co.jp/en/
Contact: Mr. Suguru KUDO kudo.suguru.ma@m-chemical.co.jp



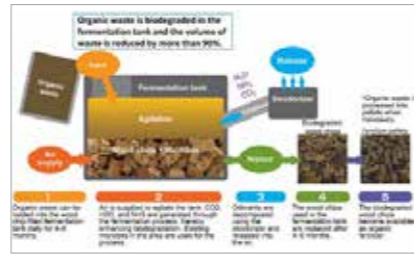
Mikuniya Corporation

Waste treatment and management

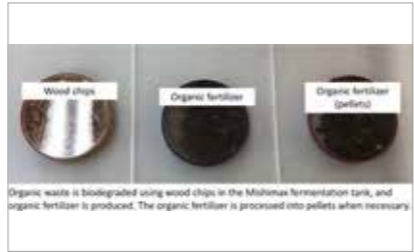
Mishimax Organic Waste Treatment System

Target Area
Waste Management

Technology
Mishimax reduces the volume of wastewater sludge, food waste, and other forms of organic waste by more than 90% in 24 hours, using high-temperature aerobic biodegradation and the heat from evaporation. The organic waste is biodegraded together with the wood chips in the Mishimax fermentation tank. After six months, biodegraded organic waste turns into an organic fertilizer.



Sample Projects
Fifteen Mishimax units have been sold, and all orders were custom-made. So far, the major clients are local governments (food waste treatment facilities, sludge biodegradation facilities, and compost facilities). In Fukushima Prefecture, Mishimax was used for demonstration experiments to reduce the volume of polluted organic wastes.



Website: www.mikuniya.jp/mikuniya_eng/index.html
Contact: Mr. Yuji TANAKA, Ms. Akiko FUJIWARA mishimax@mikuniya.co.jp

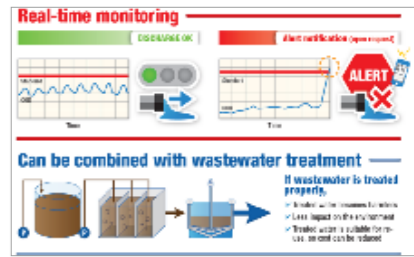
Mitsubishi Chemical Aqua Solutions Co., Ltd.

Pollution prevention and control

Real-time Online Wastewater Monitoring System

Target Area
Wastewater treatment

Technology
A sound management of wastewater quality is a vital pollution preventive measure, and the Real-Time Online Wastewater Monitoring System efficiently achieves this through an established remote monitoring technology (WeLLDAS). Its fundamental monitoring parameters include COD, BOD, pH, temperature and the flow rate, which are available real-time for clients to observe through computers and smartphones. In cases of quality disruption, users are notified immediately through communication and data transfer via a local SIM card, which is cost-efficiently installed to reduce operational costs.



Sample Projects
The Real-time Online Wastewater Monitoring System equipped with WeLLDAS has been introduced to four sites, including the alcohol factory in Myanmar and the wastewater treatment plant in Indonesia. WeLLDAS has been introduced to over 400 sites globally as of December 2020.



Website: www.mcas.co.jp/en/
Contact: Mr. Suguru KUDO kudo.suguru.ma@m-chemical.co.jp

Nihon Genryo Co., Ltd.

Pollution prevention and control

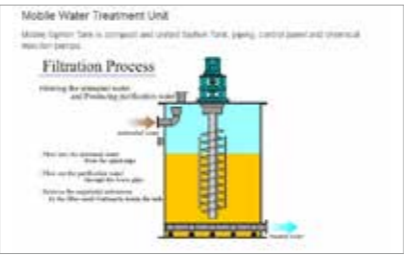
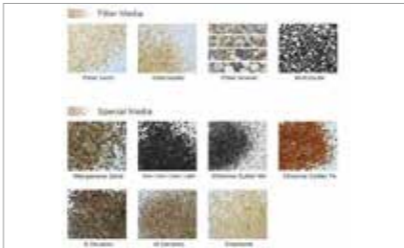
Eco-friendly Mobile Sand Filtration Device

Target Area
Water purification

Technology
The MOBILE SIPHON TANK (MST) is a mobile sand filtration device that filters raw water and produces high quality water for drinking and industrial use, or for use under emergency situations. The device does not need any replacement of filters, as the built-in filters media can be used semi-permanently. The company's patented technology called "Siphon Washing Technology" embedded in the tank can create twin vertical and horizontal vortices which cause sand particles to be kneaded to each other through a three-dimensional washing action, thus removing hard sludge layers on the surface of particles.

Sample Projects
Since its invention in 1997, the Siphon Washing Technology has been exhibited in major foreign exhibitions, such as IFAT in Germany, Aquatech in Nederland, WEFTEC in the USA, and The Big 5 in UAE. Also, the company has delivered and installed 3 MSTs in Vietnam, 6 Truck Mounted MSTs in Laos, and 1 MST and 1 Truck Mounted MST in the Philippines.

Website: www.genryo.co.jp/en/
Contact: Mr. Hiroshi EJIMA ejima@genryo.co.jp / info@genryo.co.jp



Nihon Genryo Co., Ltd.

Pollution prevention and control

Eco-friendly Sand Filtration Device

Target Area
Water purification

Technology
The MOBILE SIPHON TANK is a sand filtration device that filters raw water for drinking and industrial use, or for use under emergency situations. The device does not need any replacement of filters as the built-in filters media can be used semi-permanently. The company's patented technology called "Siphon Washing Technology" embedded in the tank can create twin vertical and horizontal vortices that cause sand particles to be kneaded each other through a three-dimensional washing action, thus removing hard sludge layers on the surface of particles.

Sample Projects
Currently, more than 100 devices with Siphon Washing Technology have been used in the world including Japan, Germany, Korea, Vietnam, Laos, Philippines and Mozambique.

Website: www.genryo.co.jp/en/
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Nihon Genryo Co., Ltd.

Pollution prevention and control

Eco-friendly Non-Electric Sand Filtration Device

Target Area
Water purification

Technology
The Non-Electric SIPHON TANK (NEST) can be operated manually without need for electricity to filter raw water and produce high quality water for drinking and industrial use, or for use in emergency situations. The built-in filter media can be used semi-permanently, thus filter replacement is not required. The Siphon Washing Technology embedded in the tank creates twin vertical and horizontal vortices that cause sand particles to be kneaded to each other to remove hard sludge layers on the surface of particles.

Sample Projects
The company conducted a feasibility and demonstration project for installing the NEST in Mozambique in 2013. This project conducted survey investigations in 3 provinces and also conducted pilot demonstrations in 4 locations. The result of the demonstrations shows that the turbidity of lake, river, spring and shallow well waters significantly improved after the treatment by the SIPHON Tank.

Website: www.genryo.co.jp/en/
Contact: Mr. Hiroshi EJIMA ejima@genryo.co.jp / info@genryo.co.jp



NIHONHAKKO Co., Ltd.

Waste treatment and management, Circular economy

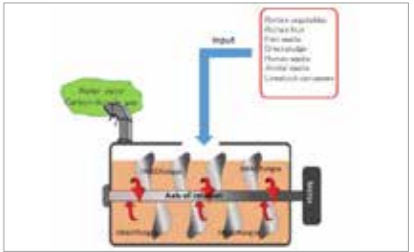
KID System

Target Area
Waste treatment

Technology
NIHONHAKKO Co., Ltd. manufactures and sells garbage disposal machines, decomposition machines, microorganisms, and environmental improvement systems. Its latest advancement is KID System, which is a technology that eliminates garbage, food waste, manure/urine/sludge, as well as dried sludge.

Sample Projects
Through the targeted use of microorganisms and stirrers, the system has the unique ability to decompose and remove more than 99 percent of the material. In addition, because no incineration is required, there is no emission of dangerous pollutants like ash or contaminants that can pose a health and safety risk.

Website: <https://nihonhako2020.wixsite.com/website-8>
Contact: Mr. Junichiro TSUNEISHI k-tsuneishi@nihonhako.co.jp



Nomura Kohsan Co., Ltd.

Pollution prevention and control, Waste treatment and management

Mercury Waste Recycling Technology

Target Area
Mercury pollution

Technology
The company has invented an all-inclusive facility that has the capacity to recycle, treat and process a wide variety of mercury waste from fluorescent lamps, batteries, mercury blood pressure devices, and thermometers. Through a roasting process, mercury is heated at 600°C~800°C, until it vaporizes. Afterwards, the mercury vapor flows through a cooling tower and scrubber where it is recovered. Recovered materials (mercury, glass, metallic base, fluorescent powder, etc.) can be recycled into raw materials to be used again for other products.

Sample Projects
Since its establishment in 1973, the company has specialized in treating, processing and recycling mercury waste. The company treated more than 25,000 tons of mercury waste every year between 2011 and 2013 in Japan. The company has also imported and treated uncrushed lamps from the Philippines from 2002 to 2014 and from Taiwan from 2006 to 2014.

Website: www.nkcl.jp/
Contact: Mr. Yasuyuki YAMAWAKE info@nkcl.jp



Pollution prevention and control
[Human Health Technologies: Public Health]

OSMO Co., Ltd.

Distributed Simple Water Purification Plant System

Target Area
Water purification

Technology
The Distributed Simple Water Purification Plant System is a membrane water system that can purify raw water into safe drinking water. The system adopts a low-pressure high-polymer membrane (reverse osmosis membrane/RO membrane), which can remove arsenic viruses, general bacteria, ions, heavy metals and other harmful substances. It can provide 3m³ - 48m³ of safe drinking water per hour. It can be easily installed in a small space and requires simple maintenance.

Sample Projects
The company has installed the system in semiconductor factories, food factories, pharmaceutical factories, and hospitals.

Website: www.osmo.co.jp/
Contact: Ms. Huayu LIN lin_huayu@osmo.co.jp



RBC Consultant Co., Ltd.

Pollution prevention and control
[Agribusiness Technologies: Production enhancement]

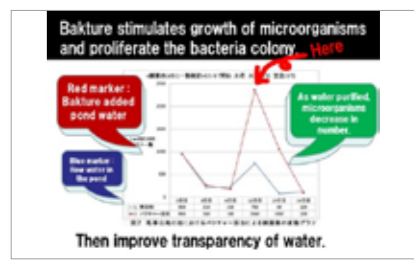
Water Treatment with Bakture System

Target Area
Wastewater treatment; Water pollution treatment

Technology
Water treatment with an activator called "Bakture Powder" can be utilized in multiple applications such as river purification, and wastewater treatment for food industries and commercial facilities. Bakture Powder activates existing microbes and the microscopic food chain can be revived in the water. Environmental pollutants are decomposed without any need of power.

Sample Projects
The powder was developed in 1993 and became commercialized in 1996. The company has purified more than 200 river and lake locations and about 10 plants for treatment of industrial wastewater in Japan. The company has also disseminated the product to other countries such as Korea, China, Thailand, Laos, USA, Australia, Canada and England.

Website: www.rbc-kk.co.jp/
Contact: Ms. Chigusa SUGIYAMA infokankyo@rbc-kk.co.jp



The Difference of Characteristic

| | Characteristic | Deposition of the harmful substances | Remain of the harmful substances | Condition of treated water |
|----------------|----------------|--------------------------------------|----------------------------------|----------------------------|
| Bakture | | | | |
| Cubic Material | | | | |
| Adsorbent | | | | |

NEW

Seiwa Denko Co., Ltd.

Public health [Environmental Technologies : Pollution Prevention and Control]

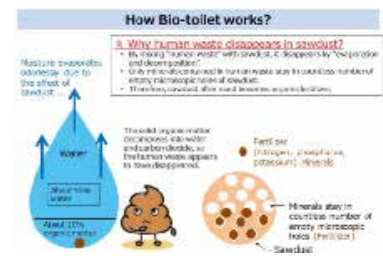
A New System of Waterless Bio Toilet "Bio-Lux"

Target Area
Bio toilet

Technology
Seiwa-Denko develops and manufactures the bio-toilet that uses neither water nor special bacteria, and treats human waste with ordinary sawdust. Our policy is that "when one bio-toilet is installed, the water will be clean", both domestically and internationally. We are working on the promotion of toilets. Our bio toilet called "Bio-Lux", eliminates human waste by "evaporating and decomposing" it with sawdust filled in the toilet. What remains in sawdust is an inorganic component that is neither evaporated nor decomposed, and it can be used as an organic fertilizer.

Sample Projects
We have been selling more than 3,600 units of Bio-toilet "Bio-Lux" and achieved many intellectual property rights since we started the development of Bio-toilet "Bio-Lux" in 1996 and keep improving until the present day. We have done demonstration projects of Bio-toilet in Vietnam with the support from JICA and JETRO. It is installed on trains and ships as well. It has a good reputation as a public toilet at sightseeing places.

Website: https://seiwa-denko-co-jp.translate.goog/index.html?_x_tr_sl=ja&_x_tr_tl=en&_x_tr_hl=ja
Contact: Ms. Noa YAMADA seiwa@seiwa-denko.co.jp



Shinko Tecnos Co., Ltd.

Waste treatment and management,
Circular economy

Hydrothermal Treatment Technology

Target Area
Municipal solid waste; Medical waste; Food waste, household garbage

Technology
This technology causes hydrolytic reaction of injected material with high temperature and high pressure steam (max 230°C/ 3Mph) inside a reactor. Germ free outputs generated after 30 minutes of treatment can be used as solid fuel, solid fertilizer, and liquid fertilizer or livestock feed. Various types of unused resources (waste) can be treated with this technology in a short-time process (2.5 – 3.5 hours for one process).

Sample Projects
The hydrothermal treatment machine has been installed in Japan in 2007, China in 2010, Thailand in 2013, Sri Lanka in 2014, and Indonesia in 2016.



Website: <https://shinko-eng1.webnode.jp>
Contact: Mr. Kentaro NAGASAWA info@shinko-mfg.co.jp

SO-EN CO., LTD.

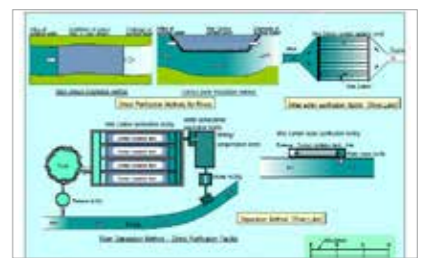
Pollution prevention and control

Water Treatment with Carbon Fiber

Target Area
Purification of river, lake, marsh and seawater areas

Technology
The Mira Carbon Water Purification is a method of purifying water in rivers and lakes using carbon fibers. Carbon fibers have a large surface which microorganisms can live on, resulting in the natural decomposition of contaminants and pollutants in water. The carbon fiber purification method is cost efficient because of low installation costs, easy maintenance and no running costs.

Sample Projects
This technology was developed in 2000 and commercialized in 2008. The Mira Carbon has been used in more than 300 locations in Japan and more than 20 locations in other countries, such as China, the Republic of Korea and Taiwan.



Website: so-en.net/tansoseni-e.html
Contact: Mr. Yukio KOGURE soen.net@gmail.com

Sion Corporation

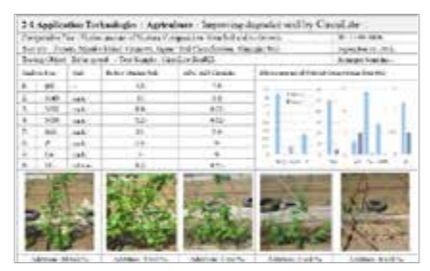
Circular economy [Energy Technologies:
Utilization of unused resources]

Venous Industrial Processing Technology (Functional Material from Biomass Ash Waste: CircuLite)

Target Area
Synthesis of functional material from ash waste

Technology
CircuLite is manufactured by ash components (mainly SiO2 and Al2O3) derived from the combustion of biomass resources such as rice husk and bagasse. As CircuLite has the specific porous structure and ion exchange capacity, it has multiple potential applications as environmental purification; adsorbent of pollutants for wastewater and exhaust gas treatment, soil conditioner, etc. The price of CircuLite is competitive to active carbon.

Sample Projects
The first CircuLite production was implemented by utilizing fly ash in a Japanese thermal power plant for ten years. In overseas, a power station treating rice hull as boiler fuel has continued to produce ash and to synthesize 1,000 ton/year of CircuLite for 6 years. The product is currently exported to Taiwan, Japan, and China.



Website: www.sion66v.com/
Contact: Mr. Shunsuke KUMAGAI sean@sion66v.com

Sugawara Industry Co., Ltd.

Waste treatment and management,
Circular economy

Asphalt Waste Recycling Technology Using Hot Mix Recycled Asphalt Plants

Target Area
Recycling of asphalt pavement material

Technology
This is a technology to repair roads at a lower cost and with lower environmental impact than conventional methods. It can reduce the use of new pavement materials by recycling reclaimed asphalt pavement (hereinafter called the "RAP"), which is generated when roads are repaired, to synthesize recycled asphalt mixtures and to use those mixtures again to pave roads. It can reduce the cost by 5% compared to the conventional method and the CO2 emission reduction to be approximately 7kg-CO2/ton-asphalt, although the effect varies depending on the RAP transportation distance.

Sample Projects
The company has already constructed an asphalt recycling plant in Karawang, West Java Province, Indonesia, and has a track record of selling recycled asphalt mixtures mainly for paving roads to private premises such as industrial parks with a recycling rate of 40% for surface layers and 50% for base layers.



Website: sugawarakogyo.co.jp
Contact: Mr. Wataru SUGAWARA info@sugawarakogyo.co.jp

TBM Co., Ltd. (Times Bridge Management)

Circular Economy (3R)

LIMEX: Alternate Plastic and Paper Material

Target Area
Conservation of wood resources

Technology
LIMEX is a new material that can be alternative to plastic and paper. It mainly consists of limestone (CaCO₃), which can be procured all over the world. Manufacturing process of LIMEX requires less oil/water, and reduces CO₂ emission compared to paper or conventional petroleum-derived plastic. Chemical and physical properties of LIMEX is compatible or superior to general paper/plastic.

Sample Projects
More than 5,300 companies/organizations have introduced LIMEX products in Japan, with the technology being applied to products such as bags, business cards, menu tables, booklets. Manufacturing of LIMEX products is expanding not only in Japan but also in China, Vietnam, etc.



Website: tb-m.com/en/limex/
Contact: Ms. Sae ISHIHARA s-ishihara@tb-m.com

Pollution prevention and control
[Energy Technologies: Energy saving and energy storage]

TECHNO TAKATSUKI CO., LTD.

Linear Diaphragm Air Pump

Target Area
Wastewater treatment

Technology
Linear diaphragm air pumps are designed for aeration of residential and small commercial wastewater treatment systems. The technology, called the HIBLOW air pump, provides air for households and compact wastewater treatment systems in an effort to activate aerobic bacteria, which in turn can reduce organic matter contained in wastewater.

Sample Projects
Since 1972, more than 15 million units have been sold all over the world including 870,000 in North America & Latin America, 380,000 in Europe & The near and Middle East and 150,000 in Asia & Oceania.



Website: www.hiblow-eu.com
Contact: Mr. Ryosuke KOMORI ryosuke-komori@next.takatsuki.co.jp

Toyokosho Co., LTD.

Pollution prevention and control
[Human Health Technologies: Public health]

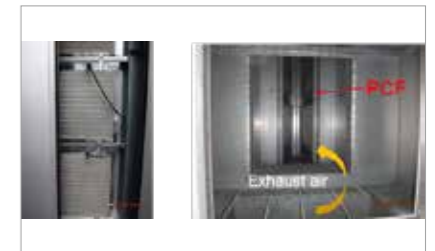
Photocatalytic Deodorization System: "PCF® Hybrid"

Target Area
Deodorization by photocatalytic reaction

Technology
PCF® Hybrid is a purification system for exhaust air with malodor or nasty smell. It has been proved to remove 92% of Acetaldehyde (stimulating greenery smell), 93.5% of Methyl Mercaptan (rotten onion smell) and 94% of Toluene (gasoline smell). As the deodorization effect occurs through UV irradiation to photocatalytic filters, less additional costs of expendables are necessary whereas filters utilizing activated carbon or other deodorants need to be purchased to refill.

Sample Projects
440 sets of products have already been installed to 206 sites in Japan. Shopping malls, schools, laboratories, resort hotels, processing food plants, and school canteens use our products. In addition, the company has a plan to export products to Vietnam, China and Taiwan.

Website: <https://www.toyokosho.co.jp/english-2/>
Contact: Mr. Hironori MIYAGAWA h-miyagawa@toyokosho.co.jp



Tsukishima Kankyo Engineering Ltd.

Waste treatment and management

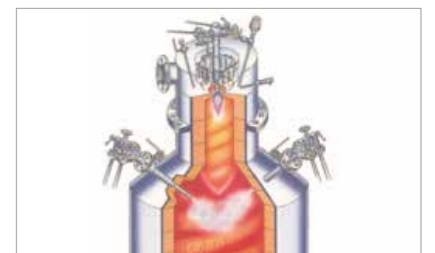
Waste Liquid Incineration System

Target Area
Waste treatment

Technology
Tsukishima Kankyo Engineering's Waste Liquid Incineration System, also known as Submerged Combustion System treats various liquid forms of waste through incineration. The technology can treat liquid waste discharged from a wide spectrum of production processes pertaining to petrochemical, fine chemical, pharmaceutical, agrochemical, pulp and other industries without secondary pollution.

Sample Projects
Approximately 400 units of Waste Liquid Incineration System have been supplied in various countries since 1973.

Website: www.tske.co.jp/en.html
Contact: Mr. Hidefumi TOYOTAKE toyotake@tske.co.jp



Waste treatment and management
[Agribusiness Technologies: Production enhancement]

Well Create Co., Ltd.

Community-based Food Waste Composting System

Target Area

Food Waste

Technology

Well Create provides an effective solution to food waste, by constructing a community-based composting system. The composting center equipped with food waste recycling facility operated by Well Create collects food wastes and produces compost in a composting machine. Then the compost is used for cultivation of rice and vegetables in neighboring farmlands.

Sample Projects

Well Create has been operating the composting center in Kitakyushu city since 2015. It produces 80 tons of compost per year and supplies the compost to local farmers. Other than the one in Kitakyushu, 588 composting machines had been sold until 2018.

Website: www.well-c.co.jp/
Contact: Mr. Takaki MATSUO tm@fun-c.jp



Agribusiness Technologies

- » **Food value chain**
(e.g. processing and quality control of food and drinks)
- » **Production enhancement**
(e.g. soil conditioner)
- » **Adaptation to climate change**
(e.g. drip irrigation system)
- » **Water resource management**
(e.g. desalination, fresh water storage)

AGC Inc.

High durability film "F-CLEAN™" for greenhouse

Target Area
Agriculture

Technology
This product "F-CLEAN™" is a highly durable film for use in greenhouses which allows users to grow high-quality and high value-added crops, within a variety of applications. The film has a low surface tension, allowing dirt to get washed away more readily by rain and snow. Also, there are different types of F-CLEAN™ films for different applications.

Sample Projects
Since 1985, 4,000 ha of "F-CLEAN™" has been sold in total. Projects widely vary in size, from 300 m² to 200,000 m². The film has been installed in more than 20 countries including Guatemala, Russia and Egypt.

Website: www.agc.com/en/
Contact: Mr. Masaaki OKABE masaaki.okabe@agc.com

*Adaptation to climate change
[Energy Technologies: Energy saving and energy storage]*



ef-initials Co., Ltd.

Multilayer Nanotechnology Coatings

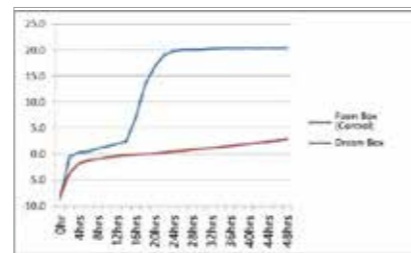
Target Area
Temperature controlled supply chain

Technology
Ef-initials Co., Ltd. applied their technology in industrial coatings to create the "Dream Box", which is a low-cost and environmentally friendly transportation box with multilayer nanotechnology coating inside to keep food or medicine cool, fresh and contaminant-free.

Sample Projects
One of the technologies featured in Dream Box, the ethylene gas control system, was commercialized by a logistic company in Korea. In addition, a Japanese company has applied the technology of Dream Box to develop a photocatalytic antimold film.

Website: N/A
Contact: Mr. Katsuhisa Max SHIMIZU ef.initials.jp@gmail.com

*Food value chain
[Human Health Technologies: Public health]*



NEW

FLORA Co., Ltd.

A Plant-activating Agent "HB-101" Made from Natural Raw Organic Materials

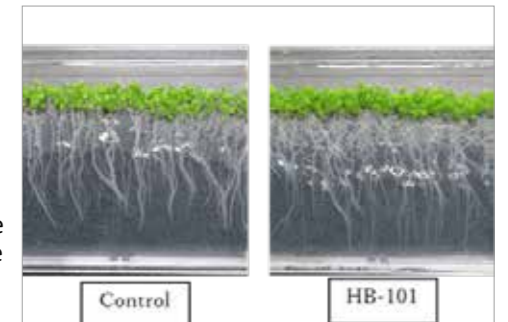
Target Area
Plant stimulant

Technology
PNatural Plant Vitalizer HB-101 is an aqueous solution that promotes the growth of plants by increasing their vitality. The positive effects of HB-101 on improving crop yields and quality have been demonstrated in cultivation tests at many research institutes and agricultural sites worldwide. HB-101 is made from the natural plants of cedar, Japanese cypress, pine, and plantain. Its product is suitable not only for conventional farming but also for organic farming. It further intends to improve crop productivity with the expected results of securing a stable food supply and increasing farmers' income.

Sample Projects
HB-101 is registered with the Organic Materials Review Institute (OMRI) in the United States and is widely recognized in Japan as a vitalizing solution suitable for organic farming.

Website: <https://hb-101.com>
Contact: Mr. Tomoaki KATO (Ph. D.) / Mr. Yoshiyasu KAWASE (President) t-kato@hb-101.co.jp

Production enhancement



FUMIN Co., Ltd.

"MR-X" Agricultural Materials for Environmental Protection

Target Area
Agriculture

Technology
MR-X is a ph.2.7 solution extracted from minerals. It activates the phosphoric acid, and enables plants to increase its absorption while reducing crop disease. Consequently, less agricultural chemicals and phosphate fertilizers will be used, leading to improved quality and yields. Moreover, it will solve the widespread ground water contamination, which is caused by excessive usage of less-effective phosphate fertilizers, nitrogen fertilizers, herbicides and agricultural chemicals.

Sample Projects
4,000 liters of MR-X have been sold to ZEN-NOH Niigata, 150 liters to ZEN-NOH Yamagata, and 1,000 liters to ZEN-NOH Fukushima in 2018.

Website: www.fumin.jp/index_en.html
Contact: Mr. Katsuo YAGISAWA k-yagisawa@fumin.jp

Production enhancement



Japan Conservation Engineers & Co., Ltd.

Production enhancement,
Adaptation to climate change

Plant Growth Biostimulant: Fulvic Acid Extract “Fujimin”

Target Area

Plant stimulation and soil conditioning

Technology

Fujimin is the enriched fulvic acid extract made from organic substances. Since fulvic acid exists only in trace amounts in natural conditions, the company has developed a mass production method. Fujimin can promote activation of photosynthesis, soil agglomeration, buffering of soil pH, desalination of soil and other functions derived from its chelating effect. As the product is a concentrated solution, it should be normally diluted with water by 500 times when using.

Sample Projects

2,000L of Fujimin were used for the farmland in the People's Republic of China. For the greening purpose, 100L was used both in Bhutan and Taiwan. From 2019, the company has been participating in JICA's disseminating survey in Paraguay where 2,300L of Fujimin has been applied for the farmland.

Website: www.jce.co.jp/en/
Contact: Ms. Kazuyo YOSHIDA green@jce.co.jp



KAWASAKI KIKO CO., LTD.

Production enhancement

Tea Ingredients Analyzer

Target Area

Tea leaf analysis for quality improvement

Technology

Tea Ingredients Analyzer utilizing near-infrared spectroscopy which can simultaneously measure main tea components in one minute. Anyone can easily measure tea ingredients by simply using a dedicated grinder and setting a powdered sample in the analyzer. Overseas sales price reaches 5.0-5.5 million JPY. Periodic accuracy adjustment (calibration) is required once every several years to maintain the measurement accuracy.

Sample Projects

More than 10 units of model GTN-C7 for roasting green tea have been successfully introduced in China and Taiwan market. In addition, products have been introduced in Sri Lanka where the company was adopted to JICA Verification Survey project.

Website: <http://www.kawasaki-kiko.co.jp/eng/>
Contact: Mr. Hiroya SHIMURA h-shimu@kawasaki-kiko.co.jp



NEW

Kett Electric Laboratory Co. Ltd.

Food value chain

Accurate Moisture Tester for Various Grains and Seeds that Conforms to the International Standard

Target Area

Grain moisture analysis

Technology

The company provides compact and precise testers to measure the moisture of grains such as rice, wheat, corn, soybeans, coffee beans, and cacao beans, based on international standards. Moisture tester that enables quality control of grains (prevention of mold formation during storage, prevention of quality deterioration due to over-drying), fair business transactions based on objective values in accordance with the international standard. We have developed two types of grain moisture tester: electric resistance type and capacitance type. The mill equipped with the tester crushes grain for analysis.

Sample Projects

Both the electrical resistance type and the capacitance type analysers have been sold worldwide, for the moisture measurement of various grains.

Website: <https://www.kett.co.jp/english/>
Contact: Mr. Ryosuke TAKAHASHI ry-takahashi@kett.co.jp



KIHARA WORKS CO., Ltd.

Food value chain

Food Dehydrator with DDS (Dual Drying System)

Target Area

Drying of food and agricultural products

Technology

KIHARA's Dual Drying System features double temperature control in both dry-bulb and wet-bulb to keep the identical humidity inside the dehydrating unit. This product has been shown to reduce fuel consumption by 70% compared to the conventional dehydrating technology, in drying shiitake mushroom. Simple button operation allows full-automation to produce the best quality of dried foods regardless of the operator's knowledge and experience.

Sample Projects

The SM / F / FS series of food dryers have been sold over 2,000 units in 10 years. Overseas product introduction results within 10 years are in Russia, Thailand, Sri Lanka, Indonesia, Korea, China, Lao PDR, and Vietnam.

Website: <https://www.kiharaworks.com/en/>
Contact: Mr. Toshimasa KIHARA toshimasa-kihara@kiharaworks.com



MARS Company

Food value chain

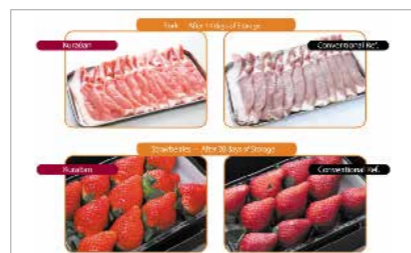
Unique Refrigerating Machines with Supercooling Technology for High-Quality Food Preservation “Kuraban”

Target Area
Cold chain

Technology
“Kuraban” has a great advantage in refrigeration technology which enables us to keep fishery and agricultural products fresh in for a long time. By applying a special electric field in the refrigerator using N-Te-Fe system, it is possible to carry out refrigeration storage for a long period without freezing food even under freezing point, as well as performing antibacterial and oxidation control.



Sample Projects
The product operates in various places such as hotels, restaurants and meat shops in various countries which include Japan and four other countries.



Website: www.mars-company.jp/
Contact: Mr. Masaki OHNO (CEO) contact_us@mars-company.jp

MARS Company

Food value chain

Special Ice Maker from Salty Water for Fish Preservation: “sea snow”

Target Area
Cold chain

Technology
The “sea snow” produces snow-like ice from seawater or salty water. It enables to keep fishery products very fresh by storing products refrigerated at -1 degree with 1% salt concentration, which is almost identical to that of the fluid inside fish bodies. Also, it helps to prevent scratches and damage to the fish’s body during delivery. Moreover, it has an advantage in water conservation by using seawater instead of tap water so that it will contribute to reducing running costs.



Sample Projects
It has already been used in South Korea to maintain the freshness of common dolphinfish, which is difficult to maintain freshness especially in fishing boats and fishing ports.



Website: www.mars-company.jp/
Contact: Mr. Masaki OHNO (CEO) contact_us@mars-company.jp

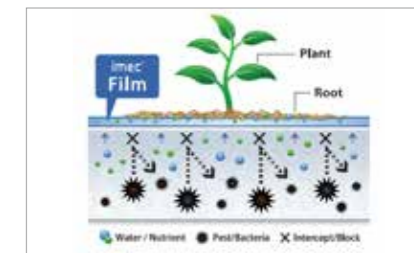
Mebiol Inc.

Production enhancement,
Adaptation to climate change

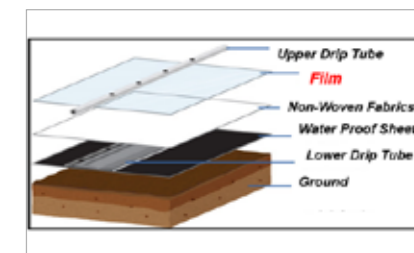
Sustainable Agriculture through Film Farming

Target Area
Agriculture

Technology
“Imec” is a film made of hydrogel for growing vegetables with less water. Using this method, agriculture can be done virtually anywhere -- even on desert land or concrete. The film eliminates soil contamination that can negatively impact crop productivity and quality.



Sample Projects
Imec was introduced for the first time in Japan in 2008. Over 330,000m² of Imec is being used and is still expanding. Imec is allowing people to produce high-quality tomatoes in difficult environments such as areas devastated by Tsunami in Japan, in the suburbs of Shanghai where concerns of soil contamination exist, and in the Dubai desert areas.



Website: www.mebiol.co.jp/en/
Contact: Dr. Hiroshi YOSHIOKA yoshioka@mebiol.co.jp

Nippon Basic Co., Ltd.

Water resource management

Desalination of Seawater for Drinking

Target Area
Water purification; Lack of water

Technology
The Desaliclean D9000 can produce 500 liters of clean drinking water per hour from seawater or brackish water by use of a gasoline engine. An electrical motor-driven Desaliclean is also available. Its dry weight is 120 kg. It measures W 550 x D 1,500 x H 780 mm. It can be carried by 2 persons, or can be moved by rolling on its casters.



Sample Projects
The Desaliclean has been used in Japan and Bangladesh. A new business is underway in Nigeria.

Website: nipponbasic.ecnet.jp/en/
Contact: Mr. Yuichi KATSUURA nipponbasic@ceres.ocn.ne.jp

Nippon Biodiesel Fuel Co., Ltd. (NBF)

Production enhancement
[Energy Technologies: Renewable energy]

Rural Energy Supply with Jatropha

Target Area
Poor energy access; Lack of liquid fuel

Technology
The package of technology includes cultivation of energy crops (Jatropha) and fuel production. Jatropha fuel can be a substitute for fossil fuels across multiple applications, such as agricultural machinery and maize mills. The model provides local residents with not only improved access to affordable energy, but also an opportunity to become producers of energy.

Sample Projects
Through the sales of Jatropha seeds and saplings to a major Japanese petroleum company and machinery manufacturers, Nippon Biodiesel Co., Ltd. has achieved revenues of about US\$0.8 million. The company has been supplying fuel in Japan for 2 diesel generators at local shops in rural villages, and also for 20 maize mills. A Mozambican mobile phone network operator has also been supplied fuel to conduct combustion tests.

Website: <https://nbf-web.com/en/top/>
Contact: Mr. Makoto GODA Makoto_Goda@nbf-web.com
Ms. Misaki SEKI seki@nbf-web.com



NEW

NISHIMURA MACHINE WORKS CO., LTD.

Food value chain

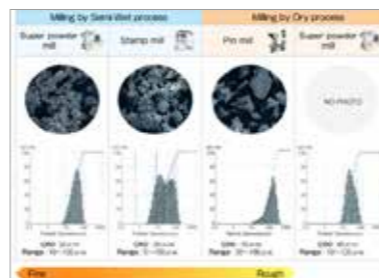
Rice Flour Making Machine and Technology by Semi-wet Method

Target Area
Rice processing

Technology
NISHIMURA machine technology has a long history of making rice flour as a substitute for wheat flour. It uses a semi-wet and airflow method to convert rice into flour without compromising the quality of the rice. It aims to improve the income of local rice producers by effectively using their rice and promoting the use of rice flour as a substitute for wheat flour, which helps to revitalize local economies.

Sample Projects
The product has been widely used in the Japanese market, and Southeast Asia, such as Thailand, Vietnam, Myanmar, Taiwan, and Korea.

Website: <https://www.econmw.co.jp>
Contact: Contact person: Mr. Motoki NISHIMURA nmoto@econmw.co.jp



Ele Mag Lab. Co.,Ltd (former O's&Tec Co.,Ltd.)

Food value chain

High Voltage Generator to Maintain Freshness "Wi-Free"

Target Area
Food storage

Technology
"Wi-Free" helps to prevent rotting and maintain freshness of the products through applying electrostatic field at a low temperature range (10 °C to -10 °C). It contributes to stabilize the supply of food, produces high quality frozen food products, and allows for a longer storage period. This technology can operate in general refer containers of 20ft or 40ft.

Sample Projects
The products were installed to containers owned by a marine transportation company in Vietnam. 20 units were installed to railway containers of Japan Freight Railway South-Kanto Logistics Company by using subsidies from the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) for low temperature transportation, in 2018.

Website: <https://www.ostec.co.jp/>
Contact: Mr. Kouichi OMURA k.omura@elemag-lab.co.jp
Mr. Ryu SHIOURA r.shioura@elemag-lab.co.jp



Website: www.sanso-elec.co.jp/en/
Contact: Ms. Kumiko HORIBE k-horibe@sanso-elec.co.jp

Water resource management
[Human Health Technologies: Public health]

Sanso Electric Co., Ltd.

Water Treatment Facility: "Desalion"

Target Area
Water Treatment

Technology
Desalion is the desalination apparatus based on RO (Reverse Osmosis) method, which treats sea water to produce clean and drinkable water. The concepts of Desalion meet the guideline of small water supply system by WHO. Desalion is a movable equipment, has high durability and can supply highly reliable drinking water.

Sample Projects
Sanso Electric has sold the equipment to Hyogo Prefecture in 2019 already, and it is expected to sell one unit each in Vietnam and the Philippines.



Website: www.sanso-elec.co.jp/en/
Contact: Ms. Kumiko HORIBE k-horibe@sanso-elec.co.jp

Shinmei Co., Ltd.

Food value chain, Production enhancement

Food Traceability Technology Utilizing QR Code, RFID IC Tag and Printer

Target Area
Food value chain

Technology
SHINMEI's direct thermal printer provides automation and labor saving of printing, labels, and package work. In addition to printers, SHINMEI can also provide traceability systems by printing ID on items such as QR code and IC tag, which enable the tracking of an item's production sequence, quantity of stock, purchased destination, and customers. It helps not only to improve the safety, quality and reliability of food/raw materials, but also to reduce costs and waste.

Sample Projects
Shinmei delivered its printers to a total of 4,000 users, and the traceability system has been introduced in several Japanese businesses.



Website: www.co-shinmei.com/en/
Contact: Mr. Manabu KAYAMA manabu.kayama@co-shinmei.com

TAIKI SANGYO CO., LTD.

Food value chain

Electric Food Dryer

Target Area
Drying of food and agricultural products

Technology
The company's electric dryer has many advantages compared to a dryer using kerosene or gas as a heat source; less CO2 emission, low running cost, less regular maintenance and much fewer failures than a dryer using oil. The company can provide a dryer with throughputs exceeding 100 kg/batch. Even if a power outage occurs, the original control algorithm automatically restores the same program just as before.

Sample Projects
Electric dryers have been sold in ASEAN countries, Sri Lanka and the USA. In Sudan, with the support of JICA, the company has supplied more than 20 units to preserve surplus harvested onion. Members of a local women's union got to be able to produce and sell dried onion products by themselves.



Website: www.taikisangyo.co.jp/english/
Contact: Mr. Soichiro YASUHARA yasuhara@taikisangyo.co.jp

TERAL INC.

Water resource management

DC Solar Pump System

Target Area
Water pump for unelectrified areas

Technology
TERAL INC. has developed the solar pump which directly utilizes Direct Current (DC) power generated by the solar panel without any intermediate conversion into Alternating Current (AC). The pump offers a built-in automatic control function and protection device. It has incompatible features due to low cost and high durability, as well as simplicity of construction work owing to the direct utilization of DC power. Our technology can be used in rural area with low costs.

Sample Projects
TERAL INC. installed two solar pump units in Senegal and conducted operation test. From 2019, this system will be installed to 16 sites in Senegal for further verification survey.



Website: www.teral.net/e/
Contact: Mr. Shigemi MINAGOME minagome00@teral.co.jp

TOHATSU CORPORATION

Water resource management [Disaster Management Technologies: Disaster emergency response]

Electronically Controlled 4 Stroke Fuel Injection Systems

(Model: VF53AS)

Target Area
Firefighting

Technology
Tohatsu Corporation's portable fire pump has been developed as a quick & first responder for building and brush fire. The superior portability & light weight can maximize the work efficiency. In addition, compared to standard pumps, CO emission is lowered by 43%, and HC and NOx emissions are lowered by 90%.

Sample Projects
The production started in 2006 and several thousand units were delivered to national fire agencies globally including Japan, China, Russia, Thailand, Singapore, Indonesia, Pakistan, Turkey and others.



Website: www.tohatsu.co.jp/en/
Contact: Mr. Genki TAMURA bousaie@tohatsu.co.jp

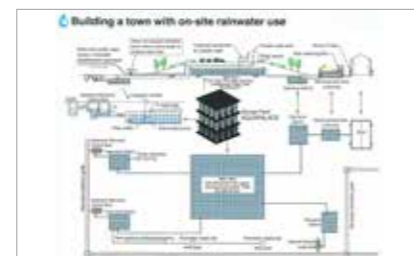
TOTETSU MFG. CO., LTD.

Water resource management

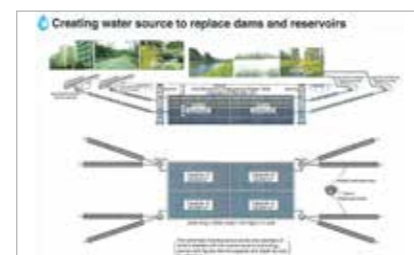
Rainwater Harvesting and Underground Storage

Target Area
Rainwater storage; Water purification

Technology
The system, equipped with a waterproof underground tank that is made of plastic units and waterproof sheet, removes 99.5% contaminants and has excellent resistance to earth pressure and earthquake.



Sample Projects
The company has installed 100 underground tank units in the last 3 years, and 30 purification system units in the last 2 years. This system is valued as a reliable technology in Japan.



Website: www.totetu.com/
Contact: Mr. Seiichiro TAKAI seiichiro.takai@totetu.com

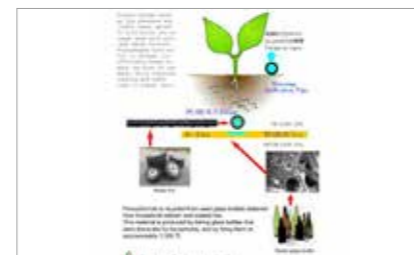
Tottori Resource Recycling Inc.

Production enhancement
[Environmental Technologies: Circular Economy]

Porous Alpha

Target Area
Cultivation in arid areas; Lack of water

Technology
The Porous System is a sustainable economic product made from wasted glass bottles and used rubber tires. This system has many pores through which water seeps out directly, and very slowly supplies water to plants by rendering water control very precise and effective. PorousAlpha results in retaining significant water content in soil.



Sample Projects
The effect of porous layers for water preservation in soil has been evaluated by Tottori University Arid Research Center in Japan. This system has already been implemented successfully by the "Institut Supérieur d'Enseignement Technologique (ISET)" in Mauritania. In 2017, the company established a local subsidiary to promote PorousAlpha and completed several projects.



Website: www.t-rrl.jp/en/overview/
Contact: Mr. Augustin IMBOLASON augustin.imbolason@t-rrl.jp

Tromso Co., Ltd.

Adaptation to climate change
[Environmental Technologies: Circular Economy]

Rice Husk Briquette Machine

Target Area
Lack of fuel; Deforestation

Technology
The rice husk briquette machine can produce useful fuels by using often-underutilized rice husks. The machine grinds and compresses rice husks with heat producing solid briquette fuels without using any binders or adhesives. The rice husk briquettes can be used as substitutes for firewood or charcoal, which contributes to forest preservation.



Sample Projects
The machine can produce 120kg of solid briquette per hour (approximately 1 ton in 8 hours). Tromso has manufactured rice husk briquette machines since 2007 and already sold more than 70 machines since establishment. 15 machines have also been exported to Tanzania, Nigeria, China, and Vietnam.



Website: tromso.co.jp/en/
Contact: Mr. Masaaki UESUGI info@tromso.co.jp

Y's Global Vision, Inc.

Water resource management
[Human Health Technologies: Public health]

Compact-Sized Desalination Device

Target Area
Desalination

Technology
A compact-sized desalination device called MYZ Series™ that is lightweight, small and portable for use on construction sites and cramped remote areas. It's also ideal for emergency situations.



Sample Projects
Exported to Vietnam, Laos, Thailand, the Philippines, Papua New Guinea, Sri Lanka, Indonesia and South Africa. More than 40 units in total.



Website: ysgv.jp/en/
Contact: Mr. Yoshifumi YANASE info@ysgv.jp

Human Health Technologies

- » **Public health**
(e.g. drinking water supply, prevention of infection, toilets)
- » **Monitoring and diagnostic equipment**
(e.g. simple equipment for health monitoring in remote areas)

AffordSENS Corporation

Public health

Vitalgram®-Patch Type Wearable Multi-Vital Sensing Technology for Health Monitoring

Target Area

Vital sensing for health monitoring

Technology

Vitalgram® is a microsensor to measure vital parameters concurrently. Once it is tied on the chest, it will continue sensing electrocardiogram (ECG/EKG), heart rate, respiration rate, core body temperature, and inner temperature as well as the body's motion and posture. Moreover, it can also monitor ambient temperature, humidity, and atmospheric pressure. The product can be efficiently applied to health monitoring and emergency prevention for the elderly and operators engaged in high workload.

Sample Projects

Vitalgram® has been sold about 400 sets for 5 years. For the monitoring purpose, automobile manufacturers used the product for the evaluation of fatigue and drowsiness of the driver. Home appliance manufacturers evaluated the comfortableness of subjects by utilizing the product.



Website: en.affordsens.com/

Contact: Dr. Kohei HIGUCHI

k-higuchi@affordsens.com

ARKRAY Japan

Monitoring and diagnostic equipment

ARKRAY Japan: Blood Biochemical Analyzer "The Lab 004"

Target Area

Diagnostic equipment

Technology

"The Lab 004" is a blood testing device that screens kidney and liver functions of HIV and/or Diabetes patients, for the purpose of monitoring potential side-effects from treatment drugs. Notably, its operational simplicity enables remote usage in Mobile Clinics, especially in areas where electricity is unstable as the device is powered by a mobile battery or the AC adaptor. Moreover, its dry biochemistry technology is well suited for environments with water shortages and/or absence of drainage systems, shaping the device highly versatile and portable.

Sample Projects

The device has just been launched in February 2020, and its performance evaluations are planned in primary healthcare facilities in several sub-Saharan African countries.



Website: www.arkray.co.jp/english/index.html

Contact: Mr. Hironobu YOSHINAGA afinquiry@arkray.co.jp AGB-inquiry@arkray.co.jp

NEW

CHARMANT INC.

Public health

Ophthalmic Medical Equipment Made by Metal Processing Technologies

Target Area
Opht medical assistance

Technology
Products of CHARMANT, INC., developed by applying "metal processing technology" and "design technology based on ergonomics", are made of safe (low-allergy) and strong metal (titanium), enjoying the benefit of long duration of use. This means that they will be able to make a long-term contribution to developing countries. A face shield equipped with a high-performance film has been adopted not only to reduce the risk of infections but also in medical sites such as operating rooms in general hospitals and dental clinics where the securement of clear visual fields is emphasized.

Sample Projects
Products have spread globally from China to US, UK, France and Germany. The company also expects to supply public procurement and private business products under contracts with local importers/distributors in emerging and developing countries.

Website: <https://www.charmant.com/e/home>
Contact: Contact: Ms. Natsuko SATO Email: HQ_Inventory@charmant.com



Fujita Corporation

Public health

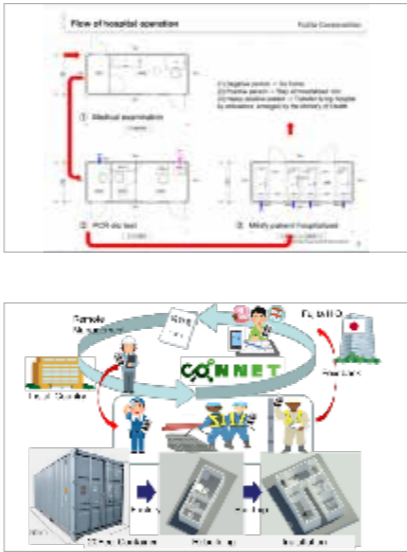
Container Unit "Quick & Easy Hospital" with Remote Supervision IT System

Target Area
Construction of a packaged medical unit

Technology
With the rapid increase in demand for hospitalization units, Fujita Corporation has introduced a "One-package service" medical unit built of 20ft containers, providing a highly accessible and a mobile alternative to the conventional isolation wards. The unit is equipped with high quality Japanese design which prioritize durability, simplicity and availability, thus well suited for usage in developing countries. In addition, the remote supervising IT system (CONNET) is installed to manage constructions and is accessible from any WiFi-equipped environment through smart phones and tablets.

Sample Projects
The medical unit has been introduced in Mombasa, Kenya, and planned to expand in several other areas. The IT System "CONNET" has been introduced to countless construction sites with over total 1,000 users in total.

Website: www.fujita.com/
Contact: Mr. Kyoichi NAGASE kyoichi.nagase@fujita.co.jp



NEW

FURUNO ELECTRIC CO., LTD.

Monitoring and diagnostic equipment

Clinical Chemistry Analyzer "CA Series"

Target Area
Blood analysis

Technology
"CA Series", a series of clinical chemistry analyzers, performs tests on whole blood, serum, plasma or urine samples to determine concentrations of analytes to provide specific values which help diagnose and treat numerous diseases. The products realize a smaller minimum reaction volume than equivalent products, leading to the reduction of patient burden with a smaller amount of blood collection, reduction of water consumption and infectious wastewater with lower usage of water for washing, and more reasonable test cost with smaller reagent volume. Moreover, the series includes benchtop types of clinical chemistry analyzers, which can be installed in small-scale facilities and can be installed anywhere.

Sample Projects
The product operates in small to large scall size medical facilities. The company also manufactures the product series in various countries, such as Thailand, Vietnam, Indonesia, Malaysia, and Costa Rica.

Website: <https://www.furuno.co.jp/en/>
Contact: Mr. Kenji KITAGAWA support.medical01@furuno.co.jp



NEW

IGADEN CO., LTD.

Public health

Chemical-free Alkaline Water Production Equipment: "CLEVER SYSTEM®"

Target Area
Sterilization agent

Technology
It generates 90% alkaline water (pH: 12) and 10% hypochlorite water by electrolysis of tap water. This unit can also produce water with the exact opposite properties (pH: 2). The alkaline water is used for cleaning and sterilization, and the hypochlorite water is used for sterilization.

Sample Projects
Currently, the company is focusing on technology development in Japan and only travels overseas for technical research. However, with the cooperation from trading companies and sales agency agreements in Japan, they have conducted overseas exhibitions in Vietnam, Thailand, the Philippines, Malaysia, and other countries.

Website: <http://www.igaden.com/sp/index%20English.htm>
Contact: Mr. Satoru IGARASHI idj@igaden.com



KANAZAWA INDUSTRY CO., LTD / AGC Inc.

Public health
[Agribusiness Technologies: Food value chain]

Electrolyzed Water Generator Incorporated with Ion Exchange Membrane

Target Area

Disinfectant (hypochlorous acid solution)

Technology

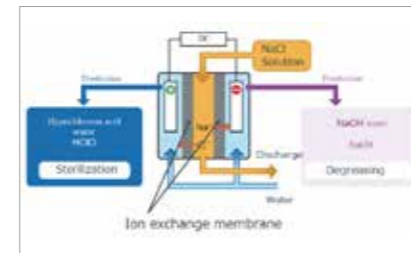
An electrolyzed water generator equipped with an ion exchange membrane was introduced in collaboration by Kanazawa Industry and AGC. The special membrane produces acidic electrolyzed water with bactericidal hypochlorous through electrolysis of aqueous salt solutions. The membrane, developed by AGC, is effective in electrolysis with its cation-filtering permeability and is composed of highly enduring, chemical-resistant fluorinated resins. Kanazawa Industry's water generator produces both salt-free acid and alkaline electrolyzed water that remove unwanted substances through emulsification, suited for implementation in food processing factories.

Sample Projects

The sales of the equipment in Japanese domestic market and international market are 1.4 billion JPY and 100 million JPY, respectively. The number of sales is 2,300 for domestic and 600 for international in 2016.

Website: www.agc.com/en/

Contact: Dr. Masaaki OKABE masaaki.okabe@agc.com



Lequio Power Technology Corp. and Okinawa Medical Device Co., Ltd.

Public health

Portable Ultrasound Scanner: US-304 series and fST series

Target Area

Diagnosis and health monitoring in remote areas

Technology

The companies provide portable ultrasound scanner with high resolution, simple function, and affordable price. This device and planned cloud learning services can contribute to promoting universal health coverage directly. Synchronized movie of probe handwork and ultrasound tomography "SyncView" will make it easier to check if you are scanning the correct position with the correct angle.

Sample Projects

About 500 devices were sold both in Japan and overseas. During the JICA's demonstration project in Sudan from 2015 to 2018, it was confirmed that midwives are capable to carry out ultrasound screening in antenatal care sufficiently, after simple training.



Website: www.lequipower.com

Contact: Ms. Naomi TAKARA takara@lequipower.com

MARUSYO SANGYO CO.,LTD.

Public health
[Environmental Technologies: Pollution prevention and control]

Antimicrobial Coating: Inviroshield M5

Target Area

Bio-decontamination by photocatalytic reaction

Technology

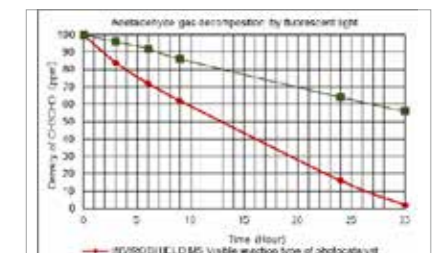
'Inviroshield M5' is a photocatalyst coating to eliminate pathogenic microorganisms and help to reduce infections in hospitals. This facilitates a decrease in ALOS (average length of stay), which will not only reduce medical expenditure but also increase the treatment availability to deprived patients in developing countries, ensure healthy lives and promote wellness for all. The coating agents can be systematically coated by using conventional spray guns and air compressors.

Sample Projects

In India, central government hospitals and municipality hospitals adopted this bio-decontamination technology for 5 years. The results were significant in the process of reduction of Infant Mortality rate in the Safdarjung hospital (Central Government Hospital). Currently, this technology is also being adopted in AIIMS (All India Institute of Medical Sciences).

Website: marusyosangyo.jp/en/

Contact: Mr. Takayuki YOSHIKAWA yoshikawa@marusyosangyo.jp



Nanatsubaki Inc. (Matsuzawa kawataten Group)

Public health

Electrodeless Germicidal Lamp: "SVI (Super Virus Inactivity) Light"

Target Area

Disinfection of bacteria/virus

Technology

The product can instantly sterilize air, water and the surface of objects by irradiating various bacteria and viruses with ultraviolet C (UV-C) light derived from the electrodeless discharge. When it comes to disinfecting water, a small amount of ozone is generated to dissolve into water, which also has a bactericidal/antiviral effect. This lamp can be easily attached to existing equipment such as pipes of air conditioners.

Sample Projects

UV-C electrodeless lamps have been installed in Philippines and Brunei, and the number of sales has been increasing.

Website: en.7tsubaki.com/

Contact: Mr. Takahiro MATSUZAWA info@yane119.net



Microtech Inc.

Public health

Drinking Water Quality Analysis Technology

Target Area
Analysis of water quality

Technology
This technology performs monitoring of water quality to make sure that drinking water treatment systems work properly. It measures and analyzes turbidity, color and residual chlorine contained in potable water. The technology is especially used to monitor fiber membrane technologies as it can detect fiber break leakages that conventional detection methods overlook, and also can find pathogens, such as cryptosporidium. By digitally displaying the processed liquid state in membrane filtration processes, it can contribute to better yields and savings on utilities.

Sample Projects
The technology has proven to be effective since 2004. Over 1,000 units are currently operational at public drinking water treatment plants all over Japan.

Website: www.microtech.st/english/
Contact: Mr. Yu KOSHIZUKA y-koshizuka@microtech.st



Mitsubishi Chemical Aqua Solutions Co., Ltd.

Public health
[Environmental Technologies: Pollution prevention and control]

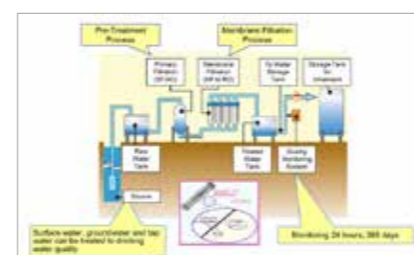
On-Site Water Treatment System

Target Area
Water purification

Technology
The company's small-scale, on-site water treatment and supply system utilizes existing water resources and treats the water into drinking water which meets drinking water quality standards. This water treatment system combines a pre-treatment process and membrane separation technology, to remove contaminants such as viruses, bacteria, anti-chlorine protozoa, iron, manganese and arsenic.

Sample Projects
As of April 2019, more than 1,250 water treatment systems has been installed in Japan and a few pilot systems in Kenya and Vietnam had been operated.

Website: www.mcas.co.jp/en/
Contact: Mr. Suguru KUDO kudo.suguru.ma@m-chemical.co.jp



Nasc Nanotechnology Co., Ltd.

Public health
[Environmental Technologies: Pollution prevention and control]

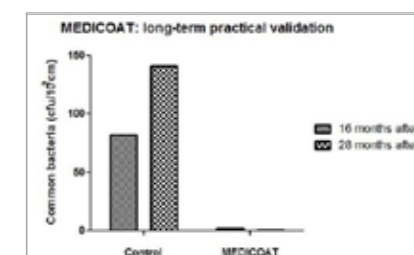
Multifunctional Nano-coating Technology

Target Area
Bacterial infections in public areas

Technology
The company's nano-coating technology called "MEDICAL NANO COAT" provides round-the-clock antimicrobial coverage without need for daily maintenance. MEDICAL NANO COAT provides a preventive solution for combating Hospital Acquired Infections (HAI) and transmission of communicable diseases in public areas. The MEDICAL NANO COAT consists of two coating solutions. By simply applying the solutions to target surfaces with a clean cloth and then with a spray gun, antibacterial protection can be provided.

Sample Projects
Since 2010, this technology has been introduced in various locations in Japan, such as the Tokyo and Kansai International Airports, municipal emergency medical treatment centers, city halls, subway transit systems and food processing plants.

Website: <https://nasc-nano.com/service/medicalnanocoat/english.html>
Contact: Ms. Ihoko TADA medi@medi-coat.com



NEW STANDARD'S Co., Ltd.

Public health
[Agribusiness Technologies: Water resource management]

AWG (Atmospheric Water Generator) with Ultra-efficient Condensation System "Sarastear®"

Target Area
Drinking water supply

Technology
"Sarastear®" offers a practical solution to areas with insufficient water purification facilities, with its water-producing server that revolutionarily condenses and filters moisture in the surrounding air to produce clean drinking water. Moisture collection occurs through a strict filtration, which is then condensed, stored and subsequently transformed into drinkable water through a virus-removing five-filter system and deep ultraviolet LED. This water server filters the stored water every three hours to the constant supply of fresh and clean water.

Sample Projects
The sales of "Sarastear®" officially began in Japan in 2018. Since then, over 300 units of Sarastear-neo20 (Home & Office Series) have been installed globally to countries including Nigeria, Kenya, Cote d'Ivoire, Malaysia, Singapore, Thailand, India and China.

Website: www.sarastear.com/en/
Contact: Mr. Kenichi TAKAHASHI info@newstandards.jp



Nippon Basic Co., Ltd.

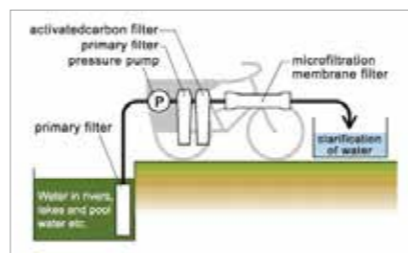
Public health
[Environmental Technologies: Pollution prevention and control]

Bicycle-Powered Water Purifying Equipment

Target Area
Water purification; Lack of water

Technology
This technology can make clean drinking water from raw water, such as water obtained from rivers, lakes and swimming pools, without need for electrical power. A unit made up of a microfiltration membrane, a hybrid carbon filter and a primary filter is fixed at the rear seat of a custom-made stationary bicycle, allowing users to produce clean water by just working the bicycle pedals. The technology can produce 5 liters of water per minute.

Sample Projects
The company's water purifying bicycle has been sold to condominiums, old age care homes, laboratories and municipal offices in Japan, and also in Bangladesh, Indonesia, Myanmar, the Philippines, China, Thailand and India.



Website: nipponbasic.ecnet.jp/en/
Contact: Mr. Yuichi KATSUURA nipponbasic@ceres.ocn.ne.jp

Old Faithful Japan Co., Ltd.

Public health
[Environmental Technologies: Pollution prevention and control]

Clean Move

Target Area
Water contamination from cleaning materials

Technology
Clean Move is an all-natural and multiple-purpose detergent for washing and cleaning a variety of objects such as tableware, clothing, buildings, cars, baby's diapers, baby bottles, etc. It is also cost effective and easy to manufacture.

Sample Projects
The technical transfer costs 15 million yen, which includes the cost for the three-day hands-on training conducted in Japan, one manufacturing machine and a complete set of equipment necessary for the production.



Website: of-j.com/index.html
Contact: Mr. Kazuaki IMAMURA imamura@of-j.com

NEW
Plus Lab Co., Ltd.

Public health [Environmental Technologies : Circular Economy (3R)]

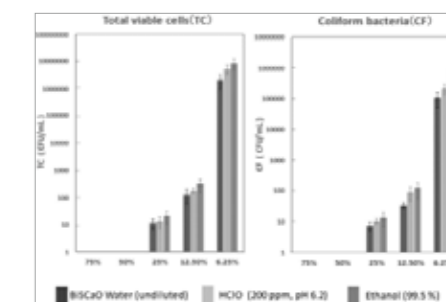
Sterilising Agent Synthesized from Calcium Oxide "BiSCaO®": Calcined Scallop-shell with Advanced Manufacturing.

Target Area
Disinfectant

Technology
Disinfectant "BiSCaO Water" is produced by automatic adding BiSCaO® to chilled clean water and decanting the supernatant into a separate container with reduced air contact. It has superior disinfection and deodorisation performances than the other commercial heated scallop-shell products (starting now called HSSPs). Furthermore, BiSCaO Water is a potent reagent that may overcome the obstacles of being strongly alkaline, making this material appropriate for disinfection against pathogenic microbes.

Sample Projects
The product has been used in various places in Japan and can also be in other countries where water quality is low. Plus Lab can partner with that manufacturer to develop a system to use BiSCaO or BiSCaO Water to purify water. In addition, Plus Lab will work with the importer in an emerging country efficiently and correctly handle.

Website: https://pluslab-mi.co.jp/en/
Contact: Mr. Shinichi SAWADA s.sawada@pluslab-mi.co.jp



Saraya Co., Ltd.

Public health

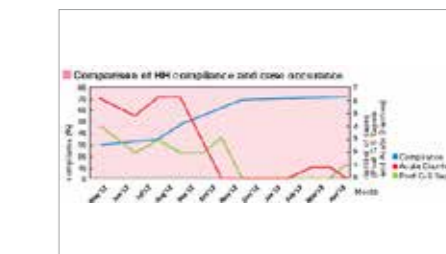
Anti-Viral Alcohol-Based Hand Rub and Improvement of Hygiene Environment through Infection Prevention and Control by Hygiene Instructors

Target Area
Disinfectant (alcohol) and hygiene instruction

Technology
Alsoft V is an alcohol-based hand sanitizer which is highly effective against a wide range of microorganisms such as general bacteria, fungi and also non-enveloped viruses that are generally deemed alcohol-resistant. The product is proven to be effective against Ebola and the corona virus, and also meets the requirements of WHO's recommended prescription, shaping it well suited for developing countries. In order to maximize awareness on hand hygiene in the medical field, hygiene instructors will also be introduced to provide local consulting services.

Sample Projects
The high efficacy (>99.99%) of Alsoft V against enveloped and non-enveloped viruses was proven in Germany. Alsoft V was the flagship product of Saraya Co. Ltd's 2010 sales, and the hygiene instructors have been trained since 1989.

Website: worldwide.saraya.com/
Contact: Ms. Tamaro Stephanie NAKAMURA nakamuratamaro@global.saraya.com



Sion Corporation

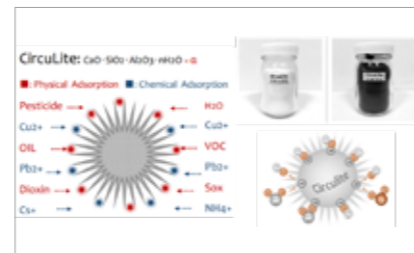
Public health
[Environmental Technologies: Circular Economy (3R)]

Anti-Virus/Microbe Porous Material and Applied Equipment

Target Area
Antibacterial functional material

Technology
The company has developed the inorganic composite called 'CircuLite' utilizing biomass ash waste. CircuLite is a powdered material that owns the two main functions, a broad range of pore size distribution and ion exchange capacity. It can change chemical characteristics by replacing exchangeable ionic charge with Alkali metal. For example, 'CircuLite-Zn' is synthesized by replacing it with zinc ion that has antibacterial and antivirus effects. In addition, CircuLite-Zn has been applied for the hygiene improvement, by kneading it in a filter material like no-woven fabric.

Sample Projects
Masks made from non-woven fabrics with CircuLite-Zn have been produced and sold in Taiwan. Sion Corporation is planning to utilize this technology for air purification devices.



Website: www.sion66v.com
Contact: Shunsuke KUMAGAI sean@sion66v.com

Solar Wind Technology inc., KANKYO BUNKA KENKYUSHO Co., Ltd., and Aga Material Co., Ltd.

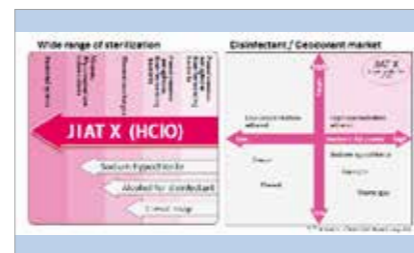
Public health

JIATX: Long-lasting Disinfectant Manufactured from Hypochlorous Acid Solution Disinfection by hypochlorous acid

Target Area
Disinfectant (hypochlorous acid solution)

Technology
JIAT X is an anti-bacterial and deodorant solution that supersedes alcohol, and perfectly harmless to humans and animals. The product uses a special method that enables the manufacture of the product just by utilizing sodium hypochlorite (NaClO). They offer excellent functionality at a reasonable price compared to other competitive products. They can also offer a concentrate (around 600ppm of available chlorine) to be diluted when using.

Sample Projects
The number of monthly sales in spray bottles exceeded 10,000. Moreover, the potential market of JIAT X is widely spreading to places where an unspecified number of people gather, such as public transportation, hospitals, schools, and many other facilities.



Website: product.solarwindtech.jp/
Contact: Mr. Tatsuhiko NAKAZAWA hikari@solarwindtech.jp

Techno Medica Co., Ltd.

Monitoring and diagnostic equipment
[Agribusiness Technologies: Production enhancement]

Portable Electrolyte Analyser: STAX-5 inspire

Target Area
Diagnosis and health monitoring

Technology
STAX-5 is a Point-of-Care Testing analyzer for in vitro diagnostic use by health care professionals. It enables us to examine cNa+, cK+, cCl-, cCa2+, cMg2+, pH, pCO2 (partial pressure of CO2), Hct (hematocrit) easily and rapidly by using the disposal sensor card with only 10 microliters of blood. Besides medical use, it can also be used for the measurement and quality control of fertilizer concentration in hydroponics in the agricultural field.

Sample Projects
STAX-5 is the 4th generation of the company's electrolyte analyzer that has been marketed in 2014. In developing nations, the product is exported to Afghanistan, Bangladesh, Egypt, India, Nepal and Pakistan through sales agents.



Website: www.technomedica.co.jp/t01/EnglishPage/index.html
Contact: Mr. Eiichi GOTO Overseas@technomedica.co.jp

Terios-Tec Co., Ltd., and Parks Co., Ltd

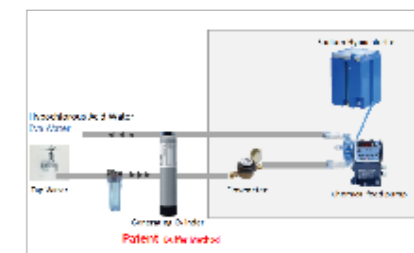
Public health

Hypochlorous Acid Solution Manufacturing Equipment (Patented Technology: Buffer Method)

Target Area
Disinfectant (hypochlorous acid solution)

Technology
In response to the increasing demand of safe disinfectants, "Eva Water", the hypochlorous acid (HOCL)-based sanitizer, was developed to provide a harmless, user-friendly and cost-efficient solution in improving hygiene management globally. In generating the hypochlorous acid water, "Eva Water" is equipped with a pH buffer which facilitates ion-exchange reactions. To increase practicality, users can choose "Eva Pot", equipped with identical functionality but smaller in size. With the presence of raw material water, "Eva Water" could be generated unlimitedly, in terms of quantity or location.

Sample Projects
"Eva Water" has been used in nursing homes, schools, banks and many other facilities within Japan, and its five manufacturing plants including subcontract factories are all located domestically.



Website: www.teriostec.jp/en/
Contact: Mr. Yasuo OGATA y-ogata@teriostec.jp

Tokyo Boeki Medysis Inc.

Monitoring and diagnostic equipment

Fully Automated Clinical Analyser "BIOLIS 30i"

Target Area
Diagnostic equipment

Technology
BIOLIS 30i is an open system, compact benchtop design, fully automated analyser for Clinical-Chemistry (e.g.: HbA1c), Immuno-Assay (e.g.: CRP), Drugs (TDM and DOA) and Coagulation (e.g.: D Dimer). The reaction cuvettes are semi-disposable (reusable). The Ion Selective Electrode (ISE) for Na+, Ca+ and Cl- is available as an option. The throughput is 270 tests/hour (with ISE 450 tests/hour). It is suitable for routine operation in small-size hospital labs and back-up operation in middle-size hospital labs.

Sample Projects
As of December 2020, more than 800 units are sold to hospitals mainly in Russia, USA and ASEAN countries. The company is interested in expanding sales to Sub-Saharan countries.

Website: www.tb-medisys.co.jp/english/
Contact: Mr. Kazutaka NAKAMURA nakamura-k@tokyo-boeki.co.jp



Public health
[Environmental Technologies: Circular Economy (3R)]

Tromso Co., Ltd.

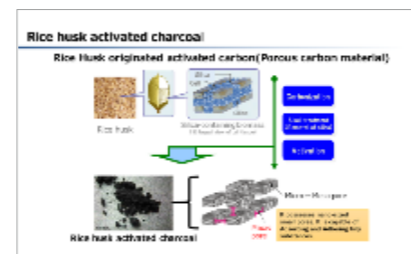
Water Purifier "Welvina" Series

Target Area
Water purification

Technology
"Welvina" is a water purifying device, equipped with a charcoal filter composed of rice husk, instead of the conventional coconut shell, to maximize its performance in removing water impurities. In comparison to its coconut shell counterparts, "Welvina" excels in porousness, resulting in a higher rate of eliminating water impurities. Most notably, the device produces more silica components in filtrated water, which are proven to enhance support and self-recovery of the immune system, as well as to provide minerals to skin, hair and body when consumed.

Sample Projects
As of July 2020, 30,000 units of "Welvina" are being planned for implementation in Soc Trang province of Vietnam, between 2020 and 2024. In Japan, approximately 2,500 units have been sold as of the same date.

Website: tromso.co.jp/en/
Contact: Mr. Yuichi YANAKA y_yanaka@tromso.co.jp



TSP TAIYO INC.

Public health, Monitoring and diagnostic equipment

Mobile Inspection System with Solar Modules

Target Area
Testing facility for non-electrified areas

Technology
Due to the COVID-19 outbreak, the global demand for PCR (polymerase chain reaction) testing facilities has risen significantly despite of their arduous implementation procedures. TSP TAIYO INC. provides a solution: testing facilities equipped with solar panels and battery units, which can operate in developing countries under electricity shortages. Moreover, specimens are collected through transparent panels in individual booths, hence minimizing the risk of infection and the cost for heavy personal protective equipment. The facility also increases mobility of medical services, increasing daily tests for 100-200.

Sample Projects
As of September 2020, TSP TAIYO INC's testing facility was installed in Miyagi and the Metropolitan Tokyo area of Japan for sample collection and storage.

Website: www.tsp-taiyo.co.jp/eng/
Contact: Mr. Takayuki NISHI nishi@tsp-taiyo.co.jp



Public health
[Environmental Technologies: Pollution prevention and control]

Yamaha Motor Co., Ltd.

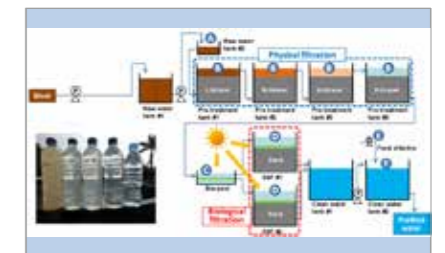
Clean Water Supply System for Rural Areas

Target Area
Water, Sanitation and Hygiene (WASH)

Technology
Yamaha's Clean Water Supply System is a water purification facility using slow sand filtration intended to provide rural residents with clean drinking water. As most rural areas are not yet connected to an electrical grid, a solar photovoltaic system is available within the same package to provide the power source. This system significantly contributes to sanitation and health conditions.

Sample Projects
The system has been operated since 2003. To date, 16 units have been installed in Indonesia and other ASEAN nations, and 27 units in Senegal, Madagascar and other African countries. In Ethiopia, the company installed 1 facility in the project organized by UNIDO.

Website: <https://global.yamaha-motor.com/business/cw/>
Contact: Mr. Masashi KANEMARU kanemarum@yamaha-motor.co.jp



YIELD Co., Ltd.

Public health
[Environmental Technologies: Pollution prevention and control]

Utility TiO₂ catalyst: Photocatalyst Titanystar

Target Area

Water treatment

Technology

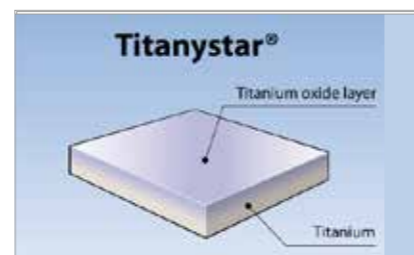
Yield Co., Ltd. has the technology to clean undrinkable water to make safe drinking water through the use of a photocatalyst. The photocatalyst found in Japan has excellent purification abilities to decompose and remove most harmful substances simply by receiving ultraviolet rays. Disinfectant for water such as chlorine and ozone becomes unnecessary, and chemical-free and clean drinking water can be provided.

Sample Projects

Number of sales in Japan reaches to a cumulative total about 30,000 pieces or more since the year 2000. For overseas, a cumulative total of about 2,000 pieces have been sold to France, UK, Russia, New Zealand, Singapore, Malaysia, India and Taiwan since the year 2004.

Website: www.yield-kyoto.com/en/

Contact: Mr. Yoshihisa ITOH itoh@yield-kyoto.com



Disaster Management technologies

- » **Disater alert system**
(e.g. alert for earthquakes, lightning strikes or floods)
- » **Disaster prevention and preparedness**
(e.g. lope collapse prevention, damping devices, lightning arresters)
- » **Disaster emetgency response**
(e.g. ex: temporary accommodation and related equipment, logistic systems for relief goods)



NEW

Challenge Co., Ltd.

Disaster alert systems

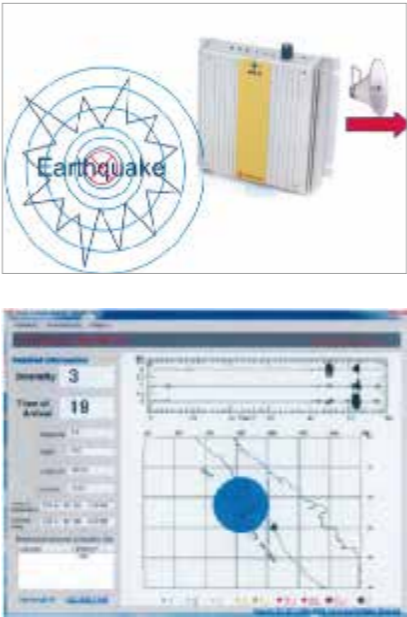
Earthquake Sensor Alarm Device "EQ guard"

Target Area
Earthquake alert

Technology
This device has specialized software to distinguish between earthquake and living noise generated close to this device, which prevents from the issuing of erroneous alarm. Earthquake sensor alarm device issue alarm by selected language from 11 languages, Japanese, English, Chinese, Korean, Indonesian, Persian, Turkish, Spanish, Portuguese, Russian and Arabic. This device can display the seismic intensity of each observation point on the map at real-time. Control signals of this device can be issued to shut down chemical plants, nuclear facilities beforehand. This device can save people's life and infrastructure.

Sample Projects
Customers: 1,000 sets installed.
In Japan: School, kindergartens, hospital etc.
Overseas: Indonesia, Korea, Turkey, Romania, Ghana, Kazakhstan

Website: <http://challengego.co.jp/english.html>
Contact: Contact: Mr. Kazuo SASAKI ksasaki@challengego.co.jp



Disaster prevention and preparedness
[Agribusiness Technologies: Adaptation to climate change]

GIKEN LTD.

Press-in Method (Piling technology) with "Silent Piler"

Target Area
Construction with eco-friendly piling

Technology
The strength of Silent Piler is low noise/vibration and compactness, so that it can be used in constrained areas, such as overwater, areas with restricted headroom, and construction sites alongside existing buildings. It allows the installation of piles without a temporary stage, and hence reduces the construction cost and period.

Sample Projects
Press-in Method has been adopted in more than 40 countries worldwide such as Senegal, Egypt, Bangladesh, Sri Lanka, Philippines, China, Singapore, Vietnam, Cambodia, Myanmar, Taiwan, Indonesia, Mexico, Russia.

Website: <https://www.giken.com/en/>
Contact: Mr. Takuya FUNAHARA project@giken.com



NEW

Kyowa Industrial Co., Ltd.

Disaster prevention and preparedness
[Agribusiness Technologies : Water resource management]

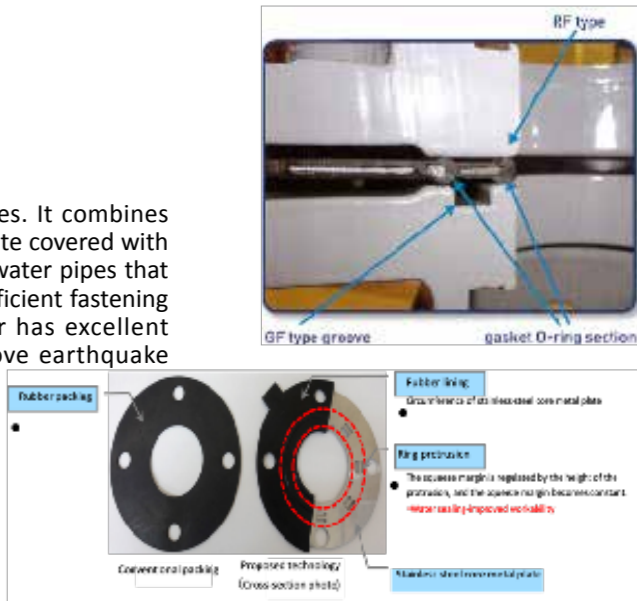
Reinforcing Joint Packing for Flange: LSP

Target Area
Prevention of water leakage

Technology
LSP technology provides packing for connecting piping flanges. It combines packing with a specially structured stainless steel core metal plate covered with rubber and loosening prevention bolts and nuts. It constructs water pipes that do not leak water even if there is a bolt fastening failure (insufficient fastening torque) due to the differences in workers' skills. It further has excellent workability and water leakage resistance. It can also improve earthquake resistance.

Sample Projects
The product has been adopted by about 454 out of about 1400 companies nationwide.

Website: <https://www.kyowa-ind.co.jp/en/>
Contact: Contact person: Mr. Katsuya SHIMIZU E-mail: katsuya@kyowakk.com



NEW

Matsushima Measure Tech Co., Ltd.

Disaster alert systems

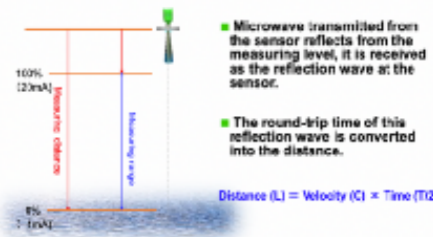
Radar Type River Water Level Transmitter

Target Area
Flood warning

Technology
Radar Type River Water Level Transmitter is the non-contact type measuring instrument which shall be mounted above the river (no need to be submerged in the river water) and therefore no risks to be damaged by the river conditions, and furthermore, it provides stable measurement without any influence from the weather conditions because of the characteristic of electromagnetic wave principle. "MWLM series" with its high efficiency Microwave Integrated Circuit and signal conditioning system realizes such stable continuous river water level monitoring even under typhoon, storm, heavy rain, etc.

Sample Projects
In Japan, 50 transmitters have been successfully installed to the domestic rivers. All of them have been working (measuring real time river water level) continuously 24 hours 365 days a year without any fault.

Website: <https://www.matsushima-m-tech.com/english/>
Contact: Contact: Mr. Kazuhito MAEDA E-mail: info@matsushima-m-tech.com



Disaster emergency response
[Environmental Technologies: Circular economy]

OOHASHI CO., LTD.

Durable Construction Temporary Road Mats Made of Recycled Polyethylene for Agricultural Roads and Working Platforms

Target Area
Road material for agriculture and air operation

Technology
The company collects low-density polyethylene covering from discarded electric cables and reproduce as high-density polyethylene plates. It is called Repy Board® and has excellent mechanical properties. Repy Board® offers ideal solutions to construct temporary roads to support the traffic of vehicles and farmer's access to the markets in rural areas. Temporal helipad, HELIBOARD® can be organized by the combination of Repy Boards® in a couple of hours.

Sample Projects
4,000 m² of Repy Board® has been installed in Thailand and Vietnam. 5 units of HELIBOARD® have been supplied to the Ministry of Land, Infrastructure, Transportation and Tourism (MLIT) in Japan.



Website: www.oohasi.co.jp/en/index.html
Contact: Dr. Takeo SHIONO shiono@oohasi.co.jp

Disaster prevention and preparedness
[Agribusiness Technologies: Adaptation to climate change]

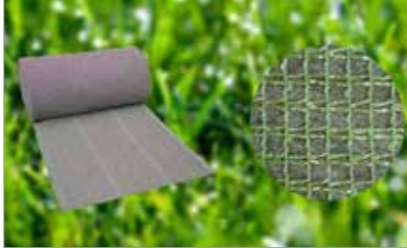
Takino Filter Inc.

Production Enhancement: Takino Filter Growing Mats

Target Area
Agriculture

Technology
Greening mats called Takino Filter prevent soil erosion for civil engineering projects aiming to repair and green the bare slopes that are found in public works projects handling natural disasters, resource development and infrastructure maintenance. The mats improve the soil environment which is highly correlated with plant growth while simultaneously preventing soil erosion. This protects the soil and achieves lasting greening.

Sample Projects
Takino Filter was sold in the Philippines (6,600m²), Honduras (2,600m²) and Taiwan (1,250m²). It has also been applied to the foot of the mountain for environmental remediation, in Indonesia.



Website: <https://www.takinofilter.com/index.html>
Contact: Mr. Kenji FUJII fujii@takino.co.jp

Disaster prevention and preparedness
[Environmental Technologies: Pollution prevention and control]

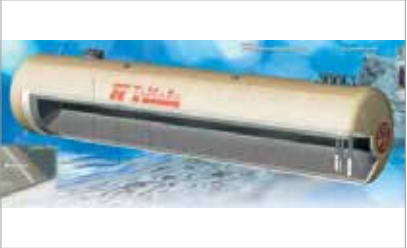
TAMADA CORPORATION

SF Double-Wall Tank

Target Area
Pollution prevention

Technology
The company manufactures SF (steel and fiber reinforced plastic) double-wall tank, which is an underground tank for storing liquid fuel and chemical products. It is designed for installation at gas stations and other facilities that store hazardous materials. Utilizing proprietary technology, this double-wall structure is comprised of a primary steel tank and a secondary FRP tank.

Sample Projects
A number of countries, including Japan, require SF double-wall tanks as a part of their environmental conservation regulations. The technology has been shared in China, Thailand, Malaysia and Vietnam.



Website: www.tamada.co.jp/english/
Contact: Mr. Takamitsu AKAIKE takamitsu_akaie@tamada.co.jp
info-overseas@tamada.co.jp

Energy Technologies

- Renewable energy
- Energy saving and energy storage
- Utilization of unused resources

Environmental Technologies

- Pollution prevention and control
- Waste treatment and management
- Circular economy

Agribusiness Technologies

- Food value chain
- Production enhancement
- Adaptation to climate change
- Water resource management

Human Health Technologies

- Public health
- Monitoring and diagnostic equipment

Disaster Management Technologies

- Disaster alert system
- Disaster prevention and preparedness
- Disaster emergency response

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