

Japanese Companies Profile

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Japanese Companies Profile

A diagonal grey line pointing towards the date and organization text.

Jan. 09th, 2018

Japan External Trade Organization

Water & Environment Sector

1. Hitachi Zosen Corporation
2. Horiba Instruments (Singapore) Pte Ltd
3. Iwatani
4. JFE Engineering Corporation
5. Kajima Corporation
6. Toshiba Mitsubishi-Electric Industrial System Corporation
7. Tsubaco Singapore Pte Ltd
8. Yokogawa Electric International

Water Sector

9. Asahi Yukizai Corporation/Asahi Asia Pacific Pte. Ltd
10. Fujiwara Industry
11. Kitakikai Sangyo
12. Nihon Suido Consultants
13. Oasys Solution Global Pte Ltd
14. Shibata
15. Toagosei

Environment Sector

16. Daimaru-Bouon
17. Dowa Eco System Pte Ltd
18. Elcom
19. NEC Corporation
20. Sanyukiki
21. Sinkipia - Japan
22. Tokyo Sangyo/Kyowakiden Industry (UPDATE: includes water sector technology)

Water & Environment Sector

Hitachi Zosen Corporation

<http://www.hitachizosen.co.jp/english/pickup/pickup002.html>

Hitachi Zosen

Products / Technologies to be introduced

Municipal Solid Waste
Waste to Energy (WtE) plant

Application

For WtE plant owners/investors of municipal solid waste management (treatment) systems who makes procurement of quality equipment systems.

Large scale waste treatment in Singapore to meet challenges in landfill/waste volume reduction, efficient waste treatment.

Features and Superiority

- the most proven technology, and it is possible to achieve stable operation.
- possible to treat a large amount of waste.
- flexibly in adjusting fluctuation of waste quality.
- not necessary to pre-treat waste.

Expected effect by introducing this technology

Waste volume reduction : typically about 90% of solid waste



Counterpart we would like to meet with

Construction company (Civil, Mechanical etc.) Ideally having a wealth of experience in the field of installation and civil, erection work for industrial and/or public large scale plant facilities.

Sales result

485 WtE Plants Municipal government (Tokyo, Osaka, etc) and related affiliated bodies

- 14 WtE plants in mainland China (Engineering & Procurement only)
- 8 WtE plants in South Korea (Engineering & Procurement only)
- 5 WtE plants in Taiwan • 2 WtE plants in Thailand
- 1 WtE plant each in India, Malaysia, and Vietnam etc

Hitachi Zosen Corporation

<http://www.hitachizosen.co.jp/english/release/2015/12/001943.html>

Products / Technologies to be introduced

「MARIMO」 which is fiber filtration technology to make recycled water from effluent instead of sand filtration.

Application

For PUB and corporation which has plan to install facility of recycled water. Clients who consider a plan to install recycled water facility though it is difficult to keep amount of treated water due to footprint.

Features and Superiority

1. It is not required to exchange all media like sand filtration.
2. Power of backwashing pump will be smaller compared with sand filtration.
3. Amount of water for backwashing will be fewer compared with sand filtration.

Expected effect by introducing this technology

OPEX of MARIMO will be more economical than that of sand filtration.

Hitachi Zosen



MARIMO

Counterpart we would like to meet with



The expecting networking partner is PUB in charge of recycled water project, or their contractor such as consulting company.

Sales result

About 30 projects for Municipality or Public sector

Hitachi Zosen Corporation

<http://www.hitachizosen.co.jp/english/technology/hitz-tech/environment01.html>

Products / Technologies to be introduced

High-speed Seabed Infiltration System 「HiSIS」 for desalination plant

Application

Corporation who considers desalination project

Clients who have a desalination project which requires intake facility.

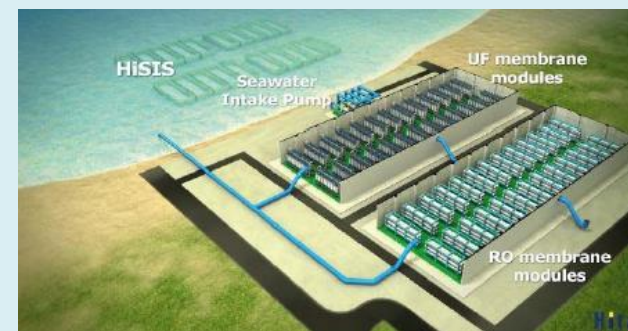
Features and Superiority

1. Chlorine feeding is not required to prevent pipe from biofouling.
2. Footprint will be smaller since filtration rate of HiSIS is faster than that of conventional seabed infiltration.

Expected effect by introducing this technology

Chemical cost will be decreased due to no requirement of chlorine feeding.
Moreover reducing agent is no need to remove chlorine in order to keep lifetime of RO material.

Hitachi Zosen



HiSIS

Counterpart we would like to meet with



The expecting networking partner is PUB in charge of Desalination project, or their contractor such as consulting company.

Sales result

Reference in Middle East region

HORIBA Instruments (Singapore) Pte Ltd

HORIBA
Process & Environmental

<http://www.horiba.com/sg/process-environmental/>

Products / Technologies to be introduced

Gas analyzer (Stack Gas analyzer, Ambient analyzer etc)

Water analyzer (On-line analyzer, portable analyzer etc)

Application

For Factory, Waste treatment plant, NEA, PUB etc

- Long term stable measurement for environmental monitoring
- Monitoring of parameter to increase the efficiency of production

Features and Superiority

- Reducing maintenance cost
- More stable measurement for longer term

Counterpart we would like to meet with



Engineering



NEA



Others

- Engineering companies who have potential to work together
- Manufacturing facilities
- University research institutes

Sales result

Sold to several Power plant, Steel plant, Cement plant, Paper mill, Chemical plant, Refinery, Waste water treatment plant, Drinking water plant etc.

HORIBA Instruments (Singapore) Pte Ltd

HORIBA
Process & Environmental

<http://www.horiba.com/sg/process-environmental/products/water-treatment-environment/drainage-water/details/ammo>

Products / Technologies to be introduced

Ammonia Nitrogen Meter HC-200NH

Application

For Aeration control in Waste water treatment plant

Conventionally, aeration tank is controlled by O₂ which is introduced through blower, however, this need to have huge energy. By controlling aeration tank by using NH₄-N base, it is possible to increase energy efficiency of the plant

Features and Superiority

1. It allow stable measurement by special PTFE protection filter on sensor. This prevent that microbes form bio filter on the sensor.
2. It allows to have long term measurement by using ultrasonic cleaner. This reduce maintenance period dramatically.
3. It allows to measure low sensitive NH₄-N by using most suitable internal solution in sensor
4. It is easy to replace sensor
5. Self diagnostic function notice the possibility of sensor error in advance.

Counterpart we would like to meet with



- Any possibility to do test of NH₄-N in PUB plant
- PUB contractors such as consulting companies

Sales result

Several Waste Water Treatment Plant

Iwatani Corporation

<http://www.kotobukikk.com/english/>

Iwatani Group
Iwatani Corporation (Singapore) Pte. Ltd.

Products / Technologies to be introduced

We have had an experience of water treatment as engineering company for 40 years and provided more than 5,000 solution to customer. We are able to propose equipment depending on the local challenging and meet on customer demand. We will provide the lower price as long as we can in order to cooperate with local construction company.

Application

For Those who need the waste water treatment equipment, especially those who has challenging below.

1. Public water is expensive, in addition to sewage treatment is also expensive and need to transact quite a lot of water.
2. Looking for automation system.

For above challenge, our solution will be :

1. It is able to make and provide recycling water from sewage depending on the customer requirement such as Secondary treatment (Sand filtration activated carbon treatment), or tertiary treatment (RO membrane treatment). the purpose is to reduce the sewage treatment and make use of recycling water as supply water.
2. We can provide monitoring system and remote control system for equipment trouble, and water management will help you saving staff.

Features and Superiority

Solution is different depending on the type of business, level of sewage , consumption , customer budget .

it can be produced recycling water for 70~80% of sewage, although it is depending on the condition of water clean level.



Counterpart we would like to meet with



1. PUB (We can propose efficient operation of recycling water, sludge treatment/dehydration, automation technology (remote monitoring, water cleanness control),
2. Water treatment engineering company dealing with new water plant, sludge treatment etc.
3. Facilities that are considering applying exhaust gas treatment and/or wastewater recycling (non-potable), and recycling facilities considering automation.

Sales result

5,000 project for 40 years, 150 project per year in Japan (Rapid filtration, Dissolved-air flotation, Biological treatment equipment etc)
Clean system for MRT in Singapore. Dissolved-air flotation in Philippines.

JFE Engineering (S) Pte Ltd

<http://www.jfe-eng.co.jp/en>



Company Profile

JFE Engineering is the comprehensive engineering arm of the JFE Group. We aim to become one of the world's leading engineering companies, addressing ever-changing needs with products and services that draw on the strengths of the JFE Group and state-of-the-art technology.

The company has its roots in steelmaking and shipbuilding businesses and has expanded its engineering business that underpins people's lives and industries in the fields of energy and the environment, and social infrastructure by blending and evolving its technologies.

Our business boasts the latest technologies and a wealth of experience in a wide variety of energy utilization methods in particular, including natural gas plants and pipelines and a power generation plant fueled by waste and sewage sludge. In recent years, we have been involved in renewable energy projects in areas such as biomass energy, geothermal power engineering and photovoltaic generation.

With regard to infrastructure development, such as transport and logistics systems as well as water supply and sewerage systems, the company has also been contributing to a great degree to the growth of developing countries with its high-standard technologies gained through the longstanding operations in Japan.

Products / Technologies to be introduced

We want to introduce Waste and Sludge management technologies that drastically reduce waste/ sludge to be disposed at landfill to achieve zero emission.



First Waste to Energy Plant in Myanmar Image © JFE Engineering

Counterpart we would like to meet with



PUB



End-users



Engineering



Others

- Engineering companies
- General Contractors
- PUB contractors such as consulting companies

Sales result

- (1) Waste to Energy Plant :
China, Thailand, Malaysia, Italy
- (2) Water Treatment Plant :
Philippines, Malaysia, Myanmar, Sri Lanka, Vietnam, China

Kajima Corporation

<https://www.kajima.co.jp/english/welcome.html>

Products / Technologies to be introduced

COSBIO (Co-digestion of sewage sludge and biomass)

Application

For, Sewage System Operator, Food industrial company, Food Waste disposal operator"

This technology can be applied to following challenge

- Already operated digester in sewage treatment plant, and need to increase biogas generation by receiving organic waste.
- Reduce the tipping fee of organic waste drastically.
- Reduction of fossil fuel usage to save the operational cost
- Reduction of the emission of CO2 gas."

Features and Superiority

- Installing COSBIO in existing WRP which has operating digester, save the initial cost by utilizing them.
- COSBIO is a pretreatment process which can remove the foreign solid like plastic bag and produce the slurry from kitchen waste at the same time.
- Mechanically remove inorganic materials like egg shell and burns. "

Expected effect by introducing this technology

- For the treatment of kitchen waste, so much of energy spent on dehydration and incineration, but COSBIO provides the benefit of saving those expenses.
- By accepting kitchen waste 15% of the weight of sewage sludge, biogas generation volume increase about two times.



COSBIO

Counterpart we would like to meet with



NEA



PUB



Engineering

PUB/NEA

- The personnel in charge of WRP
- The personnel who is in charge of evaluating new technology

Sales result

- 4 project. Municipal sewage treatment plant which has digester
- Municipal sewage treatment plant operator

Kajima Corporation



https://www.kajima.co.jp/tech/g_warming/metakles/index.html#pagetop

Products / Technologies to be introduced

METHACULES (Thermophilic down flow anaerobic packed bed digestion technique)

Application

For Food industrial company / Food Waste disposal operator"

- Reduction of organic waste(i.e. kitchen waste, sewage sludge,)
- Reduction of fossil fuel usage to save the operational cost
- Improvement of corporate value by reduce the emission of CO2 gas."

Features and Superiority

Compared to conventional mesophilic fermentation,

- Higher efficiency and stable performance of fermentation
- Compact facility
- Most of the recovered gas can be used for various type of energy
- Final residue is easily composted.

Expected effect by introducing this technology

Compared to conventional mesophilic fermentation,

- Short hydraulic retention Time (Reactor volume reduce to 1/3 - 1/5)
- Increase biogas volume more than 1.1 times
- Degradation rate of organic component is 80 - 90%



METHACULES

Counterpart we would like to meet with



NEA



PUB



Engineering

PUB/NEA

- The personnel in charge of WRP
- The personnel who is in charge of evaluating new technology

Sales result

More than 15 project (include extension of facility)

- Food industrial company
- Municipal food waste disposal operator

Kajima Corporation



https://www.kajima.co.jp/tech/g_warming/metakles/index.html#pagetop

Products / Technologies to be introduced

METHASOURUS (Continuous hydrothermal degradation process combined with METHACULES)

*METHACULES is a technology of thermophilic down flow anaerobic packed bed digestion technique)

Application

For Sewage System Operator

- Reduction of the volume of sewage sludge disposal
- Reduction of fossil fuel usage to save the operational cost
- Reduction of the emission of CO2 gas.

Features and Superiority

Continuous hydrothermal reaction provides,
-High homogeneous performance of degradation for high efficiency of fermentation

Compared to conventional mesophilic fermentation,
-Higher efficiency and stable performance of fermentation
-Compact facility

Expected effect by introducing this technology

- Reduce the sewage sludge to 1/5
- Compared to the combination with conventional mesophilic fermentation, shorter hydraulic retention Time (Reactor volume reduce to 1/3 - 1/5)
- Degradation rate of organic component is 80 - 90%
- Final residue is recycled as fertilizer.



METHASOURUS

Counterpart we would like to meet with



NEA



PUB



Engineering



Others

PUB/NEA

- The personnel in charge of WRP
- The personnel who is in charge of evaluating new technology

Sales result

- 1 project. Municipal sewage treatment plant
- Municipal sewage treatment plant operator

TOSHIBA MITSUBISHI-ELECTRIC INDUSTRIAL SYSTEM CORPORATION



<https://www.tmeic.com/products/59>

Products / Technologies to be introduced

Medium voltage drive (VFD: Variable Frequency Drive)

TMdrive-MVe2 for small to medium size motor (~3000kVA at 6.6kV)

TMdrive-MVG2 for large size motor

Application

For Owner/User of water plant, whole system designer

Most of energy is consumed by motor for Pumps and Fans in the water plant. Previous water/air flow control technology which uses valves reduces (it means adjusting the demand) the amount of water/air flow but its energy reduction effect is small. On the other hand water/air flow control technology by using VFD (Variable Frequency Drive) reduces not only the amount of water/air but also the large amount of energy.

Features and Superiority

[Comparison with other control method]

- High efficiency
- Reduction of maintenance work
- Controllable/start multiple motor by one VFD

[Comparison with other VFD vender]

- High reliability and less maintenance work by using film capacitor
- Reactive power compensation function(TMdrive-MVe2)
- Extremely low harmonics(TMdrive-MVe2)

Expected effect by introducing this technology

From TMEIC experience, ROI estimates approx. 3 years. Over 20% energy saving is available (depends on operation condition)



Medium voltage drive

Counterpart we would like to meet with



PUB, NEA, especially in charge of engineering and maintenance.

Water treatment engineering companies.

Modification and replacement of existing equipment/facility: Direct selling (TMEIC can handle engineering). It depends on case by case.

Newly construction : Via engineering company.

Sales result

Japan: Over 1000 units for medium voltage VFD. Over 140 units for TMdrive-MVe2(TMEIC's latest model)

Outside Japan: Over 3500 units for medium voltage VFD including overseas factory 42 units in Singapore. Over 800 units for TMdrive-MVe2 (TMEIC's latest model) including overseas factory

TOSHIBA MITSUBISHI-ELECTRIC INDUSTRIAL SYSTEM CORPORATION


<https://www.tmeic.com/products/74>
<https://www.tmeic.com/industry/water-wastewater>
Products / Technologies to be introduced

Uninterruptible Power Supply (UPS),
Multiple Power Compensator (MPC)

Application

For Owner/User of water plant, environmental owner
In the facilities of water/environmental plant the power for 365days/24hours without any interruption must be required, UPS and MPC feeds the power continuously while the AC power is not available due to any disturbances; Power outage, Voltage sag by Lightning, in the AC power network.

Features and Superiority

[Comparison with other control method]

- Wide range of capacity
- High reliability
- High efficiency
- Reduction of maintenance work
- Top share; Lots of supply record and experiences in the world, not only Japan/Asia

- * Contribution to high operation ratio in plant.
- * Comparing with other products, our benefit of product technologies for efficient energy contribute to energy saving for the whole plant.



Large Scale



Medium Scale

UPS/MPC

Counterpart we would like to meet with

NEA



PUB



Engineering

Water treatment engineering companies. Same as drives, to be newly installed in plant or to be modified/replaced from existing equipment/facility can be flexibly applied: Products made in TMEIC and Sales/engineering organization; Direct selling (TMEIC can handle engineering) etc, depends on projects, case by case.

Sales result

Share No.1 (90%) (> 100kVA) in Japan. Long year and lots of experiences. For Large computer systems (Bank, Insurance etc), Data Centers (DCT), Communication systems, Transportation (Railway, Airport etc), Medical care, Various manufacturing companies/clients.
Share No.1(>100kVA) in Asia, North America. (Share No.4 in the world)

TOSHIBA MITSUBISHI-ELECTRIC INDUSTRIAL SYSTEM CORPORATION



<https://www.tmeic.com/industry/renewable-energy>

Products / Technologies to be introduced

Photovoltaic Inverters (PV-Inverter)

Application

For Owner/User of water plant, whole system designer

PUB, NEA, Water treatment engineering companies.

Same as UPS/MPC. PV-inverters contribute to Sustainable energy for Plant can be available depending on the owner's business policy and method of management.

Features and Superiority

“World Top-level Efficiency”, “High performance MPPT(Maximum Power Point Tracking) control”etc; TMEiC PV Inverters contribute to increase the generation power of PV plants with these features.

In addition to installation of new PV generating facility) securing the alternative and sustainable power for plants, or reduction of the cost of whole electricity.



Outdoor



Indoor

PV-Inverter

Counterpart we would like to meet with



NEA



PUB



Engineering

Modification and replacement of existing equipment/facility: Direct selling (TMEiC can handle engineering). It depends on case by case.

Newly construction : Via engineering company (EPC etc) case by case.

Sales result

Share No.1(>99kW) in Japan.

Over 7 Million kW, already supplied and installed in Japan.

Share No.3 Medium & Large capacity (>201kW) in the world.

Cumulative Total: More than 14GW @ 2017.

TSUBACO SINGAPORE PTE LTD



<https://www.tsubaco.com.sg>

Products / Technologies to be introduced

Bulk Handling Conveyor
High-tech Water Clarification UF & MF Membranes

Application

[Customers] Tuas Incinerator Plant, cement plant & others

- Bulk Handling Conveyor for the ash and fly ash handling
- Crushed garbage & discarded plastics handling
- Cement industries
- Biomass

[Customers] PUB, EPC, Wafer fabs industries & Japanese car makers

- RO Pre-treatment in NEWater, variable salinity desalination, seawater desalination & drinking water
- Final filter for ultrapure water polishing in semicon wafer fabs industries
- Electro deposition paint recovery for car manufacturers

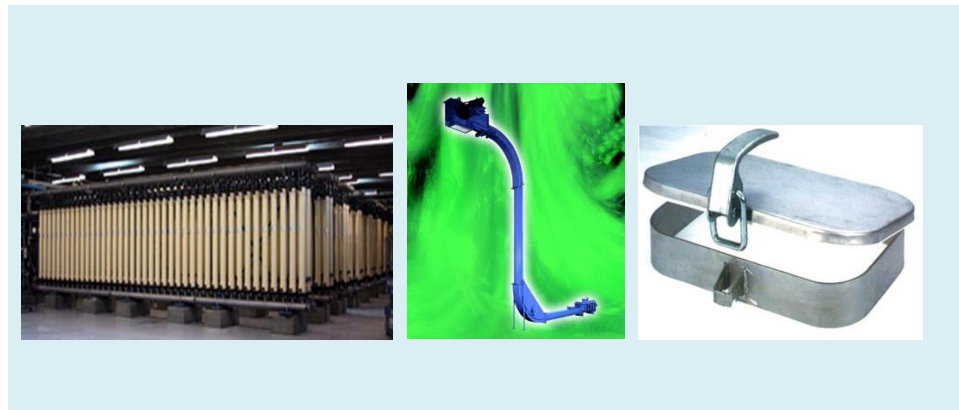
Features and Superiority

Bulk Handling Conveyor for the ash and fly ash

- Compact & economical, dust tight & waterproof structure, corrosion proof, smooth operation.
- Totally enclosed structure to prevent leakage of smell & liquid from casing.
- Customisation available

High Tech Water Clarification UF & MF Membranes

- High integrity membranes : sharp pore size distribution (0.1um)
- High physical strength
- High chemical tolerance
- Long operation life span (longest lifespan in all PUB plants & in the world), stable operation by superior control philosophy



Counterpart we would like to meet with



PUB, NEA, EPC, main contractors & others.

Sales result

- More than 50% of drinking water plant in USA
- Approx. 60% of waste water recycling plant in Singapore are using our MF membrane
- Approx. 90% of semiconductor wafer fab manufacturing plant in Singapore are using our UF membrane
- Main Japanese car makers are using Electro Deposition paint recovery UF membrane
- MHI & JFE are using our Bulk handling conveyor integrated into their conveying system

Yokogawa Electric International Pte.Ltd

https://www.yokogawa.com/industries/water-wastewater/#Details_Applications_Full-scale-Scope

Products / Technologies to be introduced

Distributed control system "CENTUM"
 Wide Area SCADA/PLC Control Solutions "STARDAM" "FAST TOOLS"
 Cloud base CMMS "eServ"
 field instruments, analyzer
 Operator Training Simulator (OTS) OmegaLand

Application

For Every industry such as Oil & Gas, LNG Supply Chain, Chemical & Petrochemical, Pulp & Paper, Power, Food & Beverages, Water & Wastewater, Mining & Metal, Pharmaceutical, Semiconductor, Iron & Steel, Combined Cycle

Customer who want to improve their operation cost and production quality, keep secure connection, safety control, against cyber attacks, asset management.

Features and Superiority

Soundness, continuity developing,
 - With a factory and development capabilities in Singapore, they are able to develop products based on the needs of their clients
 - OTS is the first of its kind in Japan, with few competitors globally.
 - Specialises in Control Units for liquid substances. The control units are able to manage the temperature, flow rate and pressure etc. of liquids.

Counterpart we would like to meet with



PUB



Engineering



End-users

We would like to know your current challenges and the requirement to your partner.

- Medium sized Engineering companies
- Plant operators
- End users

Sales result

150MUSD/Year : Water & Waste Water
 1000MUSD/Year : ALL INDUSTRY
 ALL Water supply association in each prefecture
 4000MUSD/Year Outside Japan

Water Sector

ASAHI YUKIZAI CORPORATION


ASAHI AV

<http://www.asahi-yukizai.co.jp/en/index.html>

Products / Technologies to be introduced

Plastic Valve, Plastic Pipe and Plastic Fitting

Application

For Chemical Industry, Semiconductor Industry, Mining, Steel Manufacturing Industry, Water supply and Sewage system, Desalination Plant, Aquarium, Water Treatment

- Long Life
- Corrosion Resistant
- Light Weight

Features and Superiority

Solution for corrosion resistance, Security, Safety, Long life and Useful.
Replace from Metallic valve.

The initial cost is higher than the metal valve, but the running cost is good because of the anti corrosion. Thus it becomes long life.



Counterpart we would like to meet with



PUB



Engineering



Distributors

- PUB, Engineering company or Distributors interested in dealing with our products.
- EPC Companies
- PUB contractors such as consulting companies
- General Contractors

Sales result

Chemical Industry, Semiconductor Industry, Nonferrous Metal/Refining Industry, Steel Manufacturing Industry, Water supply and Sewage system, Desalination Plant, Aquarium, Water Treatment, Agriculture, Fish Farming

Fujiwara Industry Co., Ltd.

<http://www.fj-i.co.jp/English/home.htm>



Protect Environment and Lives
Fujiwara Industry Co., Ltd.

Products / Technologies to be introduced

Automatic Scum Removal System
Monorail Type Sludge Collector

Application

For Sewage Department of Government or the private sector undertaking the work.

With the Automatic Scum Removal System, Monorail Scum Removal System solving the problems such as quake resistance, easy maintenance, energy saving, the labor saving.

Features and Superiority

Automatic Scum Skimmer
The Apprehension percentage 90% more
Monorail Earthquake Resistance, Magnitude 6 to 7,
30% to 50% decrease of maintenance expense
Sludge collection ability 90% efficiency
Installation time is shorter



Monorail Sludge Collector

Counterpart we would like to meet with



NEA



PUB



Engineering

The networking partner is client of similar business in Singapore (PUB, NEA), or water treatment engineering company, consultant etc.

Sales result

Government, Local Government, Sewage Department in Japan and Canada

Kita Machinery Co., Ltd.

<http://kitaikai.co.jp/>

KITAIKAI

Products / Technologies to be introduced

KST Water Purifier System

Application

For the people who need to reuse and discharge turbid water or heavy metal polluted water. Or for the people who need drinking pure water or life water.

In case that neighborhood residents fear from discharging turbid water, KST is useful to purifier turbid water as drinking water.(Japanese water quality standard)

Features and Superiority

KST is water treatment system used sand filter. KST can treat Dioxine even it is said that sand filter cannot treat Dioxine. Capacity 20m3/hour

Specialized in Temporary Equipment, therefore our treatment facilities are compact, easy to carry.



KST Water Purifier System

Counterpart we would like to meet with



PUB



NEA



Engineering



Others

Potential partners for marketing and sales. We would like to meet with partners who have experiences of water treatment project of Singapore government.

Rental service company for construction equipment, as our treatment facility is for construction site and reusable/portable.

Sales result

- 1) We have done the project of water treatment in the reuse fly ash system
- 2) Water treatment at water purification plant

Kita Machinery Co., Ltd.

<http://kitaikai.co.jp/>

KITAIKAI

Products / Technologies to be introduced

Micro-grid with Renewable energy

Application

For the people living without electric power such as sightseeing points in mountainous region. Or for the people considering Micro-grid-system using renewable energy by small electric power.

Features and Superiority

Generate electricity by using Hydro-electric generator for developing non-electrified community. We offer micro-grid system which can be operated by local residents. System can be sustained by local residents in the long time.

Enable to make suitable micro grid system for user(local residents)

Our micro grid system can create drinking water 450 L/h with 1 KW/h electricity.



Micro-grid with Renewable energy

Counterpart we would like to meet with



Others



Engineering



PUB

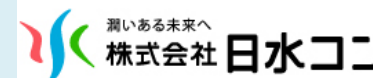
We would like to meet with EPC company or company/consultant works on community developing.

Sales result

The pilot project of Micro hydro generator verification of Tokushima Prefecture.

- 1) System had been installed in Philippines under JICA(Japan International Cooperation Agency) project,
- 2) System had been installed in Myanmar under JICS(Japan International Cooperation System) project

Nihon Suido Consultants Co., Ltd.



<http://en.nissuicon.co.jp/>

Products / Technologies to be introduced

Electrical conductivity sensor / Infiltration survey based on Electrical conductivity

Application

For Organizations responsible for maintenance of sewer pipe (local government, designated administrator of private contractor).
Or, the private sector undertaking the work (consultants, investigator)
Technique for filtering the areas where infiltration (rainwater infiltration, groundwater infiltration) generates; and water quality sensor utilizing technique above.

Point: Filtering the areas where infiltration generates, with not only the flow measurement.

Features and Superiority

■About the method

The filtering of area where infiltration generates is generally conducted by flow meter. The flow meter has restrictions such as unable to be installed at the bent part and junction, as well as necessity of installation of water level & water flow sensor, logger and battery inside manhole. On the other hand, method based on water quality measurement is simple as only the installation of water quality sensor (built-in logger and battery) is needed and no restrictions on installation at the bent part and junction. Less maintenance during the installation (measurement period), and less survey cost (half of the cost of flow measurement method in Japan)

■Water quality sensor

The water quality sensor is our original product, which after installation in the flow of sewage, is able to conduct measurement in 2 months without maintenance. There's no product from other manufacturers with equivalent performance. In the case of product from other manufacturer, variation of data generates due to contamination of the sensor in several days, causing difficulty in accurate measurement.

Nihon Suido Consultants Co.,LTD. (NSC) is a leading water consultant which providing service mainly on water supply and sewage.

In Japan, we are receiving orders from local government for filtering of areas where infiltration generates. During these surveys, the water quality sensor introduced is being used.

Counterpart we would like to meet with

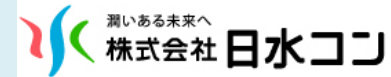


The expecting networking partner is client of similar business in Singapore (PUB), contractor (consultant or investigator), or BOT operator of water / waste water treatment plants.

Sales result

The water quality sensor is being used in orders of "filtering areas with generation of infiltration" from local government. Because of the high orders superiority, we are not selling this sensor in Japan. We have numerous experiences.

Nihon Suido Consultants Co., Ltd.



<http://en.nissuicon.co.jp/>

Products / Technologies to be introduced

Urban flood disaster monitoring service

Application

For disaster reduction department, organizations responsible for maintenance of river and sewer pipe (local government, designated administrator of private contractor). A system that displays the conditions of rain and conditions of rivers and facilities such as sewerage during rain in real time, and distributes disaster reduction information, facility status, etc. to administrators.

Point:

- Xband-MP radar, capable to catch guerilla heavy rain in real time.
- Capable to stock and share information necessary for management and operation of rainfall information, water level information, damage information, management history etc.

Features and Superiority

■ Functions related to rain management and disaster reduction

This system consists of a radar system, a water level observation system, and a cloud data center (DC). Radar system can overlay and display the facility information with GIS information whose data are delivered from multiple Xband-MP radars and synthesized by DC. And the radar system can provides the administrator with necessary information such as rainfall and risk information for each area in real time. In addition, the water level measurement system, after the setting of the water level gauge at the concerned point, can deliver the water level information to the DC in real time, and compare the rain condition and the water level information. Also, because it is a cloud type system, you can use the system anywhere with only access to Internet needed.

■ Facility management function

Facility information can be displayed if there is GIS data of the lifeline's ledger such as sewerage ledger, water supply ledger etc.

■ Information sharing function

You can share information by plotting notes · photos etc. on the map

■ High functional extensibility such as image/ remote monitoring etc

Nihon Suido Consultants Co.,LTD. (NSC) is a leading water consultant which providing service mainly on water supply and sewage.

In Japan, we are receiving orders from local government for filtering of areas where infiltration generates. During these surveys, the water quality sensor introduced above is being used.

Counterpart we would like to meet with



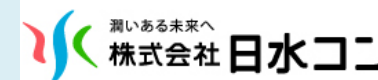
The expecting networking partner is client of similar business in Singapore (PUB), contractor (consultant or investigator), or BOT operator of water / waste water treatment plants.

Sales result

Used as investigation equipment in orders of "soft measures for rain management" from Ministry of Land, Infrastructure, Transport and Tourism and local government. Totally 7 orders until now.

Local government installed the above system: Chofu City, Okazaki City, Izumiotsu City, Koshigaya City, Yoshikawa City, Onojo City, Atsugi City and so on.

Nihon Suido Consultants Co., Ltd.



<http://en.nissuicon.co.jp/>

Products / Technologies to be introduced

Sewer pipe inspection system utilizing drone / drone for sewer pipe inspection

※ Technology under research and development

Application

For Organizations responsible for maintenance of sewer pipe (local government, designated administrator of private contractor).

Or, the private sector undertaking the work (consultants, investigator)

In a sewer pipe which is supposed to be deteriorating, instead of the operator, by flying the drone and photographing the deterioration and abnormality, efficient inspection is possible.

Points: The safety of workers is secured, and the cost of investigation can be reduced.

Features and Superiority

■ Capable to implement investigation on difficult survey routes

In sewage pipe where it is difficult to secure workers' safety (for example, large amount of flow, sudden rainfall, work under the occurrence of oxygen deficiency and hydrogen sulfide, etc.), instead of workers, photographing by drone with unmanned flight can reduce the risk of accident occurrence.

It is under research and development to reduce the cost to a same or lower level than the underground visual investigation by worker.

Counterpart we would like to meet with



PUB



Others



Engineering

The expecting networking partner is client of similar business in Singapore (PUB), contractor (consultant or investigator), or BOT operator of water / waste water treatment plants.

Sales result

No selling experience as it is still under research and development
Research and development are in progress in the field of Yokohama city.

OASYS SOLUTION GLOBAL PTE. LTD.

OASYS

<https://solution.oasys-inc.jp/en/>

Products / Technologies to be introduced

Water Pipe Ozone Cleaning

Application

- Condominium unit owner / tenant, • HDB unit owner / tenant
 - Landed house owner, • Service Apartment, • Commercial Building Owner, • Facility Management Company, • Hotel, • Hospital, • School
- It is common for residents in HDB and condominiums to boil or use through water purifiers as they do not have a good impression on tap water. We want to get rid of such impression through our water pipe cleaning technology, to make them feel safe to use.

In Singapore, it is possible to use tap water as drinking water as in Japan as WHO standards is applied. However, the concept of "maintenance" of water pipes is still not widely known, most of the people use boiled tap water or through purifiers. We believe we can convey the safety of tap water by providing water supply pipe cleaning.

Features and Superiority

【Features】

Remove the slime(dirt) adhered to water and hot water supply pipes and sterilize the inner surface of the pipe by using our own cleaning technology.

【Superiority】

- Japan: No.1 construction achievement result
- Singapore: No competitor



Water Pipe Cleaning

Counterpart we would like to meet with



PUB



Others

- BCA, HDB
- Facility Management companies
- Developers, general contractors
- We are planning to target HDB, landed houses and condominium customers, but eventually, we hope we could collaborate with PUB to clean the water pipes throughout Singapore, to change the image and mind of people in Singapore against water.

Sales result

- 2014: 1,206,937 thousand yen (S \$ 15,086,000)
- 2015: 1,298,528 thousand yen (S \$ 16,231,600)
- 2016: 1,114,784 thousand yen (S \$ 13,934,800)

Shibata Co., Ltd.

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

SHIBATA

Products / Technologies to be introduced

Development of on-site screening system for biological wastewater treatment

Application

Purification of factory wastewater which is performing biological treatment

- Purification of sewage, Purification of lakes / rivers

This technology can be applied to following challenge

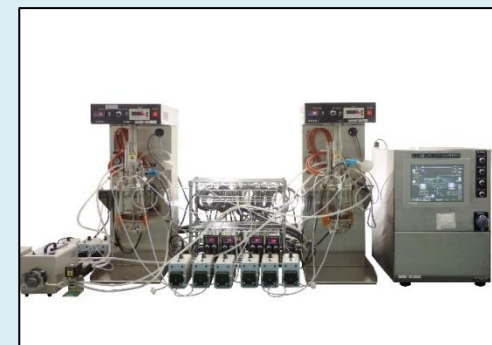
Biological treatment is difficult to operate and trouble easily occurs. This developed product assumes a factory wastewater treatment facility with these problems.

Features and Superiority

Compared to microorganism preparations with high running cost and unstable effects, highly effective microorganisms can be added at high concentration.

Expected effect by introducing this technology

It is possible to add the optimum microorganism for purification.



Development of on-site screening system for biological wastewater treatment

Counterpart we would like to meet with



Distributors



Others

Engineering companies

- A partner who can cooperate in field trials
- Business partners who can cooperate with us, Distributer, Water Treatment Equipment Manufacture

Sales result

No achievements during development.

Shibata Co., Ltd.

SHIBATA<https://www.shibata.co.jp/english/>

Products / Technologies to be introduced

Liquid metal absorption filter 『META-CAT』

Application

Precious metal recovery. Removal of heavy metals and others.

This technology can be applied to following challenge

It is possible to improve the recovery rate of precious metals such as gold and platinum which are leaking due to surface treatment or the like. Also, a chelate resin filter that removes other metals.

Features and Superiority

In addition to the elimination effect of alkaline earth metals such as calcium and magnesium, it has an extremely high adsorption rate as compared with conventional products.

Expected effect by introducing this technology

Thereby contributing to an improvement in the precious metal recovery rate.
Contribute to improvement of heavy metal removal rate.



META-CAT

Counterpart we would like to meet with



Distributors



Others

Engineering companies

- A partner who can cooperate in field trials
- Business partners who can cooperate with us, Distributer, Water Treatment Equipment Manufacture

Sales result

Water treatment engineering company, catalyst manufacturer, plating company

TOAGOSEI Co. Ltd



<http://www.toagosei.co.jp/english/>

Products / Technologies to be introduced

ARON Series / Low molecular weight polymer solution of polyacrylate and Acrylic acid & Sulphonic acid copolymer.

Application

For water treatment plant, and the company who provides the maintenance & service to the Water treatment plant

Our products are one of the main additives of the acrylic polymers for "Anti-scale agent" which is used for keeping scale clear at seawater desalination or re-use of waste water.

Meanwhile we assume the suitable "Anti-scale agent" has to be chosen depending on the water condition. We are glad to be useful & helpful partner.

Features and Superiority

In Japan, we have a lot of business partners in the field of water treatment And we have wide range of acrylic polymers for "Anti-scale agent".

In Singapore, we own a plant for manufacturing acrylic polymer in Jurong island (currently the only one in Singapore). We also own manufacturing facilities in Thailand. While the main focus of our business is the manufacturing and export of polymers, we can also handle delivery of the polymers in Singapore and Malaysia in small lots. Toagosei Japan R&D can support Singapore development. Our polymers do not foam much and are heat resistant.

By using our products, we can contribute to reduce the energy cost with preventing scale generation.

Counterpart we would like to meet with



Engineering



Others

- Engineering companies - Formulator of "Anti-scale agent" and/or technical service company

- University researchers/professors - We would like to discuss the future direction of water treatment in Singapore with university researchers

Sales result

Our market share in Japan: Regarding to acrylic polymer, it is estimated more than 30%. (Analyzed by ourselves)

TOAGOSEI SINGAPORE PTE. LTD is now manufacturing acrylic polymers, and one of them has been applied for the field of water treatment.

Environment Sector

Daimaru Inc.

<http://www.daimaru-bouon.co.jp>



Products / Technologies to be introduced

Noise reduction panel/Recycle and reuse technology

Application

*Our customers are general contractors of tunnel construction work.

Features and Superiority

*Noise control technique and installation of full noise closure design for during the tunneling work in the city.

*Reuse of structure frame and noise reduction panels make cost down become possible.

*Noise reduce effect: -35dB

*Reusable (recycle and reproduce)

Expected effect by introducing this technology

*Noise level of work site can be reduce under the noise regulation at nighttime in the city.



型式 Model	寸法 Size	重量 Weight
CM4	1000 H × 4000 W × 100 t	230 kg
CM2	1000 H × 2000 W × 100 t	130 kg

Noise reduction panel/Recycle and reuse technology

Counterpart we would like to meet with



NEA



PUB



Distributors



Others

In addition to NEA, PUB,

1)Construction Company, especially Japanese companies. 2) LTA.

3)Company who can provide maintenance work such as welding, machining , or those who have factory crane capable of handling 230kg panel and can store the panel.

Sales result

Noise enclosure with roof for shield tunnel construction;

Noise enclosure with roof for tunneling work.

(MILT, Local Government etc)

DOWA Eco-System Singapore Pte Ltd/Technochem Environmental Complex Pte Ltd



<https://www.dowa-eco.co.jp/en/>

Products / Technologies to be introduced

Waste Management services-Toxic industrial waste collection/treatment.
Metal recycling. Environmental Consulting services

Application

For Manufactures, hospitals, Traders etc.
Clients seeking reliable toxic industrial waste(TIW) collector for their waste.
Clients who required to conduct environmental baseline study.
Clients who have precious metal contain waste such as e-waste.

Features and Superiority

We provide transportation and waste treatment including incineration of TIW in Singapore. The process combines appropriate waste management with ensured traceability that enables customers to avoid the risk of illegal disposal and improper treatment. Along with those business, we provide Precious metal recycling and environmental consulting service as well in Singapore.



Waste Management services

Counterpart we would like to meet with



Manufactures, hospitals, Traders in Singapore or willing to open their business in Singapore.

Chemical and Medical-related manufacturing facilities

University research institutions

Manufacturers or trading companies dealing with electrical parts

Sales result

Hazardous and Non- Hazardous waste treatment and landfill business, soil remediation, metal recycling, e-waste recycling, environmental consulting services. manufactures, traders etc.

ELCOM Co., Ltd

ELCOM

<http://www.elcom-jp.com/english/products/e-pep>

Products / Technologies to be introduced

e-PEP waste plastic recycling system/ Resin pellet fuel boiler and Resin pelletizer

Application

For Companies generating Plastic waste and local governments→
Processing PP,PE,PS waste into resin pellet fuels and regenerating Energy. Solving Waste, Energy and Environmental problems at the time.

- Energy management : Regenerate Energy from Plastic waste !
- Waste management : Resolve Plastic waste issue !
- Environmental management : Clean perfect combustion!

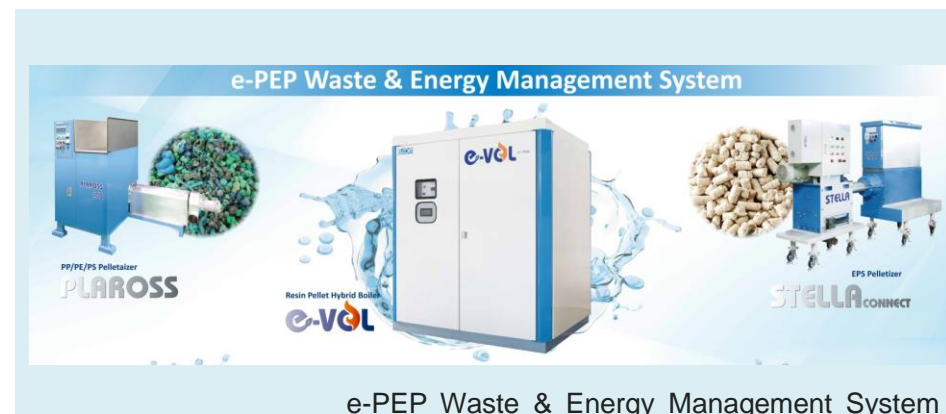
Features and Superiority

e-VOL is the resin pellet boiler fueled by resin pellets made from waste PS/PP/PE, ensuring safe perfect combustion and regenerating Energy of hot water, steam or air conditioning.

Small footprinted, low priced. Hybrid boiler combined in use of kerosene or heavy oil A. By regenerating Energy from waste, achieve significant reductions on fuel cost and global impact.

Expected effect by introducing this technology

e-VOL ensures 50% cut of fuel cost compared with conventional oil fuel boilers and 75% cut of CO2 emissions compared with importing refining crude oil.



Counterpart we would like to meet with



NEA



Distributors



End-users



Others

Potential partners for marketing and sales. In addition to potential partners for marketing and sales, we also would like to meet with company with maintenance capability.

We also want to meet with end-user, such as department stores, supermarket, hospital, Medical Research Institute, warehouse & shipping companies,

Sales result

Supermarket, EPS manufacturer, Fisheries and Agriculture-related production companies.

ELCOM Co., Ltd

ELCOM

<http://www.elcom-jp.com/english/products/premo/index.html>

Products / Technologies to be introduced

PREMO/ Automatic waste compactor

Application

For Companies generating general waste such as papers and soft plastic→
Compressing to reduce the volume of waste 1/5. Reduce CO2 emission of transporting waste and cost of disposing waste.

●Waste management : Reduce volume of waste ensuring great deal of saving on waste disposal cost, as well as space saving & keeping clean and hygiene!

●Environmental management : Reduce volume of waste helping drastic cut of CO2 emission on transporting waste!

Features and Superiority

Automatic waste compactor PREMO features moter chain drive, easy & quiet operation and high standard of safety, Stylish design and small footprinted with wheels make it fit any place where you need it to be!

Expected effect by introducing this technology

By reducing volume of disposed waste, save 80% of space and transporting as well as cost of disposal.

PREMO



PREMO/ Automatic waste compactor

Counterpart we would like to meet with



NEA



Distributors



End-users



Others

Potential partners for marketing and sales. In addition to potential partners for marketing and sales, we also would like to meet with company with maintenance capability.

We also want to meet with end-user, such as department stores, supermarket, hospital, Medical Research Institute, warehouse & shipping companies,

Sales result

1)Supermarket, EPS manufacturer, Fisheries and Agriculture-related production companies.

2)Hospitals, Schools, Supermarkets, commercial facilities, logistics, and so on.

NEC Corporation

<http://www.nec.com/> http://www.nec.com/en/press/201410/global_20141007_03.html

Products / Technologies to be introduced

Smart Waste Recycle Solution

Application

[customers]

1. NEA/public and private company who wants to improve effectiveness of waste collection and distribution.
2. Operator who wants improve effectiveness of waste treatment facility.
3. NEA/public and private company/waste generator who wants to reduce waste management cost and make new revenue as energy, fertilizer and feeds from waste.

[challenges that customers faced]

1. High cost of human resources and trucks due to lack of efficiency of waste collection route.
2. High cost of treatment of organic waste.
3. Need to reduce waste including ash delivered to final disposal site.
4. Need to improve ratio of recycle.
 - > Optimize the value chain of waste management from waste collection, waste recycling to final disposal by using ICT.
 - > Reduce waste delivered to final disposal site by recycle to energy, fertilizer and feeds from waste by using compost system utilizing bacteria.

Features and Superiority

1. Optimization of whole value chain of waste management based on rich IoT/AI experience.
2. High speed compost system which doesn't need segregation, waste water treatment and smell treatment.
garbage
3. Reduce 15% of the cost by waste collection optimization (case of Spain)

Smart Waste Recycle Solution



Counterpart we would like to meet with



Engineering



PUB



NEA

*We want to discuss with PUB, NEA, engineering company and waste treatment company for following :

1. Discussion of needs of ICT for waste management flow including segregation, collection, distribution and recycle.
2. Discussion of needs of compost which can reduce waste and improve recycle rate.

Sales result

AZCAN(waste treatment company), Santander city
 - Deploy waste collection system by using IoT in Santander city, Spain
 - Kawasaki city, Japanese ministry of the environment.

SANYU KIKI CO., LTD

<http://www.sanyu-kiki.co.jp>



Products / Technologies to be introduced

Rapid fermentation composter: From organic waste to organic fertilizer

Typical application examples

For Food factory

Solution for organic wastes from food factories. Organic wastes are changed to organic fertilizer and only small space is required.

Features and Superiority

Compo Fuji SK series are developed to use our fermentation process technology accumulating for a long period and continuously improved by feedback from our customers. Compo Fuji SK series focus production quality of fertilizer, durability, operability and running cost and make large capacity treatment possible. Already introduced more than 1000 units in Japan.

Installation space required is only 8 meters by 8.5 meters, even for the biggest model. 46,000KW (per annual) energy saving by using special heat exchanger (compared with using heater)



Rapid fermentation composter: From organic waste to organic fertilizer

Counterpart we would like to meet with



NEA、 Engineering Companies who have access to Food processing industry, Livestock Industry, Industrial Waste Treatment companies, fertilizer manufacturer, sewage treatment etc.
Companies interested in effective use of organic waste

Sales result

More than 1,000 units. Livestock Industries, Food companies, Industrial waste disposal contractors、 Sewage treatment plant and Fertilizer company. Philippines, Bangladesh

SINKPIA JAPAN

<http://sinkpia-j.co.jp/>



Products / Technologies to be introduced

Food waste disposal machine

Application

Food Processing Industry, Facilities supplying food-service (such as hospital, care & welfare facilities, hotel, etc.), Food service industries (Such as supermarket, restaurant, convenience store, shopping malls), who have following challenge :

- 1.to reduce waste disposal fee
- 2.to solve with garbage smell which raise negative impact on company image
3. need to buy new garbage machine due to trouble of existing machine, or repair cost is too expensive.
4. need to buy new garbage machine with low running cost and less maintenance.

Features and Superiority

1. Compare with conventional dry compost type, our machine needs less heat treatment, therefore reduce power consumption drastically.
2. No rotten stink generated because garbage could be decomposed into liquid quicker than putrefaction process. In addition, it is designed that leakage of stink from the treatment tank is hardly occurred, therefore, even indoor installation could be possible.
3. Less space required compared with similar specification type manufactured by competitor.
4. On site decompose process, without transferring nor incinerating garbage



Counterpart we would like to meet with



NEA



Others

We would like to meet with business entities who are discharging garbage such as hotels, theme parks, shopping centers (food courts), ISO acquired companies (A dining room), schools, hospitals, in addition to municipalities.

Sales result

Supermarket, Hospital, care & welfare facilities, hotel, kindergarten, Manufacturer for kitchen equipment etc

TOKYO SANGYO SINGAPORE PTE LTD

TSS

Tokyo Sangyo Singapore Pte Ltd

<https://www.tscom.co.jp/english/index.html> <http://www.kyowa-kk.co.jp/english/>

Products / Technologies to be introduced

G-ace (Grease trap advanced conditioning equipment)

*We are the partner of Kyowakiden Industry Co.,Ltd.

Application

[Customer]

Restaurant, shopping complex, hawkers

[Challenges that customers faced]

Odor, insect, labor management of the grease trap by the kitchen oil

Features and Superiority

*Automatically oil separation and prevent the odor and insect by the ozon micro bubble technology.

*Improve the sanitation of the grease trap and reduce the labor management cost

In comparison with the chemical approach, G-ace has the following 4 advantages.

- (1)Fats and oils do not clog the sewer pipe, because G-ace separates and removes oils physically.
- (2)No need chemical costs. Only electricity charges.
- (3)It does not take time and effort of cleaning.
- (4)G-ace keep off pests, because of the effect of ozone.

While there are similar equipments for plants and large facilities, there are currently no product like G-ace, which targets smaller scale operations such as restaurants and factories.



G-ace

Counterpart we would like to meet with



Distributors and Consultants that have a wide range of connection to the food-service industry.

End-users of G-ace.

Sales result

- Motor maintenance process Factory (China)
- Electronic Device Factory (China)
- Rubber Factory (China)
- Electronic Device Factory (China)

TOKYO SANGYO SINGAPORE PTE LTD



<https://www.tscom.co.jp/english/index.html> <http://www.kyowa-kk.co.jp/english/>

Products / Technologies to be introduced

- (i) Seawater Desalination Plant
- (ii) Hybrid Water Purification System

Application

[Customer]

Government, factories, hotels.

[Challenges that customers faced]

- (i) The shortage of drinking and industrial water
- (ii) Labor management of water system in a remote area.

Features and Superiority

- (i)
 - Pre-design against corrosion.
 - Installation of advancing energy recovery technology.
 - Experience of design and running of the largest desalination plant (50,000m3/day) in Japan.
- Securing large amounts of stable water resources
- Reduce the labor management cost
- (ii)
 - Web monitoring devices enable from a remote place to check operating condition regularly and to grasp the problem points in case of trouble.
- Battery can supply energy in case of trouble (eg. power failure.)



Counterpart we would like to meet with



- PUB, related to waste water treatment with oily drainage.
- NEA/PUB contractors, such as consulting companies
- Engineering companies (EPC)

Sales result

- Government (Japan, Indonesia, Korea)



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Manufacturing Industry Department,
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