GOMI SOLUTIONS CO.,LTD.
Business Summary

Kazuta Sekiyama (CEO)
20th,May,2025

Our Philosophy

As long as we humans exist, our economic, and environmental activities constantly generate waste. In a world where the growth of production and consumption of products have been growing at a rapid pace and will keep doing so for the foreseeable future, it is vital that we find a sustainable solution to treating waste.
Our technology converts waste into energy, recovering more energy than consuming it for the treatment of waste.
We believe that our technology can provide a solution to the world's waste problems and can be catered to the specific needs of every region and contribute to the circularity of resources and carbon neutrality

"GOMI" means Waste in Japanese. "ごみ" also refers to Waste that have the potential to be recycled. We propose GOMI solutions from Kitakyushu, Japan.

Slogans

"It's time to have a next solution for waste"

Traditionally, we have relied on incinerators and landfills, but we off er our technology "Pyrolysis" as **a next solution for waste. Sustainable Waste Treatment** and Reduct CO2 Emissions.

"Convert waste into resources and Maximize Waste Energy"

Waste is the new resource. It is time to convert waste that has been stored in landfi lls for years into a resource.and, The reality that waste is in a mixed state is a very important factor in solving the waste problem. Recycling would be possible if the waste could be cleanly sorted and cleaned, but this is practically impossible to solve waste issues.
Let's collect resources from waste and use re-newable energy.

"Appropriate waste, at Appropriate time"

Our equipment can be sized according to the amount needed. We realize the treatment of waste in each region in each region. De-centralization of waste.

Compay Information

GOMI Innovative waste technology Solutions

We saw great potential for waste treatment with “Pyrolysis”.
Our technology reduces carbon dioxide emissions while preventing the release of harmful gases such as dioxins. It also makes the most of the energy contained in waste materials, and by realizing waste treatment in this way,
it achieves sustainable and cyclical waste treatment.
We are now able to expand the use of this “Pyrolysis” waste treatment technology throughout the world from Japan!

Our machine pyrolyzes waste fed into a reactor using “Pyrolysis” technology at a maximum temperature of 600°C.
The inside of the reactor is filled with steam, and the oxygen content is 0.05% or less.
Since there is no oxygen in the reactor and no fire is used in the reactor, the waste is not burned.
Therefore, there is no generation of CO2 or dioxin. In addition, the reactor is under atmospheric pressure.
so the risk of explosion and fire is very low. In addition, this technology can recover resources from waste.
Recovered oil can be collected from plastic and resin waste, organic waste can be converted to charcoal, and metals canbe recovered as metals. The volume of general waste is greatly reduced (approx. 10% to 15%) after treatment, thus contributing greatly to the reduction of landfill space. Mixed waste can be processed, so it can be thrown in without sorting.
Various sizes are available, so suitable size processing machines can be installed according to local needs.

Batch type

Continous type

The continuous type is a series of reactors, which can feed a large amount of waste.Since the expected treatment results are the same for both batch and continuous systems, it is effective to use the batch system for demonstration purposes and the continuous system for treating a large amount of waste.

1	Establishment	February,2024
2	Capital	43,300,000 JPY
3	Location	Compass Kokura (in Kita Kyusyu city)
4	Executives	Kazuta Sekiyama (CEO) Maeta Hyuga (Director)
5	Main Bank	Sumitomo Mitsui Bank (Kita Kyusyu Branch)
6	Related organizations	北九州市 / IGES Institute for Global Environmental Strategies / 大阪大学 OSAKA UNIVERSITY

- avpn — Granted AVPN’s Sustainability Seed Fund for Zero Plastic Island Project
- JETRO — Adopted By Consortium For New Export Nation 2024
  Featured as a panelist at the Japan-Cambodia Co-Creation
- JICA — Elected as a Smart City Consortium Core Company
- 環境省 Ministry of the Environment — Adopted For The Ministry Of The Environment’s Intercity Cooperation Project
- 経済産業省 Ministry of Economy, Trade and Industry — Attend Public-Private Roundtable And PALM 10 Economic Forum
  Global South Subcidy is granted for Palau Project

Organization

Born on July 22, 1990

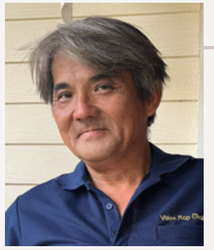
Kazuta Sekiyama

CEO

History

After graduating from Akashi National College of Technology, the Department of Electrical and Computer Engineering to learn electrical engineering and programming,
I joined Panasonic Corporation, where I was engaged in the development of In-Flight Entertainment systems.
I had to be in charge of all the manufacturing site, design, and indirect departments. I worked in U.S. and Israel, and was the youngest person to be in charge of launching a new product.

Then, I wanted to see the world with my own eyes, so I left Panasonic and embarked on a bicycle trip through Japan, Europe, Southeast Asia, and the United States. At that time, I saw many piles of waste and various other things, and I strongly felt that I wanted my next work to be good for the environment and useful to the world. After returning to Japan, I came across the superheated steam technology.
I feel that my strength is “rationality” and “sense of balance”. I think this is very important for technical development, improvement, and business development. I also feel that waste treatment technology using superheated steam has tremendous potential.



Hiroyuki Okamoto

Director of Operation & Maintenance Division

Born on March 23, 1965

Eiichi Kato

Expert Advisor (Technical and Chemical)

Osaka University, Invited Associate Professor

Hyuga Maeta

Director

Born on November 9, 1997

GOMI Innovative waste technology Solutions

OUR TREATMENT TARGET WASTE

METALS CONTAMINATING WASTE

RECOVERED RESOURCES : METALS, RECOVERED OIL

Our technology is very effective for wastes that contain metals and cannot be stripped or separated by hand. Adhered wastes such as plastics are converted to oil as recovered oil, while metals are left as they are. Since it is not an incineration process, the waste is removed in good condition.
(Left image: Plastic waste adhering to a piece of SUS)

MIXED PLASTIC WASTE

RECOVERED RESOURCES : RECOVERED OIL

A wide range of plastics can be converted to oil. Can be fed in a mixed state without the need to separate into single materials. Approximately 60% to 70% of the specific gravity is recovered as recycled oil. Due to its light specific gravity, it is preferable to compress it, and the processing time can be set short because of its easy processing.

SCRAP TIRE WASTE

RECOVERED RESOURCES : RECOVERED OIL,WIRE,CHARCOAL

Tires are a waste material we are very good at.
The wire contained in the tire can be recovered as it is, and good quality recycled oil can be recovered. Although it can be processed as it is, it is preferable to cut it into 4 pieces to increase the input volume.

GENERAL HOUSEHOLD WASTE

RECOVERED RESOURCES : RECOVERED OIL,CHARCOAL

We are studying the treatment of general household waste in Thailand, Cambodia, and India. Mixed household waste is mostly organic waste, and most of the recovered resources are charcoal. Since the volume can be significantly reduced, we are developing this as a means of extending the life of landfills and reducing the volume of landfills.

LANDFILL WASTE

RECOVERED RESOURCES : RECOVERED OIL,CHARCOAL

Landfill waste is similar to general household waste, but landfills that have been in place for years may no longer have organic waste and are composed mostly of plastics, allowing for the recovery of more recycled oil. In many areas, it is difficult to create new landfills and we offer our equipment as a solution.

MARINE PLASTIC WASTE

RECOVERED RESOURCES : RECOVERED OIL

Marine plastic waste is a type of waste that is not suitable for disposal in incinerators or landfills, but our technology, which does not incinerate it, can handle it without any problems. The problem of waste from remote islands and drifting debris has become apparent in many parts of the world, and we are developing a model that can be introduced to small islands as well.

Targeted wastes and evaluation

Target Waste	Summary	Demand	Profitability
Landfill Waste 	Landfill waste is mixed waste and is generally difficult to dispose of. Furthermore, landfills are filling up and it is difficult to construct new landfills. With our system, it is possible to process trash in landfills and open up the volume of landfills. In addition, landfills that have been abandoned for a long time may have weathered organic matter and become mixed plastic waste, in which case more recycled oil can be recovered, which is expected to be more profitable.	○	○
General household waste 	General collection waste is a very high demand waste. This is because these wastes are daily visible garbage, and they directly lead to volume pressure on landfills. The challenge is the high proportion of organic material and the low profitability from recovered resources.	◎	△
Industrial Waste 	Industrial waste is a treasure trove. Since the metal can be extracted directly, it is expected to be expensive and profitable. But of course, factories often have a limited amount of waste because they do not want to throw away expensive materials. Also, if industrial waste can be easily reused, it is not available for us. Therefore, industrial waste that is difficult to dispose of is targeted. The best idea is to install equipment in industrial parks, etc.	△	◎
Island Waste 	In many cases, island waste cannot be disposed of on the island and is transported to the mainland. That can cost a lot. Completing waste disposal on the island is expected to reduce transportation costs and CO2 emissions. In addition, marine plastics that wash up on the islands can be processed at the same time.	○	△

GOMI Innovative waste technology Solutions

Island Model

Complete waste treatment on the island.

Waste generated on the island cannot be disposed of on the island, often transported somewhere for incineration or landfill.
Transporting waste can be very costly.

Our technology can install equipment of a size appropriate to the size of the island at a relatively reasonable price.

In addition, recycled oil, charcoal, and other resources can be recovered from waste to significantly reduce the volume of waste.

The “Island Model” is a model that allows for complete waste disposal on the island.

If this can be achieved on one island, a similar model can be deployed around the world.

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Samet Island, Thailand

Koh Samet is a resort island in Rayong Province. It is famous for its beautiful beaches, and the entire island is a national park. Currently, garbage is collected at the “MRF” (Material Recycling Facility), which is located only one place on the island, and after being sorted, it is sent to the mainland of Rayong Province.

Population : 4,000 islanders
Amount of waste : 13 tons per day
Number of tourists: 1.5 M per year
Administration: Rayong Province
Waste treatment facilities: Collection and sorting by trommel
Possibility of additional fee: Island Tax and Hotel Green Tax
Transportation costs: 4,000 THB per time

Economic Model

Two target waste patterns are assumed.
1. Plastic waste (215 tons/year)
→ install one 5-㎥ machine
2. Mixed waste (5 tons/day, 1,800 tons/year)
→ install 15-㎥ machines (5-㎥ x 3)
The equipment to be installed is different due to the large difference in the amount of waste.

Since the volume of waste is very different, it is necessary to carefully choose which one to select, according to the purpose of the project.

In both cases, the waste disposal alone is a loss.
Koh Samet has an entry tax of 200 THB for foreigners and 40 THB for Thais.

Samet island entry tax is distributed to each jurisdiction as follows.
MRF 50% / Rayong PAO 45% / Phe Subdistrict 5%

In 2024, the administration is scheduled to be transferred from Rayong PAO to Phe Subdistrict.

This business model is based on the assumption of allocating 10 THB/1 tourist by either 1) raising the island entry tax or 2) distributing the island entry tax to waste disposal.

The project on Samet Island is called the “Zero Plastic Island Project”.
carried out in cooperation with Rayong Prefecture, Kitakyushu City, and IGES.

The initial goal was to dispose of all plastic waste (213 tons/year) on the island. As the first step, with the financial support of AEPW (Alliance to End Plastic Waste),
we brought a demonstration machine to Thailand
and confirmed that the waste from Samet Island can be treated.

In the second phase, with the financial support of ADB (Asian Development Bank),
we have conducted many demonstrations and established a collection system for plastic waste on the island.

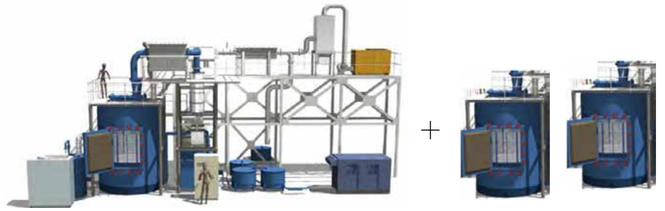
Pattern 1 : Plastic Waste Only

5㎥ machine × 1

ROI : 1.98 years

Pattern 2 : Mixed Waste

5㎥ machine with 3 furnaces



ROI : 4.80 years

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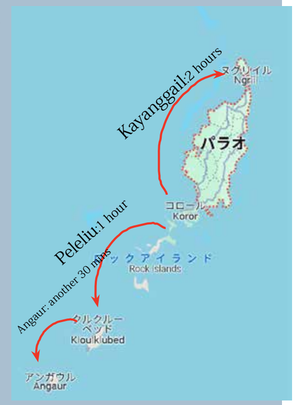
Palau, Small islands

The project started with the objective of installing a 1㎥ machine on board a ship to dispose of waste in the small islands of Palau where waste disposal is inadequate.

The budget is envisioned to be a supplementary budget for the “Global South Future-Oriented Co-Creation, etc. Project” of the Ministry of Economy, Trade and Industry(METI). METI requested that the idea be first conceived for Palau as the centerpiece of the Pacific Island Nations Project, and this was the background for proposing the concept of installing the equipment on board a ship and touring the islands. We will contribute to Palau’s waste management by processing not only marine plastics, but also waste tires and other waste that are currently difficult to dispose of,
We will contribute to Palau’s waste management by processing not only marine plastics but also waste tires and other waste that is currently difficult to dispose of.

Palau is a small island nation with a population of about 12,000 and is composed of 16 states. Ninety percent of the population is concentrated in the state of Koror. The three islands targeted for this project’s vessel cruise are Kayangail Island, Peleliu Island, and Angaur Island. Kayangail Island is a small island with a population of 100 and a small landfill site on the island. (There are plans to develop a resort, which may increase waste) Peleliu Island has the largest population of the three islands, with about 300 people.
Angaur is another small island with a population of about 100.



Kayanggail Island is a two-hour trip each way by vessel, Peleliu Island is an hour away, and Angaur Island is another 30 minutes away. There has been no method of disposal, but this project will make it possible to dispose of marine plastic.

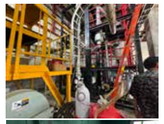
The total national waste volume is 24 tons per day, of which plastics are expected to account for about 10%. Since the incinerator has been shut down, the waste disposal method relies on landfill, of which there is one on the island.This landfill was built with support from JICA (about 1.3 billion yen) and will be in operation from 2022, with plans to use it for 25 years. Currently, there is no other option but to landfill medical waste, and there is concern about infectious diseases transmitted by birds and other organisms.

About Palau Waste Facility

Palau Recycle Center

Recycle Center operated by SWM, Koror. It has facilities for bottle and can sorting and collection, a glass factory using waste glass, composting, a methane gas tank, an oil conversion unit, and a generator.

Palau has a recycling law that promotes the collection of beverage containers with an incentive of 5 cents per container. 95%+ recycling rate has been achieved. (When the law was enacted, the collection rate was over 120%.) The features of this system are very high incentives and the fact that the collectors bring in the containers in a clean condition. The company is able to handle them in a clean condition and export them overseas to generate revenue. Bottles and cans are counted by a machine that counts bottles and cans. In the future, the company is looking to expand into food containers.



Oiling equipment

With the support of JICA, an oil conversion unit has been installed and is in operation. It is made by CFP, Hiroshima Prefecture.
Only three types of plastics, PP/PE/PS, can be processed, accounting for 40% to 50% of the total plastics. Our equipment will process other types of plastics to improve the recycling rate. The current processing capacity is 500 kg/day.
Plastic waste is brought in in a cleaned state and taken away free of charge. Recycled oil is refined in the facility and used in generators. Since the recycled oil from our equipment can also be refined, it is expected to be used for electricity.
By using this system in combination with our equipment, plastic and waste tires, which could not be processed in the past, can be processed together, thereby improving the recycling rate.

経済産業省 Ministry of Economy, Trade and Industry **Global South Subcidy from Japnese METI is granted**

Suggestion

After being transported in a mixed state, the valuable materials are collected. The landfill is still in a mixed waste state due to the fact that it has not been in operation for many years. Since the landfill is just starting to operate, there is still landfill volume, but a permanent waste solution is desired.

Proposal 1 : Small island waste disposal by installing our equipment on vessels and waste disposal on the Palau mainland.

RAM CORPORATION

Second Proposal : Total Waste Disposal on the Mainland

Ojika island/ Nagasaki

Ojika Town, Nagasaki Prefecture, has a population of approximately 2,100 and is located on Ojika Island, about 2.5 hours by regular ferry from Sasebo Port in Nagasaki Prefecture. The town had an agreement with Kamigoto Island regarding general waste disposal until 2033 (started in 2024).

Twice a week, general waste is transported to the Kamigotojima incinerator.

The annual disposal cost is over 500 tons, or about 5 tons at a time, and the annual disposal cost is 30 million yen.

The simple calculation for general waste disposal on Kamigoto Island is 60,000 yen/ton.
The agreement with Kami Gotoh Island is based on a method in which the disposal cost is determined according to the amount of waste brought in,If the amount brought in is small, the amount to be paid is reduced.Currently, waste is transported twice a week, but if it can be processed on the island, the number of transports can be reduced.
If the waste can be processed on the island, it is possible to reduce the number of transports.

Local Issues in Ojika Town

1. Large household oversize garbage

The island's population is decreasing, and more than 10 houses are being vacated every year. This generates large oversize household waste such as tatami mats, sofas, and beds, which need to be cut into small pieces before they can be disposed of as combustible waste (40 cm or smaller).

2. Large animal extermination

Crop damage by wild boars and other animals is increasing,Ojika Town is having trouble disposing of the exterminated boars.。

3. General waste

General waste disposal costs are high, amounting to more than 30 million yen/year. However, after many years of discussions with Kamigoto, we have started disposal and cannot afford to switch immediately.(Estimated amount: a little over 1 ton per day, or about 3 m3)

4. marine plastics

Currently, marine plastics are disposed of using marine debris aid.

Proposals

1. Large household oversize waste

The volume is greatly reduced, The product is collected as charcoal.
No need for cutting,of large oversize garbage will be eliminated.

2.Large animal extermination

The volume is reduced and the product is extracted as charcoal.The exterminated animals can be disposed of immediately. No odor is generated.

3.General Waste

Charcoal and oil are recovered.
Waste disposal is completed on the island and disposal costs are reduced.

4.Marine Plastic Waste

Charcoal and oil are recovered.
This will be one of the few model cases of on-island
model case for on-island processing of marine

Pattern 1: Small Machine Intoroduction(2㎥)

Items to be disposed of)
If there is nothing to dispose of, the disposal cost is reduced by disposing of general waste.
Installed equipment : GXB-2 (designed to accommodate tatami mats, etc.)

Cost : approx.
Operating cost : approx. 13,000 yen/times
Maintenance cost : 1,000,000 yen/year
Consumables cost : 200,000 yen/year
Total : 5.1 million yen/year (300 operations per year)

Profitability :
Collection of bulky waste disposal costs : approx. 15,000 yen/m3
→ Collection cost of 2,000 yen per tatami mat.

(approximately 20 mats are expected from each house)
Cost reduction from general waste disposal: 6,480,000 yen/year
(180 times a year, assuming 600 kg of waste is disposed of each time)

Pattern 2: Middle Machine（5㎥）

Waste to be treated) 1 + 2 + 3 + 4 => All waste on the island will be treated.
The total treatment of general waste will reduce the current cost of treatment.
Installed equipment : GXB-5

Cost : approx. 26,000 yen/trip
Operating cost : approx. 26,000 yen/times
Maintenance cost : 1.5 million yen/year
Consumables cost : 500,000 yen/year

Total : 9.8 million yen/year (300 operations per year)

Profitability :.
Cost savings from general waste disposal : + Revenue from combustible oversize waste
+ Revenue from combustible oversize waste
⇒A profit of about 15 million yen per year is projected.

Additional information : Study the possibility of applying the project to promote regional countermeasures against marine debris, etc.

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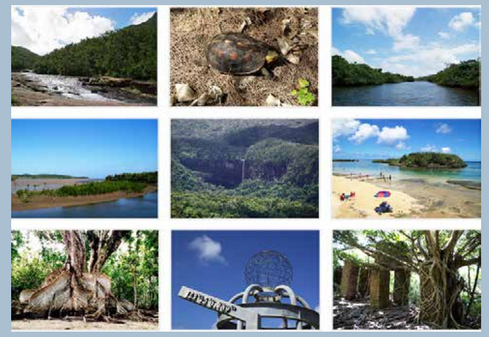
Iriomote, Okinawa, Japan

Iriomote Island belongs to the Yaeyama Islands located at the most southwestern tip of Japan and is the second largest island in Okinawa Prefecture after Okinawa Island. Approximately 90% of the island is covered by jungle and has a unique and diverse ecosystem, which led to its registration as a World Natural Heritage site in July 2021. Iriomote Island and other islands in Okinawa have a serious problem of marine plastic litter.



Population : 1,400 islanders
Amount of marine plastic waste : 34 tons per year

Current Status and Issues

Disposal - There is no way to dispose of marine plastic that washes ashore on Iriomote Island, so it is taken to the final disposal site on Ishigaki Island.

Collection - Collection is mainly done by volunteers, and there are activity limitations.

Suggestion

Treatment - Our equipment will process all marine plastic waste on the island. Recovered resources (recycled oil/charcoal) will be reused in operations.

Target Model:GSB-1/GSB-5

Proposal Advantage

After collection, immediate disposal eliminates the burden of storage and transportation. In addition, the current annual collection volume is 34 tons (171 m3), Currently, 34 tons (171 m3) are collected annually,
The amount of waste collected and treated will be much larger than the current 34 tons (171 m3) collected per year.

Prospected Result

Model 1: Solution for Current Status

Using GSB-1 (1 m3 machine),
the current annual recovery rate of 34 tons/171 m3 of material to be processed

Recycled oil recovery : 108 L/day
Recycled oil recovery minus the amount of oil recovered : -38ℓ/day
Amount of carbon dioxide reduction: 70tCO2/year
Operating cost (OPEX): 1.3M Yen
Amount of carbon dioxide transported: +130tCO2

Model 1.5: Extended Solution

the maximum throughput of 72 tons/360 m3 can be achieved.
72 tons/360 m3 of material can be processed.

Recycled oil recovery : 108 L/day
Recycled oil recovery minus the amount of oil recovered : -38ℓ/day
Carbon dioxide reduction: 147tCO2/year
Operating cost (OPEX): 2.7 M Yen
Amount of carbon dioxide transported: +130tCO2

Model 2: Permenant Solution

Using GSB-5 (5 m3 machine),
The GSB-5 (5m3 machine) will be used to expand and realize processing of up to 390 tons of drifting marine plastics.

Recycled oil recovery : 585 L/day
Recycled oil recovery amount by subtraction : 305ℓ/day
Amount of carbon dioxide reduction: 800tCO2/year
Operating cost (OPEX): 900,000 yen
Amount of carbon dioxide transported: +130tCO2

Subcidy and Budget

- Subsidy for Okinawa Prefecture Industrial Waste Generation Reduction and Subsidy for Promotion of Industrial Waste Reduction and Recycling, etc. (up to 10 million yen)
- Monodzukuri subsidy (Labor-saving framework: up to 80 million yen)
- Entry island tax (Taketomi Town visitor tax)
- Okinawa Prefecture Coastal Debris Subsidy for local countermeasure promotion project (Subsidy rate: 9/10)
- Corporate Hometown Tax

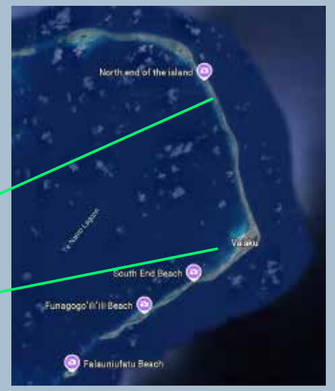
GOMI SOLUTIONS Business & Organization

GOMI Innovative waste technology Solutions

Tuvalu

Tuvalu relies on landfill for waste disposal, and the landfill is reaching its capacity limit.A feasibility study was conducted from April 3rd to 6th, 2025, to confirm the current situation of waste in Tuvalu and to investigate the possibility of introducing GOMIX. As a result, it was concluded that GXB-5 can treat whole waste in Funafuti.

We have signed an installation contract and GXB-5 will be installed in 2025.



Landfill site

Central Area

The amount of waste is 46.8kg per person per year, and there are 6,000 people, so it is estimated that the amount of waste is under 280 tons per year. Waste is collected twice a day (in the morning and evening) by small cage trucks that go around to each house to collect it.In addition, a certain amount is also brought in temporarily from places like the port.

In order to reduce the volume of waste, they are setting fires to the waste piles in the landfill area at the back of the site (but it doesn't seem to be reducing the volume much).

The landfill site has water and electricity. These infrastructure facilities can be extended to the equipment.

Next to the Waste Management Office, there is a facility for collecting PET bottles and bottles, as well as a composting facility. →As the waste disposed of in the landfill is not sorted, remove as much as possible when and after disposing of it, and return it to the collection facility.

The medical incinerator is in operation. (It is little rusty.)

Currently, there is no scale for waste, so the weight of the waste cannot be measured, and the volume is important. (It is said that it will be introduced in the future.)

Landfill site in Tuvalu

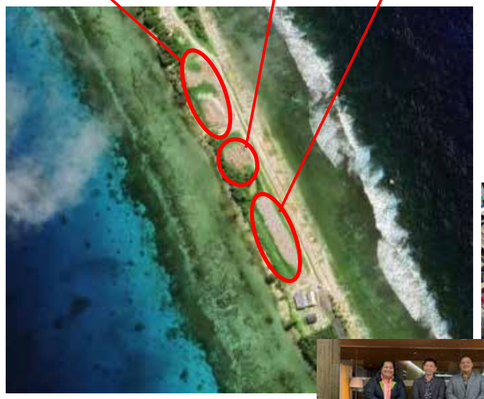
The landfill is located at the northern end and takes about 20 minutes by car from the central area.When you first enter the site, there is a building for the landfill.Then, as the road heads north, there are the 1st Landfill Area, Scrap Area, and 2nd Landfill Area.

Daily waste is dumped in the 1st Landfill Area, and waste from ports and other sources is dumped in the 2nd Landfill Area.The waste is composed of small amounts of organic matter, cans, bottles, PET bottles, cardboard, plastic, etc. We judge that it iseasy to process by GOMIX.

2nd Landfill Area

Scrap Area

1st Landfill Area



The installation of the equipment requires a flat area with a concrete base, and there were suitable areas next to the 1st and 2nd Landfill Areas. Initially, the area next to the 2nd Landfill Area was considered the most suitable, but after receiving advice from Waste Management Director Mr.Epu Falega regarding the ease of infrastructure development, the area next to the 1st Landfill Area was chosen as the most suitable now. Currently, grass is growing there, so it needs to be cut down.

Meeting in Tokyo with Mr.Talia and Mr.Pepetua from Ministery of Environment

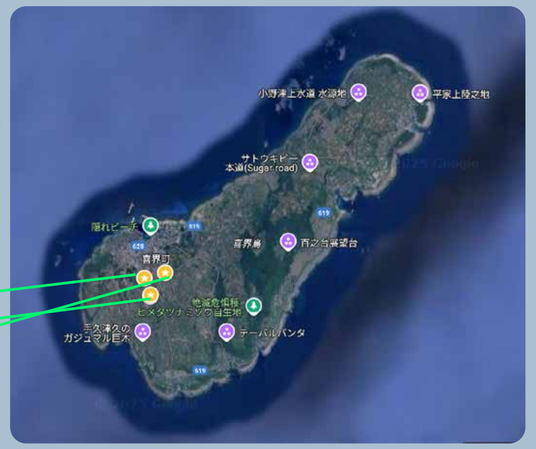
Installation

The area next to 1st Landfill Area is most suitable. We have confirmed can be sufficiently processed by the GOMIX 5M3 (GXB-5). In addition, there is a possibility that there is room for waste treatment capacity, we believe that we can gradually reduce the amount of waste in the existing landfill. GXB-5 Will be installed in 2025.

GOMI Innovative waste technology Solutions

Kikai island

Kikai Island stretches 14 kilometers from south-southwest to northeast, with a maximum east-west length of 7.75 kilometers and a circumference of 48.6 kilometers.
The island is generally flat, with most of its terrain consisting of uplifted coral reefs, making it renowned for coral reef research.
The population is approximately 6,200. During the winter, marine debris carried by north winds drifts ashore, with an annual volume of approximately 100 tons.



Clean center　　Landfill site　　Marine Debris stock

Incineration is carried out at the Clean Center.
The Clean Center was newly completed in 2021.
It incinerates 1,500 tons per year (4.2 tons per day, equivalent to 650 grams per person). The annual consumption of heavy oil is approximately 55,000 liters.
In the past, marine waste was also incinerated, but since the completion of the Clean Center, the incinerator manufacturer has stopped this practice, leaving us with no disposal method.






Okinoerabu Island

Okinoerabu Island is a small island that can be driven around in about an hour, and is also known as a mecca for cave exploration (caving) with 200 to 300 large limestone caves hidden underground.

Okinoerabu Island consists of two towns, China and Wadomari.

The population of Okinoerabu Island is approximately 12,000 people. Specifically, Wadomari Town has approximately 6,000 people, and China Town has approximately 5,500 people.


Clean Center


Landfill Site




The facility incinerates 3,400 tons of waste annually. Fuel costs amount to approximately 30 million yen per year. Marine waste is first rinsed with rainwater to remove chlorine, then mixed with general waste at a ratio of approximately 20% before incineration. The fuel used is kerosene (approximately 130 liters per day).

The Clean Center was constructed over 25 years ago at a cost of approximately 2.7 billion yen, and its combustion efficiency is declining. Once the landfill reaches capacity, there are plans to construct a new Clean Center in Chna Town.

Marine debris volume is 40 tons per year.

Needs

The waste in question is “marine debris” and “landfill waste.” Marine debris amounts to 100 tons per year, but in reality, nearly twice that amount washes ashore.

There are no final disposal methods, and budget constraints prevent the collection of all debris. Landfill waste is being managed through the construction of an underground dam. However, it has been discovered that harmful substances are leaching from the landfill waste, necessitating its proper disposal. Our company plans to propose solutions targeting these waste streams.






Needs

Okinoerabu Island is aiming to become a zero-carbon island. In particular, Mayor Imai of China Town is very enthusiastic about the effective use of waste and would like to see demonstration experiments conducted. The town is also promoting the introduction of an advanced power system called DGR.

When we explained this to the mayor, he responded very positively, and we are now looking forward to moving forward with demonstration experiments.







GOMI Innovative waste technology Solutions

Landfill Waste Model

Reduce landfill waste and convert it into resources. Secure future landfill capacity

Landfills around the world are filling up. In this situation, building new landfills is costly and becoming more difficult every year.

Our machine's ability to process mixed waste allows us to treat and reduce the volume of waste in landfills, turning it into resources and extending the life of landfills.

GOMI Innovative waste technology Solutions

Siem Reap,Cambodia

The project will treat mixed waste in Siem Reap landfill site. The landfill site at Siem Reap is filling up and immediate action is needed for future landfill.

The waste in landfi ll siite is mixed and dirty, but our machine technology can treat them and collect resources from the waste. This feature is not found elsewhere.

Siem Reap Plastic waste is an ideal condition for our technology because organice waste has been gone and other materials are picked up. Siem Reap landfill consists of 4 areas, mainly. and each areas are huge and huge amount of plastic waste is in here.





Exhibition

We brought the equipment to Siem Reap for demonstration. Many Cambodian government officials and others visited us.

Opening Ceremony;
Siem Reap Dupty Govenor : Pin Prakad / French ambassador : Jacques PELLET /
Japanese Consulate General: Masaki Kawaguchi
Excecutive Director of Kita-Kyushu city : Takanori Arima / STC Owner : Philip Kao / GAEA Co-Owner : Dominique CATRY









Demonstration

Our demonstartion started from 25th October,2023 in Siem Reap. We confirmed the result of treatment each waste : Plastic Mixed Waste from Siem Reap Landfill site Tire Waste, Medical Waste. We summarize the result in here.




The plastic waste was compressed with the help of a company located near the landfill site. The target waste consisted of mixed (not sorted by type) plastic waste picked up from the landfill. The weight was approximately 270-300 kg per m3.

As a result, 180 liters of recycled oil was recovered and about 10 kilograms of charcoal was recovered.
Since 100% of the 280 kg of plastic waste could not be considered as plastic, assuming that 90% was plastic, the weight of plastic waste was 252 kg. 180 liters was recovered for 252 kg, which means that the conversion rate of plastic to recycled oil was 71.4% this time.Charcoal is clean and can be used as fuel by solidifying it.








Tire Waste

Approximately 70 liters of recycled oil was recovered. The total amount of charcoal and metal is estimated to be about 15 kg.
(The exact amount of input is not known, and a visual estimate is believed to be about 100 kg) Recycled oil from tires is of the best quality.

Medical Waste

The demonstration was conducted with a view to future disposal of medical waste. The waste is collected directly from the hospital and is separated from other waste by yellow garbage bags. The specific gravity is relatively light, estimated to be 500 kg/container. Although many ampoules and medical waste made of plastic materials were found, most of the waste was found to be food residues.
1㎥ of medical waste was fed into the system and treated. 30 liters of recycled oil was recovered, and the residue was approximately 10 kg. Because of its light specific gravity, it is thought that compaction is effective, as is the case with mixed plastic waste.


Suggestion

Our suggestion is to use our machine to treat waste from this landfill and secure the capacity for the future. Our machine has the following advantages for treating waste from the landfill:

1. Even waste that is a mixture of various types of waste can be treated without separation.
2. No CO2 emissions from the waste treatment itself, since the waste is not incinerated but rather pyrolyzed by superheated steam.
3. Very inexpensive compared to incinerators.
4. Resources can be recovered from waste. Especially, a lot of recycled oil can be recovered from landfill wastes, which are mainly mixed plastic wastes;
5. There is no risk of explosion, because the equipment is at atmospheric pressure.

Area 1	Area 2	Area 3	Area 4
135 m x 143 m	100 m × 63 m	177m×85m81m	164 m × 81 m
482,625㎡	157,500㎡	376,125㎡	332,100㎡
Recovered Oil when all waste is treated in each area			
63,706,500ℓ	20,790,000ℓ	49,648,500ℓ	43,837,200ℓ
CO2 Emission Factor (ton・CO2) (First Low : Recovered Oil Factor / Second Low : Burning Waste Factor/ Third Low : Amount of CO2 Emission)			
165,636	54,054	129,086	113,976
292,412	95,426	227,826	201,212
458,049	149,480	356,972	315,189

Battam Bang,Cambodia

Battambang Province is working to improve the waste management through recommendation from ADB and GIZ, and with multiple stakeholders, including COMPED, which composts waste and sells waste plastics.
However, while large amounts of waste are being transported to the new landfill site, the intermediate treatment facility is only able to treat the limited waste, and efforts to reduce waste are insufficient.

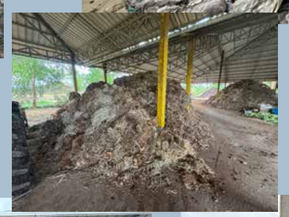


Population : 120,000
According to the Ministry of Environment, the generated waste volume in Battambang province is 365 tons per day, however, the collection volume is being 234 tons per day, a collection rate of only about 64%.However, the information from the site is 100 tons per day.



Currently, there are two landfills in Battam Bang, the first of which has been filled and the second is mainly used; organic waste is still being brought into the first landfill and compost is still being generated by COMPED.

Battam Bang 2nd Landfill can still be used for more than 10 years, but it will be filled in the future. It is advantageous for our equipment that the organic material is going to the first landfill, so we can process mainly plastic waste.




Suggestion

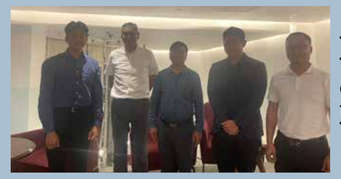
Installation of our equipment next to the second landfill in Battam Bang for treatment. The volume of waste will be greatly reduced, which will greatly extend the useful life of the landfill. We are considering installing a 40 m3 machine first.








Mayor of Battam Bang was invited to see the facilities in Thailand and was given recycled oil and charcoal from the waste.

The 2nd landfill site is 20 hectares.
The facility for intermediate treatment has been completed, but no machine inside, and Battam bang government expect to install some kind of equipment. Waste pickers are only residents of the dormitory and cannot enter from the outside. The amount of waste picked up is about 1 ton per day.
The intermediate treatment facility is about 30m × 60m × 10m. ADB support for solar panels has been decided. 112kW. Cell 1 will be full by 2030. cell 2,3,4 will be expanded and developed.






GOMI Innovative waste technology Solutions

Lautoka,Fiji

Vunato Landfill site... Lautoka City Council operates and manages waste disposal services from its facility at Vunato. The landfill caters to the whole of Lautoka City (citizens, businesses, schools, offices, NGOs, hotels, etc), the whole of Nadi Town, rural areas towards Ba and Nadi, Islands (Yasawa, Malolo, Mamamuca), Denarau (all Hotels), etc.

The landfill has a fully computerized weighbridge system whereby disposal fees are charged based on the weight of waste, category of waste and origin of wastes. Waste disposal rate averages **75.5 ton (post-covid 19).** The facility has a total of six waste disposal cells, a special waste disposal area, a green waste disposal/chipping area and a composting facility.

Lautoka forms the second largest metropolitan area in Fiji after the capital city of Suva. Located 24 km north of Nadi. Located in the center of Fiji's sugar cane cultivation, the main industry is sugar refining, and the entire town is centered around the sugar industry, including being a major sugar shipping port, earning it the nickname "Sugar City".

Population : 116,000 Total (Lautoka Target Area)
Breakdown : 52,000 (Lautoka)/42,000 (Nadi)/15,000 (Ba)/4,000(Yasawa) /3,000(Malolo)





Tipping fee for Landfill site is shown in https://www.lautokacitycouncil.com.fj/vunato-landfill/

The landfill tipping fee is tabulated below:

No.	Category of Waste	Dumping Fee per Ton for City Area (VIP) ($)	Revised Dumping Fee per Ton for Outside City Area (VIP) ($)
1	Household Waste (collected by council's contractor/private contractors)	22.00	30.50
2	Household waste – General (individual resident and direct haulage)	10.50	13.50
3	Market Waste	10.50	13.50
4	Hotel Waste	25.00	30.50
5	Other Business waste/Factory Waste General/Others	29.50	38.00
6	Green Waste/Park Waste/ Drain/Street Sweeping Waste	10.50	13.50

Possibility of private companies

SUGARS OF FIJI
PURE SUGAR FROM PURE NATURE

Lautoka is a location where a major Fijian company has a factory and its waste is currently being brought to the landfill. We would like to cooperate with them, as many of those wastes contain high purity plastics and other wastes suitable for recovery resources.

Partnership

SIF is a organization that is working to solve social issues through collaboration with Fiji with the aim of "producing human resources and businesses that Japan can look forward to in 30 years' time.
SIF is already working on the waste issue and we will cooperate together to solve waste issues in Fiji.

Social Innovation Fiji

Plans

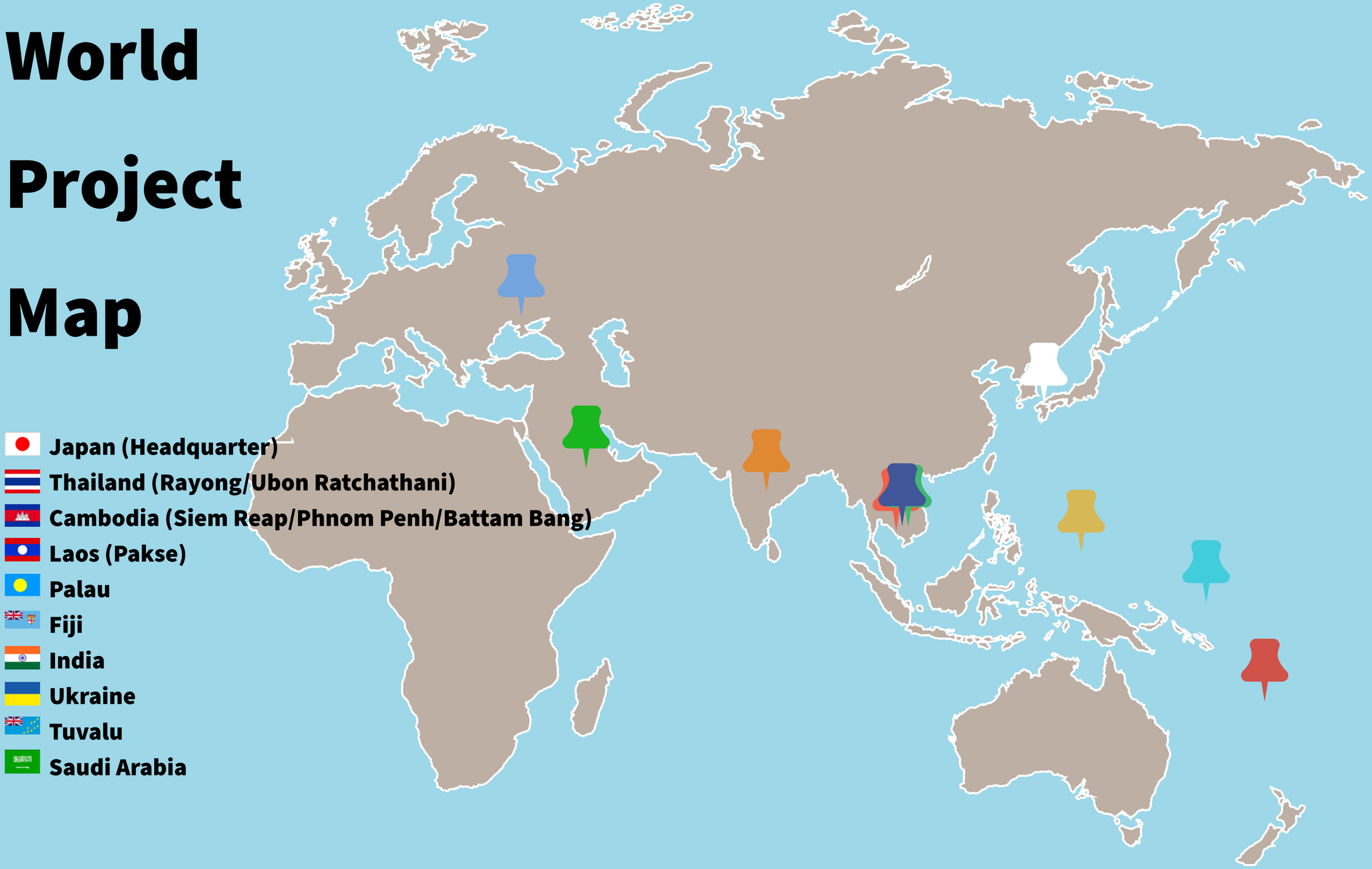
Pilot - GXB-5 (3.5tons per day)

The first plan is to install a minimal-sized GXB-5 with a throughput of 5 m3 per batch. By operating this size, we will start a **circulated waste treatment** system. At the same time, by introducing an intermediate treatment plant, the entire amount of waste currently brought to the landfill will be treated in a recycling-oriented manner.
Invite and train engineers from other island countries with Fiji as a Pacific hub


Mass - GXC-40 (12tons per day)

The GXC-40 will be a large waste treatment unit that will process 40 m3 per day. Due to its large processing volume, the GXC-40 will make a significant contribution to Lautoka's overall waste processing when operated in conjunction with intermediate treatment.Further expansion is possible due to revenue generated from waste disposal.


World Project Map



- Japan (Headquarter)
- Thailand (Rayong/Ubon Ratchathani)
- Cambodia (Siem Reap/Phnom Penh/Battam Bang)
- Laos (Pakse)
- Palau
- Fiji
- India
- Ukraine
- Tuvalu
- Saudi Arabia

GOMI Innovative waste technology Solutions

Project Galleries


with AEPW executives and Rayong Director

with Battambang members


Cambodia Environment Ministery Sector

METI Public-Private Roundt table summit for Ukraine


with
Singapore Project Members


Rayong Seminar


Cambodia Environment Ministery Sector

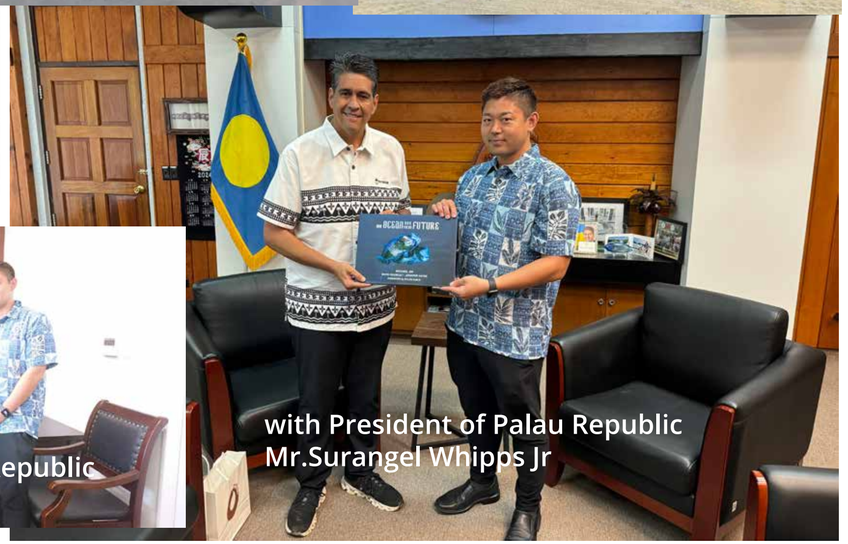

Cambodia Waste Summit
Core Members


Singapore Visit
with Kita Kyusyu members


Cambodia Siem Reap Demonstration
With Siem Reap Govenors, STC chairman,
Japanese consulate, French Ambassador


With Samet island Project members


with Minister of Palau Republic
Mr.Obiien


with President of Palau Republic
Mr.Surangel Whipps Jr

with Nauru President
Mr. David Adeang

with Battambang members

with DMCR Rayong members

Japan-Cambodia Co-Creation Networking Symposium with JETRO/JAXA

PALM10 Summit

with Dupty Minister of
Environment of Japan
Mr.Nakada

In the Future...

Space Debris Treatment

-Treatment in the other planets-

Humans are currently making inroads on the Moon and Mars.
In the future, we may decide to live on other planets.

As long as humans live, waste will surely be generated.
There is also the matter of energy.
Naturally, transporting energy to the Moon and other stars is very costly.

Human migration to the Moon is expected to begin in 2030, at a current estimated transportation cost of $1 kg/$6 million.

With our technology, waste can be converted into energy. We can process waste on other planets without transporting energy.
Such a future awaits us in the future.

GOMI Innovative waste technology Solutions

Business Model Basics

When processed by our machines, the waste is transformed in this way.
These are the basis on which all business models are assembled.
Generally speaking, the less organic waste contained in the garbage, the more profitable it will be.
Also, the more waste that cannot be resolved by incineration or landfill, the higher the profitability.

Metals : 100% of the metals remain intact.
Organic waste : volume reduced to about 10% to 15% and turned into charcoal.
When hardened, they become charcoal briquettes.
Plastic wastes and resin : collected as recovered oil (60%-70%).

Our specialty

Mixed waste and Marine waste can be processed

Profitability: High → Low

Model	
1	Treatment of wastes that contain metals and are also usually difficult to dispose of.
2	Get special processing fees (e.g., tourism tax, green tax, etc.)
3	Obtaining recovered oil from plastic waste
4	Mixed waste treatment from household

Potential for higher profitability in the future

Carbon Credit / Recovered Oil Refining
Higher added value through certification of recovered oil

Marketing Stage Model

	<Stage 1> Approach Recognition	<Stage 2> Explanation Simulation	<Stage 3> Trial Feasibility Study	<Stage 4> Manufacturing Installation	<Stage 5> Operation	<Stage 6> Maintenance Support
	Marketing & Development	Marketing & Development	Operation & Maintenance	Operation & Mainte-	Operation & Mainte-	Operation & Mainte-
Information Needs:	<Introduction> Respond to customer inquiries Research and approach potential clients <Preparation> Catalog WEB site	▪ Explain the details of the machine to the customer and make sure they understand it. ▪ Identify the types of waste the customer has and the types of waste that are a potential ▪ Identify the amount of waste and envision the target machine ▪ Simulate the business model ▪ Sign an NDA	▪ Obtain and test waste from customers or bring equipment to site and run it ▪ Discuss costs with customer Basically, the customer pays for shipping and each operation.	Manufacture and install equipment. 50% of the total fabrication cost is to be deposited in advance. After assembly and operational verification, the equipment will be sent upon receipt of the remaining 25%. Receive the final 25% after on-site assembly and operational checks.	Keep the equipment running.	Perform maintenance on equipment. Perform major maintenance on a regular basis. Collect data from equipment operation and examine new issues and technologies.