



ASEAN-Japan Economic Co-Creation Forum

The Demonstration Project for and Energy-saving Resource Circulation System to Utilize Electronic and Electrical Equipment Waste in Thailand.

Hidaka Yookoo Enterprises Co.,Ltd.

© All right reserved 2018 Hidaka Yookoo Enterprises Co., Ltd.



Overview of Hidaka Yookoo Enterprise

◆ **Company name: Hidaka Yookoo Enterprises Co., Ltd./ 日高洋行エンタープライズ (株)**

◆ Business description:

1,Collection, sorting, and processing of ferrous and non-ferrous scrap (Include WEEE scrap)

2,Dismantling and purchase of various vehicles, machine tools, etc.

◆ Representatives: Chairman: Mr. Tatsuo Hidaka President: Mr. Yasuo Hidaka

◆ **Foundation: 1928 (Showa 3rd year) ~ 95nd year of business in Thailand.**

◆ Capital: 250 million baht

◆ Customers

<Purchasing>: Domestic automobile manufacturers, home appliance manufacturers and parts manufacturers, steel/steel pipe manufacturers, coil centers, and others (corporate purchases only)

<Sales>: Domestic and overseas blast furnaces, electric furnaces, casting manufacturers

◆ Handling volume and sales*:

2019 644,916 tons About 53,750 tons/M. 6.87 billion baht

2020 595,581 tons About 49,632 tons/M. 5.82 billion baht

2021 709,007 tons Approx. 58,850 tons /M. 11.30 billion baht

2022 727,649 tons Approx. 60,637 tons/M. 12.64 billion baht

*The figures above are for Hidaka Yookoo alone. The amount handled by the Sriracha factory was set Joint venture in July 2014, so it is excluded from the above.

◆ Number of employees: Approximately 651 (full-time employees)

◆ Owned equipment: 25 units - baling machine, 12 shredders, briquette machine, guillotine shear, component inspection machine, etc.

◆ Vehicles owned: 250 commercial vehicles (trucks and trailers), 50 heavy machinery, 50 forklifts

◆ Web site: <http://www.hidakayookoo.co.th>

◆ ISO Certificate and Green Industry Certificate. ISO 9001,ISO14001, ISO45001, ISO27001, ISO14064-1, and Green Industry Level 5



Ground Design of Hidaka group

Hidaka Group Vision

We will contribute to global environmental conservation through our recycling business and realize a recycling-oriented society in line with the SDGs philosophy.

Mission

Be a company recognized by all stakeholders through complying with laws and regulations and fulfilling corporate social responsibility.

Value

Introduce, deploy and enlighten a sustainable social recycling system with less environmental impact in the ASEAN region, and spread the significance of recycling.

100th Anniversary Goal

By the end of 2028, the 100th anniversary of the company's founding, we will become the number one global recycling company in the ASEAN region.

Target : Achieve annual handling volume of 1 million mt, sales 200 million US\$, and PBT 8.5 million US\$ by 2028

◆ **What are expected to us now : Evolution to be global recycling company** ◆
Diversification of our business models & service / overseas expansion

Limitations of collectable factory scrap as worried at Japanese factories in Thailand

How we could maintain our independence and sustainable growth in a rapidly changing business environment ?

Increasing global environmental awareness and changes in industrial structure

Expanding influence of growing Chinese economy



Purpose of WEEE recycling demonstration

Background of the Initiative

In Thailand, the amount of waste electrical and electronic equipment (WEEE) is on the rise as the standard of living improves with economic growth. On the other hand, laws related to the collection and disposal of waste have not kept up with the development, and problems such as health damage to workers and water and soil pollution caused by improper waste disposal have become issues.

Recognized issues

- **Insufficient legal system regarding WEEE processing (Law)**
- low disassembly and sorting technology and only recycles valuable metals (**Technology**)
- Appropriate treatment of hazardous cannot be treated in Thailand (**International resource circulation**)

Goal

- Efficient use of resources by building a system for international resource circulation
- Clarification of the WEEE recycling model in the Asian region
- Recommendation of treatment model standards for certified factories for WEEE treatment (Thai Ministry of Industry, Thai Ministry of Natural Resources and Environment)



Illegally imported WEEE /Thai Custom



Waste plastic import volume in Thai



Burned to pollute soil and water

NEDO Concludes MOU with Thai Department of Industrial Works on Demonstration Project for Recycling Waste Electronic Equipment

In September 13, 2019, NEDO concluded a memorandum of understanding (MOU) with the Department of Industrial Works (DIW) in the Thai Ministry of Industry (MOI). Under the MOU, the two sides will conduct a demonstration project on the recycling of waste electrical and electronic equipment (WEEE) in the Thai capital of Bangkok and surrounding areas.

In this demonstration project, with the goal of assisting Thailand in the development of a WEEE recycling system, NEDO will provide support for the development of recycling guidelines suitable for Thailand in parallel with the introduction of an integrated WEEE recycling system utilizing Japan's advanced WEEE recycling technology. In addition, the project aims to establish a recycling model where useful resources that cannot be processed in Thailand will be recycled in Japan and thereby realize an international resource circulation system.



MOU Signing (DIW-NEDO)

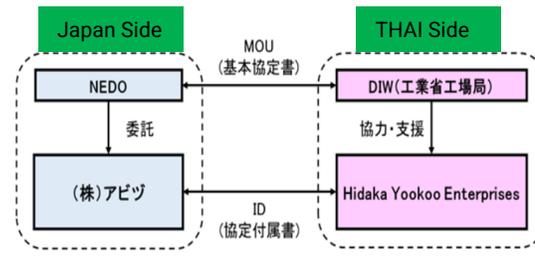
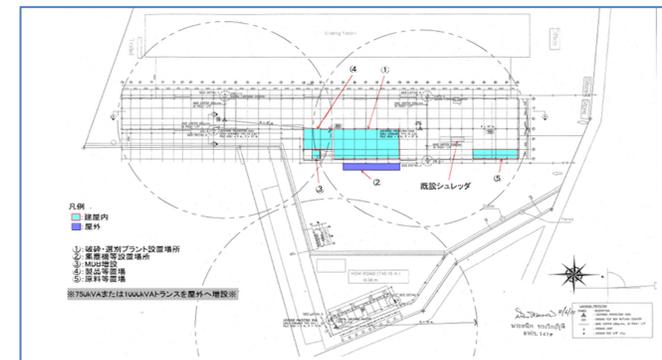
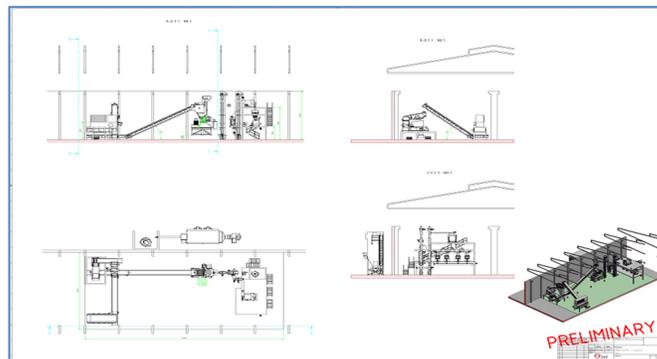


図2 実証事業の実施体制図

Demonstration project implementation system diagram



Demonstration Equipment





WEEE Scrap Process flow

WEEE Scrap

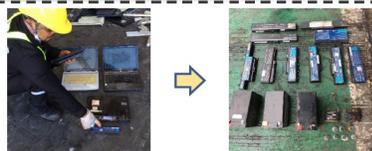


Pre Sorting

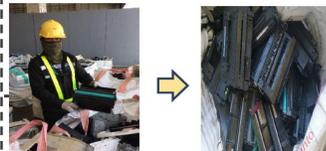
PRE-SORTING

Pre-sorting is required to sort out dangerous materials before throwing into the crusher to prevent fire and protect the crusher.

Fire Prevention



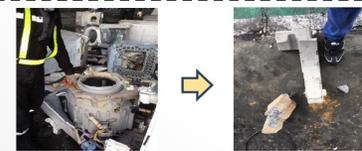
Prevention of dust explosion



Collect Freon gas



Prevention of equipment damage

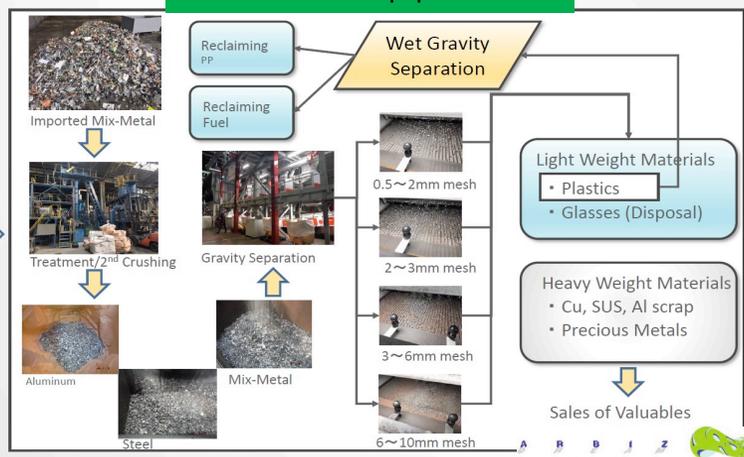


THE PROCESSING FLOW OF THE PILOT TEST

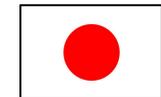
Primary Shredded



Demonstration equipment



RECOVERED MATERIALS IN PILOT PLANT



In order to further deepen the resource circulation between Japan and Thailand, we will continue our activities through cooperation with each company, approaching related government offices, and disseminating information to individual consumers.

Issues recognized WEEE and business extend for future.



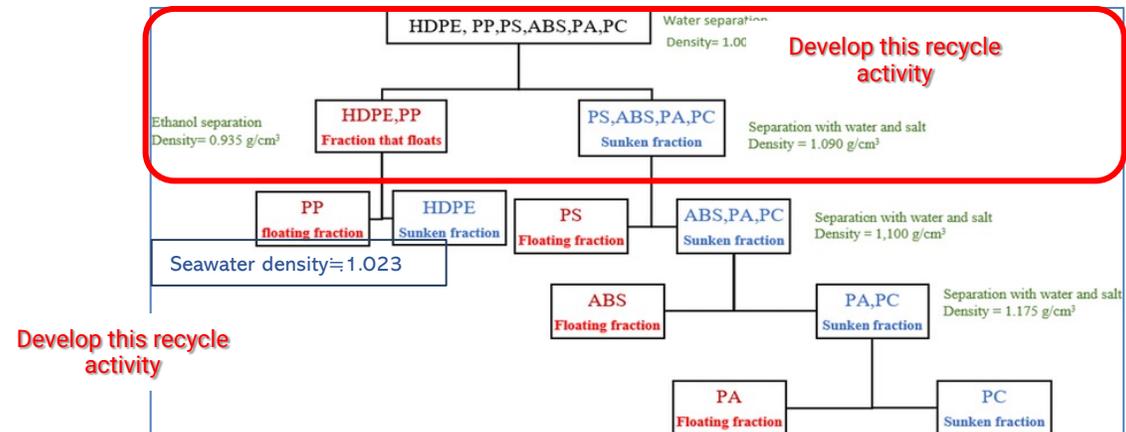
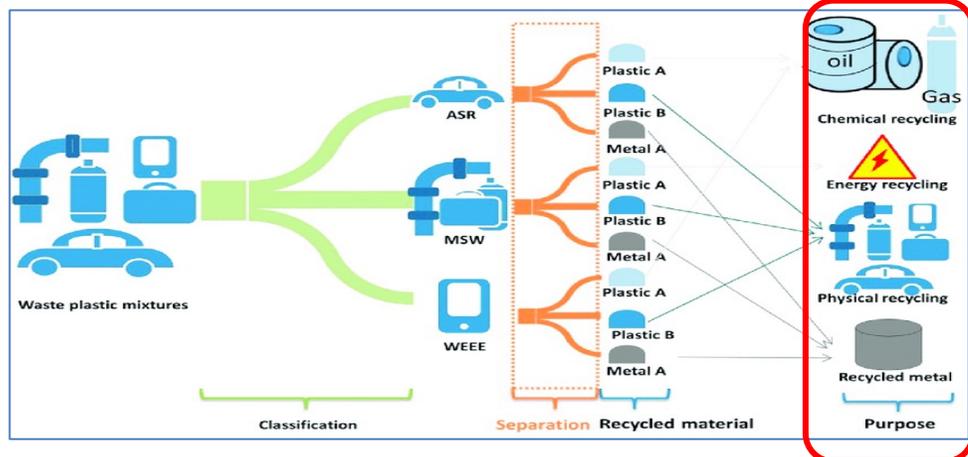
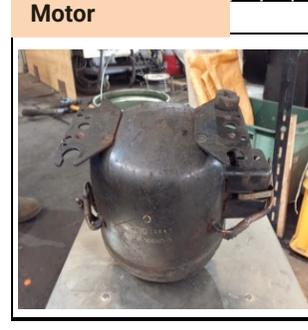
Doing NEDO demolition activities, we found mottainai points and mission to do as commercial business and extend for future

Activity points/認識した課題

- ▶ Plastic separation and material recycling request
- ▶ Oversize scrap tangled by copper wire
- ▶ Dismantle motor scrap (Copper, Plastic)
- ▶ Compressor oil disposal
- ▶ Battery recycle (Primary Battery)
- ▶ ELV battery and components disposal

Action Plan/取組内容・施策方向性

- ▶ Install water separation system (for Thermal and Material recycling)
- ▶ Develop and Install shredder for suitable for WEEE
- ▶ Study and discuss with Producer, Recycle friendly products.
- ▶ Using for RPF, RDF energy
- ▶ Using EF mill for as Steel and Carbon Material.
- ▶ ELV recycle plant connect to WEEE recycle (Propose ELV law)



Enhancement of Handling for future



We will promote recycling activities in the following fields according to the changing times.

- Battery recycling (primary, secondary, including automobile batteries)
- Solar recycling (panels, modules)
- Information security product dismantling (ATM, paper media)
- Windmill
- ELV Recycle
- Expand recycling site in Thailand

Recycling plant backbone network (Recycle park concept)



<https://www.thailandtravel.or.jp/areainfo/thailand-map/>

As technology evolves, advanced recycling equipment, technology, legal requirements, and recovery are required, and the alliance proposes a model that can build resource circulation.