

RENERGY SYSTEM



RENERGY SYSTEM

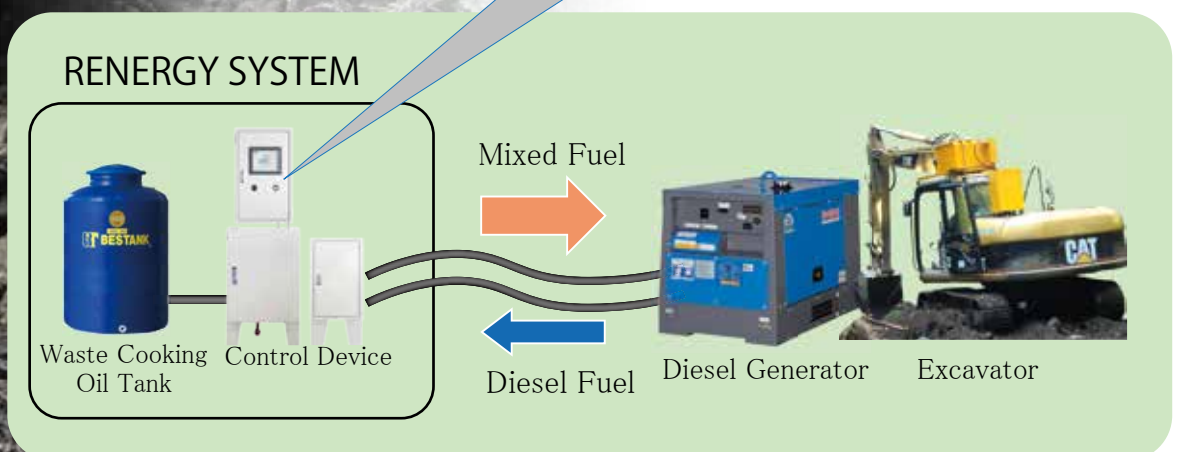
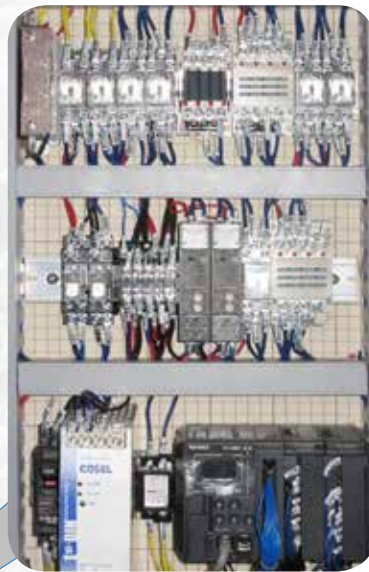


RENERGY SYSTEM makes it possible to use unpurified waste cooking oil as fuel in a diesel engine.

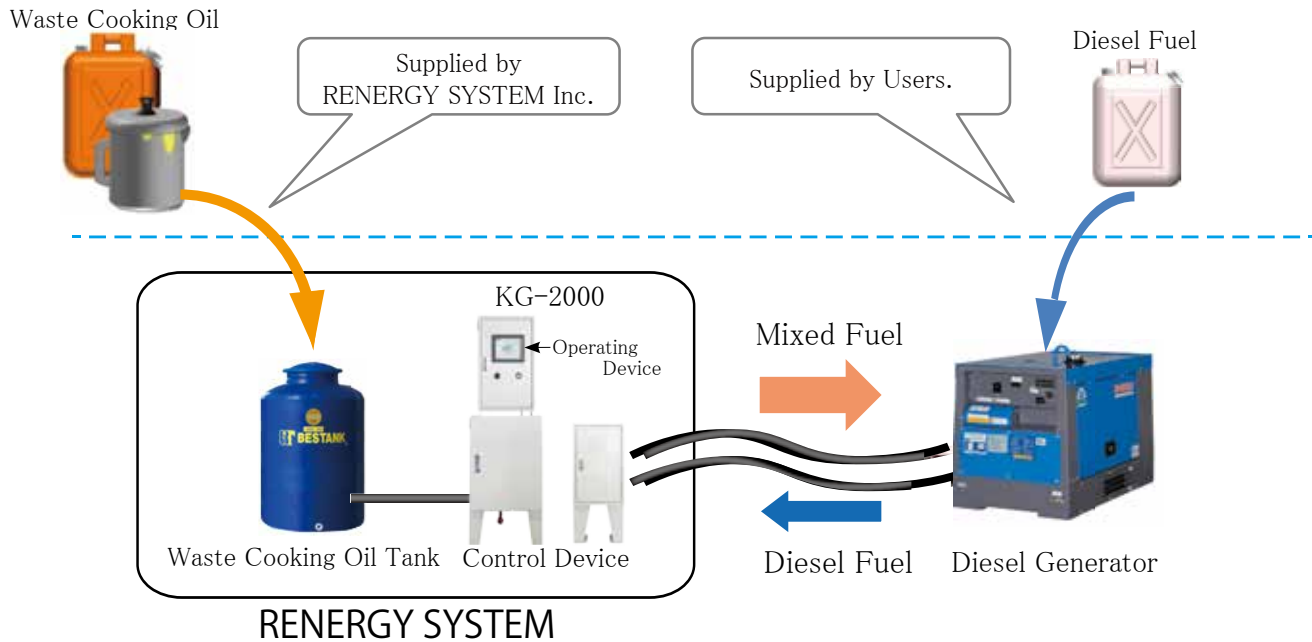
The equipment mixes waste cooking oil with diesel fuel and supplies it to the diesel engine. The mixing ratio is automatically controlled by computer.

By using RENERGY SYSTEM with the diesel engine,

**You can save 2 million pesos
of fuel costs per year**



System Proposal



RENERGY SYSTEM Specifications

Item \ Model Number	KG-1000	KG-2000
Target Output of Generator	~ 500kVA	~ 1MVA
Control Device Dimensions (W×D×H)	1100 × 250 × 1400 mm	800 × 250 × 1500 mm
Waste Cooking Oil Tank Capacity	200 ℓ	200 ℓ ※
Waste Cooking Oil Tank Dimensions (W×D×H)	650mm φ × 1300 mm	650mm φ × 1300 mm
Operating Device	Mechanical Button	Touch Panel
RENERGY SYSTEM Investment Cost ①	PHP 2,000,000	PHP 2,800,000

※ Waste Cooking Oil Tank Capacity depends on Target Output of Generator

Advantages

By using RENERGY SYSTEM with the diesel engine, diesel fuel consumption is reduced because this equipment uses waste cooking oil as main fuel.

Therefore, it saves more than PHP2,000,000 of the fuel costs per year.

Fuel Cost Estimate (per Year)

Application Item		KG-1000	KG-2000	Notes
Fuel Consumption		396,000 ℓ	633,600 ℓ	Operate at 70% of rated output, Generating Efficiency 2.8 kW/ ℓ (KG-1000), 3.5 kW/ ℓ (KG-2000), Operating Time 12 hours/day 22days/Month
Fuel Cost	Before installation	PHP 11,880,000	PHP 19,008,000	Diesel Fuel PHP30/ ℓ
	After Installation	PHP 9,504,000	PHP 15,206,000	Waste Cooking Oil PHP20/ ℓ Mixing ratio 60%
Savable Fuel Cost ②		PHP 2,376,000	PHP 3,802,000	

ROI ※ Estimates

Application Item		KG-1000	KG-2000	Notes
ROI (=①÷②)		10 months	9 months	

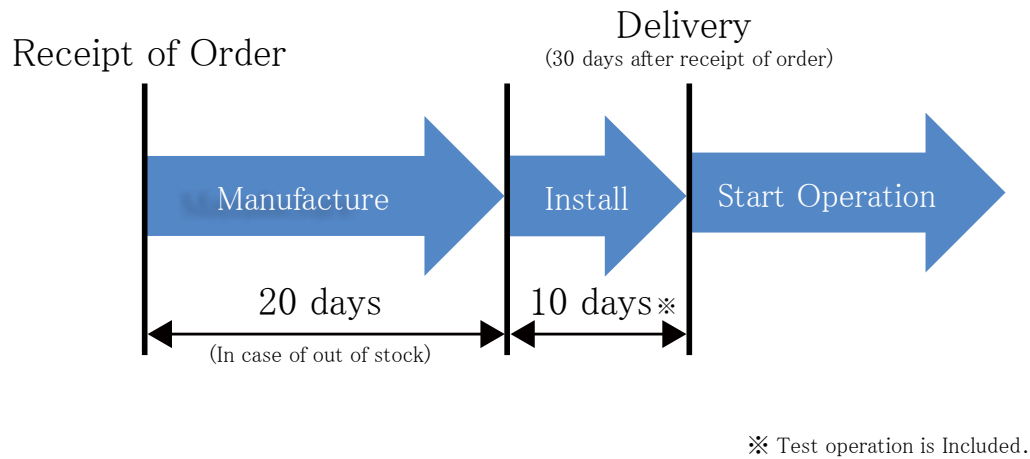
※ Return on investment

You can recover the investment cost within 1 year.

Implementation

In case of generator

Schedule

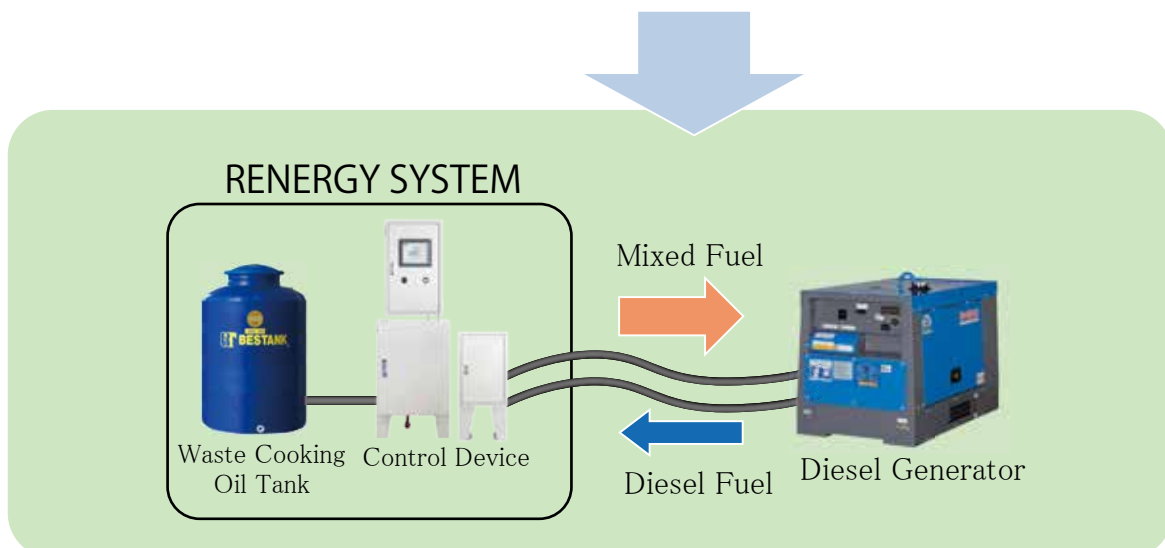


Installation

We will modify fuel hoses in the generator.



Diesel Generator



Operation and Maintenance

Operation

Just turn the operation switch to ON/OFF position.

- ON Mix waste cooking oil with diesel fuel and supply it to the generator.
- OFF Wash the inside of the engine by diesel fuel automatically. (Patented Technology)

Regarding procurement of waste cooking oil

- In accordance with your request, RENERGY SYSTEM Inc. will supply it.
- Waste cooking oil which you have is also available. (Be sure to filter it before using.)

Maintenance

Maintenance Contents	Frequency		Notes
Scheduled Inspection	Within one month from the date of delivery	Once a week	Free of Charge
	Within one year from the date of delivery	Once a month	Free of Charge
	After one year from the date of delivery	As needed	Contact us
Fuel Filter Replacement	As needed		Consumable supplies are not provided free of charge.
Refueling of Waste Cooking Oil	As needed		Waste Cooking Oil PHP20/ ℓ

Warranty

For a period of one year from the date of delivery, RENERGY SYSTEM Inc. will repair the product at no cost to you.

(This warranty is void in case of improper use of the product. You will have to pay for expendable supplies.)

Installation Examples

Example 1. Excavator

Place Chizu Japan
Date July 2012
Ratio of UCO 60 %



Example 2. Philippines

Place Philippines
Date February 2013
Rated capacity 30 kVA
Ratio of UCO 50 %



Example 3. Small Bus

Place Philippines
Date October 2013
Ratio of WCO 70 %





JAPANESE ADVANCED TECHNOLOGY



Example 4. Generator

Place	Philippines
Date	April 2014
Rated capacity	220 kVA
Ratio of UCO	70 %

Example 5. Generator

Place	Philippines
Date	June 2014
Rated capacity	500 kVA
Ratio of UCO	90 %



Example 6. Generator

Place	Philippines
Date	April 2015
Rated capacity	150 kVA
Ratio of UCO	90 %

Reference Information

RENERGY SYSTEM Basic function

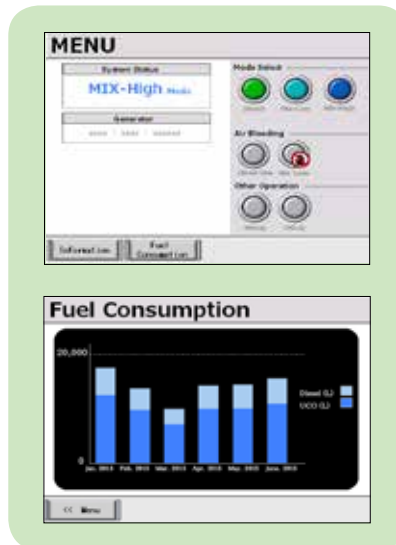
- Automatically control the ratio of waste cooking oil from 0 to 70 %.
- Monitor water temperature and exhaust gas temperature, and control the equipment for optimal performance.
- It is possible to connect 2 generators with RENERGY SYSTEM. This enables you to switch and use 1 of 2 generators. (available as an option)



KG-1000

RENERGY SYSTEM with Touch Panel

- You can operate intuitively through the display screen and check running state easily.
- You can check saved diesel fuel consumption graphically every month.



KG-2000

Automatic Purge Algorithm

- Automatic Purge Algorithm which washes inside of the engine periodically is equipped. (Patented Technology)
- Waste cooking oil will not remain in the engine.

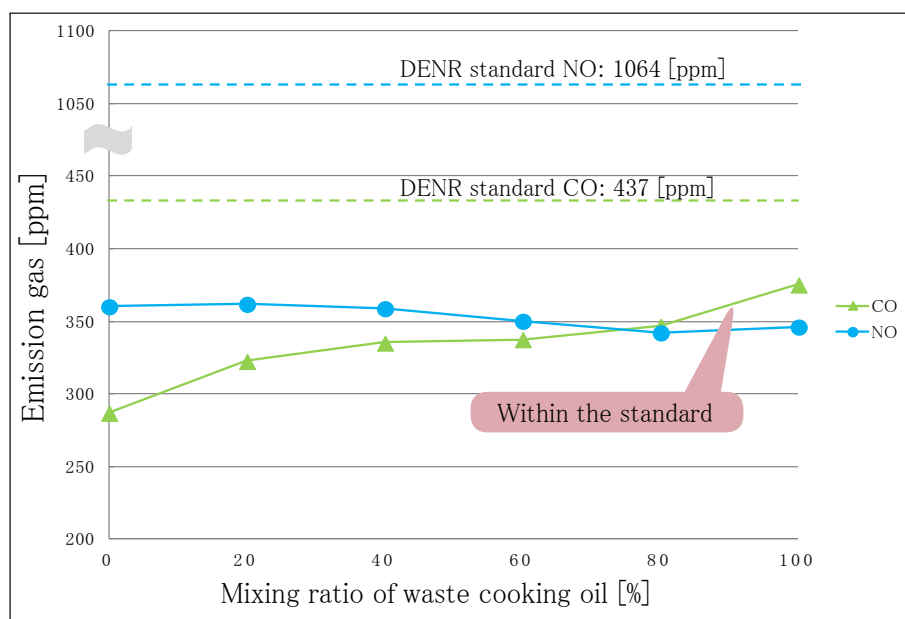


Status of Exhaust Gas Valve

Stack Emission Test Data

Change of Emission Gas

Even if the mixing ratio of waste cooking oil is high, the resulting pollutants discharged from the gas emission are well below the standard limits set by the DENR.

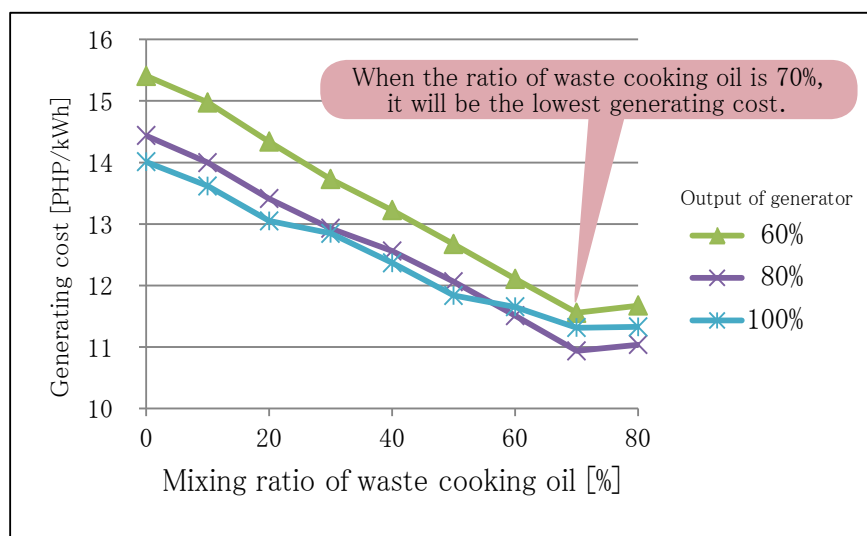


Generating Cost Data

Change of Generating Cost

If the ratio of waste cooking oil exceeds 70%, it decreases fuel efficiency and increases generating cost.

The point at which generating cost is the lowest changes depending on the quality of the waste cooking oil.



(Case of Philippines)

Contact for inquiries



#19 Joe Borris St. Bagong Ilog,
Pasig City, 1600 Philippines

Tel/Fax +63-2-655-7912
Web <http://www.renergysystem.com>
E-mail info-renergy@renergysystem.com



2-148 Asagiridai Kanazawa City
920-1158 Japan

Tel +81-76-224-7562
Fax +81-76-224-7071
Web <http://www.renergy.jp>
E-mail renergy@renergysystem.com