						- 55	renewable energy
E-08	Keywords	Y3	equipment or facility	Z1/2	solid fuels/oil	E25	general-purpose machinery
							Kanadevia Corporation

Waste to Energy System

Features

- A thermal recycling system to recover energy from waste
- Burning waste as fuel greatly reduces consumption of fossil fuels
- Incinerating refuse and generating power from the waste heat by using a steam boiler and a steam turbine
- Reducing refuse volume by incineration helps for an effective use of reclaiming land
- Removing harmful substances in exhaust gas by special treatment facilities
- Stabilizing fly ash containing harmful substances by special treatment
- Enabling the stable incineration of various refuse

Basic Concept or Summary

- Burnable refuse in the refuse pit is incinerated with air supply through the stoker-type grate.
- The steam boiler recovers heat from the high-temperature generated gas of about 800 degrees.
- Steam generated in the boiler is sent to the steam turbine and used to generate power.
- The exhaust gas after heat recovery is processed in the exhaust gas treatment facilities to clear the environmental standards. Then the gas is released to the atmosphere.
- The incinerated refuse is discharged as ash with reduced volume in about 1/10 of the original refuse and then buried.

Outline of facilities



Power output by facility scale (based on Hu = 8,800 kJ/kg)



Facility scale (t/day)

Basic flow of power generation from refuse (Example)



Effects or Remarks

- A thermal recycling system to recover energy from waste that was previously disposed of in landfill sites.
- Burning waste as fuel greatly reduces consumption of fossil fuels.
- Optimizing boiler design by visual simulation
- Various combinations available at the customer request
- No noise, vibration, and odor from the facilities. Good impression to local residents by supplying heat from the plant waste-heat recovery to a district heating system, building and heated swimming pool or spa for residents on the premises
- Established technology of a history over 40 years
- 8,000 hours or longer continuous run is possible

1962

Domestic

Installation in Practice or Schedule

Simulation of boiler shape



Regional heat supply



The Shinagawa Garbage Processing Plant of Tokyo not only generates power of 15,000kW but also supplies incineration heat to more than 5,000 households in the neighboring Yashio Housing Complex mainly for heating and boiling water. (Photo from the website of The Japan Heat Service Utilities Association)

Stable and reliable technologies accumulated through the experiences of over 40 years from

Power generation from refuse built by Hitachi Zosen in Japan

◆ 60 plants in Japan for a total power output of 350 MW from refuse

In total: 60Plants, Total power generation: 347,480kW Hitz 450t/d×2 (32,000kW)



Overseas Many in Korea, Taiwan, and China

> 7 incineration plants built by Hitachi Zosen in Korea



- ◆ 5 incineration plans built by Hitachi Zosen in Taiwan
 - 12 incineration plants built by Hitachi Zosen in China



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