

6 REFERENCE / TYPICAL PROJECTS

REFERENCE PROJECT-1151





ENTECH – RENEWABLE ENERGY SYSTEM

PROJECT: 1151
THERMAL CAPACITY: 6.4 MWt (≈ 1.4 MWe)
APPLICATION: Waste Derived Fuel (WDF)
WDF TYPE: Biohazardous Waste (@ 40 MJ/kg)
WDF CAP.: 20 T/dy (~ 60 T/dy of MSW)
ENV. STD.: Compliance to equal of EUD2000/76
CUSTOMER: CGMH Corporation
DATE INSTALLED: 2004
LOCATION: Taiwan



←
Energy
Utilisation
Heat
Exchanger /
Steam Boiler

→
3rd Stage of
Air Quality
Control
System



PROJECT DETAILS: The 2nd delivery for the CGMH Corporation (refer to ENTECH project no. 1115 for further details.





REFERENCE PROJECT-1150



ENTECH – RENEWABLE ENERGY SYSTEM

PROJECT: 1150
THERMAL CAPACITY.: 1.6 MWt (Equivalent to 0.4 MWe)
APPLICATION: Waste Derived Fuel (WDF)
WDF TYPE: Biohazardous Waste (@ 40 MJ/kg)
WDF CAP.: 3.5 T/dy @ 40 MJ/kg (~ 15 T/dy of MSW)
ENV. STD.: Compliance to equal of EUD2000/76
CUSTOMER: RCO Investment Corporation
DATE INSTALLED: 2003
LOCATION: Poland



←
 (Foreground)
 Materials
 Handling
 Device

→
 (Foreground)
 3rd Stage of
 Air Quality
 Control
 System



PROJECT DETAILS: A group of private investors and RCO Hospital; a 800 bed leading oncology facility, recognized that waste derived fuel could be utilized to satisfy the hospital's high energy demands. The ENTECH – Renewable Energy System process waste derived fuel from the hospital's own waste, plus biohazardous waste collected from other facilities within a 100 kilometer radius.

The result being that RCO Investment Corporation (partially owned by RCO Hospital) sells energy to the hospital at discounted rates below conventional fuels, the hospital's existing boiler room plant is now only adopted as standby and the ENTECH system produces energy equivalent to over 1.0M litres of fuel oil per year (or around 1.0M cubic meters of natural gas per year).



©

REFERENCE PROJECT-1142



ENTECH – RENEWABLE ENERGY SYSTEM

PROJECT: 1142
THERMAL CAPACITY: 3.5 MWt (\approx 0.8 MWe)
APPLICATION: Waste Derived Fuel (WDF)
WDF TYPE: Byproduct of Pharmaceutical Mfg.
 (@ 20 MJ/kg)
WDF CAPACITY: 15 T/dy (\sim 30 T/dy of MSW)
ENV. STD.: Compliance to US-EPA
CUSTOMER: Scinopharm Corporation
DATE INSTALLED: 2001
LOCATION: Taiwan



PROJECT DETAILS: In the application above, ENTECH's unique "Liquifire"™ liquid injection system is adopted to inject and atomize liquids into the Pyrolytic Gasification Chamber. Gasification occurs and syngas having similar properties to methane gas is produced. The syngas is fired in the ENTECH Syngas Burner into a fire-tube type steam generator. Steam is used for process needs, or cogeneration can be adopted for electricity generation.

Complete environmental impact assessment reveals:

- Fossil fuel consumption is negated (or reduced).
- Reduced emission of pollutants from waste gasification as compared to combustion of some conventional fuels.
- Greenhouse gas production from waste decomposing at landfill is negated.
- Landfill leachate is negated.

As well as the significant environmental benefits, the ENTECH Renewable Energy System provides for relatively short-term return on investment; by alleviating or reducing purchases of fossil fuel.



©

REFERENCE PROJECT - 1134



ENTECH – PYROLYTIC GASIFICATION SYSTEM

- PROJECT NO.: 1134
- THERMAL CAPACITY: 13.9 MWt
- APPLICATION: Waste Derived Fuel (WDF)
- WDF TYPE: MSW (@ 10 MJ/kg)
- WDF CAPACITY: 60 T/dy
- ENV. STD.: Compliance to BS 3316
- CUSTOMER: Genting/Sri Layang Municipality
- DATE INSTALLED: 1998
- LOCATION: Malaysia

View Above
mezzanine waste
tipping floorView below
mezzanine waste
tipping floor

PROJECT DETAILS: A resort complex and surrounding community processes around 60 T/dy of MSW-biomass (municipal solid waste-biomass). With this quantity of MSW-Biomass converted into energy, significant environmental and economical benefits are achieved (as compared against equivalent energy from fossil fuel and waste disposal by composting) and include:

- Reduction of $\approx 4,350$ T/yr of virgin fossil fuel use.
- Hazardous ultrafine particulate emissions are negligible at ≈ 900 times less.
- CO₂ equivalent "greenhouse" emissions are $\approx \frac{1}{2}$, being equivalent to a reduction of 350,000 T over a 20-year project life.
- Toxic dioxin/NAH emissions are $\approx 1,000$ times less.
- Negligible effect on heavy metal discharge to land.
- Negligible haulage and landfill cost.
- Fossil fuel savings of \approx US\$2,000,000 per year.
- Eligibility for government recycling tax incentives and carbon credits.



REFERENCE PROJECT - 1123



ENTECH – RENEWABLE ENERGY SYSTEM

- PROJECT NO.: 1123
- THERMAL CAPACITY: 5.8 MWt
- APPLICATION: Waste Derived Fuel (WDF)
- WDF TYPE: Byproduct of Food Processing (@ 7 MJ/kg)
- WDF CAPACITY: 72 T/dy
- ENV. STD.: Compliance to equal of US-EPA
- CUSTOMER: Singapore Food Industries
- DATE INSTALLED: 1998
- LOCATION: Singapore
- ENERGY OUTPUT: 4.0 MWt (as Steam)



↑ Energy Utilisation Heat Exchanger / Steam Boiler.



↑ Air Quality Control System.



REFERENCE PROJECT-1115



ENTECH – RENEWABLE ENERGY SYSTEM

PROJECT: 1115
THERMAL CAPACITY: 6.9 MWt (≈ 1.7 MWe)
APPLICATION: Waste Derived Fuel
WDF TYPE: Biohazardous Waste
WDF CAP.: 20 T/dy (~ 60 T/dy of MSW)
ENV. STD.: Compliance to US-EPA
CUSTOMER: C.G.M.H. Corporation
DATE INSTALLED: 1996
LOCATION: Taiwan



← Project 1115 and many other projects concurrently process liquid wastes.

PROJECT DETAILS: C.G.M.H Corporation (part of the Formosa Group) is another satisfied ENTECH customer, including having recently installed their second ENTECH – Renewable Energy system. As well as protecting the environment by reduced fossil fuel consumption and associated emission concerns, the “destruction” of infectious waste eliminates landfill sites as a source of serious infectious diseases. In fact, many countries are now insisting on thermal degradation of infectious waste as alternative “treatment” processes (e.g. sterilization, chemical disinfecting), have been found to be ineffective against many Encephalic type pathogens.



©