INNOVISION-PECMA

PECMA POLLUTION CONTROL & EQUIPMENTS

FROM WASTE TO EFFICIENT CLEAN ENERGY

Processing Capacity 20 TPD to 4000TPD

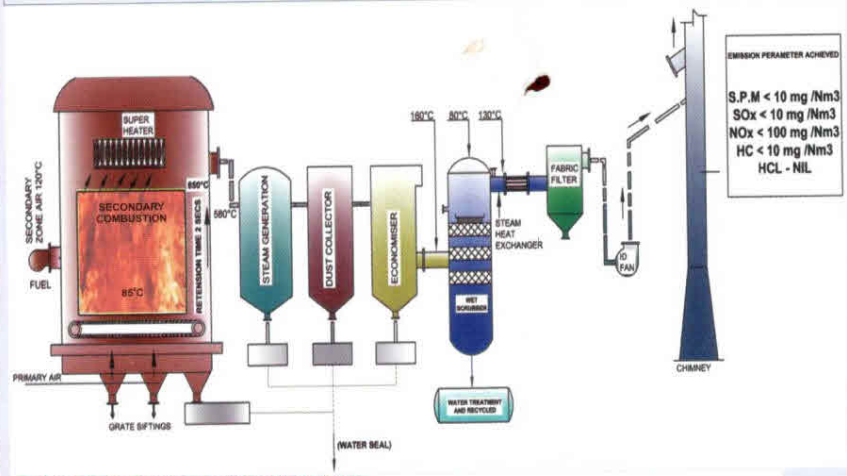
REFUSE DRIVE FUEL POWER

Energy Balance

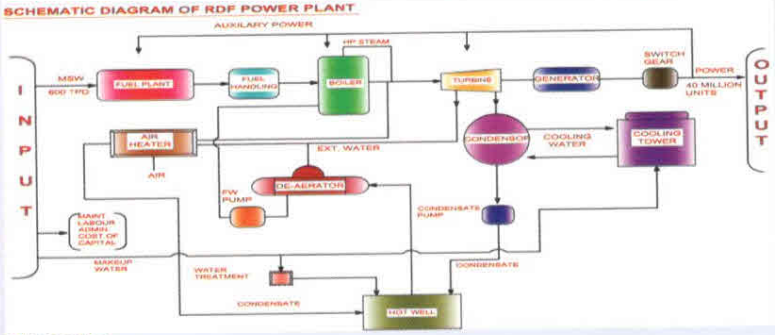
Energy in Municipal Solid Waste (MSW) --100%
Energy carried away in compost-11% (Output product of High Value)
Energy in By Product Plastic12%- (Output product of high value)
Energy recovered in Fuel RDF- 77%
Power plant operates in co-gen Mode, Energy recovered in Power Plant
Electrical Energy- 23%
Thermal Energy- 13% for Drying
Total Energy Recovery- 36%

Salient Features

- Clean, green energy is produced.
- There are no toxic discharges in either liquid , gaseous or solid form.
- As MSW consists of current biomass, there is no net addition of Co2 into the atmosphere thus contributing to climate change mitigation
- WtE plants based on this technology qualify for CDM benefits
- Does not contribute to global warming
- As the material now land filled has been sterilized, it does not decompose thus avoiding generation of methane, a potent greenhouse gas.
- Technology is low cost and low breakeven point
- Plant is of modular design, enabling capacity addition with ease as the city grows.
- Technology provided in typical modules to meet requirement of cities with varying population profiles
  Bulk handling of MSW in an environment friendly manner



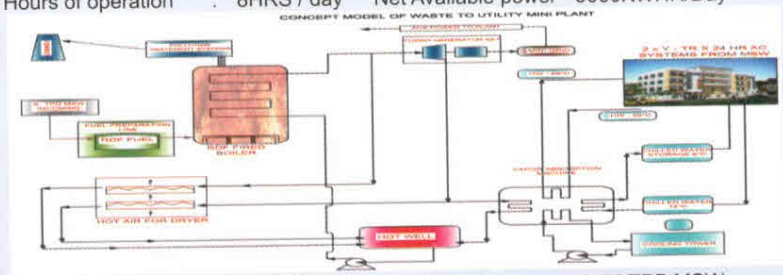
SCHEMATIC DIAGRAM OF RDF POWER PLANT



POWER

SYNOPSIS

MSW treated per day : 60tons
Hours of operation : 8HRS / day
Fuel RDF generated :22 tons
Net Available power 9000KWHR/Day

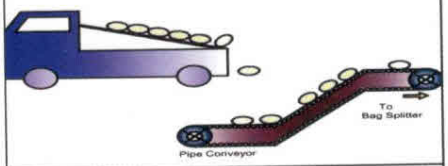


AIRCON

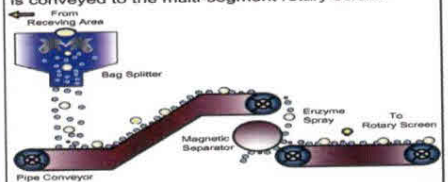
Synopsis: Supply of utilities (AIRCON) to residential clusters with 50 TPD MSW generates 250 TR chilled water could be supplied for 24 HRS a Day, means air-conditioning facilities be available for 160 Rooms for 24 HRS a Day

Process

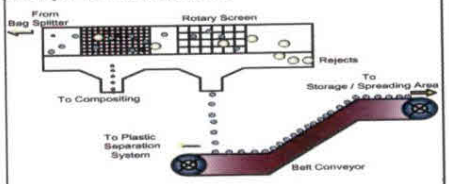
Waste Receipt: Waste is received at the waste receipt facility, and is conveyed through a pipe conveyor to the bad splitter



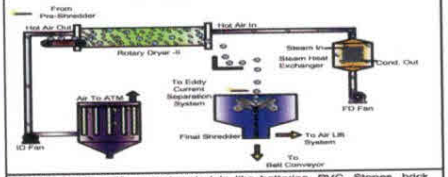
Bag Splitting & Magnetic Separation: Bags are slit open in the bag splitter and the open garbage is conveyed through a conveyor, where odour control is done through spraying enzymes. tramp iron is removed by the magnetic separator and the waste is conveyed to the multi-segment rotary screen



Rotary Screening & Plastics Separation: At the multi-segment rotary screen, organics are removed for composting, recyclables are segregated and the balance material is conveyed through a belt conveyor for fuel preparation

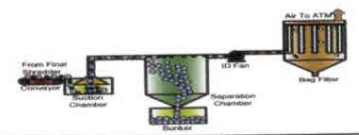


Drying & Shredding: The most important process of fuek preparation is Drying and Shredding. Drying reduces the moisture content to the desired levels and shredding homogenizes the waste to achieve steady combustion in the boiler. this process is done in two stages. Drying is achieved in a rotary dryer, with counter current hot air flow. In the first stage, bulk drying is done and in the second stage, precise drying is done to get the desired moisture content in the Rdf. Hot air is genetated by using extraction steam from the turbine, operating in co-gen mode, thus increasing the thermal-cycle efficiency of the system. Non-ferrous metals like aluminum, copper, etc. are removed by an Eddy Current separator.

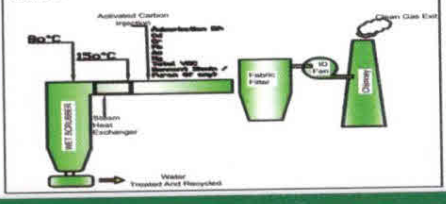


Air Lift System: Unwanted materials like batteries, PVC, Stones, brick bats, etc. are removed through an air-classification system.

Stem Generator: The steam generator is tailored with special design features to suit the combustion of RDF. An elaborator pollution abatement system is incorporated in the steam generator to arrest, neutralize and remove the contaminants permitting only clean flue gas to exit the chimney. Nox and Dioxin are two toxics that are generated during combustion. By combustion technique, Dioxin is disintegrated and NOx is kept under limit by a two-part combustion technique.



Wet Scrubber: Acid Fumes like Sox and HCL are neutralized and eliminated by wet-scrubbing. All heavy metals like Mercury, Cadmium, Zinc, Arsenic, Lead, etc. are absorbed in activated carbon, trapped in a bag filter and removed. Only clean flue gas is allowed to exit the chimney. Emission's monitoring is done at the Chimney. Hazardous wate comprising of heavy metals are collected in the pollution control system. This is a very small quantity. This is handled as per existing local practices.



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