Bio methanation of Municipal Solid Waste at our Goa Garbage treatment facility

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The State of Goa has installed a modern MSW treatment plant comprising waste segregation and anaerobic digestion (AD) which treats the incoming wet waste / garbage and converts it into useful products like electricity and compost.

The complete plant treats 150 to 170 tons per day of incoming municipal solid waste out of which wet organic waste is 70-90 TPD. This fraction is fermented in the AD process, to generate electricity via the bio-methanation route. Surplus electricity is exported to the State electricity grid. The residual digestate is compost and is used by the farmers and local organizations for green belt development.

Besides the AD process, the MSW treatment plant also treats the inorganic dry waste, by recycling 10 Nos of different recyclable fractions like paper, plastic film, hard plastics, PET bottles, glass, metal, cloth, tetra packs, coconut, rubber & leather articles, and aluminium cans. These items are sold to recycling vendors.
The residual non- recyclable inorganic product is sent to cement factories as Refuse derived fuel (RDF) having 3000 plus Kcal/kg calorific value. RDF is Used by Cement Companies for co-processing in their cement manufacturing process. Less than 10% inert, sand, grit is sent to the sanitary landfill. Part of this inert fraction is used as construction material for building of roads, bridges, buildings etc.

Resource recovery

The following outputs are generated at the plant,

Sno	Resource or Output from treatment of MSW	% Of Input waste
1	Recyclables like paper, plastic, cloth, rubber, glass, metal etc. sold to recycling vendors	5 to 8%
2	Compost sent to farmers	5 to 8%
3	Electricity generated used to operate the plant and excess power is exported on the grid	8000 Kwh/day
4	RDF sent to cement companies for co-processing, and used as a low-grade fuel for coal replacement	25 -30 %
5	Inert fraction sent to construction sites and land fill	Less than 5%