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Journey of india's first anaerobic digestion waste to biogas plant

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Introduction

Organic Recycling Systems Pvt. Ltd. which was established in 2008 and functions through its SPV-Solapur Bio-Energy Systems Pvt. Ltd (SBESPL), has established India's first demonstration plant for MSW processing facility based on indigenously developed technology at Solapur, Maharashtra. The company is currently processing 200 Tons per day (TPD) of un-segregated MSW, and now is being upgraded to full working capacity of 400 TPD. Besides this, Bangalore 1000 tonnes and Meerut 800 tonnes are also in advanced stage.

Awards/recognitions

- Global Excellence Award In Renewable Energy 2013
- Energy & Environment Foundation 2013
- Global WasteMet Award 2014
- Fastest growing Indian Company Award by National Achievers Conference 2014
- Global WasteMet Award 2015
- Skoch Smart Technology Award 2015
- Global WasteMet Award 2016

Success factors

- India's first waste to energy plant on Anaerobic Digestion Process.
- Recognized by MoUD, Govt. of India, under Best Practices towards Swachh Bharat Abhiyaan.
- 1st Plant in India to have exhaustive in-house segregation system that has been indigenously developed and the plant is operated on patented technology DRYADTM.

How was it done?

Segregation & processing of mixed waste

Since 2008, we have been the forerunner in sustainable treatment of solid waste. The success lies in the development of scientific approach towards treatment of waste. We are a focused company in the domain of Scientific Treatment of Municipal Solid Waste (MSW). In our endeavor to provide an environmental friendly solution for treatment of MSW, we have developed our patented DRYAD™ - Anaerobic Digester Technology based on the principles of Thermophilic biomethanation. The technology has been developed after a thorough research and development after considering the characterization of MSW in India and validation of operational data through a 12 TPD Pilot Plant on mixed MSW.

The flexibility of the DRYAD™ technology allows the treatment of a wide range of different feed materials. The bio-gas generated from the process is used to generate energy & the digested residue is extracted from the digester, dewatered to a Total Solid (TS) content of about 50% and stabilized aerobically during a period of approximately one to two weeks.

Presently, Power-Installed Capacity 3.60 MW b) Compost - 50 Tons/day c) RDF - 50 Tons/day (Under Implementation).

Economic aspects

Entire Project has been commissioned on DBOOT basis with an investment of Rs 110.00 crores approx.

Conclusion

Overall Sustainability

- Reducing burden on landfill by daily processing 300 - 350 Tons of Waste.
- Reducing Greenhouse gas emission by processing of organic waste
- Recycling the combustible waste (plastic, papers, rags, etc) into useful fuel for cement industry
- Provided training & employment opportunity to 60-80 rag-pickers in the plant. Organic Compost produced from the plant is sold to farmers, which is reducing the consumption of synthetic fertilizer like urea, hence increasing the soil condition and nutrition of the area.

Additional Information

ORS has also developed a Product line called "YASASU Green" a decentralized

Waste to Energy solution of 1, 2, 3 and 5 tons, to cater Urban, Semi Urban & Rural Market for decentralized processing of MSW while reaping the same benefits. He has also guided ORS team to develop rural solution for cattle manure organic waste. The model developed is Yasasu Urja of capacity 1 nm³. He has represented and presented technical papers in various national and international conferences. He is also a member of FICCI Advisory group on waste management.

