

## Modular High Rate Digester for safe disposal of garbage

<p>Title of Product/Process/Design/ Equipment</p>	<p>Modular high rate digester for safe disposal of garbage</p>
<p>IPR Status Patent / Copyright / Trademark Secured in India / Abroad IPR Details</p>	<p>Patent documents submitted</p>
<p>Application/Uses</p>	<p>Safe disposal of garbage Biogas production from any organic solid waste.</p>
<p>Salient Technical Features including Competing Features</p>	<p>High treatment efficiency in terms of percentage solid reduction. Based on high rate biomethanation technology with world class standard. Designed for apartments, residential colonies, hotels and canteens. Can be scaled-up for medium scale application in food industries, slaughter houses, tanneries and market yards. Fully automatic for operational convenience. Feeding without size reduction &amp; pre-processing. Field tested and free from operational problems. Modular design, portable, less space requirement &amp; aesthetic looks. Fully sealed, completely safe &amp; environment friendly. No water consumption &amp; no secondary solids generation. Affordable cost.</p>
<p>Level/Scale of Development</p>	<p>Capacity ranges from 40 kg/day to 100 kg/day.</p>
<p>Environmental Considerations</p>	<p>Environment friendly</p>
<p>Status of Commercialization</p>	<p>License given to M/s Enbiopac, Kochi, Kerala, M/s Lars Enviro Pvt Ltd, M/s Engine Doc Energy Co, Bangalore, M/s Mamko Design &amp; Engineering, Mumbai and M/s Shivalik Solid Waste Management Ltd, Himachal Pradesh. (Total 5 companies)</p>

Major Raw Materials to be Utilized	Source sorted garbage or any biodegradable organic solid waste.
Major Plant Equipment and Machinery Required	Custom designed digester made of mild steel with internal fittings, epoxy coating for contact parts, air compressor, motorized butterfly valve, process control system, & biogas holder.
Techno-Economics	<p>Current practice of garbage disposal in urban areas:</p> <p>In urban area each family spends Rs.50/month to dispose 25 to 30 kg of garbage. This amounts to Rs.2/kg of garbage.</p> <p>In addition to this amount urban local body spends nearly Rs.600 to Rs.1000/ton for transporting and dumping the garbage in dumping yards. Therefore current expenditure for an improper garbage disposal system is Rs.3.00/kg of garbage.</p> <p>Garbage disposal using digester:</p> <p>Cost of digester = Rs.3.00 lakhs</p> <p>Interest @ 10% = Rs.30,000/-</p> <p>Depreciation @ 10% = Rs.30,000/-</p> <p>Note: Digester generates 1 cu.m of biogas daily and it is equivalent to 0.3 kg of LPG. Considering cost of LPG as Rs.50/kg, revenue from biogas amounts to Rs.5475/year.</p> <p>Total operating cost = (Rs.60,000 – Rs.5,475 = Rs. 54,525/-)</p> <p>Digester capacity = 18.25 tons/year</p> <p>Garbage disposal cost = Rs. 3.00/kg</p> <p>Conclusion:</p> <p>Cost for safe disposal of garbage using digester is Rs.3/kg whereas present practice of unsafe garbage disposal by municipal corporations is Rs.5/kg.</p>
Technology Package	Free of license fee for MSME as CSIR@800 initiative
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Photographs (please provide high quality photographs)	Modular high rate digester installed in an apartment complex



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