

Landfill Gas Potential of the Gorai Landfill; LFG Applicability to India

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URS



Summary

- LFG to energy technology.
- Gorai Landfill.
- Gorai LFG potential.
- Cost and profitability analysis.
- Recommendations.

MSW to Landfill Gas (LFG)

- Solid waste in a landfill undergoes methane fermentation, which converts biodegradable organics into LFG, about 50/50 methane and CO₂.
- LFG can be captured via a network of wells and headers under a slight vacuum.
- After some purification, it can be used as a fuel.

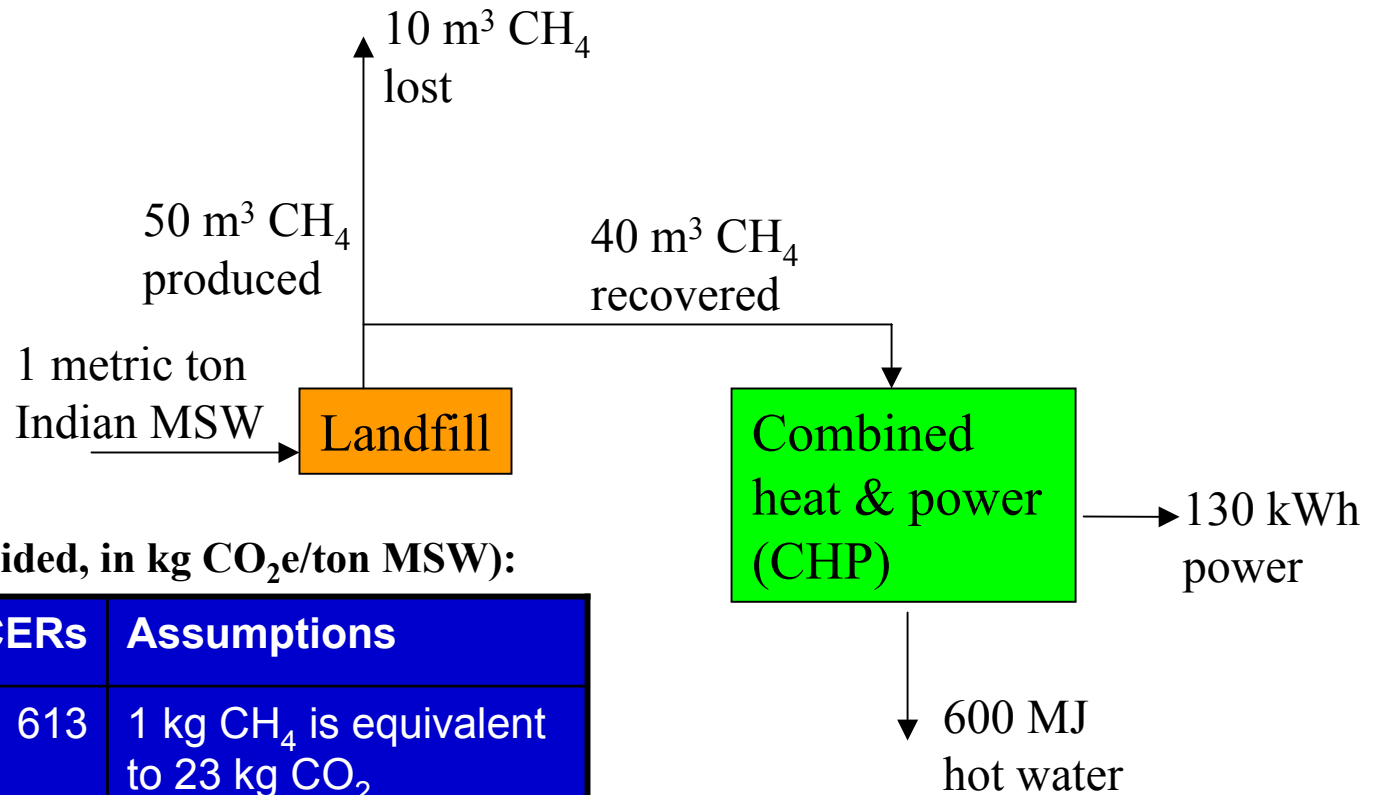
LFG to Power

- The most prevalent use of LFG is as a fuel to power generators and produce electricity for sale to the power grid.
- It can also be used as a fuel by nearby users; a few sites upgrade LFG to pipeline quality gas.
- Methane is a potent greenhouse gas, 23 times more powerful than carbon dioxide (ton/ton).
- LFG capture prevents the emission of methane, and conversion to electricity displaces power plant fossil fuels.

LFG to Energy

- Widespread and well-developed technology, over 1150 installations worldwide.
- Most of them in Europe and North America.
- In India, LFG could supply 9% of the nations' natural gas demand.

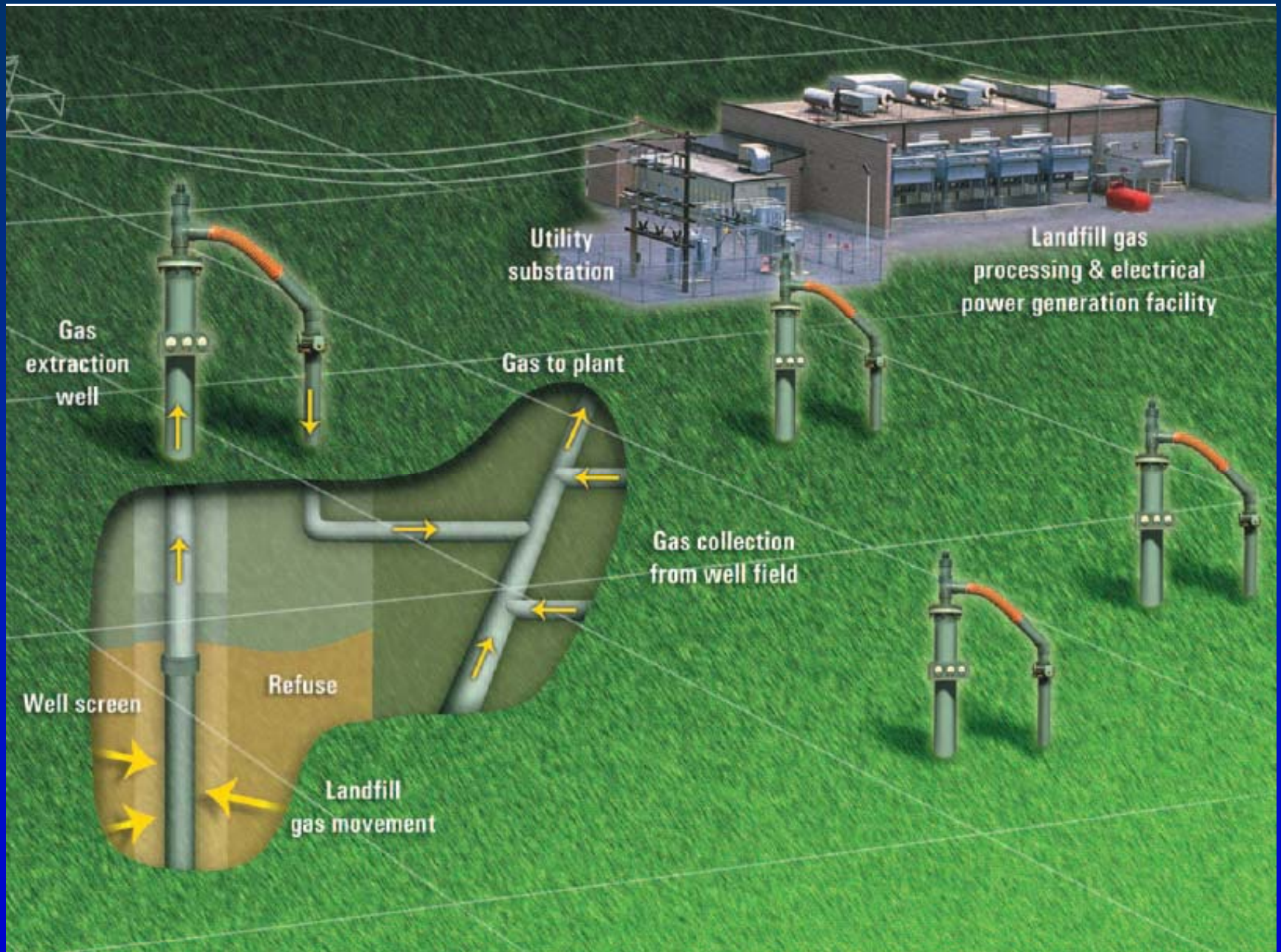
Typical LFG energy summary - India



Carbon credits (CO₂ avoided, in kg CO₂e/ton MSW):

CER source	CERs	Assumptions
Methane emission intercepted	613	1 kg CH ₄ is equivalent to 23 kg CO ₂
Power plant fuel displaced	80	Maharashtra power plant fuel mix
Boiler fuel displaced	43	Natural gas boiler, 70% efficiency
Total	736	

LFG System Diagram



LFG Wellhead



Landfill gas treatment, blower, and flare station

