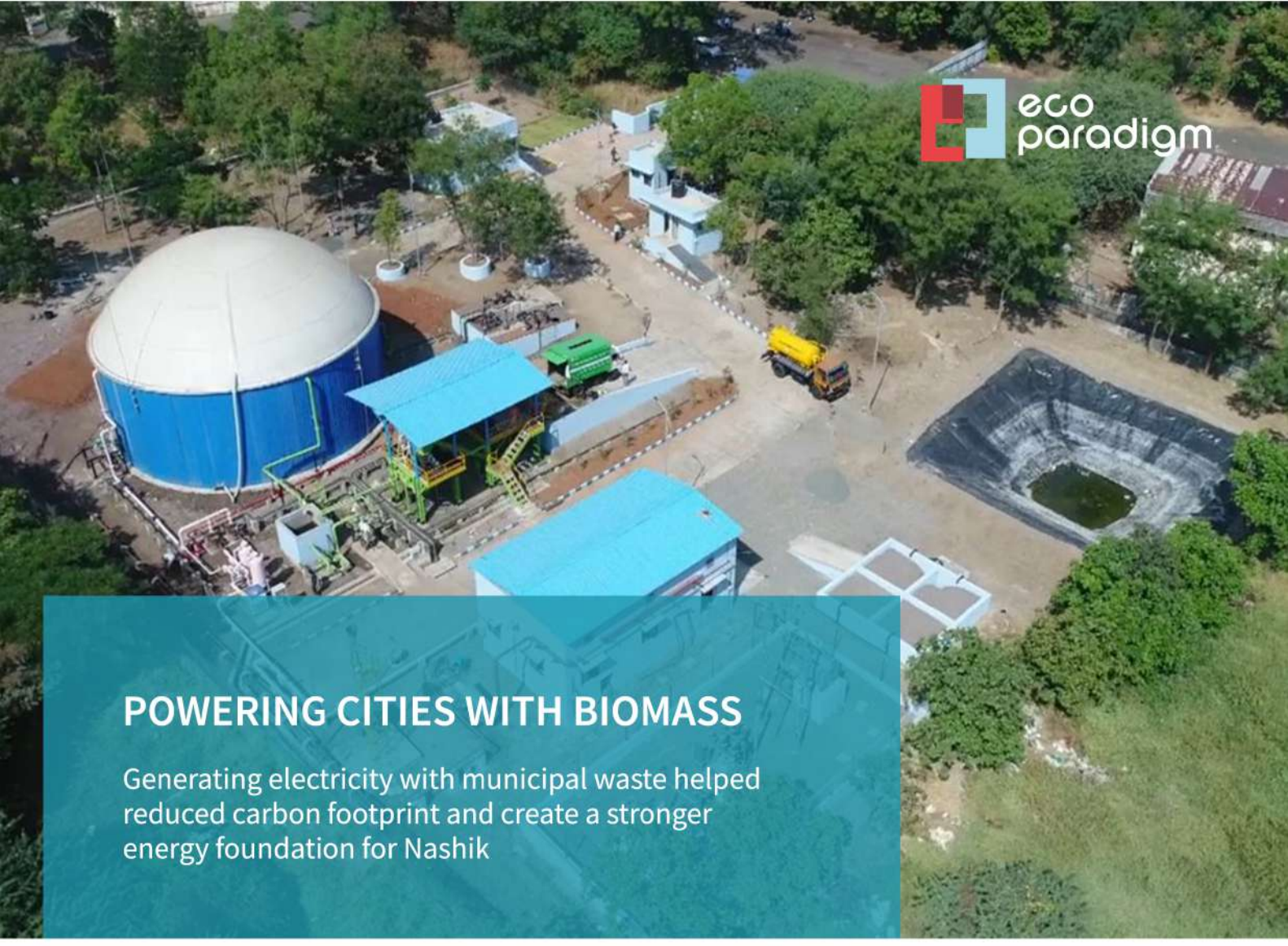


POWERING CITIES WITH BIOMASS

Generating electricity with municipal waste helped reduced carbon footprint and create a stronger energy foundation for Nashik

Ecoparadigm was the technical partner in the implementation of the “Waste to Energy” project in Nashik. We partnered with the Nashik Municipal Corporation supported by the Federal Ministry of Environment, Nature Conservation and Nuclear safety of Germany (GIZ) within the framework of the “International Climate Initiative”. It involved the generation of electricity from the waste disposed in the locality, and the reuse of by-products. The electricity generated from the plant was fed back to the city’s power supply grid, enabling a sustainable looped platform for clean energy.

Potential for converting

500+

tonnes of solid waste into clean energy

1.48 acre facility generated

3300

kWh net electricity per day

More than

100

crore rupees saved annually

How the story began

It was estimated that the local municipal corporation collected 500 tonnes of solid waste; which is 200g/d of waste generated per capita. The poor disposal of large quantities of sewage in the city was a growing concern as it posed a serious threat to the health of the people in the local community. Some of the issues that needed to be resolved were:

- The emission of greenhouse gases due to the poor treatment and disposal of septic and solid waste.
- Pollution of water - sources such as rivers and lakes due to the unchecked disposal of industrial waste.
- Unregulated usage of water by the residents being a serious health hazard.

The ask

The project was developed to demonstrate the technical feasibility of the power plant, and to develop a general framework for the operation of the plant. The goal of the project was to:

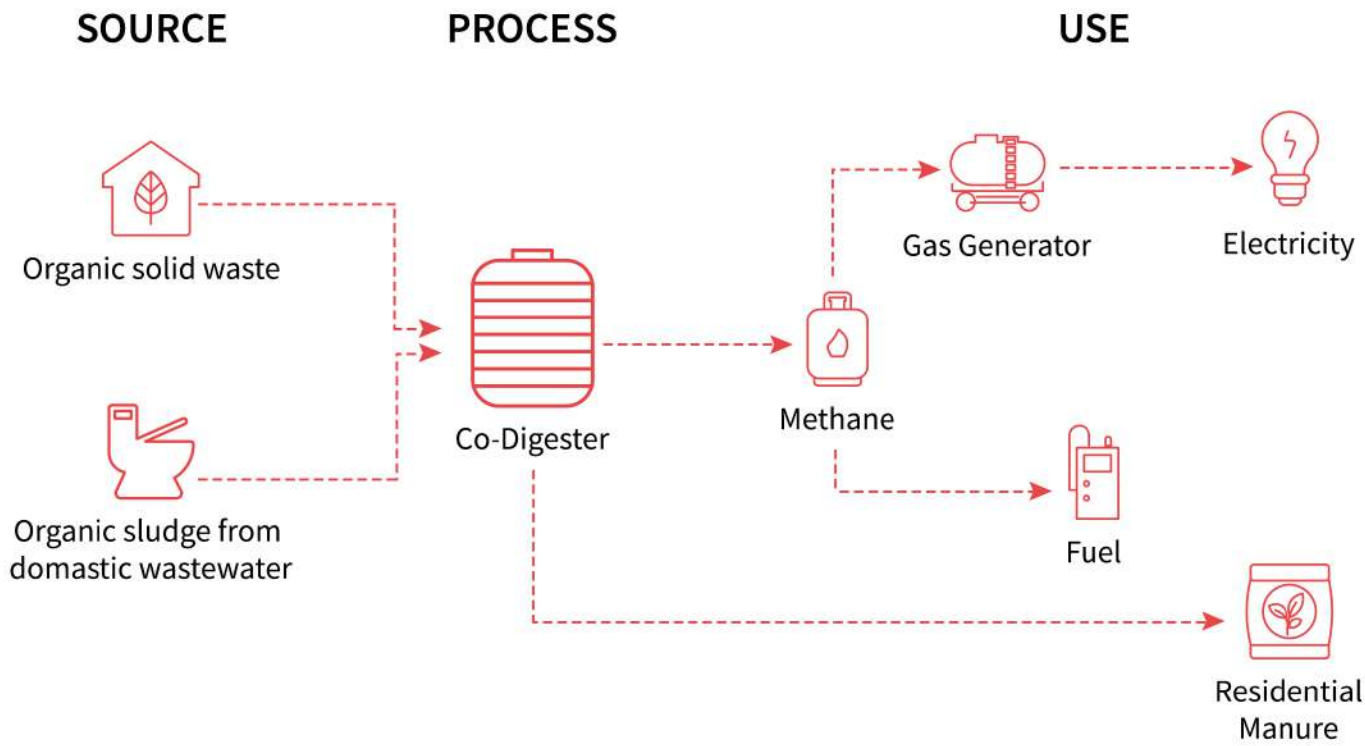
Demonstrate the innovative concept of co-fermenting biomass with black water to generate electricity.

Formulate an economic and feasible business model to run a power plant.

Design a sustainable business operation model with a close-the-loop approach that ensured waste and wastewater were recycled efficiently.

The approach

Given the prerequisite conditions of the locality and the existing challenges, Ecoparadigm played a key role in the application of an innovative solution to efficiently process the waste to methane. The process, called co-fermentation, converted organic elements from the municipal solid waste with septage from community toilets. The result would be the generation of biogas through a process called biomethanation. The methane (biogas) produced is used in the production of electricity through a combined heat power plant. The scientific approach required field studies and calculations to estimate the potential of biomass produced and electricity generated from the plant, and its supply to the city.



The result

The project recycles waste that was previously considered hazardous into useful products – thereby reducing carbon footprint.

The biogas produced generated 3,300 kWh of electricity, which is supplied to the power grid.

This is economically viable and eco-friendly project which also led to an improved relationship between government bodies and local residents.

The organic waste processed produces high quality biogas (since it's purely organic), and compost as a by-product. The compost is rich in nutrients and can be used as a fertilizer.

About Us

Ecoparadigm is a boutique Environmental Engineering and Consultancy firm implementing sustainable and eco-friendly development projects. Since our inception, we have successfully executed 280+ projects in the areas of resource conservation, sanitation, renewable energy, water management, and solid waste management globally.

Ready to
#PaveTheGreenWay?

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