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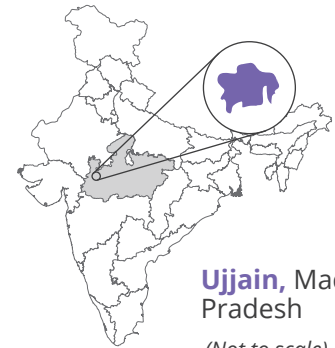
BIO-METHANATION PROJECT: UJJAIN

Project Highlights

- Decentralized waste treatment plant directly connected to the electricity grid
- Sustainable collection mechanism
- Revenue Generation
- By-product utilization

Background

Ujjain, the ancient city, situated on the banks of River Kshipra in Madhya Pradesh is known for its holy and sacred identity due to presence of the age old deity Lord Mahakaleshwar. Ujjain city, as a municipal entity, spans an area of 92.68 sq. Km. The city is divided into 6 zones covering 54 wards. There are 4 daily markets and 3 weekly markets in the city which produce 25 – 30 MT of vegetable waste weekly. The implementation of the Bio-methanation plant has emerged a head turner as it has become self-sustainable by using the existing resources and then later converting it into electricity which in return is used for the working in the plant and also to the nearby street lights. Also, the materials implemented in the project such as smellers, powders acts as an upper edge towards treating and prohibiting health issues for the laborer. The implementation has focused on Waste to Energy utilization. The plant is processing the bio-degradable waste of the city to generate electricity and compost and is currently processing 5 tonnes per day of waste and is planned to be scaled up in the near future. This plant is helping in the solid waste management of the city and is also a step towards reducing the burden on non-renewable resources by producing electricity.



Project Objectives

- I. To create decentralized facility apart from the existing centralized facility that is located outside the city
- II. Selection of apt technology with respect to size, waste quantity, waste characteristics, generation and use of gas
- III. Installation of a 5TPD capacity Bio-methanation plant for the treatment of organic market waste to generate green energy
- IV. To decrease carbon footprints
- V. To Promote awareness of clean and green technologies to combat global warming

Key Stakeholders

Ujjain Smart City, Nagar Nigam, Aryan Associates

Approach

The project adopted an integrated approach to strategize the activities being undertaken under the initiative as indicated below:

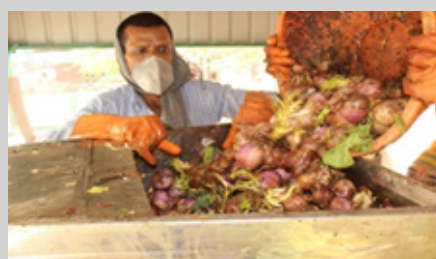
- Treatment of the total Market waste generated daily in Ujjain.
- To collect vegetable waste from all the mentioned markets via E-Vehicle
- To install Bio-methanation plant with M-KVIC Floating Dome Technology
- By product utilization(Methane gas, Compost)

Achievements



The development and inception of the waste to energy plant has resulted in the following benefits and co-benefits:

- Provided electricity to light the Street Lights in Ujjain using clean energy and reusing resource (organic waste),
- Reduction in the amount of waste reaching land fills
- Reduction in the cost of tipping fee and C&T cost was also reduced on the ULB
- The slurry generated from Bio-methanation was utilized for landscaping, gardening and farming purposes
- The project promoted the awareness of clean and green technologies and reduced greenhouse emissions onto the environment by 12,176 Kg/month



Success Factors

- Technical innovations for effective management of solid waste

Limitations

Preliminary phase of the Project had many issues which included:

- The Land issue, as the area where project was supposed to be installed was not a free land
- The land was a low lying area, prone to inundation, therefore had to be maintained prior the development of the project
- Vegetable vendors had a fear of Land Encroachment as the Bio-methanation plant was supposed to be installed near to the Mandi area.
- Collection of vegetable waste was also one of the main issues, as municipal corporation already had door to door collection but this project had a target of reduced tipping fee
- Post the implementation of the Bio-methanation plant few technical issues were observed as there was no Net Metering Policy for the Bio-methanation