

# Paving a Green Future: Sustainability and Waste Management

Karnal - Haryana



## CHALLENGES FACED

The list of challenges faced due to stubble burning had to be eliminated. These include:

- Deep air pollution from smoke that turns into smog
- Damage to electrical and electronic equipment from floating threads of conducting waste
- Risk of fires spreading out of control



**T**he Municipal Corporation of Karnal, Haryana has launched an initiative to establish an integrated project to convert slaughterhouse solid waste, agricultural waste and biodegradable solid waste into clean energy.

The scope of green development in the country has improved over the ages. With the Government and Municipal Corporations adopting newer projects every day, the day when India will run entirely on green energy is not far away.

The Municipal Corporation introduced an innovative technology to enable complete elimination of sewage waste, effluents and solid waste from slaughterhouses along with all types of biodegradable waste. The technology turns wastes into Bio-CNG, clean water and bio-fertiliser as by-products. The WTG1XG technology is endorsed by Indian clean fuel exploration and production organisation, Growdiesel, which is dedicated to the causes of environment, energy and empowerment of masses. Its core business is to produce and sell renewable clean fuels.

The suggested technology WTG1XG uses a four stage process that utilises bio-reactors and bio-catalysts. This highly versatile technology can convert

#### FINAL OUTCOMES

- It is thus believed that the technology will be able to solve the problem of massive waste generation
- It would also eliminate paddy stubble, which is a persistent problem, without burning it; it was reported that stubble burning was one of the main reasons behind the pollution in Delhi

almost all type of organic matter into fuel.

The positive aspect of using the technology is that it offers almost 100% elimination of organic waste, making it more effective. It thus follows a two-stage bioreactor system that helps avoid inefficient digestion and choking of digesters, allowing better conversion from waste to fuel. The WTG1XG also eliminates the problem of scum formation and boasts of a low Hydraulic Retention Time (HRT), among other positive factors.

The rising population demands a greener solution, one that is unconventional and renewable and at the same time cost-effective with maximum output. Indian cities are generating a massive amount of waste that goes untreated, which highlights the need and importance of the integrated project. Apart from Municipal solid waste, Karnal generates a lot of e-waste due to a huge corporate sector as well as bio-medical waste, owing to a growing hospital sector. Besides, industrial waste, sludge is also generated in large quantities due to a growing industrial base. The cluster has an urban area of about 1,967 sq. km. and a resident population of about 4.2 lakh (2017). It generates 243 Tonne Per Day (TPD) of Municipal solid waste. The projected population 5.1 lakh in 2025 will generate about 290 TPD municipal waste.

This latest technology adopted by Karnal for its development, allows effective waste management and clean fuel generation by finding an alternative to the biomethanation technology. The project will generate 1,000 kg gas, 2,000 kg bio-fertiliser and 3,000 units of electricity every day, which would be utilised by the Municipal Corporation in different areas.