

# Efficient Disposal

Innovative business models needed to derive value from waste

India's urban centres are facing severe environmental challenges due to rapid urbanisation and increasing industrialisation. A classic example is the National Capital Region with severe air pollution in the form of smog every winter season, toxic water of the Yamuna River and overflowing landfill sites that catch fire and release poisonous gases. This has deleterious effects on the overall well being of the population living in and around Delhi, and is a constant cause for concern for the government.



At the recent Clean Tech Environment 2019 event, hosted by the Confederation of Indian Industry (CII), several industry experts and government representatives discussed these issues and suggested solutions for proper waste management. *Renewable Watch* presents some of the key ideas discussed at the event...

## The problem

Improper waste management has become a serious problem for the state and central governments, impacting the health and livelihood of people. The Government of India has laid significant emphasis on addressing these issues and improving the environmental quality. The Swachh Bharat Mission was introduced in October 2014. Following this, the Solid Waste Management Rules, 2016 were introduced, with increased focus on the cleanliness of Indian streets and roads, and waste management in cities. Despite this, the waste disposal situation in the majority of the Indian cities remains dismal.

## The key issues

As per statistics, India generates roughly

62 million tonnes of waste every year, of which less than 60 per cent is collected and only around 15 per cent is processed. The problem lies with urban communities as rural households generate very less waste as compared to urban

households. Recent surveys show that waste segregation at source is still a major problem in cities, with even educated people opting not to segregate the recyclable and non-recyclable materials in their houses or offices, or refusing to pay the garbage collectors for waste disposal. This has major financial implications for the entire waste disposal supply chain. Hence, one of the major problems is the mindset of Indian citizens, for which awareness programmes need to be conducted on television, radio, etc. Another challenge is the lack of strict law enforcement for waste collection, segregation, handling and sorting. The government needs to impose strict penalties in every town and city for dumping garbage without going through proper waste disposal channels provided by the authorities. The government, municipal bodies and resident welfare associations should ensure the provision of separate bins for recyclable waste, promote compost and manure making, and encourage adequate wages for garbage collectors.

In a city where land constraints impede the creation of sanitary landfills, waste-to-energy (WtE) plants can help utilise waste products. Although WtE technology is quite mature, it has not witnessed significant uptake in Indian cities. Improper waste management and the lack of a viable business model are the key factors impeding the adoption of WtE. As Ajay Shankar, former secretary, Department of Industrial Policy and

Promotion, Government of India, remarks, "A key creative challenge is to get the latest technology adopted quickly."

## Solutions and the way forward

Despite these challenges, a few cities are successfully developing the waste management and WtE model. For instance, Pune has an integrated solid waste management service with an automated waste collection process. The city stopped open dumping of waste in 2010 and started scientific processing of municipal solid waste at decentralised plants. Meanwhile, the state of Haryana has proposed the execution of integrated solid waste projects in 15 clusters across the state. The state plans to develop WtE plants in three clusters and waste-to-compost plants in the other 12 clusters. In the industrial sector, many waste products are recycled and reused to derive the greatest value. For instance, low-value plastics are sent to cement plants or their pellets are used for outdoor furniture. Waste heat is recovered from industrial exhausts and used for a variety of heating applications saving copious amounts of energy.

India has the technology and manpower to make sustainable waste disposal a reality. However, the country lacks adequate business models, long-term visibility for project developers, regulatory mechanisms for the strict enforcement of waste disposal laws, and citizen awareness. Jitendra Kumar, adviser, NITI Aayog, remarks, "We need to contribute at the individual level, such as going zero plastic in our own homes. Then adequate technologies can be applied for clean air and water, and zero emissions." ■

*Based on discussions at the Clean Tech Environment 2019 event hosted by CII*