

Sustainable Conversion of MSW



JITF Aquasource, the water management wing of the Jindal Group, has implemented a number of water and waste projects for municipal corporations and industries throughout the country. **Allard M Nooy, CEO of JITF Water Infrastructure Ltd-JITF Aquasource**, speaks to *Clean India Journal* about the waste-to-energy plant coming up at Timarpur-Okhla, New Delhi.

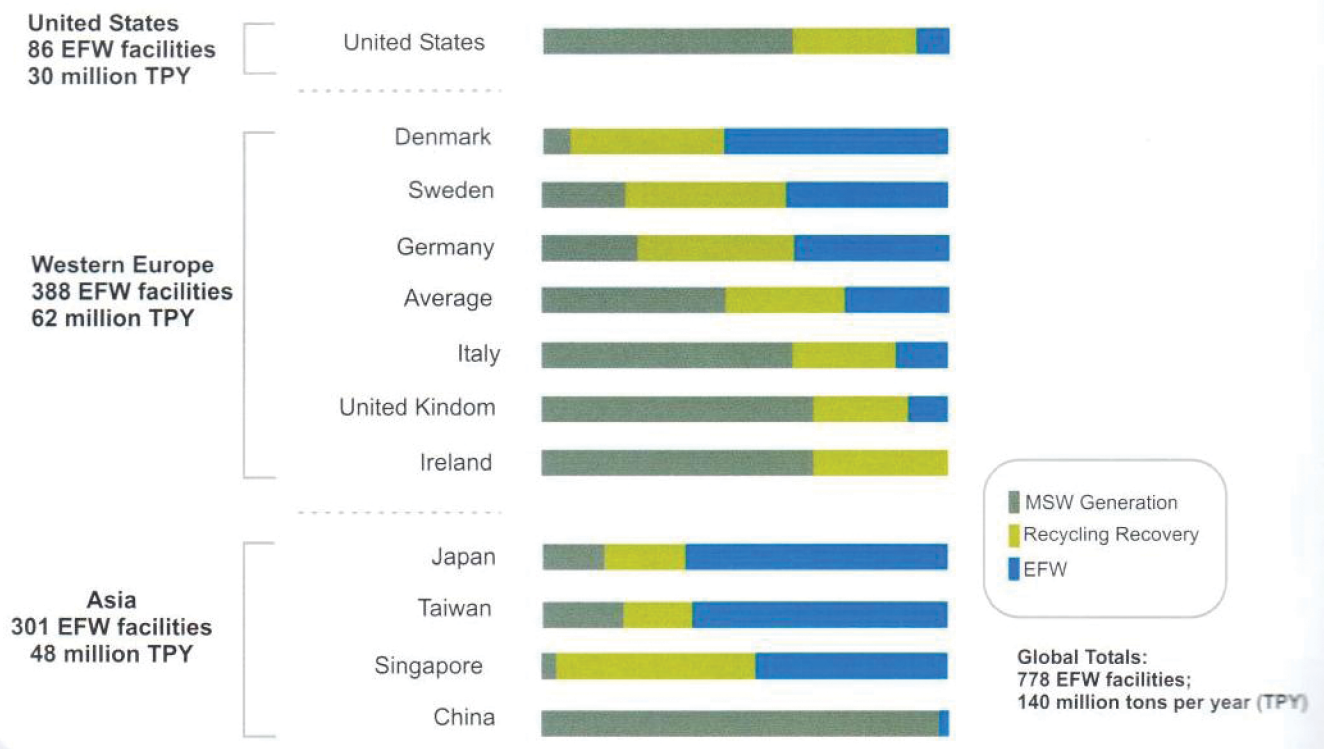
Most of the capital intensive projects of Jindal ITF are being developed under the B-O-T/ B-O-O-T structures in PPP model. They are also expanding in the EPC (Engineering and Procuring Construction) contract model, which has got operation and maintenance contracts attached to it. The Timarpur-Okhla waste management project undertaken by JITF Urban Infrastructure Ltd-JITF Ecopolis Integrated Waste Management of the Jindal Group promotes the zero-waste concept and at the same time produces clean and renewable energy in a

sustainable way. This will reduce the total MSW waste flow to less than 10%.

The Timarpur-Okhla project scheduled to be commissioned this year in New Delhi is the first-of-its-kind in the country. "We believe that waste-to-energy, despite not being successful yet in India, is a sustainable way for the conversion of growing industrial waste and municipal solid waste. This project will create a number of advantages for the communities where we want to invest and operate:

- 1) It preserves valuable land. We want just a quarter of land in comparison to landfill.

Worldwide Distribution of Energy-from-Waste Facilities



- 2) It protects the environment because no matter how well the landfills are built or constructed these days, there is always a risk of groundwater contamination. By bringing truck-loads of garbage into waste-to-energy facility, the risk of polluting groundwater can be eliminated.
- 3) It prevents greenhouse gas production, particularly methane gas. In spite of precautions, proper care and closure of sanitary landfill, there is always a risk of methane gases getting released into the atmosphere. Australia is one of the worst examples where given the vast land mass, landfills are all over the place but Australia has also been earmarked to have the most affected ozone layer. Methane gas burns the ozone layer with all negative aspects.
- 4) It reduces odour around landfills and around composting plants. The beauty of the waste-to-energy facility is that once the truck comes inside the plant, it is in enclosed area and is in negative pressure.
- 5) The waste-to-energy process gets rid of the waste in a simple way and could be part of urban-centres. Jindal has invested a huge amount in sophisticated air-pollution equipment. This equipment is not the traditional filters which fossil fuel power station has; this is a very sophisticated system with scrubbers used with activated carbon and lime injection. This basically takes the flu gases through a backhouse filtering process, treatment system and finally, disposing off the hot-air through the chimney.”

There is a misconception about this process. It is an environment-friendly heating process and not an incineration process of the 70s and 80s which has largely waste burners. Earlier there was no air-pollution control equipment, or heat recovery and no energy was produced. The waste-to-energy heating process produces heat; the water heated up in the boilers produces steam, which is recovered to run the steam generator.

Another advantage of the capital-intensive renewable energy facility is that they will create high-level green jobs. There is need for a good maintenance and operations technicians in this facility.

In the last 15-20 years in Europe and North America, a number of countries have put additional taxes on landfills because of the greenhouse gas and climate change issues. The UK and Ireland have signed up to support the landfill tax legislation. Continental Europe has been in the forefront besides Denmark, the Netherlands, Germany and other few countries.

It is found that in communities where there are waste-to-energy facilities, the level of recycling is far higher and in communities without waste-to energy facilities there is no awareness about reducing waste at source, recovery or recycling.

The recycling rate is about 20% in communities with waste-to-energy facilities. People understand that garbage/waste is not a nuisance and is a fuel for renewable energy. There are close to 800 waste-to-energy facilities globally. In the last decade, there is a huge development of these facilities across Asia, especially in the island nations because of lack of land space. Singapore has no more landfills with 100% waste-to-energy conversion, followed by Taiwan about 85% and then Japan.

Waste-to-energy facilities are increasing in terms of capacity and number of installations in the emerging market. Malaysia and China are big drivers. China propagated the Renewable Energy Act in 2005-2006. The Chinese legislation promotes renewable energy by giving preference to those investors who are investing in wind, solar, hydro and in waste to energy projects. China has around 100 waste-to-energy plants either in operation, construction or in development stages.

India is importing large pieces of equipment for the implementation of waste-to energy facility at Okhla site. The air-pollution control equipment is from Austria and the environment-friendly heating process and the boiler combination from China. The steam turbine is from India.

“We believe in waste-to-energy concept by reducing waste to absolute minimum in creating clean and renewable energy at the same time. Getting the private sector involved in the delivery of utility services, waste collection services and waste disposal services has improved dramatically. There is a clear recognition that the private sector adds value by creating these assets. It will reduce the operational cost over the lifetime of the project, bringing in efficiency and bringing in capital. Financing these projects from the private sector and implementing them is quicker than the public sector. We see recognition of public-private-partnerships in water, waste-water as well as in the waste sector.

“We need to create awareness on waste-to-energy concept because some of these projects are coming into the market with prescriptive technology – either as composting plant or RDF plant or a sanitary landfill as the means for waste disposal. These could create groundwater pollution, greenhouse gas production and also consume valuable energy. What we promote to the municipal corporation and the transaction advisors in this space is that they have to be transaction neutral; they need to give credits for land used for waste disposal and they need to have energy element to a waste disposal project, they need to give credit to reduction of greenhouse gases and production of clean and renewable energy. Once the project gets technologically neutral and credits added to all the above aspects then waste-to-energy has a chance to win in the waste disposal processing market.”

In providing solutions to the community, JIFT is making a long-term investment to own and operate such facilities in a sustainable and environment friendly and responsible way.