

## **Co-Processing in India**

Waste management in India is an increasing concern. Rapid urbanization in India would create higher demand for Municipal Solid Waste (MSW) management, considering increasing income levels and changing lifestyle choices. Therefore, effective waste management practices become imperative for the sustainable growth of the country. The National Mission on Sustainable Habitats has also identified Urban Waste Management as a major component for ecologically sustainable economic development in India.

India generates about 7.9 million Tons of hazardous wastes annually, out of which around 3.98 million tonnes is recyclable, 0.60 million Tons is incinerable and 3.32 million tonnes is landfillable<sup>[1]</sup>. India also generates about 1,27,000 tons of MSW per day. The total MSW generated by the year 2047 in India is estimated to be about 260 million tons per year. India's current waste management infrastructure is inadequate to manage the quantities of wastes generated today.

All developed nations globally have utilized cement kilns in their countries as an effective option for industrial, municipal and hazardous waste disposal. The Basel Convention also highlights coprocessing of waste as an environmentally friendly way of disposal. The use of waste as alternative fuels in the cement kilns has numerous environmental benefits such as:

- The use of waste as alternative fuels reduces the use of non-renewable fossil fuels such as coal.
- The use of waste as alternative fuels also contributes towards a lowering of GHG emissions.
- The use of alternative fuels in cement kilns maximizes the recovery of energy from waste.

During the period 2010-16, CII was involved on a continuous basis in activities, supported by Shakti Sustainable Energy Foundation (SSEF), to facilitate development of enabling policies and framework by regulatory agencies (State and Central Pollution Control Boards) to facilitate use of urban & industrial waste as raw material/ alternate fuel in the cement industry, thereby moving towards a low carbon economy.

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As part of the above activities, significant strides were made towards increasing the usage of AFR in cement kilns:

- AFR substitution increased from less than 1 % to more than 4% in 2016
- Recognition for Co-processing in the policy framework and acceptance of the recommendations submitted
- > 36 Cement plants started co-processing in their production units
- Few state pollution control boards like Gujarat and Tamil Nadu, developed specific action plan & implementation schedule to promote co-processing
- >7 cement plants set up pre-processing facilities to convert non- homogeneous waste in to AFRs
- LCA (Life Cycle approach) considered as a part of manufacturing process & extended producer responsibility
- Inventory of the waste generated is mandated annually in every state
- Waste processing facilities, like Ramky, started sending pre-processed waste mix to cement plants