White Paper
on
“Sustainable Industrial Waste Management-
Way Forward
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The downside of any industrial growth is the associated amount of wastes that is generated in large quantities. In India, over thirty six thousand industrial set ups generate over 7.66 MT hazardous waste every year of which 50 percent is recyclable and about seven percent is incinerable. Out of the total hazardous waste generated in India, Three states namely Gujarat, Maharashtra and Andhra Pradesh contribute to 63 percent. Maharashtra and Gujarat alone generates about 63 percent of incinerable waste and Chattisgarh along with these three states generates about 65% of recyclable waste. In a nutshell four states contribute to over 65 percent of total waste generated in India.

As per Ministry of Environment and Forests (MoEF) the recyclable waste should be processed and reused by the industries having a valid authorization, issued by the respective State Pollution Control Board. India being a party to the Basel Convention on trans-boundary movement of hazardous wastes, is obliged to regulate and minimise the import of hazardous waste and minimise generation of hazardous waste. At present, hazardous waste generated by industry is being disposed either through secured landfill or incineration with due authorization from The State Pollution Control Boards (SPCBs) under relevant rules. However, through joint efforts of SPCBs and local bodies a framework could be evolved for better recycling hazardous waste and its reuse as fuel/raw material.

At present, there is shortage of cost-effective treatment, storage and disposal facilities (TSDF) in India and the waste is being indiscriminately disposed through landfills and open incineration thereby causing serious health and environmental concerns. Illegal dumping of hazardous waste has been observed in many states for a long time and around 500 open dumpsites were identified in 20 states. This challenge of waste disposal can be converted into opportunity through the adoption of environment-friendly waste to energy technologies that will allow treatment and processing of wastes before their final disposal. Waste to energy projects will

\[\text{India Environmental Portal} \text{ http://www.indiaenvironmentportal.org.in/category/thesaurus/hazardous-waste}\]
Globally, waste to energy option is a preferred form of waste disposal than incineration and is classified as an environmentally sound method of energy recovery. The environmental benefits of waste to energy, as an alternative to disposing of waste in landfills, have been proven in the west. Waste to energy generates clean, reliable energy from a renewable fuel source, thus reducing dependence on fossil fuels, the combustion of which is a major contributor to GHG emissions.

**Industry perspective on waste management** – Most industries recognize the fact that certain components of the hazardous waste generated can be recovered through co-processing, but there are long regulatory procedures that are prohibitive. While waste generators are grappling to find cost-effective method of disposal, waste users are struggling to obtain consent to operate their facilities with hazardous waste as supplementary/alternate fuel.

**Key challenges facing industry include;**

- Price rationalization for waste - waste generators are looking at rationalizing the cost of disposal. Waste recycling/recovery or co-processing provides this advantage compared to existing solutions provided by TSDFs.

- Absence of a dedicated handling and transportation network

- Cumbersome and lengthy process to obtain consent even for trial burns.

- Storage time limit of 90 days is not sufficient due to non availability of treatment and disposal facilities.

- Blanket ban on Chandrapur area to undertake trial burns preventing industry from utilizing hazardous waste

**Key suggestions from Industry include;**

- Clarity in definition of hazardous waste

- Recognition of co-processing as preferred method of disposal in next amendment of Hazardous Waste Management Rules

- Need for a dedicated handling and transportation network

- Need for waste exchange banks for reuse and recycling and mixing of waste. A national data bank on CPCB/SPCB website about HW inventory would facilitate this.

- Rationalise the process to obtain consent from MPCB for trial burns in Cement Kiln on the
basis that the co-processing does not adversely affect the pollution load. Permission to take trial burn in Chandrapur area if the emission limit is adhered to.

**Regulatory perspective on waste management** – Regulators and standard setting bodies have concerns over the waste inventory data primarily due to weak reporting by industry. The data in its current form has been arrived at on the basis of rated capacity and not actual quantity disposed/processed. Waste inventory is not robust which is primarily due to non/late-submission of annual returns by industry and absence of adequate management information systems related infrastructure within industry to measure and report waste inventories. It is expected that the industry performs beyond the expectation of state pollution control boards. It is important to maintain baseline emission norms in case of co-processing and the concept should be tried beyond cement industry. The government had set up PPP model for setting up waste treatment and disposal facilities but there is dearth of waste in such facilities which has lead to closure of one such facility in Maharashtra.

**Key issues at policy maker's end include;**

- Industry is not taking proactive step in submitting annual returns on hazardous waste and hence waste inventory is not authentic

- Criteria for transportation, storage, handling and incineration needs to be maintained in case of co-processing.

- Disclosure on hazardous waste generation and disposal is not timely from industry to The Government.

Although there are issues and challenges with regard to understanding at Industry end on government policies and that at Government end with regard to robust disclosures by industry, there are a few key actions that are planned in the near future;

- Government to bring in clarity on schedule 1 and 2 in the next amendment. This amendment is expected to include definition of hazardous waste.

- Trans-boundary movement for electrical waste shall be permitted since the industries have to import such waste to reuse the same.

- National Hazardous waste Management strategy booklet will be published by the ministry highlighting the co-processing as a strategy.

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1. Ministry of environment and forest (MoEF) had imposed a ban on Chandrapur, Tadali, Ghugus and Ballarpur industrial clusters in the district for development of new industries based on CEPI since January 13, 2010.
Co-processing of hazardous waste will be allowed in steel plant and thermal plant in addition to cement plants.

Government would take a fresh look at the disposal methods for wastes that are designated as non-hazardous in nature (but at present, are included under hazardous category)

**The way forward**

- Co-processing of waste can be recognized as a preferred method of disposal in next amendment of hazardous waste management rules.
- Awareness on developing inventory of waste should be increased among various stakeholder including industry and government
- A study to be carried out to explore feasibility of setting up waste exchange banks to ensure consistency in the quality of waste making it best fit to be used as alternate fuel.
- Explore public private partnership modalities for investment in hazardous waste handling and disposal.
- Awareness on HW management rule among industries including waste recyclers and SPCB to be enhanced with support from CPCB/MOEF.
- Identify and put in place processes and resources to speed up access to consent in Maharashtra for trial burns in cement kilns.