

NATIONAL PLASTICS WASTE MANAGEMENT TASK FORCE

PRESENTATION OF THE REPORT TO THE HON'BLE MINISTER OF ENVIRONMENT AND FORESTS

The Plastics, a marvel of polymer chemistry, are becoming omni-present in our daily life through a variety of applications. Economic and environmental reasons have propelled increasing use of plastics and reprocessing of plastics waste. Yet, indiscriminate use of plastics as well as reprocessing and disposal of plastics waste are posing environmental problems and health hazards besides causing public nuisance.

To formulate a strategy and action programme for management of plastics waste, the Ministry of Environment & Forests constituted the Task Force comprising specialists, representatives of industry and civic authorities. This report is the outcome of detailed deliberations of the Task Force, collection and analysis of information from different sources, site visits and inter-action with various interest groups.

The recommendations of the Task Force provide a package of preventive, promotional and mitigative (PPM) measures as also the modus operandi for their implementation. These include guidelines for compliance of environmental safety, specifications for restriction on recycling of poor quality plastics waste, deterrent penalties for littering, industry initiatives and collaboration with civic authorities for improvement in plastics waste collection system, incentives for development and adoption of appropriate technologies and sustained campaigns for creating public awareness and involvement. Networking of concerned industry Associations, setting up of an Indian Centre for Plastics in Environment (ICPE) and constitution of an Implementation and Monitoring Committee (IMC) are also suggested by the Task Force for follow-up of the recommendations.

The Task Force is presenting its report to the Hon'ble Minister of Environment and Forests. It is hoped that the information and recommendations will be useful to all concerned with the requirements of environmental protection through judicious use of plastics and proper management of plastics waste in the country.

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REPORT

EXECUTIVE SUMMARY

The Indian Plastics Industry has registered an impressive growth, at a rate higher than the plastics industry worldwide. The use of plastics has become a part in all sectors of the economy. Infrastructure, agriculture, building and construction, telecommunications, consumer goods, packaging, health and medicare are all high growth areas which will ensure a spiralling demand for plastics. From the present 1.88 million tonnes (1995-96) the demand for plastics in India is expected to cross 4 million tonnes by year 2001-2.

Over the past 25 years, a country-wide network for collection of plastics waste, comprising rag-pickers, waste collectors, waste dealers and recycling enterprises (numbering around 20,000) have been established in India. Born in an era of shortage of raw materials, and high import tariffs, this economy driven development has been rated as complementary and parallel to the virgin plastics industry. Over 60% of the plastics waste (around 800,000 tonnes) generated in the country goes in for materials recycling, and then to product manufacture using appropriate recycled content, valued at Rs.2,500 crores per annum. By 2002, around 2 million tonnes of waste generated will go in for materials recycling. Packaging is the major application of plastics accounting for 52% of plastics consumption. The trend is expected to continue.

India's materials recycling rate is the highest(60%) in the world as compared to other countries (Europe: 7%; Japan:12%; China:10%; South Africa:16%).

Post-consumer plastics waste accounts for 1-4% by weight of the total 80,000 tonnes of Municipal Solid Waste (MSW) generated every day in the country, as compared to 7-8% in Europe. In addition, there are rigid plastics containers of identified origin, which continue to be reused, thereafter completing their useful service life go in for materials recycling through waste dealers and reprocessors. There is also available around 2% of in-house/process waste called 'Scrap', which is of identified origin and fairly clean for further reprocessing.

The issues relating to plastics waste management- social, technical and environmental were debated in the National Waste Management Council of the Ministry of Environment and Forests, a background paper was circulated among local authorities and the plastics industry, presentations were made by experts and workshops, conferences, seminars and field visits organised. India had also participated in and made presentations at the Commonwealth Technology Transfer Forum on Plastics Waste Management held in Kuala Lumpur, Malaysia during 23-26

March, 1995. A video film on "A Success Story on Plastics Waste Management in India" was produced by the Building Materials & Technology Promotion Council (BMTPC), and shown at Kuala Lumpur. Seminars/conferences on Plastics and the Environment were organised in New Delhi, Goa and Bombay during 1994-96, and supported by the Plastics Industry, Indian Plastics Institute, PlastIndia Foundation and Federation of Indian Chambers of Commerce and Industry (FICCI).

To take a comprehensive view and to identify the measures- social, technical and environmental to be undertaken for proper and organised management of plastics waste, the Government of India constituted the National Plastics Waste Management Task Force.

The Task Force held eight meetings, in New Delhi, Mumbai, Calcutta and Bangalore. The following are the key recommendations that have emerged as a result of the deliberations of the Task Force, and Action Plan towards integrated Plastics Waste Management in India.

1. Strategy for plastics waste management in India, will include, raising consumer and public awareness, upgrading methodology of waste collection and segregation, promoting social and environmental status of waste collectors/rag-pickers, upgradation, technically and environmentally, of recycling/reprocessing systems/and end product applications with desired recyclate content.
2. Evolving waste management system with appropriate guideline on plastics packaging and packaging waste in India, to be issued by the Ministry of Environment and Forests.
3. Promoting end applications with desired recyclate content based on Guidelines for Recycling of Plastics, to be issued by the Bureau of Indian Standards.
4. Promotional activities towards better awareness in respect of waste minimisation, reuse of plastics, plastics waste, its recycling, and upgradation.
5. Setting up of an Indian Centre for Plastics in the Environment by the Plastics Industry.
6. The Plastics industry, is to render logistic support for collection and recycling of plastics products such as bottles/containers, used for mineral water, liquor, vegetable oils, detergents, shampoos, petroleum products, EPS moulded packaging etc. which contribute towards waste generation, with the objective of formulating shared-producers-users-responsibility.
7. Constitution of an Implementation and Monitoring Committee (IMC) by the Ministry of Environment and Forests, to follow-up the implementation of recommendations of the Task Force, and report to the Ministry of Environment and Forests.

8. Product manufacturers to be encouraged to form into network of individual associations with a view to promoting waste management and organised recycling.
9. Appropriate applications development research programme to be launched, products with recycle content identified, an inventory prepared and updated from time to time, listing of volume applications, to attract price preference/incentives to promote increased use of plastics waste, and thus encourage environment awareness.
10. Plastics packaging waste and that generated from other rejected plastics moulded products ought to be monitored for collection and disposal into various grades by promoting dust-bin culture and provisions contained in HP Non-Biodegradable Garbage (Control) Act, 1995, may be referred to .
11. Appropriate fire protection/safety measures be planned in and around plastics waste dumps/waste dealers markets, and reprocessing units in different parts of the country, and efforts to be made to locate these in specified areas.

The Management of Plastics Waste through promotional, social, technical and environment measures is a continuous process, and through the setting up of the Indian Centre for Plastics in the Environment, by the plastics industry, it will be monitored and coordinated by the IMC of the Ministry of Environment and Forests (Ref. 7 above).

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RECOMMENDATIONS

The Task Force held eight meetings in New Delhi, Mumbai, Calcutta and Bangalore. Representatives of Raw Materials Manufacturers Associations, processors and reprocessors, end-users and local authorities, participated in the meetings. Recycling units were visited in these cities. In response to the decision taken at the seventh meeting of the Task Force (23rd July, 1997) PET resin manufacturers and converters held a meeting on 13th August, 1997, in Mumbai, and formed themselves into an Association viz., "National Association of PET Industry (NAPI)", as envisaged in action programme herein. Based on the deliberations in the meetings and interaction with industry and concerned agencies, the following recommendations have emerged:

Strategy for Plastics Waste Management

The strategy for effective management of plastics wastes should entail the three R's: Reduction, Reuse and Recycling of wastes. Hence, the action programme suggested by the Task Force includes a package of **Preventive, Promotional and Mitigation (PPM)** measures to achieve these objectives. The implementation of the strategy will require active involvement of all sections of the society in which the industry and the civic authorities are the key partners. The industry and the civic authorities have to act in unison to discharge their responsibilities. Public participation and catalytic support from the Government are the two important pre-requisites for implementation of the strategy.

The action programme for implementation of the Strategy covers the following components:

- (i) **Preventive measures** : Minimising use of plastics, segregation of wastes and compliance of environmental guidelines
- (ii) **Promotional measures** : Improvement in waste collection system and recycling technologies.
- (iii) **Mitigative measures** : Public awareness programme and penalties for littering, fire protection and safety measures.

Institutional mechanism

Establishment of network of concerned Industry Associations, and Indian Centre for Plastics in the Environment (ICPE), for Government-industry interaction.

Action Programme

1. **Guideline on Plastics Packaging**
Packaging constitutes 52% of plastics consumption. Accordingly this issue

was addressed by the Task Force and Guidelines on Plastics Packaging and Packaging Waste was prepared. Guideline lays down measures aimed, as a first priority, at preventing the production of packaging waste, and as additional fundamental principles, at reusing, at recycling, and other forms of recovering packaging waste, and hence, at reducing the final disposal of such waste. It is recommended that this Guideline may be issued by the Ministry of Environment and Forests, for adoption by the industry-raw materials manufacturers, processors and packers.

2. ***BIS Guidelines/Specifications***

The manufacture of products using recycled plastics should follow appropriate BIS "Guideline for Recycling of Plastics" and Indian Standard "Recycled Plastics for the Manufacturing of Products-Designation", which have finalised by Bureau of Indian Standard

3. ***Limits to Recycling***

Beyond Type-II materials; (post-consumer plastics waste of unknown origin having visible impurities, as per BIS Guideline), recycling of plastics waste should be banned. Alternatively, use of such plastics waste (beyond Type-II) should be resorted to for energy recovery. Recycling of multilayer film packaging and plastics waste beyond Type-II also be considered for use as composites and volume applications, such as substitutes for wood/concrete products.

4. ***Circulation of Dirty Coloured Plastics Carry bags/Products***

Consumer items, such as toys, water bottles, Kodum, carry bags, etc. should not be allowed to use recycled plastics waste, beyond Type-I (100%). Instead a blend with virgin plastics be encouraged (50:50), and efforts should be made not to downgrade the quality and performance of end products. Reprocessors using dirty plastics waste for the manufacture of consumer items will be warned of this environmentally unsound practice. Manufacture of dirty coloured carry bags with visible contamination and their circulation in the market should be banned.

5. ***Recycling Logistics***

The integrated plastics waste management need the cooperation and participation of plastics industry, local authorities and the consumers. The Industry needs to take a lead in supporting pilot collection schemes with the objective of channelising more and more post-consumer plastics waste for recycling.

6. ***Consumer Awareness Programme***

Social and environmental issues relevant to the plastics industry should be addressed by the industry. For this, it is recommended that a country-wide consumer awareness programme be launched from time to time through media, exhibitions, newsletters, publications, videofilms, posters etc. for the education of common man, environmentalists, Government Departments, Trade Associations, Educational Institutions etc.

7. ***Applications Development Research***
Appropriate applications development research programme should be launched by the industry in association with, and participation of waste reprocessors, Govt. agencies CSIR, DST and other R&D institutions. In order to prevent repeated generation of plastics waste, there should be shift from consumer products to volume applications, like synthetic lumber etc., where recycling plastics waste could be technologically absorbed.
8. ***Penalties for Littering***
Post-consumer plastics waste is primary source of littering, as seen around in public places. This should be contained by promoting dust-bins culture. Local authorities should promote anti-littering measures, enforce provisions of existing laws, and by imposing deterrent penalties. In this connection, it is recommended that provisions contained in HP Non-biodegradable Garbage (Control) Act, 1995 and Rules 1996, may be referred to.
9. ***Incentives***
In order to prevent indiscriminate generation of plastics waste and promote recycling incentives, technical and financial assistance should be provided. Plastics products with appropriate recycle content should attract price preference/incentives. To promote increased use of plastics waste, incentives, like concessions in sales tax, excise duty and custom duty, for upgradation of recycling technology, import of technology, equipment and machinery, may be considered for the benefit of plastics waste industry, thus encouraging environmental management of plastics waste. Incentives should be provided by the plastics industry to rag-pickers and NGOs for increased collection of plastics waste from public places.
10. ***Recycling/Reprocessing Machinery Equipment***
These are already being manufactured in India. The existing units mostly depend upon local machinery. However, there is a scope of upgradation of recycling technology in tune with the scale of operations, and use of improved machinery. The plastics industry/waste recycling units should compile an inventory of such machinery and their requirements.
11. ***Hazardous Plastics Waste***
Plastics waste generated as a result of use of large number of products in health and medicare, i.e. hospitals, nursing homes/clinics, should be carefully segregated. Infected plastics waste products should not be resorted to for materials recycling. Same is applicable in respect of plastics containers/packagings, used for storing of hazardous and toxic chemicals including insecticides, pesticides, and petroleum products. These should be carefully segregated from waste stream, and not resorted to materials recycling, but incinerated as per Notification on Bio-Medical Waste issued by Ministry of Environment and Forests. Only clean packaging waste, like films, EPS shaped mouldings, glucose bottles etc., are to be segregated for materials recycling.

12. **Fire Protection and Safety Measures**
Appropriate fire protection/safety measures should be planned in and around plastics waste dumps, waste dealers markets, and reprocessing units, to prevent fire accidents. Waste dumps and dealers markets should be located in specified industrial areas.
13. **Network of Concerned Industry Associations**
To facilitate monitoring growth and diversification of plastics packaging industry- both flexible like carry/shopping bags, multilayer film packagings, film wraps etc, and rigid packaging, like EPS shaped moulded packaging, blow moulded containers, PVC, PET bottles, disposables used in hotel and catering establishments, it would be necessary for each of these products manufacturers to form into individual Associations, with a view to promoting waste management as a result of their use, encouraging organised recycling, and upgrading its technology. In this connection, the plastics industry should resort to concepts of minimising plastics waste, reuse and increased materials recycling.
14. **Centre for Plastics in the Environment: Government - Industry Interaction**
The Task Force recommends setting up of an autonomous Institution under the name "Indian Centre for Plastics in Environment "(ICPE). Social, environmental and technical issues in respect of plastics industry/processors with specific emphasis on waste, should be handled by this Centre based on the pattern followed by similar institutions abroad. The plastics industry is advised to work out modalities of funding and operation, and finalise the setup of the Centre before the end of 1997.

To achieve the targets (by 2002), relating to above activities, the following **Action Plan** is recommended:

I. Action by the Ministry of Environment & Forests

- a) Announcement of Strategy and action programme for plastics waste management in the country;
- b) Issuance of "Guideline on Plastics Packaging and Packaging Waste";
- c) Coordination with Bureau of Indian Standards for Issue of Guideline and standards on recycled plastics;
- d) Promotion of activities towards better awareness in respect of plastics waste and recycling; and
- e) Constitution of Implementation and Monitoring Committee for follow-up of the recommendations of Task Force,

II. Action by the Industry

- a) Setting up of the Indian Centre for plastics in the Environment;
- b) Implementation of Guideline on Plastics Packaging and Plastics Waste; BIS Guidelines on Recycling Plastics;
- c) Taking up of lead role in establishing effective waste collection system through pilot projects;
- d) Participation in Implementation and Monitoring Committee; and
- (e) Establishing network of concerned industry Associations for promoting waste management and organised recycling.