

TALE TELLING



PET BOTTLES



June 29 2001 ,Puja being performed at ICPE Secretariat Mumbai, new premises.



Bundling press for used PET Bottles.



Vol. 2, July/September 2001 No. 3

Editorial Board

Mrs Veena Mathur

Dr U K Saroop

Pawan Bakshi

N C Saha

V K Grover

Rajesh Mittal

Dr D D Kale

M K Banerji

Pradeep Chopra

Office Bearers

President Governing Council

Mr. K G Ramanathan

Chairman Executive Committee

Mr. M P Talaria

Secretary & Member Executive Committee

Mr Sujit Banerji

Director General

Dr A N Bhat

Treasurer & Member Executive Committee

Mr Rajiv Tolat

Editor & Member Executive Committee

Mr O P Ratra

IN THIS ISSUE

- | | | |
|--------------------------|--|-------|
| <input type="checkbox"/> | ICPE Mumbai Secretariat , puja ceremony | 1 |
| <input type="checkbox"/> | Bundling Press for used PET Bottles | 1 |
| <input type="checkbox"/> | Tale Telling PET Bottles | 2-3 |
| <input type="checkbox"/> | Delhi Act No. 6 of 2001 | 3 |
| <input type="checkbox"/> | Plastindia 2003 Launched | 4 |
| <input type="checkbox"/> | ICPE GC/EC Meetings | 4 |
| <input type="checkbox"/> | Waste Management and Plastics | 5-6 |
| <input type="checkbox"/> | Awareness Programmes | 7-12 |
| | —Seminars: | |
| | • Bhopal | 7-9 |
| | • Raipur | |
| | • Indore | |
| | —School Programmes: | 9-12 |
| | • Hyderabad | |
| | • Kolkata | |
| | • Bhopal | |
| | • Raipur | |
| | • New Delhi | |
| <input type="checkbox"/> | No Stink, this is New-Age Garbage Station | 13 |
| <input type="checkbox"/> | Integrated approaches to Plastics Waste Management | 14 |
| <input type="checkbox"/> | Do You Know | 15-18 |

Cover: PET bottles waste can be recycled.

(Material assistance derived from Times of India New Delhi, Hindu Business Line and APME Newsletter is gratefully acknowledged)

Readers are invited to send their contributions in the form of short notes/news item, new products development, case studies relating to Plastics and the environment, recycling technology, waste management, etc. for Publication in the Newsletter.

All correspondence regarding ICPE Newsletter should be addressed to the Editor Eco-Echoes ICPE, Vijaya Building, 10th Floor, 17, Barakhamba Road, New Delhi-110 001, INDIA. Material published in the Newsletter may be freely reproduced, but its due acknowledgement will be appreciated.

Indian Centre for Plastics in the Environment

New Delhi : 1009, Vijaya Building, 10th Floor, 17 Barakhamba Road, New Delhi-110 001
Tel: 011-3326376 to 78 Fax: 91-011-3326379
Website: www.icpenviro.org E-mail: icpedelhi@sify.com

Mumbai : 203, 2nd Floor, Sagar Avenue (Opp. Shopper's Stop), S.V. Road, Andheri (W)
Mumbai-40058 Tel: 022-6958509, 6234602 Fax: 022-6236931, E-mail: icpe@vsnl.net

Founder Members
Chemicals and Petrochemicals Manufacturers' Association, New Delhi
Plastindia Foundation, Mumbai

For a Sustainable Society.....

Population growth, urbanisation, industrialisation, aspirations and expectations, supplemented by fast changes in social needs and life style of a common man, have together contributed to increased generation of urban solid waste both in developed and developing countries. With a population of one billion, India generates 100,000 tonnes of municipal solid waste every day, averaging 38 million tonnes annually.

During the past three decades, with the increased consumption of plastics as useful packaging medium the world over, including India, the presence and appearance of packaging waste in city garbage has been an eyesore socially and a challenge environmentally. Municipalities and local authorities all over the country have been concerned with generation of urban waste and its management. Recyclables like plastics, paper, board, glass and metals are prominently present as useful value based constituents in urban waste/garbage dumps.

Management and disposal options of urban waste have been debated at various levels of society- the Government, local authorities, the citizen, the consumer and the NGOs. Collection, segregation and disposal are the three stages of waste management. Management of urban solid waste is the responsibility of the municipalities. The whole network of waste collectors, rag-pickers, dealers have transformed urban solid waste into a business, in India generating livelihood for over a million people of weaker section of society. Municipal trucks, door-to-door collection and segregation of biodegradable and non-biodegradable constituents, through self-employed rag-pickers/waste dealers are daily rituals in an urbanised society. The volume of waste generation has been increasing in cities and towns, coupled with the throwaway and garbage culture in India, so have been the worries of the local authorities.

The Government and local authorities all over the country have evolved several efficient disposal options, in association with NGOs, and the process continues. There are several good examples in Delhi, Mumbai, Chennai, Kolkata, Pune, Mussoorie and Shimla. There have been suggestions that in respect of recyclables in the waste stream, and for efficient collection and disposal, local authorities could work together with rag-pickers/waste collectors and dealers and trading through recycling units. Though such a system is already operating in India, but this needs to be upgraded by adopting 'bin culture' at various levels of waste generation in the society - household, catering/hotel industry, travelling (Air/Rail), institutions, shopping centres, hospitals, wholesale and retail markets and industrial undertakings. It is a continuous process, and in India, massive communication and public awareness programmes should contribute to efficient waste management.

For a population of 14 million in Delhi, the Municipal Corporation which is responsible for keeping the city clean, has to deal with the task of collecting garbage generated every day to the tune of 6,600 tonnes. The Corporation has launched a scheme to privatise construction and management of "dalaos" - garbage dumps, initially 1200 in number at 10 sites. These will be in addition to the existing 2,500 under its direct management. Already the corporation has been successfully operating door to door garbage collection scheme in 200 residential colonies in the city. The New Delhi Municipal Council (NDMC) has also undertaken ambitious and practical schemes of collection, segregation and disposal of garbage in its area of operation.

As a useful value added component in urban solid waste, plastics waste has been appropriately handled and managed through trading and recycling. The National Plastics Waste

Management Task Force (Ministry of Environment & Forests) during 1996-97, and its recommendations have paved the way for better plastics waste management in India, now with the establishment of the Indian Centre for plastics in the Environment (ICPE). The following documents have brought about awareness about the plastic waste in the country:

- Guidelines for Recycling of Plastics : IS 14534-1998
- Recycled Plastics for the Manufacture of Products-Designation: IS 14535-1998. (Bureau of Indian Standards, New Delhi.)
- Guideline for Plastics packaging and packaging waste.
- Recycled plastics manufacture and usage Rules 1999. (Ministry of Environment & Forests, New Delhi.)

Further, for better management of municipal solid waste, with suggestions of present and improved practices, following documents have been made available.

- Manual on Municipal Solid Waste Management (May 2000) (Central Public Health and Environmental Engineering Organisation, Ministry of Urban Development, New Delhi)
- Municipal Solid Wastes (Management and Handling) Rules 2000. (Ministry of Environment and Forests, New Delhi)
- Management of Municipal Solid Waste. (Central Pollution Control Board, New Delhi)

While the recycling of plastic waste for material recovery in India is an on going industry, it is required to be regulated and upgraded, technologically and environmentally. Further, when the plastics waste is unhygienic to handle and uneconomical for recycling, but continues to have higher calorific value, the best option is to resort to incineration, alone or in association with municipal solid waste, to recover energy. Such a practice will help reduce the volume of plastics waste seen littered around in public places, which remains uncollected and continues to be an eyesore.

Incineration practices for plastics waste/municipal solid waste are very successful in Japan, Switzerland, Denmark, Germany, U.K, France, Netherlands and Austria. Energy was recovered from 3.34 million tonnes of plastics waste in 1998, in Europe, where out of 30.381 million tonnes of virgin plastics consumption, 1.072 million tonnes were recycled granulates. In India, virgin plastics consumption during 2000/2001 was 3.5 million tonnes, besides 1 million tonne of recycled plastics. In Japan, during 1998, domestic consumption of plastics was 10.200 million tonnes, generating 9 million tonnes of plastic waste, out of which 12% utilized for material recycling, 17% for incineration with power generation, 14% for incineration with heat utilization facility, 33% for landfilling and 23% for incineration without power generation and heat utilization facility.

In India, there is good scope for initiating such practices. Already, at the national level, recommendations have been made by various expert groups/committees to consider incineration as one technical option for plastics waste, besides encouraging 'bin culture' for better collection and segregation of waste at source.

Plastics are Eco-friendly and recyclable, but classified as social eyesores when in waste stream, and environmental challenge when seen littered in public places, parks or open drains.

For better management of plastics waste, the society at large has to cooperate, the consumer, the public, the manufacturers, suppliers, with inputs /guidelines/directives from the Government, the local authorities in cooperation with rag-pickers, waste dealers-together they should join hands and work out efficient disposal models keeping in view the local culture/habits of the consumers.

Both the Plastics industry and the consumer have to act with responsibility. While benefiting from the advantages of plastics to upgrade daily life, the waste generated is to be managed appropriately, economically, and environmentally for a sustainable society.

95000 tonnes per annum in the country. Used *PET* bottles are today valued at Rs. 2 to 4 per kg. and it becomes remunerative for the rag pickers to collect more and more of these bottles.

The bottles after collection are transported to the baling/bundling centres, which at present are operating in Delhi, Mumbai, Chennai, Ahmedabad, Jaipur and Indore. Baling of bottles is essential to reduce their volume during transportation to the recycling units. There is a need to set up more collection and baling centers all over the country. A private entrepreneur namely, **Sharstar Polyfibres India (P) Ltd., Coimbatore**, has developed, bundling presses for *PET* Bottles.

Time and again, the concept of buyback system of *PET* bottles as practised in advanced countries has been debated. However, the Indian buyback system for *PET* bottles is unique in nature that the used *PET* bottles which are seen discarded and thrown away in public places as also in the litterbins are conveniently collected by the rag pickers and waste dealers who earn their livelihood out of their trading.

To match the established recycling capacity for *PET* Bottles, an efficient collection system of these from available waste stream sources, is required to be organized.

PET bottles are recycled into value-added products. These include, unsaturated polyester resin, carpets and floor mats, boat parts, recreational vehicle parts, area rugs, bath rugs, sofa and chair fill, pillows, blankets, upholstery, geotextiles, paint rollers, sportswear, footwear, luggage, sheet for trays, blister pack, concrete, asphalt and stucco reinforcement, tool handles etc. etc.

Imagine, how useful are used *PET* bottles in the waste stream, when they are collected and recycled into functional products.

— O.P. RATRA

Delhi Act No. 6 of 2001

The Government of NCT, Delhi has notified "**Delhi Plastic Bag (Manufacture, Sale & Usage) and Non-Biodegradable Garbage (Control) Act 2000 (Delhi Act No. 6 2001)**

The State Department of Environment has announced the implementation of the Act with effect from October 2, 2001. Further, the **Chapter III** of this Act namely, **Management of Non-biodegradable Garbage and Biodegradable Garbage** has come into force on September 19, 2001. The Department has already identified areas for implementation of Chapter III of the Act in different zones under Municipal Corporation of Delhi, New Delhi Municipal Council and Delhi Cantonment Board. The Chapter III of the Act appropriately **prohibits throwing of garbage in public places, drains, and sewers; Provision for placement of receptacles and places for deposit of garbage and segregation of Biodegradable and Non-Biodegradable garbage.** Already, the New Delhi Municipal Council has launched **Garbage Recycling Stations** in different areas, and Municipal Corporation of Delhi has plans to set up 150 such stations.

The Department of Environment, Government of NCT, Delhi must be complimented for its bold decision to implement the Act through public awareness programmes and publication of media ads, which the department has been issuing, from time to time.

LET US
MAKE AN
ECO-FRIENDLY
DELHI



PLASTINDIA 2003 LAUNCHED

At a glittering function held in Mumbai on September 14, 2001 "PLASTINDIA 2003" one of the world's and India's largest exhibitions, was launched by the Hon'ble Chief Minister of Maharashtra, Mr. Vilas Rao Deshmukh. Those present on the occasion included, Mr. Shyam Tibrewal, President, Plastindia Foundation, Mr. Mukesh Ambani, President, National Advisory Board-Plastindia 2003 and Vice Chairman, Reliance Industries Ltd., and Mr. S.V. Kabra, Chairman, National Executive Council, Plastindia 2003.

Plastindia 2003, which is held along the lines of international exhibitions such as the **K** fairs conducted by Messe Dusseldorf, will take place in Pragati Maidan, New Delhi between February 15-20, 2003.

Elaborating on the exhibition, Mr. Shyam Tibrewal said, "**Plastindia 2003**, planned to spread over an area of 53,000 square meters at Delhi's Pragati Maidan, is expected to feature 1400 exhibitors with



nearly 450 international participants from 35 countries. Over 10 lakh visitors are expected to visit the exhibition. There will also be an international conference for 4 days in which experts and researchers in the field of plastics from all over the world will present their papers on their latest studies."

Speaking on the occasion, Mr. Mukesh Ambani said, "Over the years, Plastindia exhibitions have attained recognition all over the world and have now become a part of the international calendar of exhibitions. These exhibitions have brought Indian plastics industry to the forefront of the world map."

ICPE Governing Council and Executive Committee Meetings in Session September 15, 2001, Mumbai



Mr. K.G. Ramanathan, President, GC (R) and Mr. M.P. Taparia, Chairman, EC (L) who chaired the meetings

WASTE MANAGEMENT AND PLASTICS

ROLE OF RAG-PICKERS



Plastic products, bags and packaging are amongst the most valuable recyclables found discarded as Urban Waste at the end of their service life. May that be the roadsides or the garbage dumps and even in the litterbins seen placed at identified locations in the city

Moving around in a city, one comes

across activities of rag pickers and waste collectors throughout the day starting from early morning.

There are **rag pickers bastis** and waste dealers seen dotted at different locations in practically every other city and town. The rag pickers whose day starts collecting recyclables in residential and institutional areas including municipal

garbage dumps feel satisfied by mid-day when their collections overflow the bags normally they carry to pick up recyclables. It is a very good experience to visit rag picker basti, municipal garbage dumps and wayside areas where rag pickers and waste collectors are seen busy segregating recyclables.



Door-to-Door collection of Household Waste and segregation of Plastics



AWARENESS PROGRAMMES

ICPE continued its efforts to create awareness in respect of Plastics and the Environment in Educational Institutions as well as through workshops and seminars. Initiating such programmes in New Delhi throughout the year 2000, the ICPE carried forward these activities in Vadodara (Baroda), Ahmedabad, Patna and Hyderabad in cooperation with the local Plastics Manufacturers' Associations, NGOs and State Pollution Control Boards during the period January-March 2001.

Kendriya Vidyalaya, Air Force Station, Arjun Garh, New Delhi had taken the lead by inviting ICPE to organize Awareness Programme for the benefit of the students. The programme was organized both for the senior and primary wing on 27th January and 3rd February 2001 respectively. Once again it was an experience to talk to the children and record their observations about plastics. It was clear that misinformation spread around by the Environmental Groups against plastics was required to be set aside. The students were convinced with the usefulness of plastics and the proper disposal of plastics wastes.

Observations of the students who made presentations during the programme.

"In this world everything has two aspects, the good and the bad. Like other things the plastic bag also have two aspects... We, the citizens of India should use this plastic which is given by great science and try to recycle it. We can generate big amount of heat energy from it because calorific value of plastics is more than that of coal. We can make many useful things from plastics... At last I would like to draw your attention to the view that everything has its own value and plastics have its own value"

—Nisha Jha, IXA

".....आजकल प्लास्टिक का प्रचलन बहुत बढ़ गया है। आप खुद ही देख लें आपके घर में अनेक चीजें पॉलिथीन की ही हैं।मैं आपसे निवेदन करता हूँ कि प्लास्टिक का हमेशा सदुपयोग करें।"

—सन्तोष राना, सातवीं अ

"आज जीवन का कोई भी क्षेत्र ऐसा नहीं है जहाँ प्लास्टिक का उपयोग न होता हो। इसे हमारे जीवन से हटाया नहीं जा सकता.....।"

—रश्मी अग्रवाल, तीसरी अ

"प्लास्टिक हमारे लिए बहुत उपयोगी है। प्लास्टिक से कई चीजें बनाई जाती हैं, जैसे बाल्टी, जग, गिलास, घाटर बोटल।....."

—ममता, पहली बी

"विज्ञान ने हमें अनेक चीजें ऐसी दी हैं जो हमारे लिए बरदान साबित हुई हैं, उनमें से एक है प्लास्टिक।....."

—प्रीती दूसरी बी

"मनुष्य ने अपने जीवन में बहुत सी वस्तुओं का निर्माण अपनी सुविधा के लिए किया है तथा उनमें से एक प्लास्टिक है। आज सारी दुनिया प्लास्टिक की ओर अग्रसर है, धारों ओर प्लास्टिक की भरमार है।....."

—पुनीत कुमार, आठवीं अ

"प्लास्टिक यह शायद विज्ञान की सबसे देन है। प्लास्टिक के बिना शायद दुनिया सूनी है। इसके बिना हम सुगम जीवन की कल्पना भी नहीं कर सकते।"

—अर्कुर पोरवाल, आठवीं अ

".....जैसे खाना हमारे लिए मुख्य है ऐसे प्लास्टिक भी हमारे दैनिक जीवन में आवश्यक हो गया है। आज का युग प्लास्टिक युग बना गया है..।"

—मधुसूदन, पांचवीं बी

NEW DELHI

Prakrti invites ICPE for a Lecture Presentation



Prakrti—the Nature Club of Lady Shri Ram College for Women, New Delhi invited ICPE for a presentation on Plastics and Environment. O.P. Ratra, Member Executive Committee and Editor ICPE Newsletter, made a



presentation to group of students—the members of Club, in the College premises on 7th February 2001. Copies of ICPE Newsletter were distributed to the students.



AWARENESS PROGRAMMES

SEMINARS

ICPE continued to organize Awareness Programmes during the period. These included debates in schools and seminars.

Bhopal

The ICPE in association with Central Institute of Plastics Engineering and Technology (CIPET) and Small Industries Development Bank of India (SIDBI) organized a seminar on **Plastics Waste Management and Recycling** on July 5, 2001 at Bhopal. Prof. P.B. Sharma, Vice Chancellor, Rajiv Gandhi Produyogiki Vishvavidhyalaya inaugurated the Seminar.



Prof. P.B. Sharma seen lighting the ceremonial lamp.



Dr. A.N. Bhatt, DG, ICPE seen making presentation



Raipur

A Seminar was also organized by ICPE in association with Central Institute of Plastics Engineering and Technology (CIPET) and Small Industries Development Bank of India (SIDBI) at Raipur on August 2, 2001. The Hon'ble Chief Minister of Chhatisgarh Mr. Ajit Jogi inaugurated the seminar.



Hon'ble Chief Minister Chhatisgarh, Mr. Ajit Jogi, arriving for the seminar



Hon'ble Chief Minister addressing the seminar



AWARENESS PROGRAMMES

The EPS Recycling Association of India (ESPRAI) organised an Awareness Programme on EPS (expanded polystyrene) at New Delhi on 13th January 2001, for the benefit of EPS processors and raw materials manufacturers the country Mr. Ajay Mittal, President of the Association, in his presentation, emphasized the international movement and alliance of the EPS industry. The keynote presentation was made by Mr. D.R. Thuse of BASF India Ltd. By

explaining the life cycle of EPS, Mr. Thuse indicated that there was no negative environmental effect at any stage of EPS production and use as per research results documented at the University of Victoria, Mr. Thuse made comparison of EPS cups with that of paper, highlighting that :

- Paper consumes 12 times more steam 36 times more electricity: 3 times more process chemicals,
- produces 580 times more waste

water, and has 50 times global warming potential.

Mr. Thuse further informed that the basic concern of the industry is waste management of EPS, and its material recycling. He brought to the notice of the participants that EPS is not bio-degradable, and it does not degrade the bio, as compared to paper pulp.

The ESPRAI has launched its Newsletter, the first issue was released by Mr. O.P. Ratra of ICPE.



ENVIRONMENT—THE PLASTICS CHALLENGE—VADODARA

A seminar each on the above themes was organised at Vadodara, on 7th January 2001, by Society for Clean Environment (SOCLEEN) in association with Indian Oil Corporation, IPCL, GSFC, Bayer ABS and ICPE; and at Ahmedabad, on 8th January 2001, by Laghu Udyog Bharati and Indian Plastics Institute. The four Sessions of the Seminar at Vadodara, covered 'recycling of plastics and its environmental implications', Rules and

Regulations, Public Participation. There was a lively debate and discussion on the subject, particularly on rules and regulations. Dr. (Mrs.) Alka Karnade Health Officer, aptly highlighted the efforts put in by Mumbai Municipal Corporation in respect of implementation of the Notification issued by the Ministry of Environment & Forests, relating to Rules 1999, on Recycled Plastics manufacture and usage, and phasing out of plastic carry bags less than 20 micron thickness.

PLASTICS—A FRIEND OF ENVIRONMENT—AHMEDABAD

The Seminar was inaugurated by Mr. Kanjibhai Patel, Hon'ble Minister of Forests & Environment. Presentations were made by the representatives of IPCL, CII, and plastics manufacturers. The ICPE was represented by Dr. A.N. Bhat, DG, and Mr. O.P. Ratra Member, Executive Committee, and Editor, ICPE Newsletter.



The Seminar at Ahmedabad was inaugurated by Mr. Purushottam Rupa Chairman GIDC. The presentations were made by Mr. O.P. Ratra, Dr. A.N. Bhat of ICPE, and Mr. Bharat Jain from Gujarat Cleaner Production Centre, GIDC.



HYDERABAD

Managing effectively the post consumer plastics waste, requires cooperation and help from all sections of the society, particularly the civic authorities, the citizen groups, NGOs and the plastics industry. It was in this spirit that ICPE approached the authorities in Hyderabad and together with Andhra Pradesh Plastics Manufacturers Association, organised the programme on 8th February 2001.



The programme was conducted for the benefit of two schools namely, Little Flower High School, and Rosary Convent Govt. High School. School children were addressed by Dr. A.N. Bhat, Director General ICPE, Brother Frank Novohne, Sister Mary Mathais, Mr Rajiv Tolat Member Executive Committee, ICPE and Mr. A. Ravindra Babu, President, Andhra Pradesh Plastics Manufacturers' Association. During the programme, the promotion of "bin culture" was emphasized, and plastic bins were displayed for the benefit of the school children. Dr. Bhat also held meeting with NGOs.



AWARENESS PROGRAMMES

SCHOOL PROGRAMMES

Hyderabad

The Andhra Pradesh Plastics Manufacturers' Association in cooperation with Human World Organization, an NGO, organized an Awareness Programme on Plastics and Environment for the benefit of the students of Bharatiya Vidya Bhavan at Hyderabad, July 02, 2001.



Kolkata

The Indian Plastics Federation in association with ICPE, IPI and IPCL organized a debate for the benefit of students of Shree Maheshwari Vidyalaya at Kolkata on July 28, 2001.



Bhopal & Raipur

The ICPE in association with CIPET organized an Awareness Programme

for the benefit of the students of St. Montfort School at Bhopal on July 6, 2001. The ICPE presented litterbins to the school. Another school programme

was organized for the benefit of students of J.R. Dani Girls H.S. School at Raipur on August 3, 2001.



AWARENESS PROGRAMMES



New Delhi

".....we just can't ban plastics, as we do not have any other material that can replace plastics."

Don Bosco Public School, New Delhi organized a debate on **August 10, 2001**, the theme was "**Reign of Plastics Must End**". Eighty students from the following twenty schools participated in the debate. Twenty students against and twenty for, twenty each as interjectors.

- St. George's
- St. Anthony
- Vasant Vally
- Mother's International
- DPS, Mathura Road
- Mater Dei Convent
- Fr. Agnel School
- Blue Bells
- Mount Sr. Mary's Convent
- Convent of Jesus' & Marry
- Army Public School
- Apeejay Public School
- DPS, Vasant Kunj
- Kalka Public School
- Gyan Bharti



- DPS, R.K. Puram
- Frank Anthony
- Carmel Convent
- G.D. Goenka
- Don Bosco Public School.

The debate was very lively and students had prepared the theme very intelligently. ICPE was invited as the Chief Guest of the debate; ICPE had given cash prizes to students who were adjudged the best speakers. At the end of the debate it was concluded that why should we end the reign of plastics, these are already integral part of our daily life.

Father George Tharayil, Principal, in his address cautioned the students that the plastics must be used judicially and



their abuse should be avoided.

STUDENTS REACT DURING THE DEBATE . . .

So, Ladies & Gentlemen, I am of the firm opinion, that if we keep an open mind we will see that plastics are safe and practical to use. The reign of plastics must and will continue. Plastics are here to stay!

*Jatin Mengia,
XI-C, D.P.S. Vasant Kunj*



AWARENESS PROGRAMMES

I am shocked. Not electrically! How can we remove plastics from our lives? Plastics have now become the part of our very existence.

Without the plastics, we'd rather be returning to the Stone Age, and singing the jingle of the Flintstones - we're modern Stone Age family.

Zarine Khan

XII-A, St. George's School.

So I would like to conclude by saying that we just can't ban plastics, as we do not have any other material that can replace plastics.

H.S. Prashant,

XI, Fr. Agnel School, Gautam Nagar.

So let me conclude by saying that if you remove plastics, civilization will go back by a few decades. The reign of plastics has just begun.

Nikhil Swaminathan

X, Mount St. Mary's School

To conclude, I would like to leave you with a thought. Isn't it ironical that my worthy opponents have written pages and pages against plastics, using a pen made of the same?

Siddharth Sundar,

XI-A, Apeejay School, Saket

Plastics play a crucial role in conserving our natural resources as well as given us benefits which only plastic can give us. **Therefore, let us not make the mistake of throwing away the baby along with the bath water.**

I conclude by saying that instead of the reign of plastics, the reign of the abuse of plastics must end.

Veneetha Roy

XI-A, Convent of Jesus' & Marry

It would be sheer hypocrisy to advocate the end of reign of plastics when we know we cannot do it and more importantly, we should not do it because it would mean a full stop of our any further progress.

The Reign of Plastics Must End? Nothing could be farther from the truth!

Vishwas Khanna

XII-A, Frank Anthony Public School



GARBAGE IN, GARBAGE OUT. Bangalore, like many other cities in India, generates 2,500 tonnes of garbage every day. There are never enough of these public dustbins which cost around Rs 500 each. Garbage is one thing that seems to multiply faster than rabbits, causing irreversible damage to the environment and the health of the common man.

(Courtesy: Hindu Business Line, Aug., 22, 2001)

NO STINK, THIS IS NEW-AGE GARBAGE STATION - CITY GETS FIRST GREEN GARBAGE CENTRE

New Delhi, August 24, 2001

For the first time in the city, garbage will be segregated and disposed of in an eco-friendly manner. The new garbage station set-up by the **New Delhi Municipal Council (NDMC)** was inaugurated by the Lt. Governor of Delhi, Mr. Vijay Kapoor. It will have the facility to separate biodegradable waste from the non-biodegradable. The garbage station is not called a dump since it is so beautifully designed and maintained that it promises "no stink".

The civic body plans to construct nine more such stations equipped with the same technology. The station will have colour-coding system to segregate garbage. Red compartment for metal waste and glasses, Yellow compartment for plastics materials, Green compartment for paper and organic wastes and mixed waste will be thrown into the Blue compartment.

The NDMC has entrusted the design



and construction work to private companies on build, operate and transfer policy. The garbage station will promote recycling and reuse of garbage. A caretaker will be stationed for 8 to 10 hours at the garbage station. NDMC would

educate the residents in its area to segregate garbage at their homes.

The Municipal Corporation of Delhi also has plans to have 150 more such stations in its areas of operations.



INTEGRATED APPROACHES TO PLASTICS WASTE MANAGEMENT AND RECYCLING

NetPEM in conjunction with IIIIEE, Lund University, Sweden, Central Pollution Control Board and Vidarbha Industries Association conducted a workshop at Nagpur on Integrated Approaches to Plastic Waste Management and Recycling in India, on July 10, 2001.

The seminar was well attended and comprised all the stakeholders related to the plastics waste management. Dr. N.K. Verma and Dr. D.D. Basu represented the Regulators; Mr. O.P. Ratra, ICPE, represented the industry. The NGO sector was well represented by Mr. Ravi Agarwal from SRISHTI. Prof. Thomas Lindqvist from International Institute for Environmental Economics, Lund University, was the chief speaker. Mr. Shisher Kumra from Network for Preventive Environmental Management was instrumental in conducting this seminar in association with the other members.

The seminar dealt with issues regarding Plastic use and Plastic waste management in India, in particular Packaging Plastics. Prof. Lindqvist gave the august audience a comprehensive picture of Europe's strategy in tackling this problem, and how it had evolved during the last two decades. There were numerous lessons to be learnt from Europe's experience in tackling this issue.

Mr. Shisher Kumra, during his short talk, posed certain very pertinent questions regarding the ethical dilemma of regularizing the rag pickers contribution in the plastic waste management cycle. Mr. Ravi Agarwal was of the view that, it was time the plastic industries took a proactive stand in tackling this issue, which was in unison with the concept of Extended Producer Responsibility (EPR). EPR is currently the European way of tackling issues like plastic waste management.

Representing the industry, Mr. O.P. Ratra, ICPE stressed that banning plastic is not the solution. Plastics have become an integral part of the society and

he was stressing on technological options of plastic waste management. According to him government and media put plastics under a very wrong image and that the social attitude towards plastic needed a total change. He also made a point that there were guidelines on packaging and packaging wastes. If in place they would be a practical solution to the issue.

From the regulator's viewpoint, a task force was in place to address this issue in India, after numerous deliberations with the industry a 14-point agenda in no way places any responsibility on the

industry, which would force them to grapple with this problem. But, Dr. D.D. Basu, in his short speech made it clear to the Industry that the future was bleak if they do not initiate prompt proactive action. Public concern and demonstrations just add to the woe of the Industry.

The positive outcome of the seminar was the recognition by both the NGOs and the industry, that they would have to complement and not confront each other, in tackling this issue.

Vamsi Krishna Nori and Soumya
Chaturvedula (NetPEM)



Small and Tiny Industries Convention, Exhibition, July 28-29, 2001, Madurai

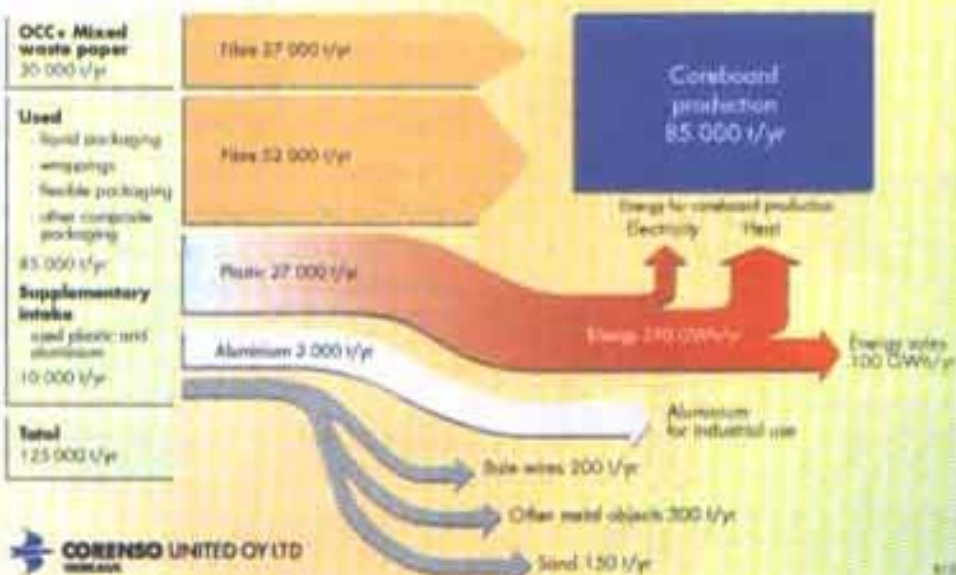


Mr. Vijay Merchant, Member, GC, ICPE, Seen addressing the Seminar, July 14 2001 at Chennai

DO YOU KNOW . . .

Total Recycling

VARKAUS RECYCLING



Plastics Waste as Alternative Fuel for Industrial Applications

Baufeld-Austria converts plastics waste into fuel, which in several respects is superior to regularly used fuels (e.g., coal) - since a natural resource is never as homogeneous as **Baufeld - Austria's** plastics fuel.



The outstanding feature of **Baufeld-Austria's** know-how is that it has succeeded in obtaining standard quality - assured fuel. Thus, mixed plastic material, as well as (excessively) dirty and very small refuse not suitable for material recycling is used to substitute regular fuels, thereby saving valuable re-



sources. To this end, a multi-stage pre-treatment process has been established by **Baufeld-Austria** in close cooperation



Corenso's **ECOGAS** Energy plant in Varkaus, Finland, started up at the beginning of 2001. This is the first recycling plant in the world in which all the components of used liquid packaging materials, the paperboard, plastics and aluminium layers in waste juice cartons, for example, are completely and beneficially utilized. Normal liquid packaging contains about 70% woodfibre and 30% plastic and aluminium foil. The **ECOGAS** process enables the woodfibre element to be recycled into coirboard and at the same time converts the plastic into gas for energy and recovers the aluminium for use by the metal industry.

The new Energy Plant generates some 250 GWh of energy a year. Enough to heat a Finnish town of 40,000 people throughout the long cold Nordic winter. Its thermal power of 40 MW is more than that of all the wind power plants in Finland today. And it can process some 125,000 tons of collected used material a year,

equivalent to 12 railway wagons of compressed bales of waste material every day.

Aluminium recovery in the **ECOGAS** process, some 3000 tons per year in the Varkaus plant, requires only 5% of the energy used in production from bauxite. Bale straps and other metal objects found in the bales, amounting to some 500 tons a year, are also recovered for recycling.

The **ECOGAS** plant itself and the energy which it produces from the plastic, equivalent to some 27,000 tons of oil a year, cause virtually no pollution compared with burning oil or coal.

This pioneering Corenso process is believed to have great potential throughout the world. To recycle just 50% of the world's used packaging which contains aluminium foil in this way would enable several hundred **ECOGAS** plants to be built, replacing at least one 1 MW nuclear power plant.



with the cement industry and experts from Vienna Technical University. Austria is known to be one of the European countries enforcing the most stringent environmental stipulations for industry. Since the process has been accepted by numerous Austrian authorities, this speaks for its quality. **Baufeld-Austria's** know-how has been purchased by the Association of Plastic Manufacturers in Europe (APME) and is to be introduced as the basis for a European programme for the utilization of plastic wastes as fuel in industry.



• Delivery of Plastics

Plastics packaging materials are collected all over Austria by various firms. **Baufeld-Austria** has developed criteria regarding the desired composition of waste, i.e. its permissible degree of contamination, the way it is bundled, etc. and has settled this contractually with

the collectors. The waste is delivered by road to the processing locations. **Baufeld-Austria** currently processes an average of 140 lorry loads (2800 tons of plastics) per month.

• Visual Checks

To determine whether the stipulated collection requirements have been observed, an initial optical control is carried out. **Baufeld-Austria** staff check at least three batches out of each delivery by extracting bales,

• Preliminary Shredding

In a twin-spool shredder the plastic packaging material (some of it rather bulky) is slightly reduced in size. This is a pre-requisite of ensuring that very small (pellet-size) plastic segments can subsequently be acquired so that during the subsequent stage all contaminants and impurities will be eliminated.

• Trommel Screen

The pre-shredded material is put into a revolving trommel screen which separates usable material from unusable material. The separation is undertaken mainly according to the specific weight of the constituents. The usable plastic parts are sucked off, while contaminants and impurities are eliminated.

• Fine Grinder

The remaining material is passed on to the fine grinder where it is reduced in size. At this stage, depending on customer requirements. Varying degrees of size can be produced. As experience has shown, this is of great importance during the combustion process. Various production methods and machines determine the type of the fuel to be used and the size of its plastic constituents.

• Storage

The shredded material is put into storage. The plastics fuel is of fully dependable quality, with guaranteed constant properties as regards composition and calorific value. Only a fuel of this type will maintain its competitiveness in industry, because only it is completely "under control". Material, which fully meets all requirements, is used.

• Laboratory Tests

Each individual production batch is subjected to a chemical check. This is carried out in part to determine the chlorine content (which should not be too high in the cement industry), and in part to comply with the criteria established by the individual customers in accordance with their environmental approval standards (e.g., as regards heavy metals). A chemical analysis forms the basis for certification of each individual fuel supply contingent.

• Rotary Kiln

In the cement works themselves the plastic material is fired taking into account the specific requirements of the plant in question. In the course of co-operating with Austrian cement works **BAUFELD-AUSTRIA** has acquired extensive experience in and knowledge about the correct usage of plastics material fuel as well as of waste oil and solvents.

Further enquiry: **BAUFELD-AUSTRIA GMBH**,

Margetinstrasse 8 c

Telephone: 0043-1-769 20 21-0

Teletax : 0043-1-769 20 21-15

e-mail: baufeld-austria@vip.at

<http://www.baufeld-austria.com>

*In India : **TECHNO INDIA**,*

Greater Kailash - I,

New Delhi - 110 048.

Telephone: 622 4324, 648 6419

Fax: 91-11-646 5956

e-mail: rachan@nde.vsnl.net.in

A BRIGHT FUTURE in Store for European Map

Food hygiene concerns are a high priority for every European consumer. It is therefore no surprise that major European food retailers are turning to **Modified Atmosphere Packaging (MAP)** as the most reliable means of ensuring that, having bought in safely, they can sell on to the consumer in full confidence.

The **MAP** technique was originally pioneered in the UK 20 years ago, but its use has grown steadily across Europe, as much due to performance reliability as new applications.

It is used primarily to improve food preservation technique whereby the food is different from the normal composition of air. Plastics packaging forms sealed bags around cut vegetables, fish and meat. The respiration of the product modifies the atmosphere within the package, resulting in extended shelf life.

MAP is all about food preservation without additives, and the key to it lies in the modified atmosphere itself - a carefully balanced combination of three gases: Oxygen, carbon dioxide and nitrogen.

The combination of the gases vary according to the product they protect. For instance, fresh red meat need plenty of oxygen to keep the bloom of the meat bright red and carbon dioxide is required to slow bacterial growth. At the moment, the accepted norm is required because there is no colour issue. Here the accepted norm is 70% nitrogen to 30% carbon dioxide. With fish it depends on whether the product is white or oily.

MAP has revolutionized fresh food packaging, enabling retailers to market fresh food that are prepared and packed in central preparation units, rather than prepared back store. The technique has also extended shelf life, allowing the product to survive both the distribution time to store as well as display time in store. Without a barrier pack, products like fresh red meat would only have a shelf life of just three to four days as opposed to the seven days or more achieved with a MAP pack.

Other benefits include:

• **Reduced packaging wastage as**

Environmental considerations become increasingly important, the main drive is towards producing very thin but strong shrink films to minimize waste. Some co-extrusions are often as thin as 25 microns, whereas the average laminate is between 60-90 microns thick;

• **Guaranteed performance** in terms of taste, texture and appearance;

• **Consumer choice** increased availability of more fresh food products on sale at any give time.

(Courtesy: APME, Newsletter August 2001)

The 21st Century Electronic cup

Cup Manufacturers Flo SpA, Italy, have won an Innov'ATO 2000 award for their disposable plastics cup design. The cup can be recognized electronically in special vending machines, so that its cost can be refunded to the user. This increases the potential to gather used cups for recycling rather than disposal. The **Codebecher Cups** have been on the market for five years and over 3 million are manufactured and sold across Europe per annum.

This is the first year of the Innov'ATO 2000 award (sponsored by Elf Atochem) which are dedicated to products which fulfil a series of eco-efficiency and sustainability criteria. In terms of the **Codebecher Cups**, this means:

- improvement in quality, technical development and security of products - plastics enable precise and consistent moulding, while indents on the bottom of the cup enable it to be electronically recognized, so that the deposit is only refunded to cups with a coded base;
- respect for the environment, from manufacture of the product to end-of-life- The reverse vending machine stacks the cups one inside the other to reduce waste volume. The deposit gives incentives to the end user to return the used cup. The cups are recycled into various items including paper, pencils, building material and farming material;
- hygiene, aesthetics and practicality - With plastics hygiene is assured as the cups are chemically neutral and micro-biologically safe;

• cost/performance ratio and ease of use - Codebecher uses a quality polystyrene crystal that enables the cost effective production of the mixture.

(Courtesy: APME, Newsletter August 2001)

PET WASTE AS FUEL

Engineering Impex, Gurgaon has developed an interesting application for infactory PET waste lumps. At Rs. 20/kg., this unit is selling PET lumps to a brick kiln in Jhajjar (Haryana) for use as a fuel along with wood. This application in rural India will provide incentives to other brick kilns in the country to take up use of PET waste lumps as a fuel.

PLASTICS CUTLERY ON INTERNATIONAL FLIGHTS

The US Federal Aviation Administration has issued an order to all International carriers to replace metal knives, forks and spoons used by the passengers with disposable plastic ones.

(Source: Times of India, New Delhi, Sept. 19, 2001)

Mobikes, Plastic-bodied scooters gaining ground

The metal-bodied geared scooters and mopeds are heading towards extinction in the Indian two-wheeler market, the second largest in the world, which produces virtually all types of two-wheelers.

Motor cycles and plastic-bodied gearless scooters have gained substantial ground during the last one decade and are going to dominate the market share in the next five years.

Inter-segment weightage in next 5 years

Category	2001-02	2002-03	2003-04	2004-05	2005-06
Geared Scooters (Metal body)	13.20	12.00	10.50	10.00	10.00
Gearless Scooters (Plastic body)	12.31	13.50	14.50	16.00	16.50
Motor cycles	58.74	59.50	61.00	62.00	62.50
Mopeds	15.75	15.00	14.00	12.00	11.00
Total	100	100	100	100	100

(Source: The Hindu Business Line, Sept. 18, 2001)



Bhagidari

Coming Soon A Ban On Manufacture, Sale and Usage of Recycled Plastic Bags for food

From 27 October, the Delhi Plastic Bag (Manufacture, Sale and Usage) and Non-Biodegradable Garbage (Control) Act, 2000 will come into effect.

Plastic bags which are less than 20 microns in thickness can not be manufactured in the NCT of Delhi.

Any person violating the provision of the above act will stand liable punishable with imprisonment for terms which shall not be less than 2 months but which may extend to 1 year or with fine which may extend to 25,000 rupees or with both.

To avoid being fined carry your own bag made of paper, jute or cloth. The next time you go shopping will don't accept plastic bags from shops and vendors.

Department of Environment
Govt. of NCT of Delhi



भगिदारी

खाद्य पदार्थों के लिये पुनः चक्रित प्लास्टिक की थैलियों के उत्पादन, बिक्री एवं उपयोग पर शीघ्र ही प्रतिबंध

संसदीय व अल्पसंख्यक विधायक पर्यावरण विभाग दिल्ली सरकार द्वारा 2000 वर्ष के अधिनियम

20 अक्टूबर से इस अधिनियम को लागू करने के लिए दिल्ली सरकार द्वारा दिल्ली के सभी शहरों में निर्देश जारी किया गया है।

अधिनियम के अन्तर्गत दिल्ली के सभी शहरों में 20 माइक्रोन से कम मोटाई वाले प्लास्टिक थैलियों का उत्पादन, बिक्री एवं उपयोग पर प्रतिबंध लगाया जाएगा।

अधिनियम के अन्तर्गत जो कोई भी व्यक्ति इस अधिनियम का उल्लंघन करेगा उसे 25,000 रुपये तक का जुर्माना या 1 वर्ष तक की जेल या दोनों का सामना करना पड़ेगा।

पर्यावरण विभाग
द. न. न. दिल्ली सरकार

सकलभारत टाइम्स, नई दिल्ली
23-9-2001

The Hindustan Times, New Delhi,
23.9.2001

PLASTICS HELP UPGRADE OUR DAILY LIFE



PLASTICS ARE ENVIRONMENT FRIENDLY AND RECYCLABLE