Management of Post Consumer PET Bottles

Plenary Session

19 October 2021
Panellists

- **Mr G. Merle** of the Mauritian Bottlers Association - Sustainable Initiatives on Plastics

- **Mr C. Wadhwani** of Extrupet in South Africa - Meeting the Waste Management Challenges of post consumer PET bottles in a growth environment: A twenty year old African example

- **Prof. (Dr.) Archana Bhaw-Luximon** of the Centre for Biomedical and Biomaterials Research of the University of Mauritius - Materials Engineering rPET and Biomaterials

- **Mr B. Beerachee** - Director the Solid Waste Management Division of the Ministry of Environment, Solid Waste Management and Climate Change - Current Practices and Future Perspectives
Where we are - Actual Situation

- Regulated under the Environment Protection (Polyethylene Terephthalate (PET) Bottle Permit) Regulations 2001
- Around 130 millions of PET bottles generated annually (local manufacturing and importation)
- Recent waste characterisation study - 3.7% of solid wastes generated is PET
- Around 40% only of post consumer PET bottles collected annually
  - Majority exported for recycling

- Remaining 60% PET bottle wastes
  - Eyesore in the environment
  - Clogs drains - threat due to climate change
  - Take space in the landfill
Where we are - Current Incentives & Initiative with regard to collection and recycling

- Financial Incentive of Rs 15 per kg for recycled and exported PET
- Initiatives at stage of design itself from major bottlers
  - introduction of light weighing preforms - Allowed reduction in use of around 107 tons of virgin material in 2020
  - From coloured bottle to clear bottle
- Integrated network for collection of PET waste bottles in Mauritius and Rodrigues of around 2,500 people involved - informal sector
- Around 332 Collection Points island-wide- public and private initiatives
Opportunities

- PET is a material of choice
  - Desirable physical properties - good tensile strength, light and non-breakable
  - Economic material
  - It has smaller carbon footprint and uses less energy
- More importantly - PET is a highly recyclable material

- Recycled PET (rPET) - increasing demand in the world
  - Extrupet has shown example of extensive recycling of PET in South Africa
  - Producing bottles from rPET extremely sought by reputed brand through their commitment towards greening
- B2B Model in Mauritius - circular economy
  - Technology available
  - But no critical mass to sustain investment
  - MSB standards approved in 2021
- Multitude of other innovative products from the recycled PET through material engineering
  - High potential in the textile industry - polyester -
  - Use of rPET in Textile can reduce 45% CO₂ emissions by 2030 in the textile sector
  - Use of rPET yarn in textile already being done - RT knits
  - Even in the biomedical sector through artificial blood vessels etc
Where we want to go

- Better design to increase recyclability

- Increase recycling of PET - rPET in Mauritius - B2B model - favouring circular economy

- Other innovative recycled products - industries to work with research institutions for more achievable and practical innovations

- New business opportunities

- To be able to achieve all the above, we need an increased collection rate
  - we need at least 80% collection rate to be able to invest in the B2B model
How to reach there

- Sensitisation - very important
- Incentives or disincentives to encourage change in behavior - hence increase diversion from landfill
  - Proposed example - reduced tax on recycled products

- Design to take into consideration end of life of product - design to increase recyclability
  - EU research showed that 80% of all product-related environmental impact can be influenced during design phase
  - Such as favouring more not coloured bottles
How to reach there

- **Proposed** - Extended Producer Responsibility (EPR) coupled with a Deposit Refund Mechanism
  - EPR - environmental approach whereby the producer responsibility is extended to the post consumer stage of the product, i.e. when it becomes a waste
  - Includes from collection to final processing
  - Very successful in other EU countries

- How it is proposed to be done in Mauritius
  - Government to come up with proper Legislative framework for same
  - Recruit a Producer Responsibility Organisation (PRO) to manage the whole deposit Refund scheme
  - Consultant of the Ministry - Clearing House which will monitor the whole system and ensure that the PRO is meeting its obligations
  - Consumer will bring their bottles either manually to shops or through reverse vending machines / depots and be refunded back - Motivate bring back of wastes
  - Whole system will be financed through an eco-contribution from Producers & importers based on market share

- **WAY FORWARD** - Further consultations with all stakeholders prior to the setting up of an EPR / Deposit Refund scheme