

# 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. Wadhvani** 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% CO<sub>2</sub> 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 wastes
  - ▶ 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