

### Material Recovery Facilities and Material Recovery Centres - Way Forward

Material Recovery Facilities (MRFs) and Material Recovery Centres (MRCs) play an important role in sustainable waste management by facilitating the systematic sorting, processing, and recycling of waste materials.

This session focused on the operational dynamics of MRFs and MRCs, exploring both opportunities and challenges in their implementation. Experts and industry leaders shared insights into innovative strategies for improving efficiency, financial sustainability, and technological advancements in waste recovery processes. The discussions highlighted the importance of integrating MRFs into the broader waste management framework to enhance resource recovery and support circular economy initiatives. A significant focus was placed on aligning MRF operations with Extended Producer Responsibility (EPR) targets, ensuring greater accountability from producers and recyclers.



The session, led by the Swachh Bharat Mission – Gramin (SBM-G) Government of Gujarat, provided a platform to exchange knowledge, best practices, and collaborative solutions for strengthening MRF and MRC operations across different regions. Through shared experiences, policy recommendations, and successful case studies, the session aimed to identify actionable steps for optimising material recovery efforts and fostering a more efficient and sustainable waste ecosystem.

#### Speakers

- Shri Kartikeya V Sarabhai, Director, Centre for Environment Education
- Ms Manisha Chandra, IAS, Pr. Secretary CRD & SBM-G, Government of Gujarat
- Mr Saurabh Kumar, CSR Head, Hyundai Motor India Foundation
- Mr Suraj Nand Kumar, Founder Director, RECITY
- Mr Deepak Sahoo, Director, Recycling Hub
- Mr Dharmendra Parekh, Scientist & Director, Debrisolve Private Limited
- Mr Manish Kothari, MD, Rhino Machines Pvt Ltd

### Presentations and Key Messages

**Shri Kartikeya V Sarabhai (Centre for Environment Education)** welcomed participants and highlighted CEE's 40-year journey in environmental education. He shared insights on youth engagement programmes like the Plastic Tide Turner Project and digital learning initiatives in collaboration with UNEP. He also shared an inspiring example of how women-led initiatives, such as Bartan Banks, have successfully reduced single-use plastic at social gatherings like weddings. Sarabhai recognised Shri Prabhjot Sodhi's efforts in Plastic Life-cycle Thinking Programmes (PLTP) and campaigns aimed at raising awareness about plastic waste management and its impact.

**Ms Manisha Chandra (IAS, Principal Secretary, CRD & SBM-G, Government of Gujarat)** discussed the importance of integrating Material Recovery Facilities (MRFs) and Material Recovery Centres (MRCs) into solid and liquid waste management strategies under the Swachh Bharat Mission. She identified the need for technology-driven solutions in waste management and encouraged collaborations between startups, government agencies, and CEE to improve waste processing efficiency. Furthermore, emphasising Public-Private Partnerships, she stressed the role of such collaborations in building sustainable waste management systems, urging corporations, CSR initiatives, and NGOs to contribute towards better sanitation practices.

**Mr Saurabh Kumar (Hyundai Motor India Foundation)** highlighted that 3.5 million tonnes of plastic waste end up in landfills annually, underscoring the urgent need for efficient material recovery strategies. He emphasised that collaborations between private companies and government can significantly accelerate sustainable waste solutions. Kumar also shared Hyundai's approach towards waste minimisation and sustainable waste management, reinforcing the role of the private sector in environmental conservation.

**Mr Suraj Nand Kumar (RECITY)** explained that 60% of global waste still goes into landfills due to inadequate waste segregation at the source. He advocated for localised MRFs within a 30 km radius to improve collection efficiency. Kumar shared experiences from setting up a 300 TPD (tonnes per day) MRF in Mathura-Vrindavan, demonstrating how effective municipal waste management can be achieved through strategic planning and financial backing. He also pointed out that funding gaps, high operational costs, and lack of energy-efficient processing remain major barriers to MRF scalability.

**Mr Deepak Sahoo (Recycling Hub)**, emphasised the need for a robust tracking mechanism to ensure proper waste management from collection to recycling. He highlighted difficulties in handling industrial waste, particularly multi-layer plastic (MLP), which requires specialised processing technologies. Sahoo also shared advancements in plastic-to-granule conversion, noting significant R&D progress in the last two years in India for low-value plastic waste management.

**Mr Dharmendra Parekh (Debrisolve Private Limited)** suggested renaming Material Recovery Facilities (MRFs) as "Resource Recovery Centres" to shift the perception of waste from a burden to an asset. He also discussed global trends, including the USD 6.5 billion compost market, which demonstrates the potential economic value of properly processed waste materials.

**Mr Manish Kothari (Rhino Machines Pvt Ltd)** introduced silica-based plastic blocks, a sustainable alternative to bricks, made from legacy waste and low-value plastics, promoting circular economy practices.

### Key Recommendations from the Session

- Promote localised MRF operations, upgrade sorting and recycling technologies, and implement data-driven traceability systems for efficient waste tracking.
- Foster collaboration between government, private sector, and startups, leverage CSR funding for MRF development, and introduce policy incentives to encourage sustainable waste management investments.
- Support R&D for low-value plastic waste utilisation, develop scalable pilot projects, and integrate advanced recycling technologies for improved material recovery.
- Enhance waste segregation at source, provide training programmes for waste workers, and encourage community-led solutions like Bartaan Banks to reduce single-use plastics.

### Concluding Remarks

Ms Manisha Chandra concluded the session by highlighting that 80,000 villages and 8.5 million households in Gujarat require urgent waste management solutions. She called for CSR and NGO Participation, encouraging corporate social responsibility initiatives and non-governmental organisations to contribute technical expertise and resources to tackle rural sanitation challenges. She also expressed appreciation for the insightful discussions and invited all stakeholders to join hands in achieving sustainable waste management solutions.