



EPS for Environment

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About ICPE

- The Indian Centre for Plastics in the Environment (ICPE) set up on the recommendation of a Task Force constituted by The Ministry of Environment and Forests (MOEF), is a body registered under Society Act on January 27, 1999. It is a nodal agency recognized by the Government of India to handle all issues related to Plastics and Environment in the country.
- Our mission is to help sustain an environment friendly image of plastics by highlighting the positive role of plastics in conserving resources and its 100 % recyclability.



What is PC-EPS (Thermocol waste) & bottleneck in circularity?

1. This is the waste that is left behind once the EPS(Thermocol) has functionally served its purpose.
2. Often consumer is concerned about how to dispose this post consumption leftover.
3. There is enough solution to overcome this situation, actually it's less than 1-2 % of municipal waste due to which it gets ignored in segregation process and ends up in landfilling.
4. The weakest link in Circular economy is its light weight (Voluminous) & hence collection economics of Post Consumer EPS Packaging (PCEP).



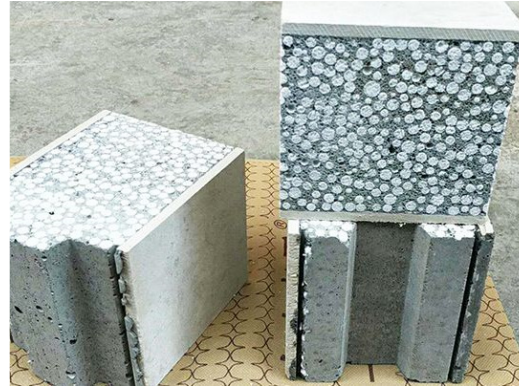
How EPS can be recycled?

- There are different methodologies available for recycling of PC-EPS which can be described as follows:
 - Mechanical recycling
 - Chemical Recycling
 - Waste to Energy (Incineration)
- Mechanical Recycling:
 - It is as simple as like other plastic materials. The waste EPS is called as post-consumer EPS(PC-EPS)
 - The collected PC-EPS gets shredded and heated in EPS Melter to make lumps forms.
 - These lumps then pass through extrusion process where it become in strands form.
 - Strands passes through cooling tank to become it brittle and gets cut into pellets by cutter.
 - The pellets are used for manufacturing of different products like phot frames, artificial jewelries, chairs, hangers etc.
- Chemical Recycling: Chemically recycled back to the original raw Material i.e., Styrene monomer (Full Circular economy).
- Waste to Energy: it can be burnt along with other Municipal Solid Waste to produce Electric Power.



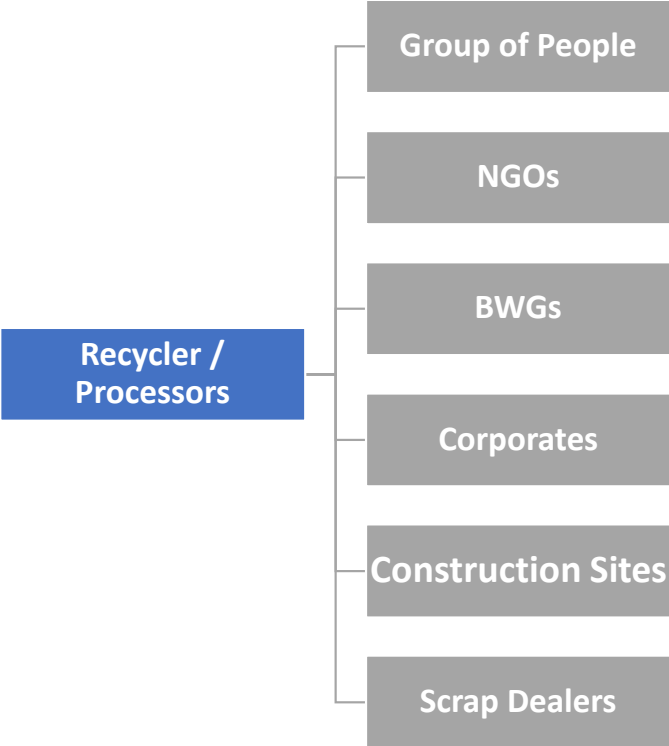
EPS – Recycling Applications

- The most prominent application of recycled EPS is Photo Frames & synthetic pencils.
 - Popular in India, Korea and many other countries
 - Korea uses 70 KMT of recycled EPS for making photo frames
 - India has many photo frame units spread across the country
- China consumes more than 50 % of recycled EPS in making XPS board for building insulation
- Synthetic Wood in Garden Benches & Fencing Posts
- Hangers, Beads & Bangles, partial replacement of polystyrene resin (recycled PS)
- Shredded EPS to replace partially virgin EPS in moulding
- Light weight concrete



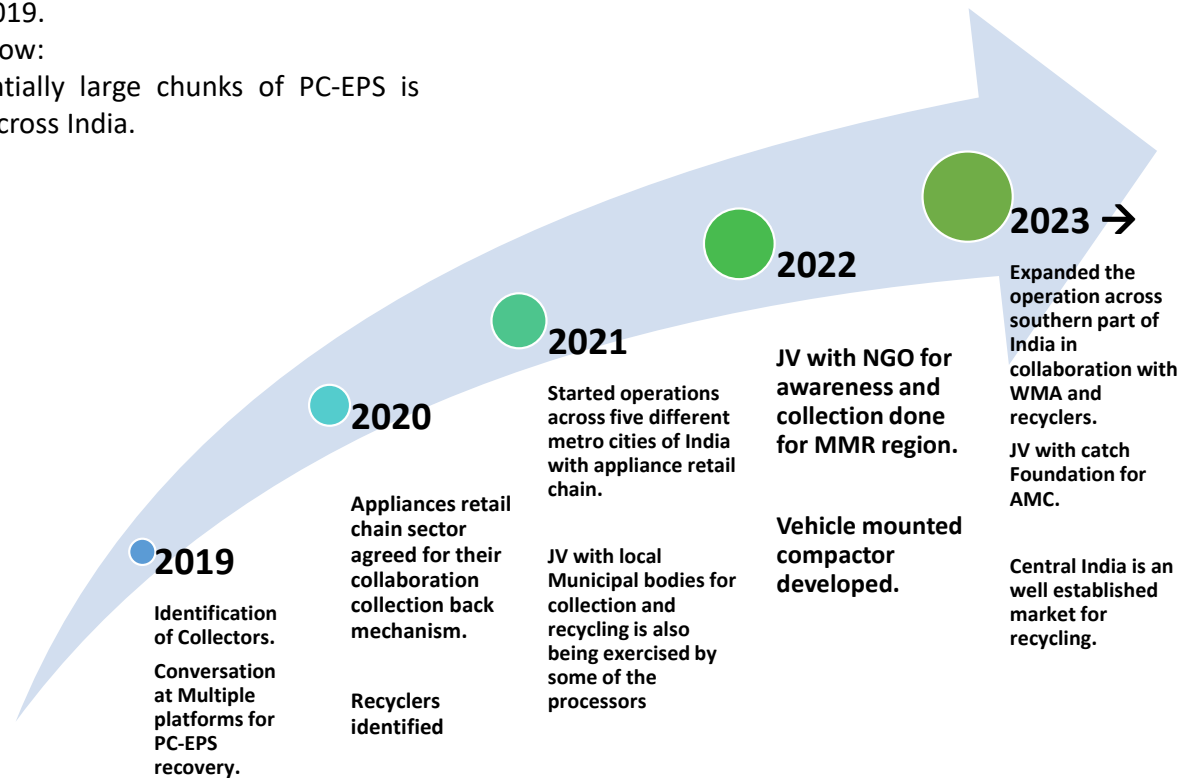
Present Methodology of Informal Sector

- No formal setup of PC-EPS collection and recycling.
- Informal Sector have some vendors involved in PC-EPS collection and processing.
- We have identified the Scrap dealers who are into the collection and processing of the PC-EPS and helping in their capacity building.

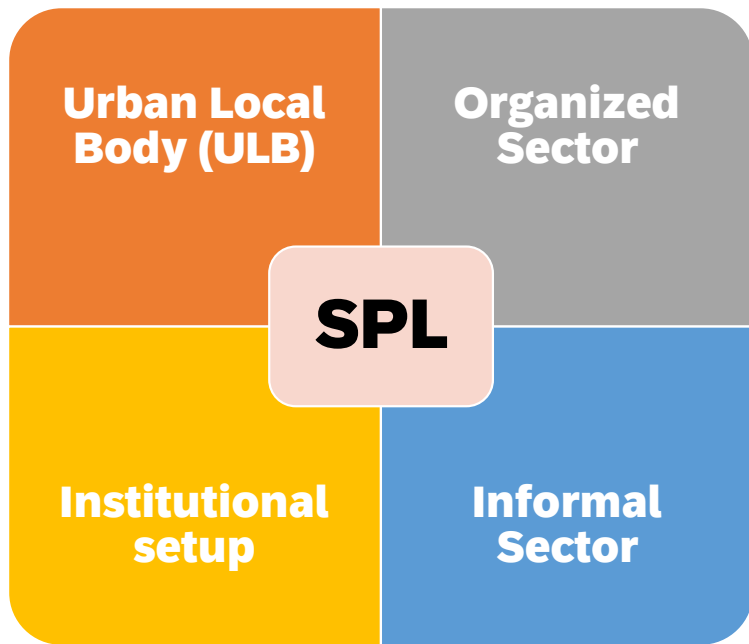


SPL's Initiative in respect of PC-EPS packaging waste

- SPL started studying the current status of EPS waste disposal in India since 2019.
- Progress is as shown below:
- We found that substantially large chunks of PC-EPS is collected and recycled across India.



SPL Approach



We convinced appliance retailers for participating in our recycling initiative - Croma, Vijay Sales, Kohinoor Electronics.
We also brought in recyclers for logistic and recycling support. Currently working with 5R Cycle, Shree Insupac, Sun Foam, Shrunkhala & Catch Foundation.
Presently working in 5 different cities across India viz. Mumbai, Pune, Bangalore, Ahmadabad & Hyderabad.

We approached Urban Local Bodies (ULB) for authorization in the name of our associates to get access of centralized waste disposal facilities.
We are currently working at NMMC, MCGM, PMC, MBMC, BNCCM, TMC, VVMC, KDMC, AMC.

We are also approaching different stakeholders for sourcing of PC-EPS and making and awareness towards recycling of PC-EPS. We are contacting Educational Institutions / WMC / FMC / BWGs.

Parallel to this, we are also engaging with informal sectors to formalize them into mainstream. We have identified vendors who are actually into collection and processing of PC-EPS.

Note :
NMMC : NAVI MUMBAI MUNICIPAL CORPORATION , MBMC :MIRA-BHAYANDER MUNICIPAL CORPORATION , KDMC :KALYAN DOMBIVALI MUNICIPAL CORPORATION , PMC :PANVEL MUNICIPAL CORPORATION , BNCCM :BHIWANDI NIJAMPUR CITY MUNICIPAL CORPORATION , VVMC : VASAI VIRAR MUNICIPAL CORPORATION

PC : POST-CONSUMER , FMC : FACILITY MANAGEMENT COMPANIES , WMC : WASTE MANAGEMENT COMPANIES , BWG : BULK WASTE GENRATORS

Progress so far : At MMR

- We established a network of collectors and recyclers.
- Worked with NGOs for awareness and collection from end users.
- Worked with unorganized sector to bring them in mainstream.
- Approx 1,00,000 Kg per month PC-EPS gets collected and recycled at MMR.
- Collaboration with ULBs and Retail chains established.
- Identified 14 EPS recyclers who either make lumps or granules from PC-EPS.





-At MMR

- Collaboration with ICPE , Shurnkhala Organization and 5R cycle foundation.
- Installed PC-EPS Melter at 5R Cycle foundation's ware-house via ICPE.
- Capacity building and awareness collaboration done with Shrunkhala Organization for Sustainable Development.
- Organized clean-up drive for creating a mass awareness at Mahim beach, collected 3000 Kg post-consumer plastic and EPS by cleaning 500M stretch.

At NCR

- Already there is well established network of EPS collection and recycling, albeit unorganized .
- Approx 8 ,00,000 Kgs EPS gets collected and recycled per month.
- Identified 8 processors / recyclers .



At Hyderabad

- Upto 15,000 Kg PC-EPS gets collected and recycled .
- Mr. Shabbir Khan, owner of Ayesha Thermocol scrap, is a scrap dealer who collect and recycle EPS & XPS.
- He collects from corporates and retails chain appliance stores.
- Other SDs drop at his warehouse.



At Bengaluru

- Bintix waste research pvt. Ltd. is a waste management company who collects dry waste from the RWAs .
- They agreed to include PC-EPS also for collection.
- Mr. Rakesh Jain, Owner of Quality thermopack, He is a registered EPS recycler at Bengaluru .
- He recycles avg. 20,000 Kg per month.



At Pune

- Through ICPE, established a Mobile PC-EPS compactor with Sunfoam at Pune collects and recycle up to 3000Kg per month.
- Mr. Mohammad of King Polymer recycle up to 25000 Kg Per month.
- K K Nag Pvt. Ltd. Through their project RecyCole collects and recycle PC-EPS is Pune area.



At Surat

- Creating an ecosystem of collection and recycling of PC-EPS.
- Met Mr. Tushar bhai of Shahjanand Enterprises at Kim , Surat.
- He recycle 80MT/Month PC-EPS at Surat which generates from imported yarns from China and converts into pellets.
- Met Mr. Dheeraj of Ramdev Polymers, They recycle 25MT/Month PC-EPS collects from different textile industries across Surat and converts into pellets. He is seeking help in getting connected with direct manufacturer as currently dealing with trader.



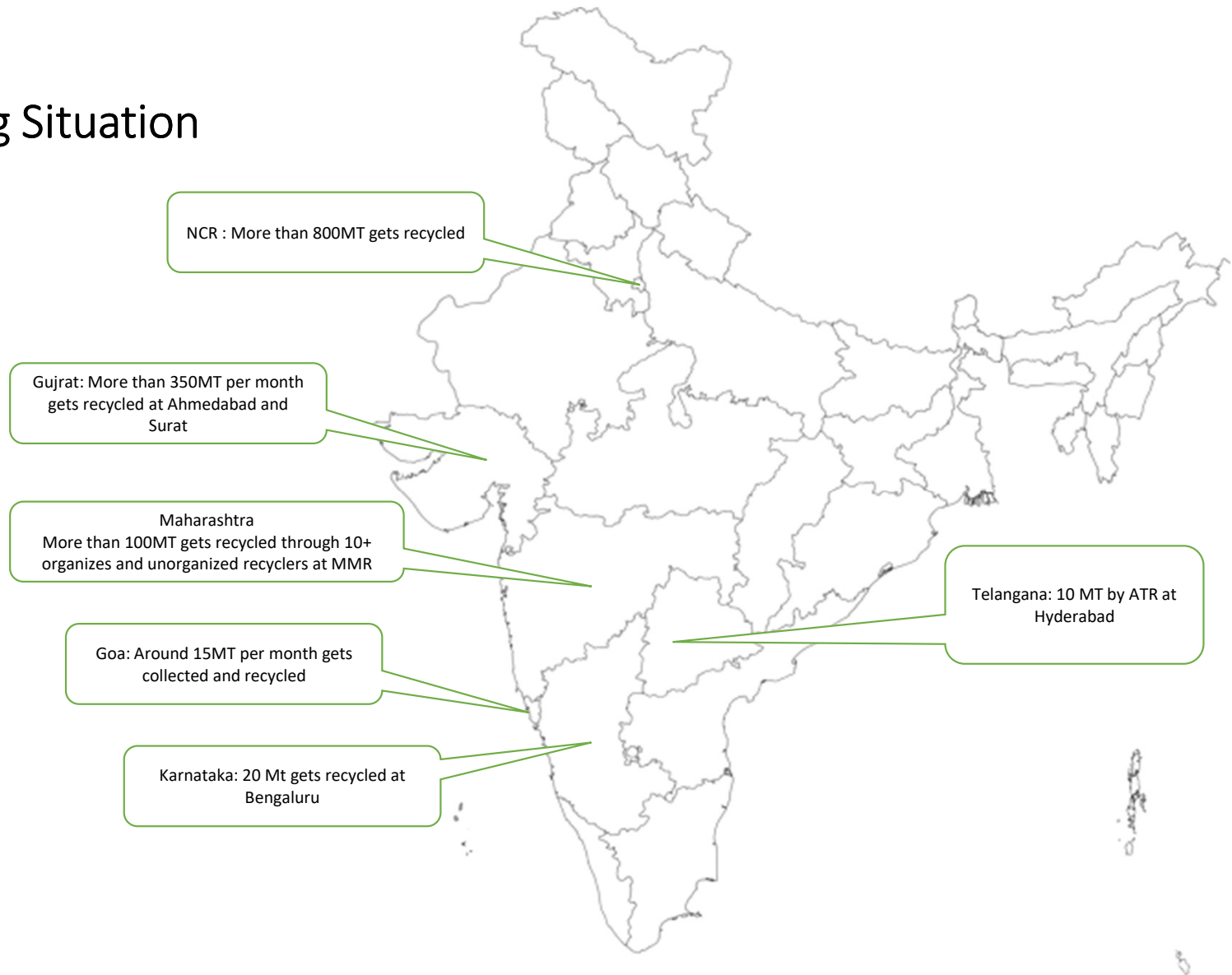
At Ahmedabad

- Mr. Mukesh Jaju of S.J. Enterprises recycle 30 MT per month , collects from all kind of stakeholders.
- We collaborated with CATCH Foundation for IEC activities across Ahmedabad region.
- Approx 50 MT of PC-EPS gets recycled per month.
- Approaching different stakeholders for IEC activities.



Current Recycling Situation

- Largely remains un-documented since the stakeholders are small entrepreneurs in un-organized segments.
- SPL is guiding all these existing players registered them in EPR portal and bring them into mainstream.



Plastics Recycling Premier League (PRPL)

- The basic principle of this program is to create a behavioral change among the citizens through their Children regarding proper disposal of plastic waste.
- To initiate ,a cricket tournament for under 14 school children to promote plastic collection and recycling program at school level and engage future generation for waste management.
- Eligibility criteria for schools are giving minimum 1000kg of plastic waste for recycling in a year/ given time frame
- PRPL will raise awareness about importance of plastic recycling and its positive impact on our environment.
- Also, by encouraging collection and recycling of plastic waste, we aim to instill a sense of responsibility and inspire young individuals to become advocates for a cleaner and greener future.



PLASTICS RECYCLING PREMIER LEAGUE

Way Forward...

- Be environmentally conscious which you want to see
- As a responsible community we should always take step to safeguard our environment by putting efforts for recycling.
- Together we can spread awareness and education for a sustainable environment by creating awareness and educating the citizens.
- Enroll your society/ corporate/ manufacturing unit for this behavioral change program and segregate the PC-EPS(Thermocol) from other waste.
- Channelize it for recycling through this initiative.



Who litters: - EPS(Thermocol)
or humans? This is the
question that we must look at.
EPS(Thermocol) do not walk
into sea or climb the trees.

Thank You

