

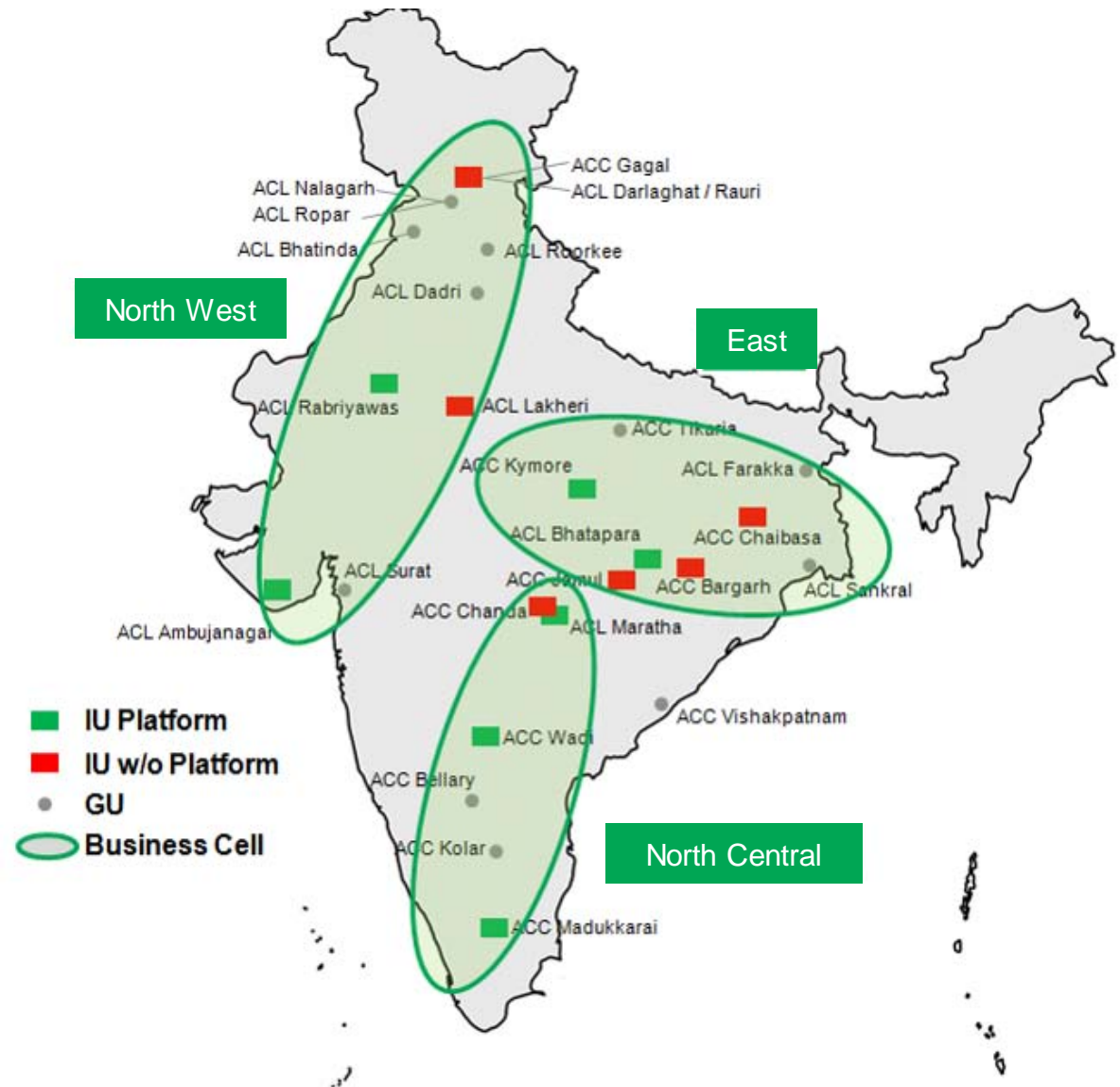
**National Policy Workshop Webinar Series**  
**On**  
**Countermeasures for Riverine and Marine Plastic Litter in**  
**India**  
**12 -22 May 2020**

***Session 3: Activities and Best practices to counter plastics litter  
by sustainable waste management and circularity***

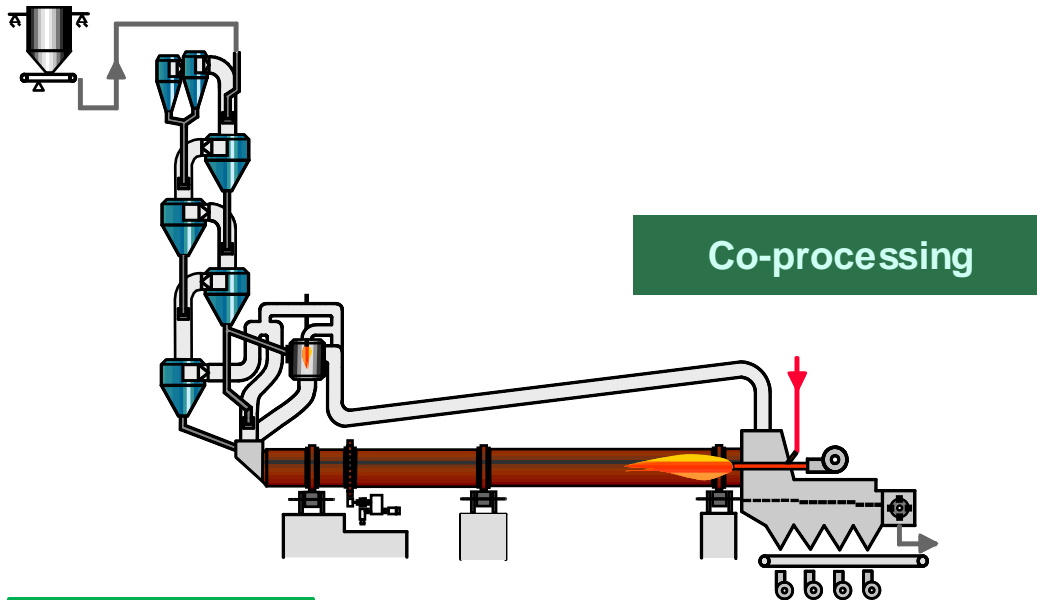
Co-processing: Bringing Circularity to waste management

# Pre & Co-processing Network of Geocycle across India

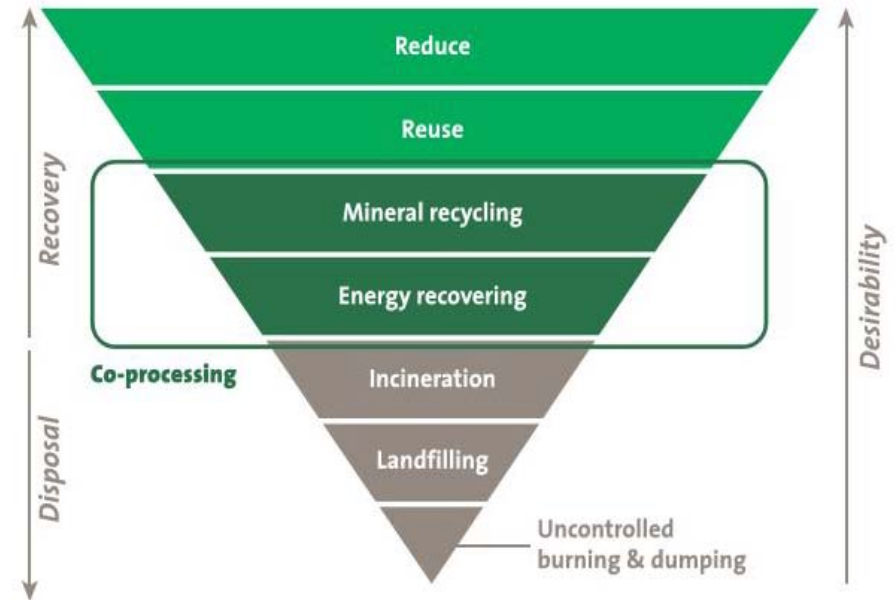
- **Geocycle is global brand of Lafarge-Holcim** represented in India by ACC Limited and Ambuja Cement Ltd.
- Geocycle has 14 facilities across India.
- We have 7 pre-processing facilities with a capacity of 900,000T per annum
- Co-processed 120,000T of SCF & Plastics in 2019; Co-process 200,000T+ in 2020
- Co-processed 940,000T of waste in 2019 in India; **Globally 11.2Million T of waste**



# Geocycle Solution: Co-processing & its description



**Co-processing**



High temperatures of up to 2000 °C

**Zero residue**

Complete material recycling and energy recovery

**No landfill**

**Re-purposing waste**

**Circular economy**

A unique '2 in 1' process

- Legally Co-processing is a **preferred technology for the disposal of waste**
- It leaves no residue and hence facilitates zero landfill option
- HOWM, SWM and PWM Rules, 2016 prefer co-processing over disposal technology

# Pre-processing and Co-processing



Waste



Pre-processing

- Shredding
- Blending
- Treatment



Processed Waste



Co-processing

At 1400°C inside the cement kiln the processed waste cease to exist

- Waste the we Co-process**
- SCF
  - HAZARDOUS WASTE
  - NON-HAZARDOUS WASTE
  - BIOMASS

# Development of Bio-mining Projects in Goa, India



New MSW processing facility set up by 3<sup>rd</sup> party,  
located next to the old MSW dump site  
NGT ordered dump remediation



Geocycle India stepped up to the challenge of  
managing SCF (Segregated combustible  
Fraction) from the dumpsite



Successful pre & co-processing of 5000 T SCF  
in Wadi winning trust of authorities and  
municipalities



Four more dump sites identified for remediation  
in Goa (250,000T)



Based on success in Goa, municipalities of  
Bangalore, Chennai (suburbs), Mumbai,  
Nagpur, Vizag and many others have come on-  
board with similar projects



Interaction with Goa CM, Mr Manohar Parrikar

# Gap identification

Gap	Rationale	Action	Stakeholder
Technical and Admin challenges to MSW projects	Lack of level playing field for various technologies	Legacy MSW Bio-mining guidelines; similar needed for MSW treatment & disposal	CPCB & MoEF&CC
Awareness on co-processing as end of life solution	Perception of co-incineration in cement plants; however co-processing is concurrent with cement manufacturing and takes places in calciners and cement kilns	Technical & legal recognition of co-processing in SWM and HOWM rules, 2016	MoEF&CC/CPCB
Economic model	Lack of proper gates fees discourage cement industry in establishing pre-processing infrastructure	Polluter pays principle implementation	SPCB/CPCB/ULB's
Permits	Monitoring for regulators in absence of guideline and emissions; a challenge	Co-processing emission norms	SPCB

# Bio-mining of MSW Dump site: Impact of our work

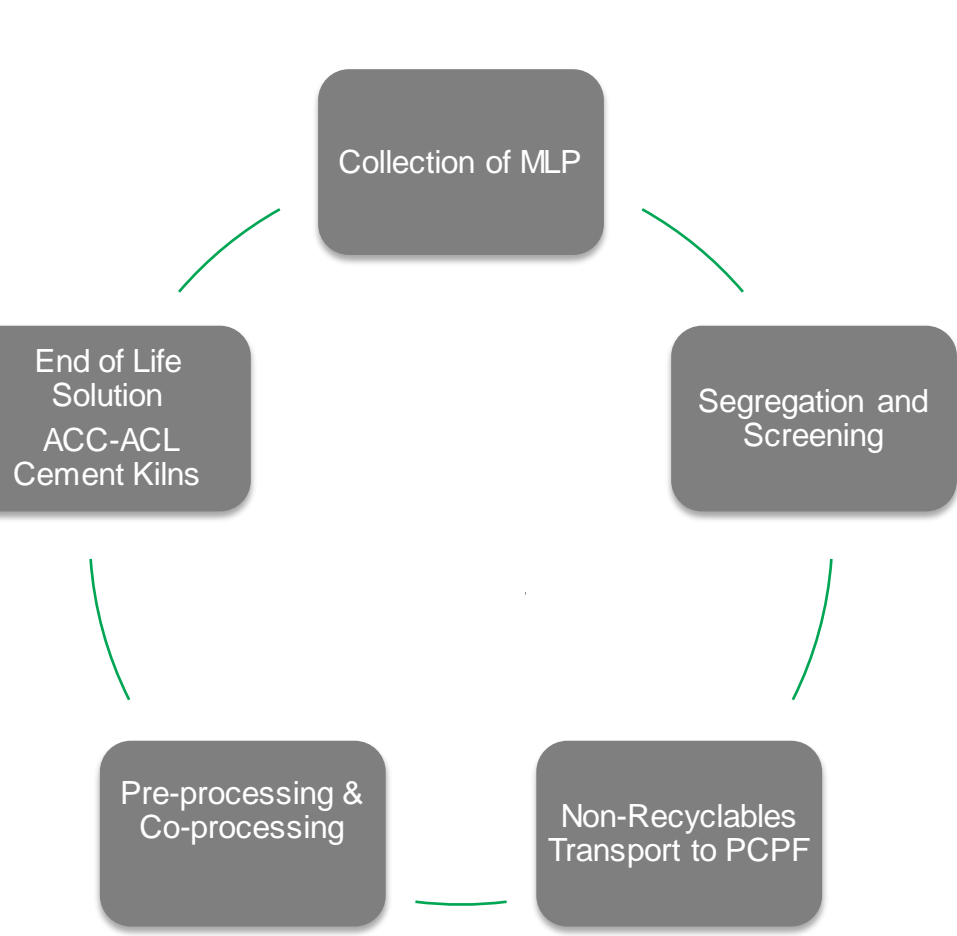


**NOIDA: 4 acres land reclaimed**

**Vijaywada: 25 acres land reclaimed**

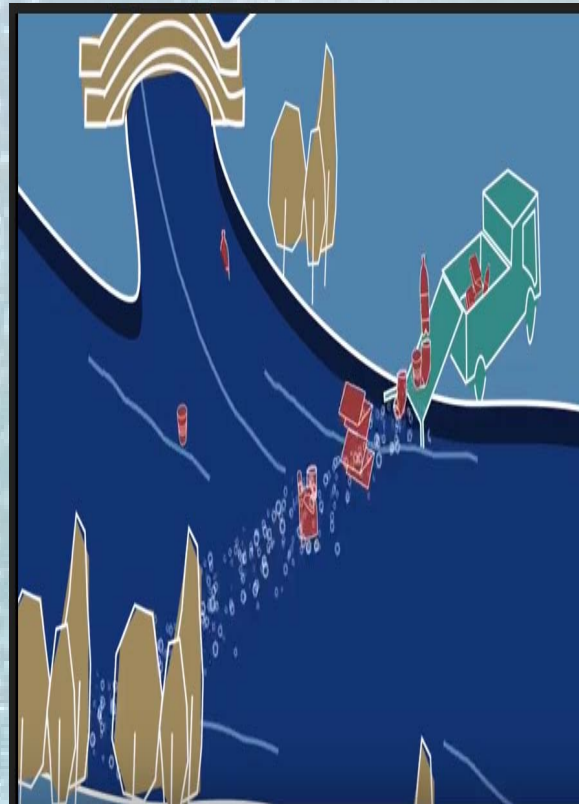
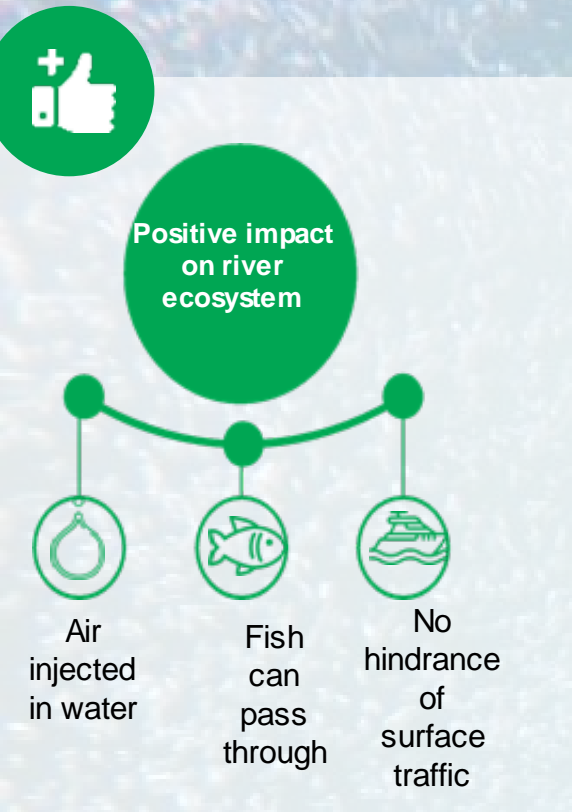
# Extended Producers Responsibility: Plastic Waste Management

- Collection to Co-processing of plastics under the program promotes new techniques and technologies





# Geocycle Bubble Barrier Project at Agra with UNEP and Agra Authorities



# Recommendations for increasing plastic & RDF co-processing

- Strict Implementation of **Polluter Pays Principle**; SCF & plastic waste management, encourage infrastructure development
- **Introduction of Landfill Tax** as proposed in resource efficiency draft policy by 2021;
- Notification & **implementation of EPR guidelines imperative**; encourage more plastic collection; strict monitoring
- **RDF Grade I,II & III** to be considered as standards from **MoHUA report**;
- **SCF management be part of MSW tenders with SCF management cost to be compensated from gate fees**;
- **Pre-processing infrastructure** in cement plant **extension to ULB MSW infrastructure**; hence tax exemptions similar to MSW projects;
- Cementitious & calcined dust extraction from cement kilns; with mixing in final product should be allowed
- **Blanket permits for waste co-processing** in cement kilns; **SPCB's to be sensitised**



## Sustainability

At the core of Geocycle's activities; zero residue to landfill



## Cement plants

Already exist & are an integral part of the legislation



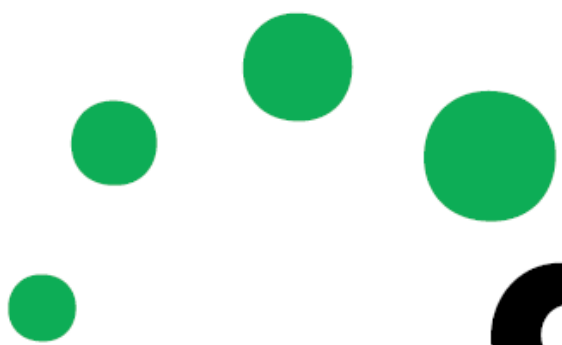
## Full circular economy solution

Waste collection and treatment into one integrated solution



## Local Treatment

Waste treatment in local cement plants



**geocycle**