

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

Collection and Channelizing Plastic Bottle Recycling via Reverse Vending System

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- Plastic in day to day life
- Plastic as waste (4-5)
- Recycle – Circular Economy (6-7)
- Biocrux – RVM as solution (8 – 12)
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1907 to 2020 a Meteoric Rise in use

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That leaves us with

26000 tonnes* of waste everyday



9000 Elephants

86 Boeing 747



10000 tonnes* of uncollected waste

Top Contributor are

1. Delhi 2. Mumbai 3. Bangalore 4. Chennai 5. Kolkatta

Source: Economic times and CPCB



What do we do with it? We throw it out of our reach and hence create



Kerala Floods: nature gives us back



Mumbai Marine: Drive 2.15 lac Kg of plastic thrown back



Dynamic ... Ever Changing



In B.C

1. Single use plastic is bad
2. Plastic is hazardous
3. It does not decompose
4. It is destroying ecosystem

Knee Jerk

Ban Plastic

In A.C

1. Water bottle
2. PPE, Food packets
3. Sanitiser Bottle

Allow Plastic

States have delayed plastic ban
Court have ruled to put measure to
recycle it



Move towards Circular Economy

- Recycle
- Life cycle and look for upcycle
- Nature process

Basic Challenges of Recycling across world:



Contamination/ Mixed waste:

- Difficult segregation
- Unviable to segregate
- Dumping site
- Sea dump
- Forest dump

Increased Medical Waste:

- Water bottles from Covid Containment zone
- Mask (regular habit) Disposal
- PPE KIT
- Sanitizer Bottles

Segregation = Recycling

Wet waste can be turned into compost

Others can be creatively and resourcefully put into use

Sustainable PET Recycling Solution

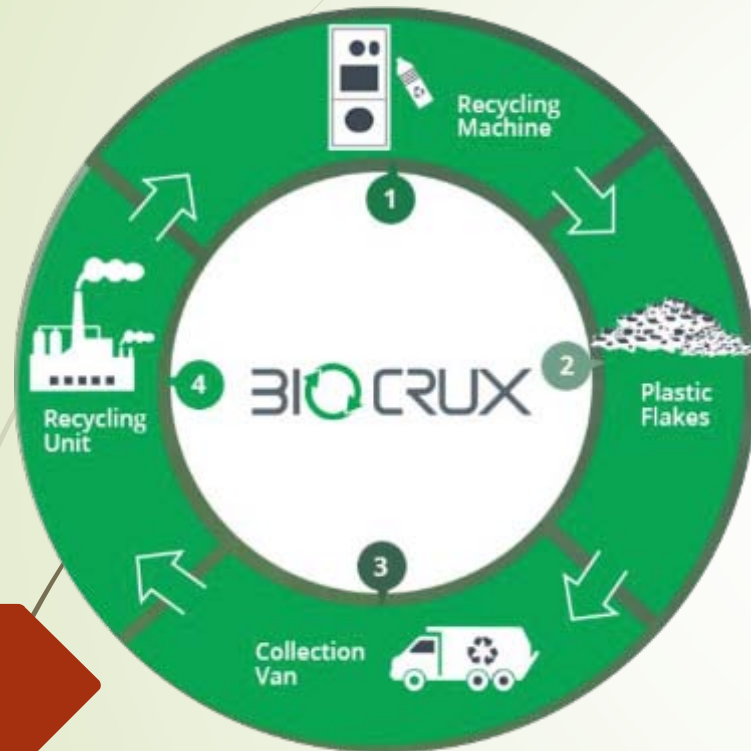
Since
2011

Inclusive
Approach

360
Degree
PET
Recycling

Model Built on insight:

“Creating an organized platform for waste producer and recycler, Providing every Indian/corporate an opportunity to contribute to the Plastic free Clean India – we do this by offering recycling options at point of consumption – with in arm’s reach.”



Established 360 degree cycle **100% Recycle pet bottle waste** with help of our associates...

1. Convert pet flakes into Resin which is used to make
 - I. Paints
 - II. Dustbin Identified vendor
 - III. Toilet cabin
2. Pet is also recycled to Apparels, Caps and Bags

Above items can be sourced back to the clients for their use

Established Product developed from PET waste

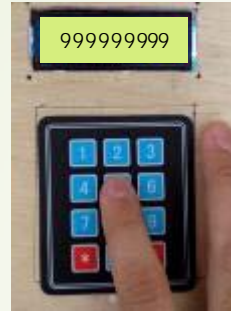
A. Chemicals & FRP



B. Merchandise



Appreciate Ur effort towards Swachata Abhiyan. Download PayTM App <http://goo.gl/5G5Uin> & click on Add Money to claim Your Rs5 PayTM code is BXZZ4G WCZJCVAD



Digital Reward system

1. Key Pad
2. Inserting mobile number
3. SMS Message as a reward
4. Customizable Message

20" screen for

1. Educating Video
2. Message
3. Advertisement
4. Branding 50 sq. feet space

Window to show flakes

1. Volume Reduced by 85%
2. Out Put Visibility
3. Visual check of bin full status



Annual Impact Of 1 Biocrux Machine



- + 8,64,000 pet bottle can be crushed annually
- +85% Volume reduction
- 17.2 tones of waste gets recycled per year
- 1,000 liters of crude oil saved per year on recycling of pet waste alone
- 10 times reduction in transportation hence saving in fuel & Carbon dioxides emissions
- 13 cubic yard of landfill freed per year
- 43.2 metric tons of Carbon dioxides emissions reduced
- 65KL-85KL of water saving
- Corporate can complete their ISO certification , Audit for waste

<https://youtu.be/WwMn8Oty5M8>



Plastic Bottle were littered in the valley and on the SMVD track

Initiative by Shrine Board with BIOCRUX RVMD



46 Machine

85% volume Reduction
Flakes (Small Pieces)



Collected
Conversion
to Resin

Impact: (PET Neutral Track)

1. More than 80 thousand bottles collected.
2. 100% recycling
3. No littering on the tracks on in the valley
4. No release of toxic pollution due to burning
5. Less vehicular traffic to ferry the waste to dispose in land fills



Upcycled to
Products





Smart Bin for Smart Corona Warrior



Capacity:
Bin 1: 420 liter,
Bin 2: 200 liter
Bin 3: 220 liters

Biocrux introduces Smart Bin to support collection, Segregation and disposal of used face mask & dry post Covid-19 waste in smart way. Suitable to place in all over city at public utility places, corporate offices & residential

Features

1. Automatic Sensor controlled mouth with 3 options: Sanitizer bottles, Face Mask and PPE kits
2. Touch Screen for instruction and selection of waste type
3. IOT based connect with each machine to track usage of machine, Bin full alert with login & password
4. Unique Digital reward mechanism -mobile based on waste deposited for end user encouragement
5. Bin full sensor on machine and to central team to ensure timely clearance & disposal



400+ machine : 75 + cities

North:

1. **J&K:** Jammu , Srinagar, Katra, Ladakh, Pahalgam
2. **Punjab:** Chandigarh, Amritsar, Jalandhar
3. **UP & Uttranchal:** Haridwar, Dehradun, Bareilly, Modinagar
4. **Delhi:** Ajmal Khan, Hyderabad House, Vigyan Bhawan
5. **Rajasthan:** Jaipur, Jodhpur, Jaisalmer, Ajmer

East

1. **West Bengal:** Kolkata, Asansol, Malda, Siliguri
2. **Orissa:** Bhubaneswar, Puri, Cuttack
3. **Jharkhand:** Jamshedpur, Bokaro
4. **Bihar:** Patna, Bhagalpur, JCD
5. **Assam:** Guwahati, Lilabadi, Tinsukia

West

1. **Maharashtra:** Mumbai, Pune, Nagpur, Solapur
2. **Goa**
3. **MP:** Indore, Bhopal, Chindwara
4. **Gujarat:**
Surat, Vadodara, Ahmedabad, Bhavnagar, Rajkot, Somnath, Jamnagar

South

1. **Karnataka:** Bangalore, Mysore, Shivamogga, Tumkuru
2. **Telangana:** Hyderabad/ Secunderabad

Gallery of Deployments..



Inorbit mall-Malad-2012



Bangalore Railway station 2012



With PM Shri Narendra Modi



Reliance : Pillai College



We've gone green behind the scenes
ZEE



Elephanta Caves 2016



With Varun Dhawan



BMC ward 2016-With Diya Mirja



Parle Machine-Bangalore



Rail Shivr- With RM Suresh Prabhu



TCS-Green Corridor



Coke CEO & CM of MP



ONGC -Vadodra



Bhopal- People Que to use machine



With Utrakhand CM

वेस्ट प्लास्टिक से बनेंगी टी-शर्ट

दुर्भाग्यवश हमारे देश में प्रतिदिन करोड़ों टन प्लास्टिक कचरा उत्पन्न होता है। इस कचरे का प्रबंधन करना एक बड़ा चुनौतीपूर्ण काम है। लेकिन अब हमें इस कचरे को उपयोगी बनाने का एक नया तरीका मिल सकता है। **बिसेली ग्रुप** और **लाओरिट मॉल** के संयुक्त प्रयासों से एक नया प्लास्टिक रिसाइकलिंग प्रोजेक्ट शुरू किया गया है।

बिसेली ग्रुप के अध्यक्ष **रमेश चव्हाण** ने कहा कि प्लास्टिक कचरे को पुनर्चक्रित करके टी-शर्ट, बैग्स और अन्य वस्तुओं में बदलना एक बड़ा कदम है। यह न केवल पर्यावरण को बचाता है, बल्कि हमें एक बेहतर और अधिक जिम्मेदार समाज बनाने में मदद करता है।

इस प्रोजेक्ट के तहत, लाओरिट मॉल में एक प्लास्टिक रिसाइकलिंग मशीन स्थापित की गई है। यह मशीन प्लास्टिक बोतलों को तोड़ती है और उन्हें चूर्ण में बदलती है। इस चूर्ण को फिर से मिलाकर टी-शर्ट और अन्य वस्तुओं में बदल दिया जाता है।



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Cuffe Parade gets a plastic bottle recycler

Cuffe Parade gets a plastic bottle recycler. The machine is installed at Cuffe Parade, a popular cafe in Mumbai. It is designed to accept plastic bottles and crush them into small pieces. These pieces are then collected and sent to a recycling plant.

The machine is a green and blue unit with a hopper for bottles at the top and a collection bin at the bottom. It is operated by a coin or card payment system. The cafe owner, **Pratik Chaudhary**, says that the machine is a great way to reduce waste and promote sustainability.



(L-R) Ramesh Chauhan, chairman of Bileshi Group and Kishore Bhatija, CEO of Iaorbit Malls inaugurating India's first PET recycling machine

वडाठराभां मोटल कडार मशीन

वडाठराभां मोटल कडार मशीन. This machine is installed at the Vada Thara Hotel. It is designed to accept plastic bottles and crush them into small pieces. These pieces are then collected and sent to a recycling plant.

The machine is a green and blue unit with a hopper for bottles at the top and a collection bin at the bottom. It is operated by a coin or card payment system. The hotel owner, **Pratik Chaudhary**, says that the machine is a great way to reduce waste and promote sustainability.



रिचर्स वेल्डिंग मशीनमां प्लास्टिक मोटल नांभो, 1 रुपियां मेतावो

रिचर्स वेल्डिंग मशीनमां प्लास्टिक मोटल नांभो, 1 रुपियां मेतावो. This machine is installed at the Rishers Welding Machine. It is designed to accept plastic bottles and crush them into small pieces. These pieces are then collected and sent to a recycling plant.

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प्लास्टिक बाटल्यांचे 'क्रशिंग' करणाऱ्या मशिन्स गर्दीच्या ठिकाणी ठेवा - आदित्य

प्लास्टिक बाटल्यांचे 'क्रशिंग' करणाऱ्या मशिन्स गर्दीच्या ठिकाणी ठेवा - आदित्य. This machine is designed to accept plastic bottles and crush them into small pieces. These pieces are then collected and sent to a recycling plant.

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Plastic recycling machine installed at Elephanta Caves to keep site bottle-free

Plastic recycling machine installed at Elephanta Caves to keep site bottle-free. The machine is installed at the Elephanta Caves, a UNESCO World Heritage Site. It is designed to accept plastic bottles and crush them into small pieces. These pieces are then collected and sent to a recycling plant.

The machine is a green and blue unit with a hopper for bottles at the top and a collection bin at the bottom. It is operated by a coin or card payment system. The site manager, **Pratik Chaudhary**, says that the machine is a great way to reduce waste and promote sustainability.



CRUSH A PLASTIC BOTTLE GET A CHEAPER DINING BILL

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New PET project to tackle plastic bottles

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Business Partners..

BIOCRUX



Parlé Agro



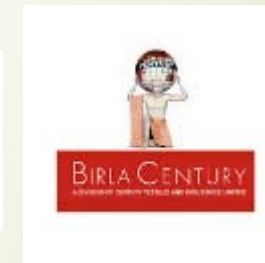
Infosys



SIEMENS



Tech Mahindra



Supported by Foundations..



Stree Mukti Sanghatana
(Womens Liberation Organization)

Etc...



Challenges to RVM Industry

- ▶ Support from Government
 - ▶ Policy interventions and execution e.g EPR detailing, Mandate to use recycled material.
 - ▶ A deposit system like other countries
 - ▶ Financial: Currently dependence on CSR
- ▶ Awareness at authority.
 - ▶ Installation but slow ramp up.
 - ▶ One machine to take every thing. (Despite MSW 2016 mandate of segregation)
- ▶ Habit of waste disposal – Indiscriminate littering.



BIO  **CRUX**

Lets be responsible Citizen