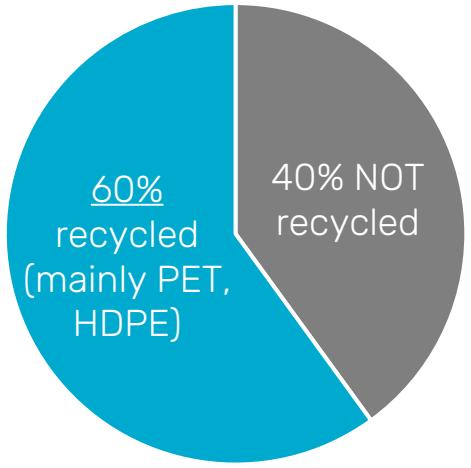


MAKING SUNGLASSES FROM  
PACKETS OF CHIPS (MLP)

<https://ashaya.in> | <https://without.live> |  [shop.without](#)

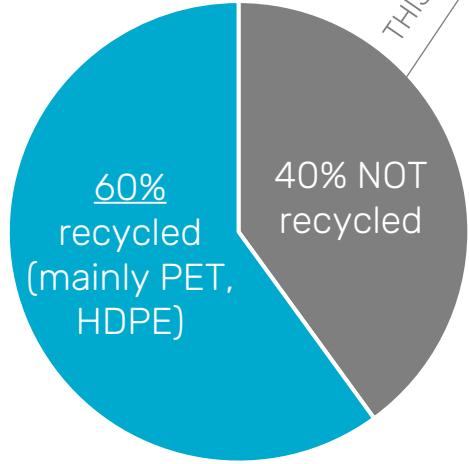
Why packets of chips?



## PLASTIC WASTE IN INDIA



## PLASTIC WASTE IN INDIA



THIS MAINLY COMPRISSES:



METALLICIZED MULTI-LAYERED  
PLASTIC (MLP) PACKAGING  
(POST CONSUMER WASTE)





THIS MAINLY COMPRISSES:



### METALLICIZED MULTI-LAYERED PLASTIC (MLP) PACKAGING (POST CONSUMER WASTE)

CONSIDERED  
**"IMPOSSIBLE" TO RECYCLE**  
BECAUSE:

- Contains 3-5 different types of materials fused together such as PP, PE, PET (plastics), Aluminium and Paper.
- Light (high volume) material that's expensive to process and transport.
- Inconsistent composition.





THIS MAINLY COMPRISSES:



**METALLICIZED MULTI-LAYERED PLASTIC (MLP) PACKAGING (POST CONSUMER WASTE)**

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- **Inconsistent composition.**

## GLOBALLY

Near 0% of B2C plastic packaging is recycled worldwide.

80% of ALL ocean leakage is flexible packaging.





IT'S  
THE  
WORST



# MULTI-LAYERED PLASTIC (MLP)

DEC 2020

INITIAL AT-HOME EXPERIMENT ON MLP SEPARATION



## INITIAL AT-HOME EXPERIMENT ON MLP SEPARATION



Multi-layered plastic  
from a LAYS chips  
packet (MLP).

## INITIAL AT-HOME EXPERIMENT ON MLP SEPARATION



Multi-layered plastic  
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Soaked in magic  
solution.

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Multi-layered plastic  
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After 16 hours, the  
aluminium disappeared, and  
a faint colour solution  
appeared.

## INITIAL AT-HOME EXPERIMENT ON MLP SEPARATION



Multi-layered plastic from a LAYS chips packet (MLP).



Soaked in magic solution.



After 16 hours, the aluminium disappeared, and a faint colour solution appeared.



Visible layer separation of other plastic layers unknown to us.

## INITIAL AT-HOME EXPERIMENT ON MLP SEPARATION



Multi-layered plastic from a LAYS chips packet (MLP).

Soaked in magic solution.

After 16 hours, the aluminium disappeared, and a faint colour solution appeared.

Visible layer separation of other plastic layers unknown to us.

## LIMITATIONS

- Did not measure purity of separation
- Was not in a controlled environment
- Unaware of plastic types remaining behind

## LEARNING

We got excited about getting basic layer separation, but are aware that this experiment was imperfect, and we have a lot to figure out.

# OUR TECH

METALIZED MULTI-LAYERED PLASTIC (MLP) PACKAGING (POST CONSUMER WASTE)



(3-5 LAYERS MADE UP OF POLYOLEFINS, PET, CELLULOSE AND ALUMINIUM)

PATENT PENDING

 CHEMO-MECHANICAL ENGINEERING

- DEMETALLIZED
- PET EXTRACTED
- PARTIALLY DELAMINATED
- PAPER (CELLULOSE) AND OTHER HEAVY CONTAMINANTS SEPARATED OUT



POLYOLEFINS MIX

PATENT APP STARTED  
CHEMO-MECHANICALLY COMPOUNDED

ENHANCED rPOLYOLEFINS (90% RECYCLED)



WIP  
RE-POLYMERIZED  
POTENTIALLY PATENTABLE



MONOMER OF PET



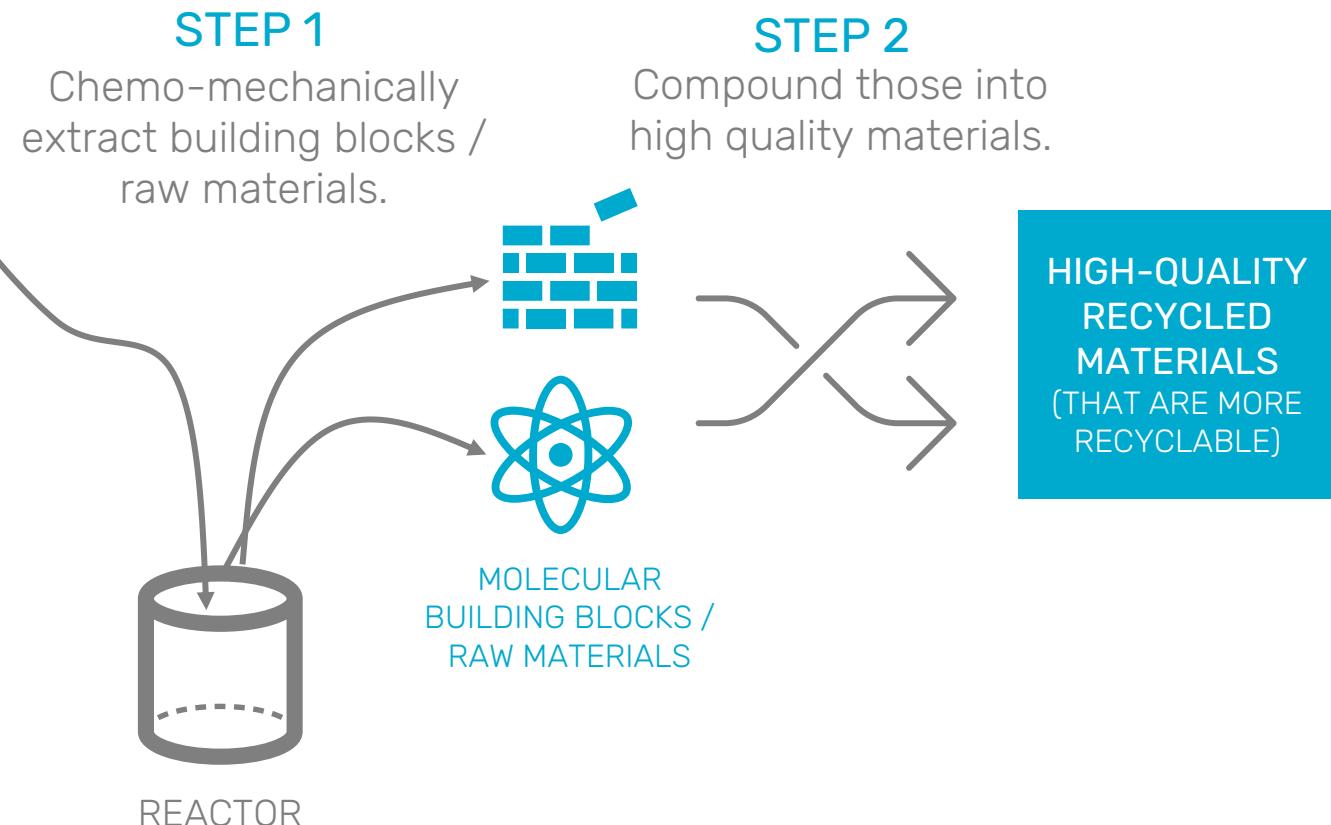
rePET  
(USING 95% RECYCLED TPA MONOMER)



# WHAT WE DO



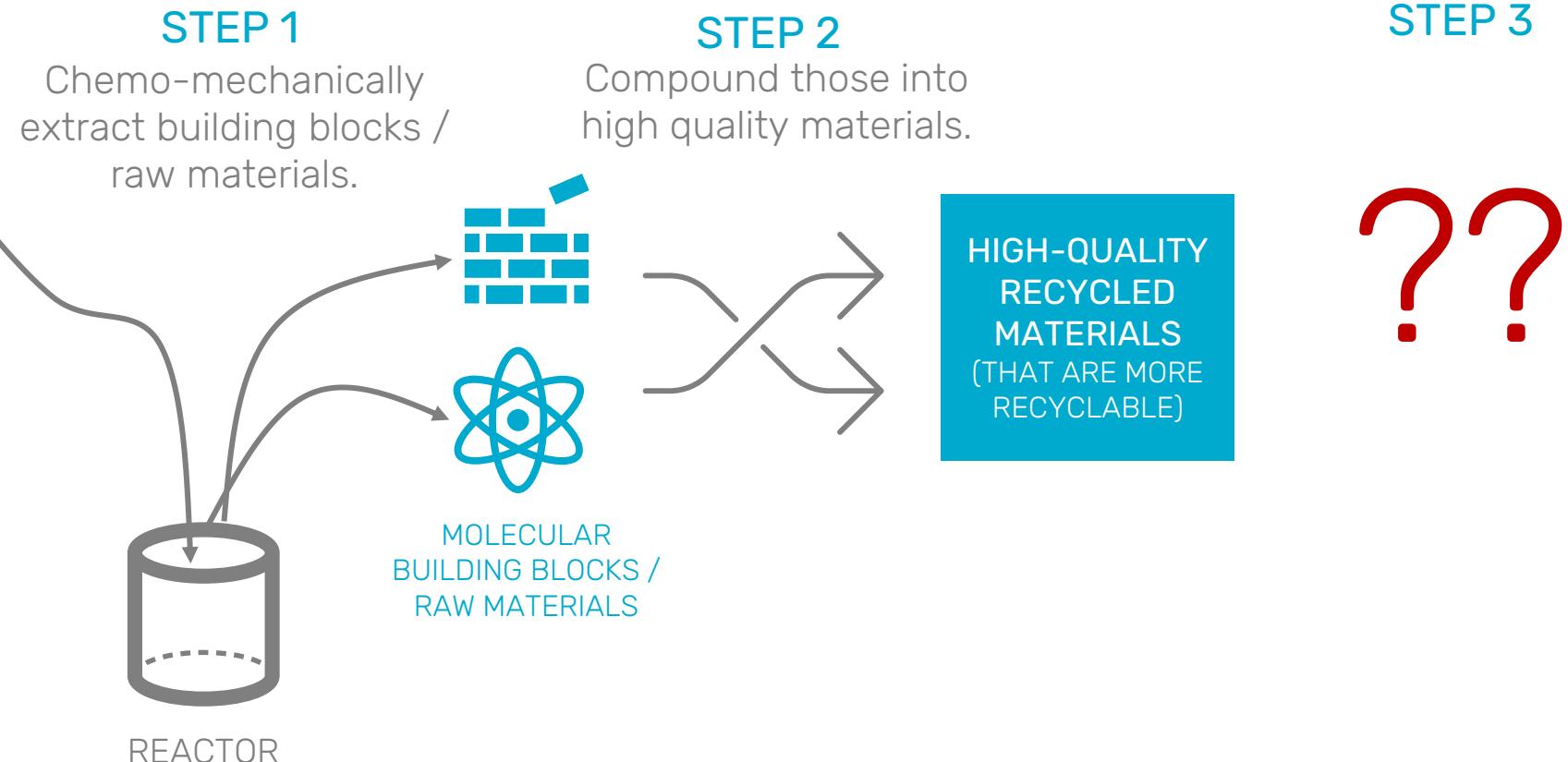
METALLICIZED MULTI-LAYERED  
PLASTIC (MLP) PACKAGING  
(POST CONSUMER WASTE)



# WHAT WE DO



METALLICIZED MULTI-LAYERED  
PLASTIC (MLP) PACKAGING  
(POST CONSUMER WASTE)



# PRODUCT OPTIONS

AMAZON INDIA DATA

BASED ON CRITERIA  
MENTIONED EARLIER

| Product Type  | Category (from Amazon)    | Complexity | Demand (Search Volume) | Market Saturation (Competing Products) | Demand to Market Ratio | Monthly Sales | Conversion Rate % | Market Price (Potentially) | Team Excitement | Score |
|---|---------------------------|------------|------------------------|--|------------------------|---------------|-------------------|----------------------------|-----------------|-------|
| Sunglasses (with initials engraved)   | Clothing & Accessories    | Medium     | 987482                 | 9824                                   | 100.5                  | 319           | 0.03%             | ₹ 908                      | 9               | 84%   |
| Dice  | Toys & Games              | Low        | 20692                  | 1181                                   | 17.5                   | 47.5          | 0.23%             | ₹ 664                      | 5.4             | 83%   |
| Rings (black)   | Jewellery                 | Low        | 499831                 | 16917                                  | 29.5                   | 193           | 0.04%             | ₹ 286                      | 4.8             | 83%   |
| Wallets (Sleek, minimalist, credit-card-holder-esque)   | Bags, Wallets and Luggage | Medium     | 631692                 | 25940                                  | 24.4                   | 1131          | 0.18%             | ₹ 480                      | 6.6             | 83%   |
| Coasters (Personalized, or with Phone Chargers?)  | Home & Kitchen            | Low        | 39349                  | 7658                                   | 5.1                    | 119           | 0.30%             | ₹ 314                      | 7.2             | 82%   |
| Wall Pots (for plants)  | Home & Kitchen            | Low        | 1919                   | 1388                                   | 1.4                    | 44            | 2.29%             | ₹ 527                      | 7.8             | 81%   |
| Watch Straps / Bands (for Apple Watch etc)  | Watches                   | Medium     | 97045                  | 21144                                  | 4.6                    | 318           | 0.33%             | ₹ 458                      | 7.2             | 81%   |
| Bracelet Wristband For Men (like Livestrong)  | Jewellery                 | Low        | 66367                  | 12433                                  | 5.3                    | 99            | 0.15%             | ₹ 397                      | 7.2             | 80%   |
| Phone Covers (Chargeable?, with hooks so it can be hung?)                                     | Electronics               | Medium     | 264519                 | 32966                                  | 8.0                    | 282           | 0.11%             | ₹ 561                      | 8.4             | 79%   |
| Flower Pots (small for succulents)  | Home & Kitchen            | Low        | 2532                   | 9250                                   | 0.3                    | 853           | 33.69%            | ₹ 344                      | 7.2             | 77%   |
| Webcam Blocker / Cover  | Electronics               | Low        | 7450                   | 93                                     | 80.1                   | 197           | 2.64%             | ₹ 211                      | 6               | 76%   |
| Bottle Opener (small, statement maker, personalized)  | Home & Kitchen            | Low        | 14645                  | 2548                                   | 5.7                    | 58.5          | 0.40%             | ₹ 263                      | 6               | 75%   |
| Photo Frames (Small 4 x 6 Inches or smaller maybe multiple arrangement options, funky shapes) | Home & Kitchen            | Low        | 4377                   | 1243                                   | 3.5                    | 119           | 2.72%             | ₹ 358                      | 7.2             | 74%   |
| Hair Sticks for Women   | Jewellery                 | Low        | 822                    | 1667                                   | 0.5                    | 41            | 4.99%             | ₹ 264                      | 7.2             | 74%   |
| Pens (Premium / Gift Worthy)  | Office Products           | Medium     | 2237                   | 1314                                   | 1.7                    | 263           | 11.76%            | ₹ 515                      | 7.8             | 74%   |
| Fidget Spinners   | Toys & Games              | Low        | 23918                  | 1360                                   | 17.6                   | 75            | 0.31%             | ₹ 314                      | 6.6             | 73%   |
| Playing Cards Holder  | Toys & Games              | Low        | 331                    | 635                                    | 0.5                    | 6             | 1.81%             | ₹ 776                      | 6               | 72%   |
| Keychain  | Bags, Wallets and Luggage | Low        | 286650                 | 16406                                  | 17.5                   | 109           | 0.04%             | ₹ 250                      | 6.6             | 71%   |
| Pen Holders (themed, unique 3D-printed designs?)  | Office Products           | Low        | 21145                  | 7426                                   | 2.8                    | 169           | 0.80%             | ₹ 169                      | 8.4             | 71%   |



# Enter Satguru Sr and Jr

SATGURU SR

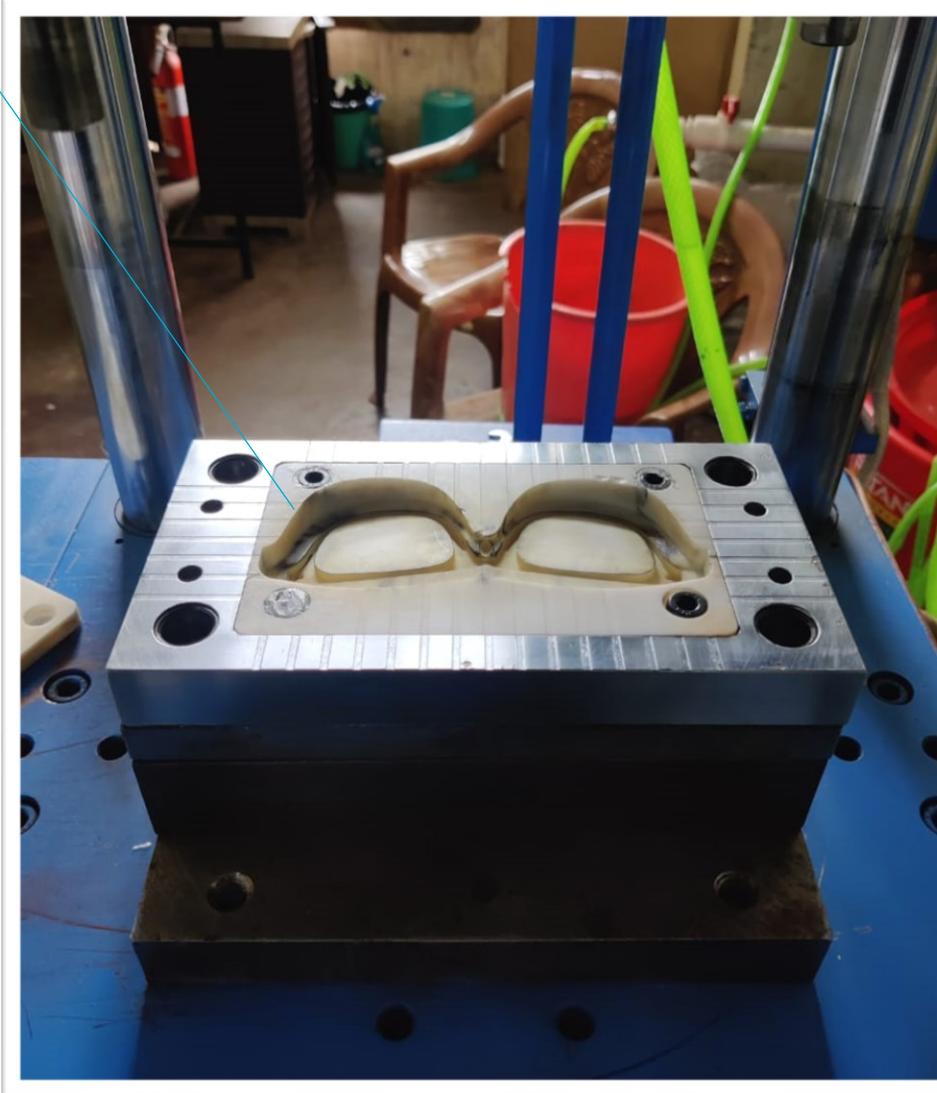
SATGURU JR



HIGH-END 3D-PRINTER



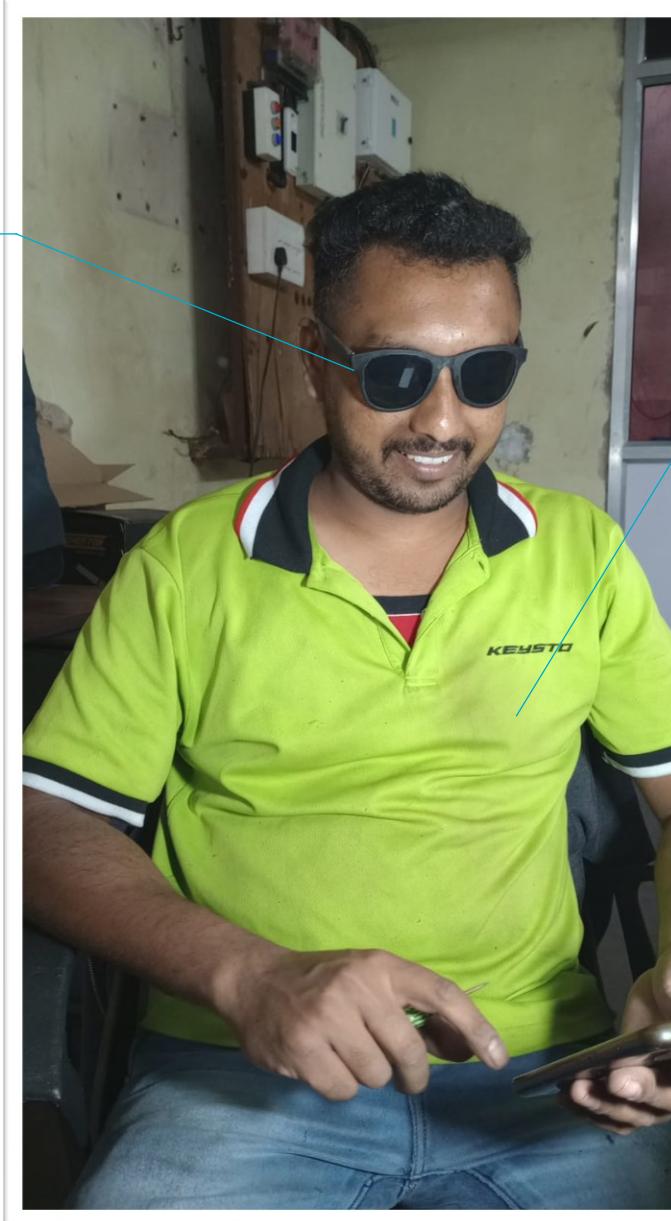
3D-PRINTED  
MOULD  
INSERT



# HELLO SUNGLASSES!

AUG 2022

FRAMES MADE  
FROM UPCYCLED  
ASHAYA MATERIAL



SURAJ, OUR  
ROCKSTAR DADA



## MANUFACTURING PROCESS



- Grooving
- Hinging
- Lens cutting
- Logo + QR code
- Polishing
- Assembly
- Packaging



# WHAT WE DO

50% - 75% WASTE-PICKER INCORPORATION



PATENT PENDING

PATENT APP STARTED

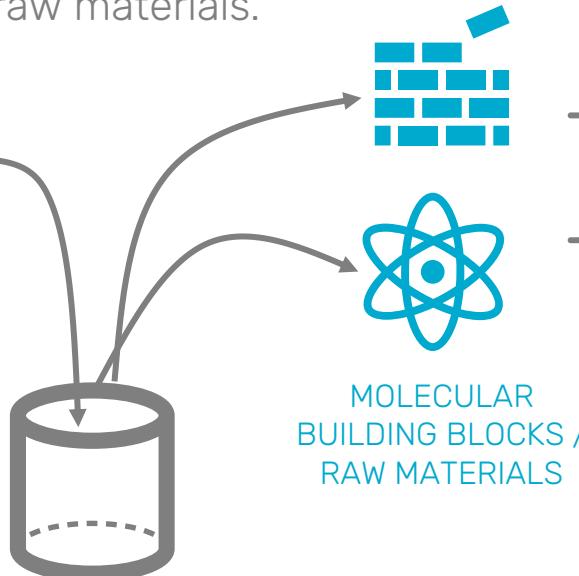
LAUNCHED FEB '23



METALLICIZED MULTI-LAYERED  
PLASTIC (MLP) PACKAGING  
(POST CONSUMER WASTE)

## STEP 1

Chemo-mechanically extract building blocks / raw materials.



## STEP 2

Compound those into high quality materials.

HIGH-QUALITY  
RECYCLED  
MATERIALS  
(THAT ARE MORE  
RECYCLABLE)



## STEP 3

Make products from them using rapid lab-to-market manufacturing tech.

Through our new brand:

**WITHOUT.**

RECOVER & RECYCLE



## USP OF OUR RECYCLING PROCESS:

More recyclable materials, higher quality, more consistency and toxin free

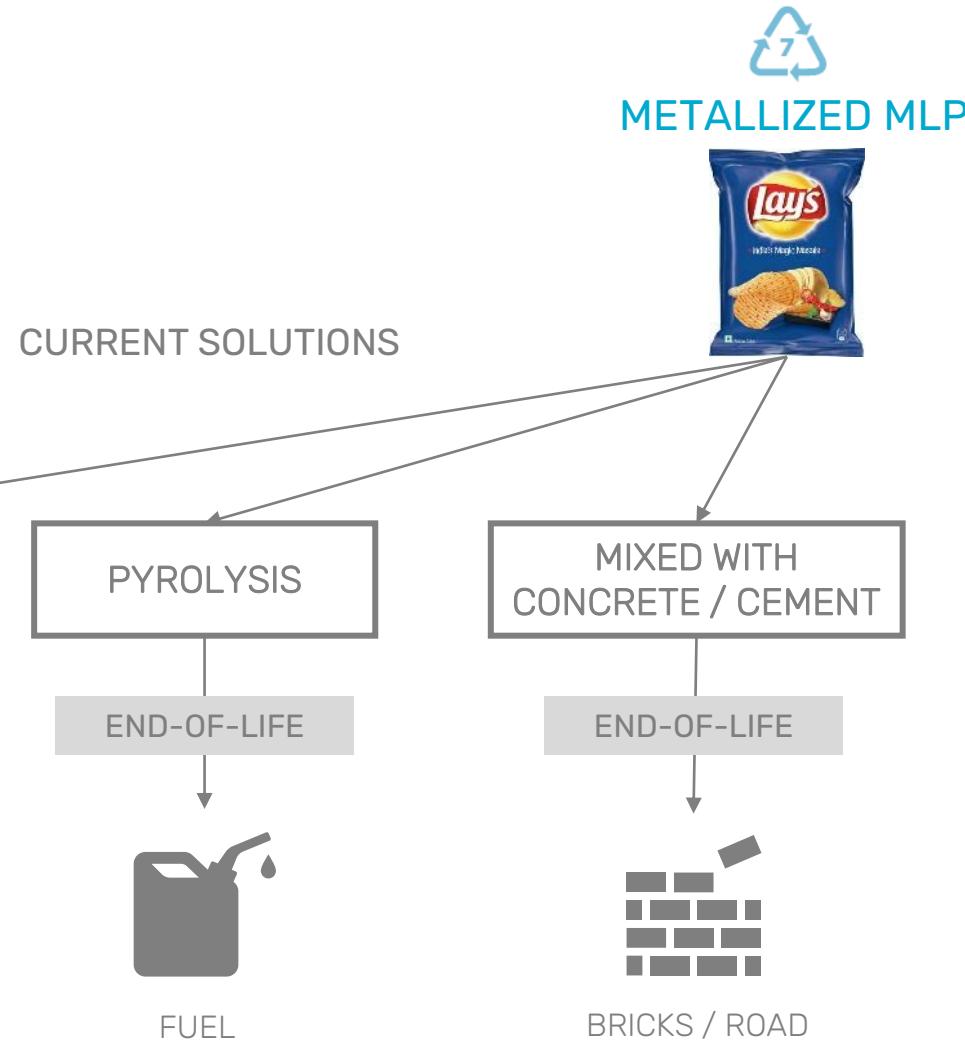


METALLIZED MLP



# USP OF OUR RECYCLING PROCESS:

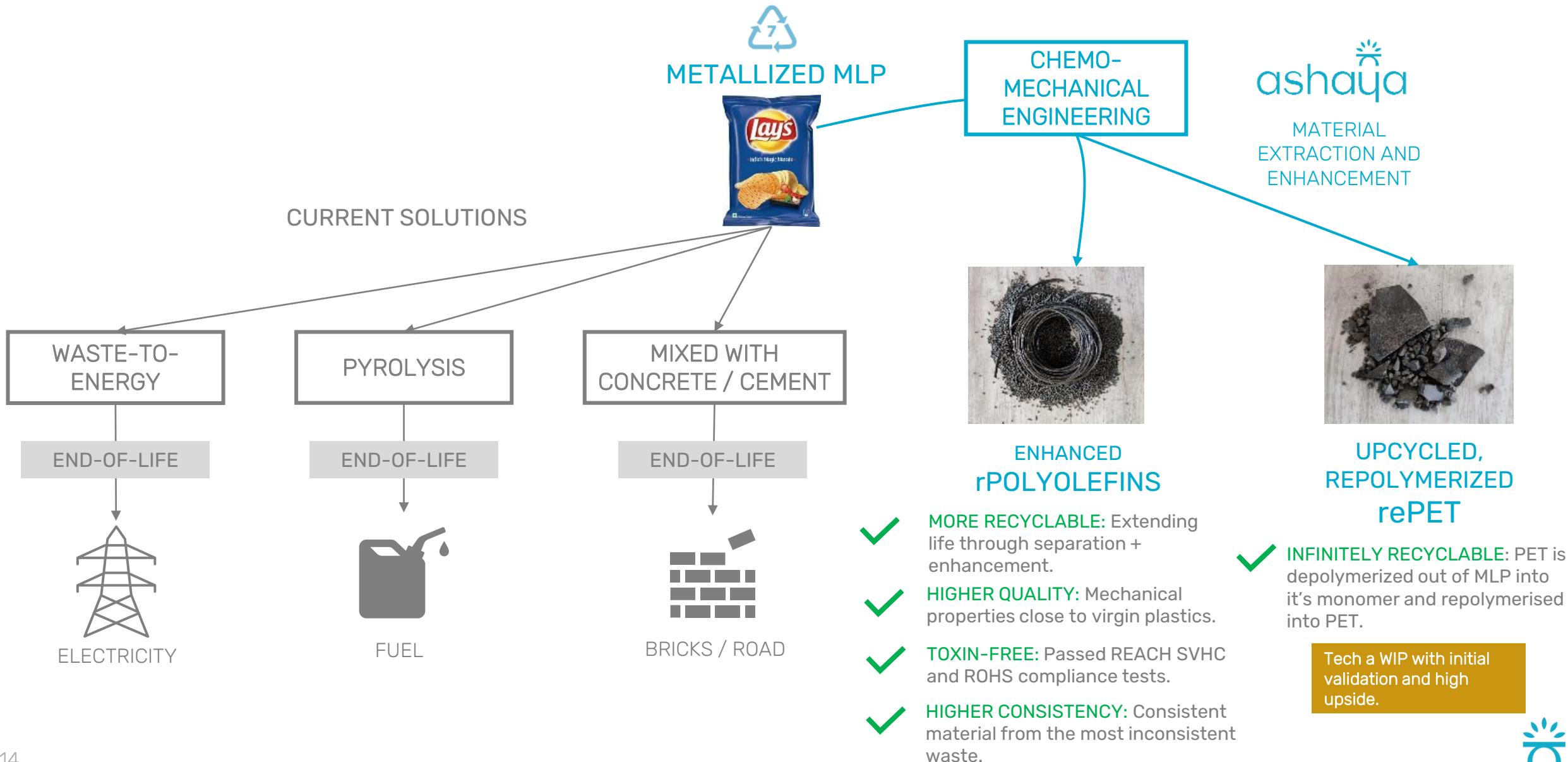
More recyclable materials, higher quality, more consistency and toxin free



# USP OF OUR RECYCLING PROCESS:

More recyclable materials, higher quality, more consistency and toxin free

MENU



# THE BEGINNING

METALIZED  
MULTI-LAYERED  
PLASTIC  
PACKAGING



## AFTER CLEANING & SHREDDING



# AFTER CHEMO-MECHANICAL EXTRACTION



# AFTER CHEMO-MECHANICAL COMPOUNDING



# INTO OUR FIRST PRODUCT(s)



rCOASTERS

rSHADES

ACTUAL SAMPLES



WITHOUT™

OUR FIRST PRODUCT  
**rSunglasses**  
BETA



BY  
ashaya

**WITHOUT**™

OUR FIRST PRODUCT

# rSunglasses

BETA

Frames from  
upcycled material  
coming from the  
worst plastic waste  
(90% recycled)



BY  
ashaya

**WITHOUT**™

OUR FIRST PRODUCT

# rSunglasses

BETA

Frames from  
upcycled material  
coming from the  
worst plastic waste  
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QR code that tells the  
story of how these  
sunglasses were  
upcycled

BY  
**ashaya**

**WITHOUT**™

OUR FIRST PRODUCT

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QR code that tells the  
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UV polarized  
lenses

BY  
 ashaya

**WITHOUT**™

OUR FIRST PRODUCT

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Frames from  
upcycled material  
coming from the  
worst plastic waste  
(90% recycled)

UV polarized  
lenses

QR code that tells the  
story of how these  
sunglasses were  
upcycled

+

**10% of sales from  
product donated**  
to waste-picker  
empowerment  
initiatives

+

**End-of-life  
recycling**  
(Return pick-up  
policy so that  
material can be  
recycled again)

+

**Carbon footprint  
of delivery  
neutralized**

BY  
  
ashaya

But, we are not *just* making sunglasses.  
That's just a proof of concept.



# THE BUSINESS MODEL WE ARE BUILDING

B2B material sales and licensing in the long run, with B2C products driving B2B material value in the short run.



OUR PRODUCT



# THE BUSINESS MODEL WE ARE BUILDING

B2B material sales and licensing in the long run, with B2C products driving B2B material value in the short run.



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# THE BUSINESS MODEL WE ARE BUILDING

B2B material sales and licensing in the long run, with B2C products driving B2B material value in the short run.





And we are NOT doing this to make money.





We are an impact-first start-up.





But we believe in creating economically viable  
solutions.





But we believe in creating economically viable solutions.

Profit Generation  $\neq$  Profit Maximization





But we believe in creating economically viable solutions.

Profit Generation  $\neq$  Profit Maximization



Maximize Impact



And just because we are impact-first, doesn't mean we can't be cutting edge.



In fact, we NEED to be cutting edge to solve the complex problem that is the waste issue in India.

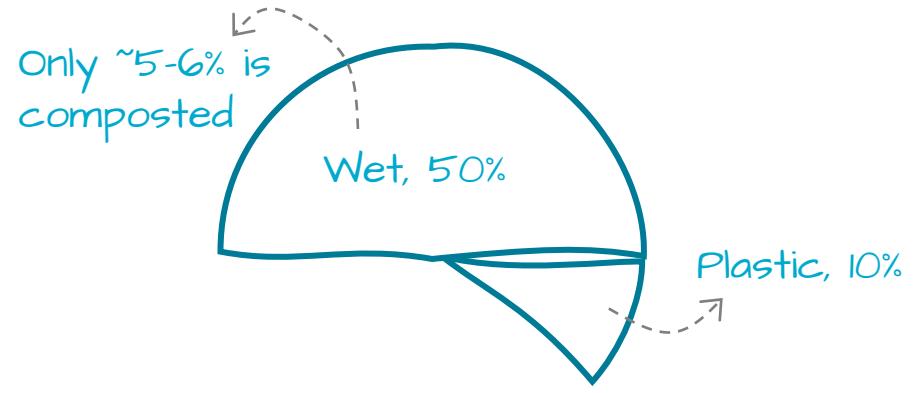




Plastic, 10%

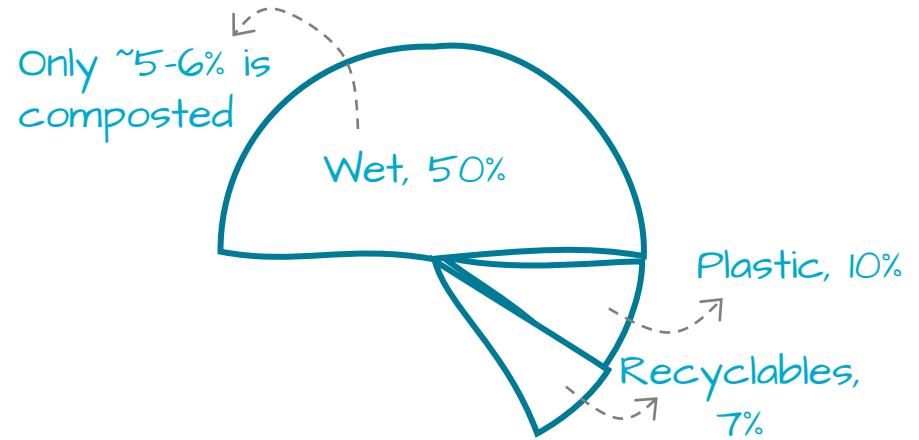
## MUNICIPAL SOLID WASTE IN INDIA





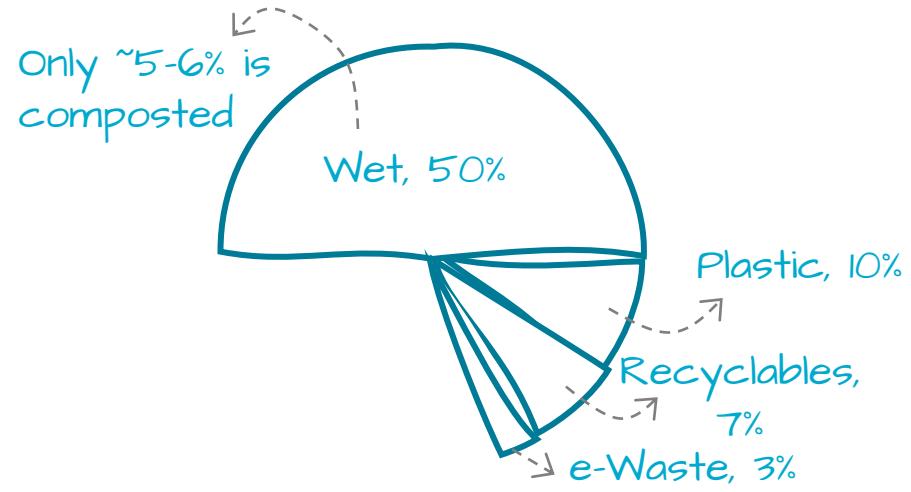
## MUNICIPAL SOLID WASTE IN INDIA





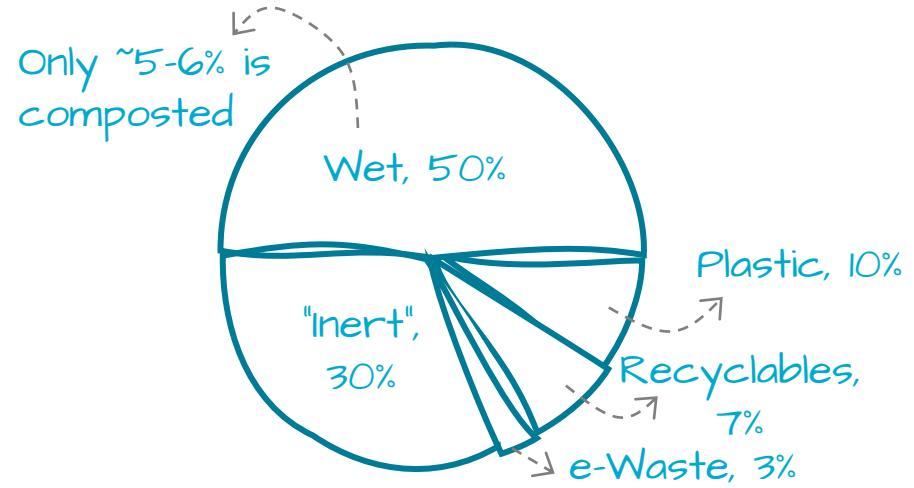
## MUNICIPAL SOLID WASTE IN INDIA





## MUNICIPAL SOLID WASTE IN INDIA





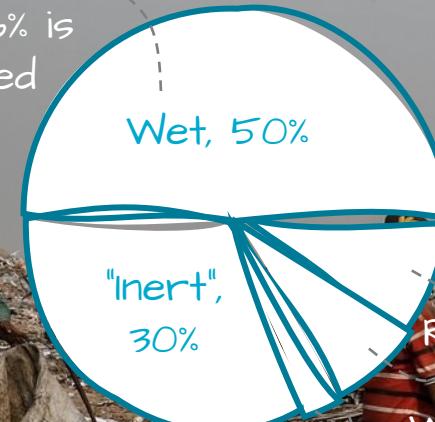
## MUNICIPAL SOLID WASTE IN INDIA





~1.5 - 4 million waste-pickers in India who live multidimensionally poor lives.

Only ~5-6% is composted

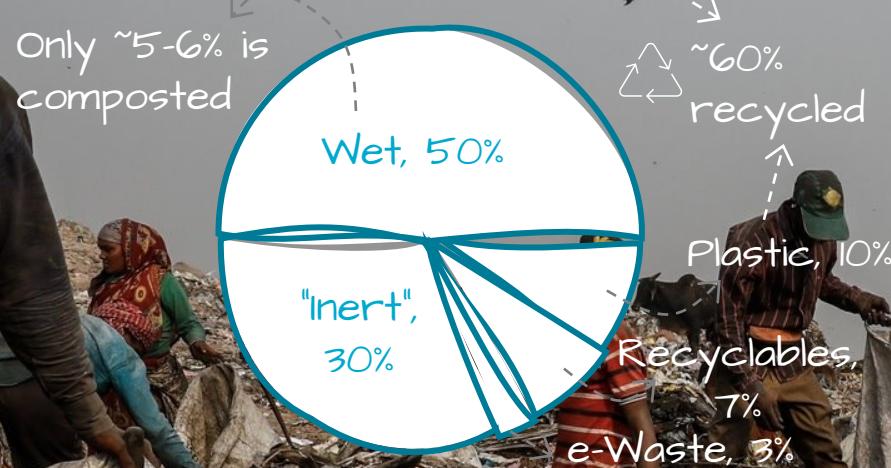


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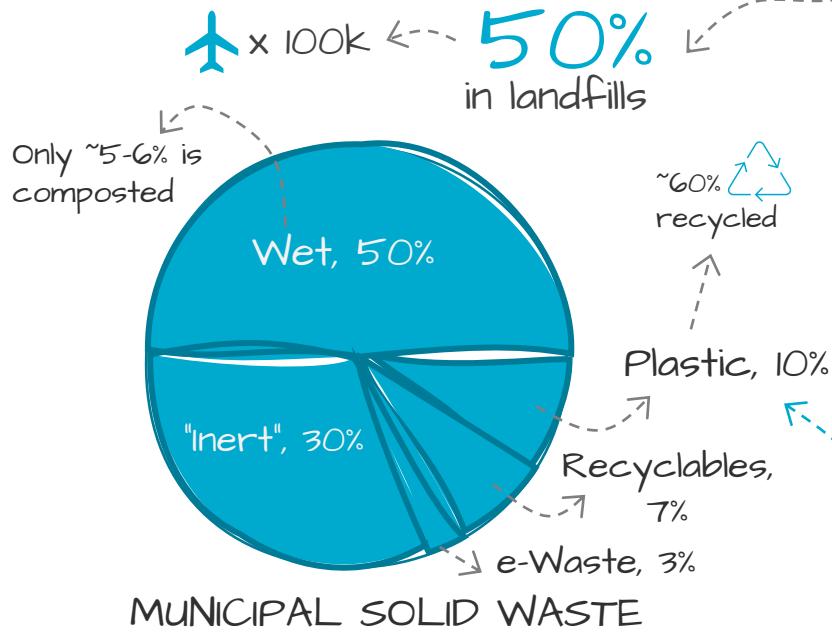
MUNICIPAL SOLID WASTE IN INDIA



# WASTE IN INDIA

~62 million tons produced / year

## ENVIRONMENTAL



## SOCIAL



Informally employed



1.5 - 4 MILLION  
WASTEPICKERS  
IN INDIA



Minorities /  
Migrants /  
Women



Rs 3k - 12k  
/ month



Lower life  
expectancy



BIOPLASTICS?

Reverse  
logistics?

Segregation  
from traditional  
plastics?

PERSONAL  
RESPONSIBI  
LITY?

GREEN-  
WASHING?

GOVERN  
MENT?

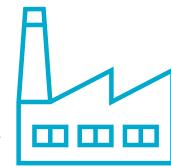
WASTE  
MAFIA?

40%-60% income  
comes from plastic

Save Bangalore Rs  
80 Crores / year

## ECONOMIC

80%  
is  
untreated



Large,  
centralized

95%  
of plastic  
packaging  
value lost  
globally

Focused on  
high-value  
waste



# OUR LONG-TERM UTOPIA

## MATERIAL CRADLES

Decentralized, small-medium-sized recycling centres in every sub-district / area in India that:



# OUR LONG-TERM UTOPIA

## MATERIAL CRADLES

Decentralized, small-medium-sized recycling centres in every sub-district / area in India that:



Process all types of local municipal solid waste



Formalize and empower the informal sector



Are financially sustainable manufacturing units ("micro-factories")



# OUR LONG-TERM UTOPIA

## MATERIAL CRADLES

Decentralized, small-medium-sized recycling centres in every sub-district / area in India that:



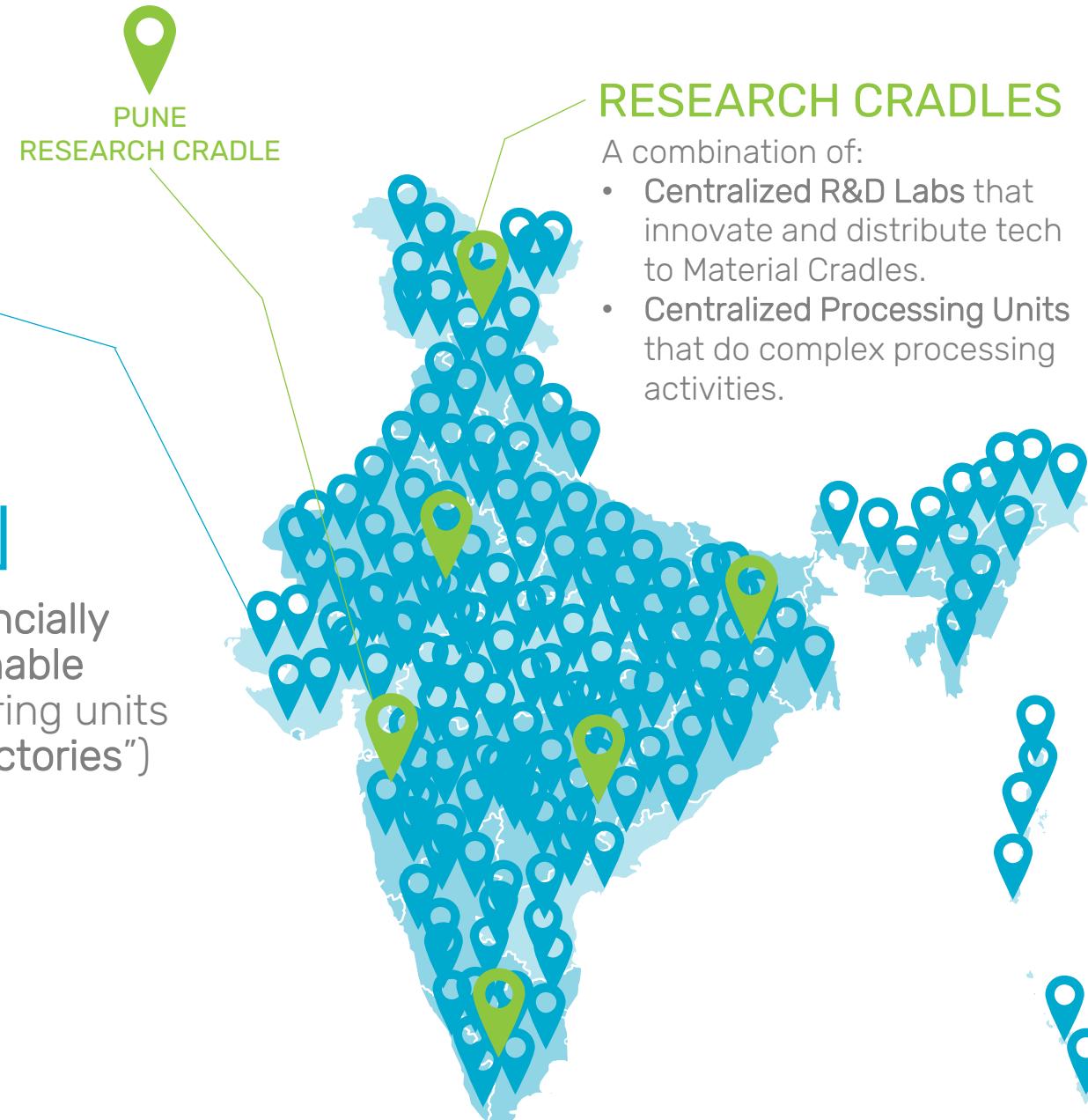
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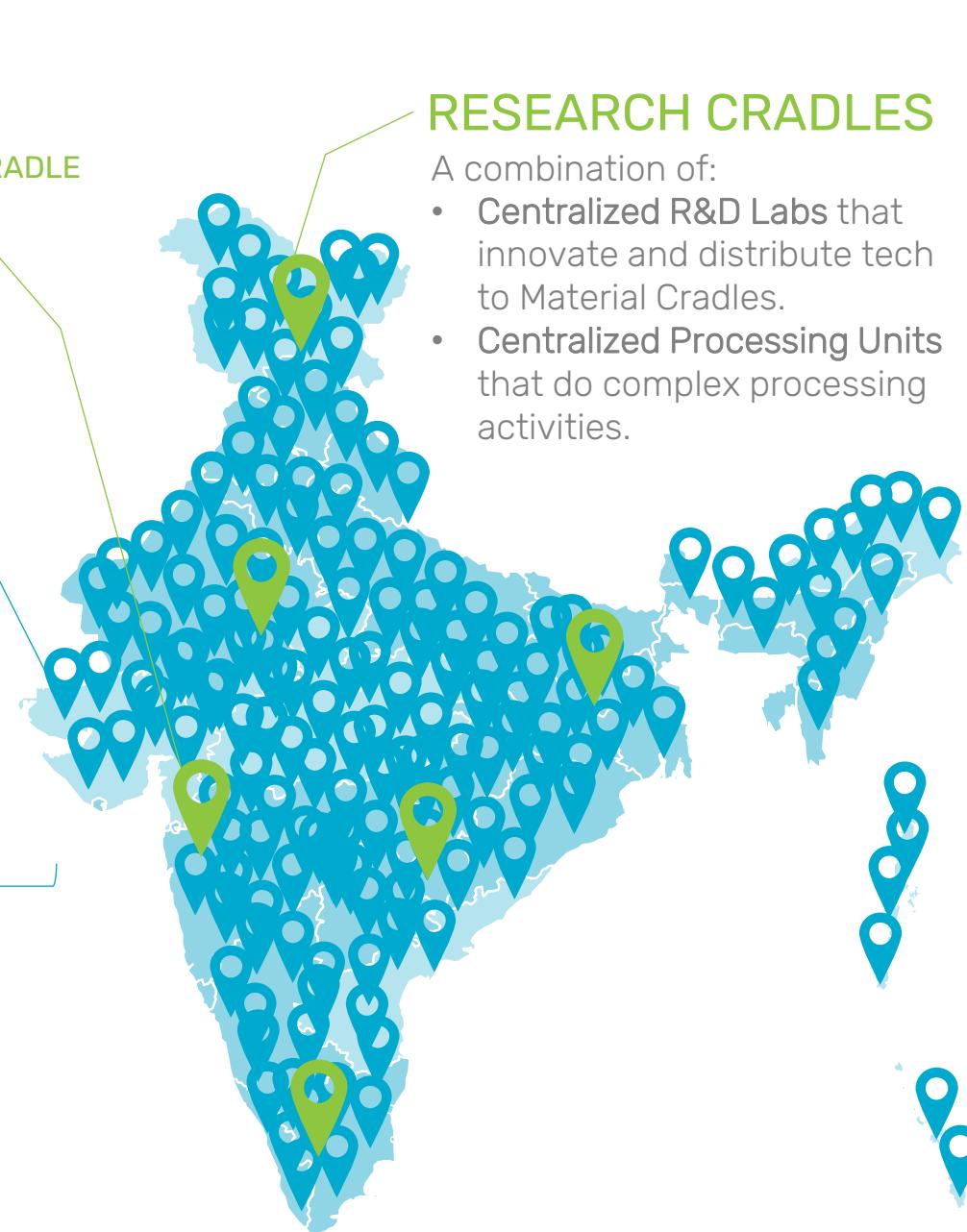


Are financially sustainable manufacturing units ("micro-factories")



Collaboration is key.

PUNE  
RESEARCH CRADLE



## RESEARCH CRADLES

A combination of:

- Centralized R&D Labs that innovate and distribute tech to Material Cradles.
- Centralized Processing Units that do complex processing activities.



## OUR IMPACT POTENTIAL



We are an **impact-first** start-up.  
We have **amended** our Memorandum of Association (MoA) to  
legally bind us to our impact.



# OUR IMPACT POTENTIAL



We are an **impact-first start-up.**

We have **amended our Memorandum of Association (MoA)** to legally bind us to our impact.

**Metrics** we will hold ourselves accountable to in the long run:



# of waste-pickers permanently pushed out of poverty based on the Multidimensional Poverty Index.



Tonnes of all waste (not only MLP) diverted from landfill.



Tonnes of Carbon avoided (indirectly).



# OUR IMPACT POTENTIAL



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# of waste-pickers permanently pushed out of poverty based on the Multidimensional Poverty Index.

**2026 TARGET**  
(FOCUSING ON IMPACT DEPTH)

25-30  
waste-pickers



Tonnes of all waste (not only MLP) diverted from landfill.

~127 tonnes



Tonnes of Carbon avoided (indirectly).

~200 tonnes



# OUR IMPACT POTENTIAL



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**2026 TARGET**  
(FOCUSING ON IMPACT DEPTH)

25-30  
waste-pickers

~127 tonnes

~200 tonnes

**10-Year Target**  
(SCALING DEPTH OF IMPACT)

500,000+  
waste-pickers

1 million+  
tonnes

2 million+  
tonnes



Started off with just the two of us



Now we are a whole bunch



A photograph of a person performing a backflip between two large, textured rock formations under a blue sky with white clouds.

And this is just the start. We have a  
long way to go.



The future of enterprise is **social enterprise**.

