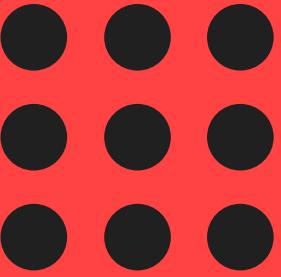


HULT PRIZE 2020 CHALLENGE



FLASTIK

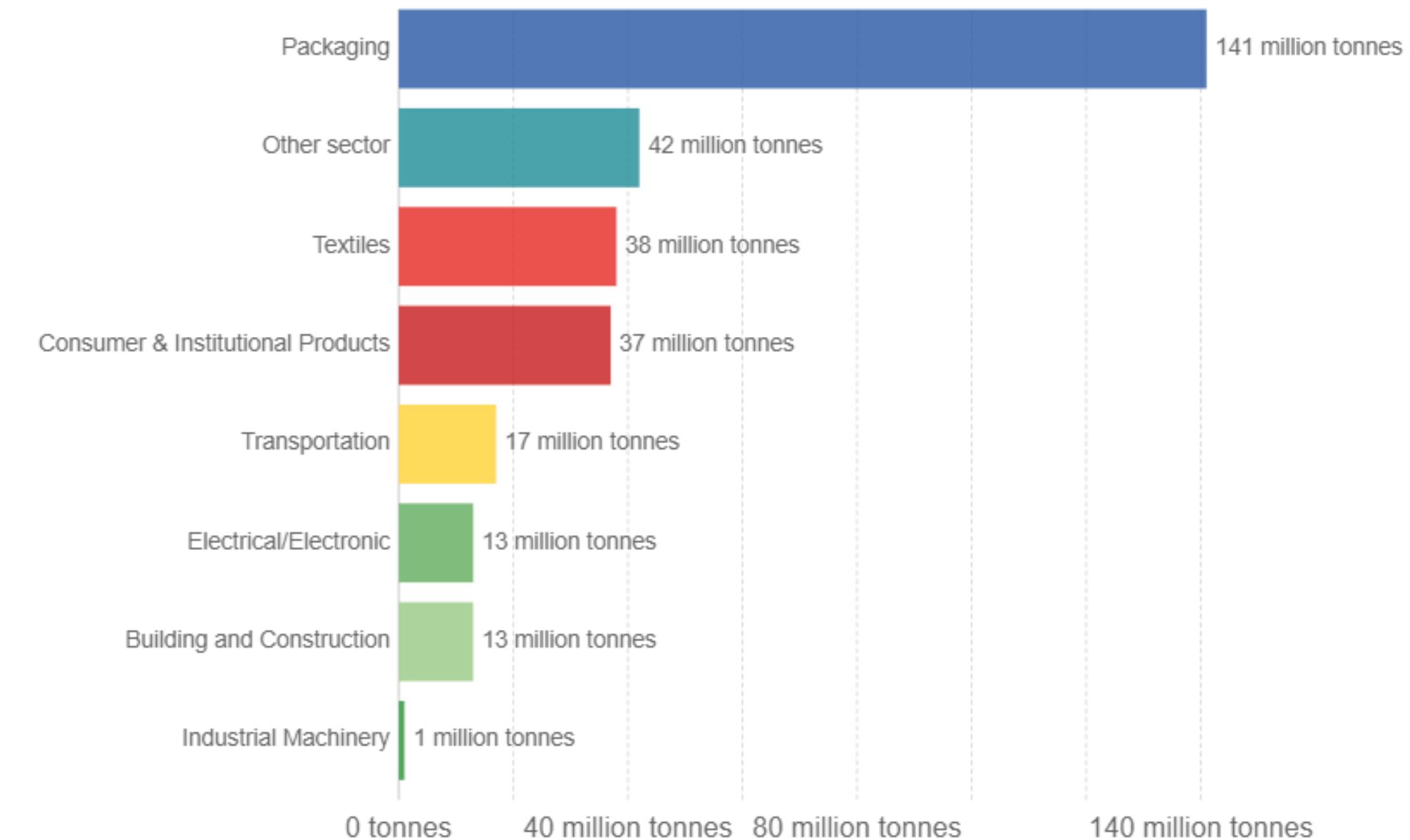
PLASTICS TO FUEL YOUR FUTURE



The Problem

Plastic waste generation by industrial sector, 2015
Global plastic waste generation by industrial sector, measured in tonnes per year.

OurWorld
in Data



Source: Geyer et al. (2017)

CC BY-SA

PLASTICS ARE
HORRENDOUS!



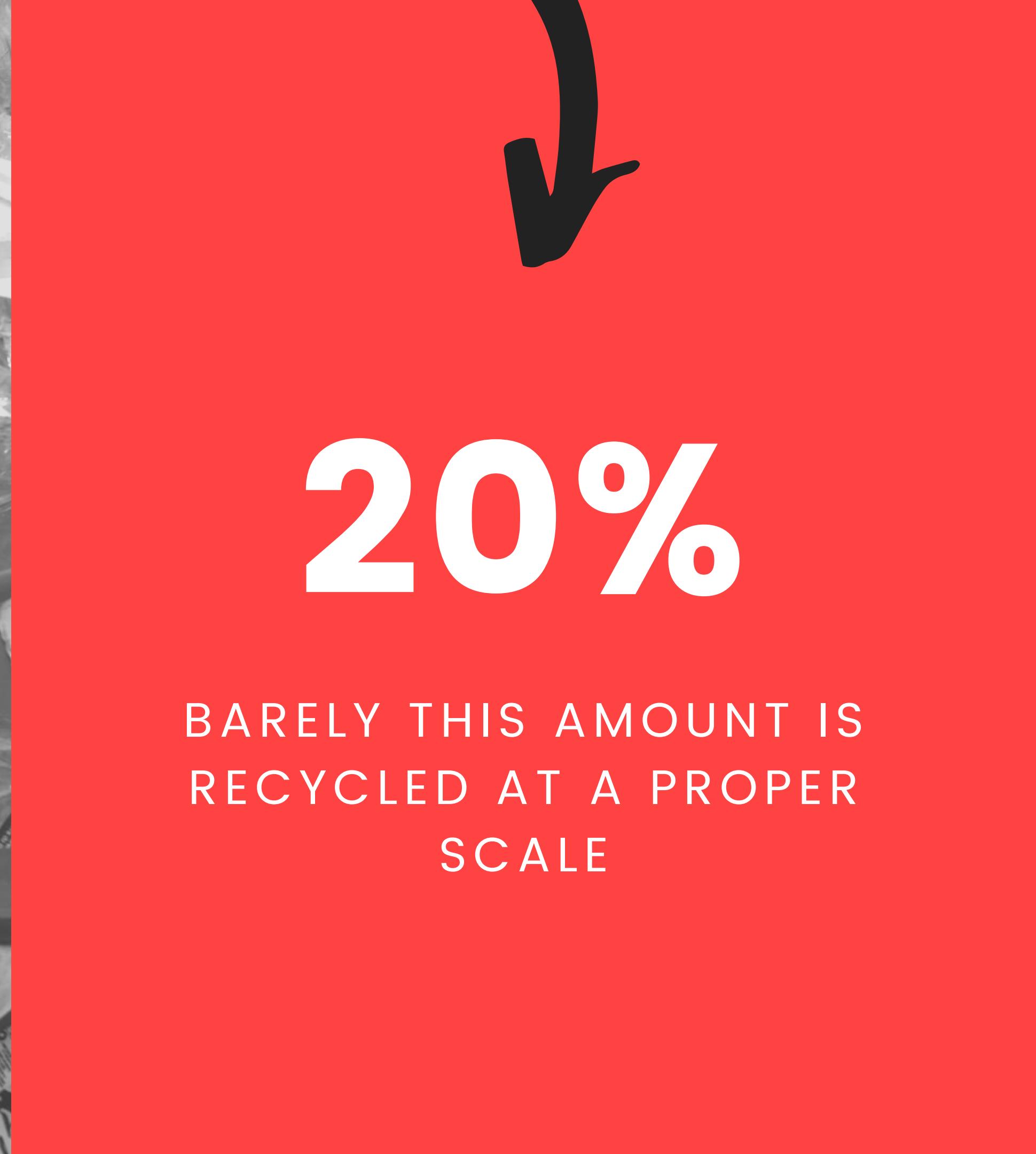
20
Million

METRIC TONNES
CONSUMPTION OF PLASTIC IN INDIA



80%

TOTAL PLASTIC
CONSUMPTION
DISCARDED AS WASTE



20%

BARELY THIS AMOUNT IS
RECYCLED AT A PROPER
SCALE





OUR NORTH STAR

Human health is
the great global
connector.

KATHLEEN SEBELIUS

Solution: Why not make use of waste plastic?

- **REDUCTION IN CARBON FOOTPRINT ON AN INDIVIDUAL LEVEL**
- **PLASTIC OIL IS POLLUTION-FREE AND CAN BE USED FOR HEATING AND DOMESTIC PURPOSES**
- **THE RESIDUE, CARBON BLACK CAN BE USED FOR CONSTRUCTION PURPOSE.**

THE GLOBAL OUTLOOK

381 Million+

TONS OF ANNUAL
PLASTIC PRODUCTION
(2015)

76
Million+

TONS OF ANNUAL
PLASTIC RECYCLED

(2015)



THAT
WHOPPING
FIGURE IS
OUR
PRODUCE
MARKET
SIZE!

PLASTIC FUEL

Fuel made from plastic pyrolysis



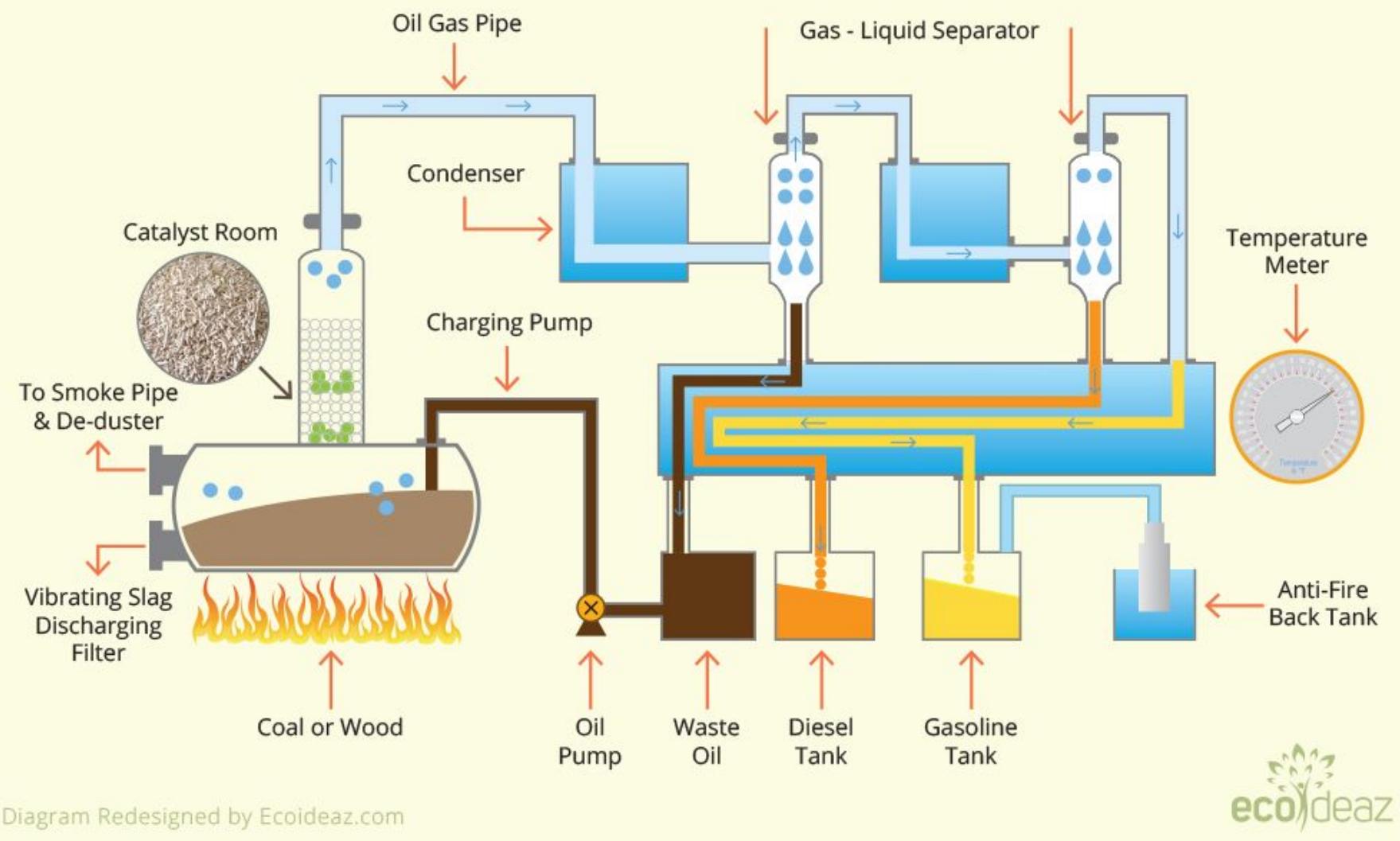
PLASTIC BRICKS

Construction material and Insulation



PLASTIC FUEL

Plastic Pyrolysis Process



- Certain forms of plastic, Polyethylene and Polypropylene, produce fuel after burning in the absence of Oxygen
- These plastics after being shredded are subjected to a temperature 450-500 Celcius, resulting in the formation of a gas, which when liquified produces pyrolysis oil or plastic oil.
- Polyethylene can be found in bags, films, packages. Polypropylene are found in spoons , plates , water bottles. Plastics such as PVC are not used because of its high chlorine content.

Why Plastic Fuel?



HIGH CALORIFIC VALUE

Plastic Oil is a heavy oil(calorific value > 10KCal/kg). This high heating value enables us to use it in boilers, cement factories, steel mills, etc.

LOW COST OF PRODUCTION

Plastic waste costs Rs. 15/kg. The conversion costs around Rs. 7/kg. Filtering and packaging costs Rs. 5/kg. So, cost of producing 1 L plastic oil is approximately Rs. 30. Much lower than diesel!

THE CARBON BLACK RESIDUE

The carbon black obtained as residue can be used as asphalt for roads.



PLASTIC BRICKS

- High mountain villages lack the infrastructure for recycling plastics. This means that majority of the plastics brought to trekking regions are burnt or discarded, which leads to the contamination of the environment.
- HDPE and PE bags are cleaned and added with sand and aggregate at various percentages to obtain high strength bricks.
- These bricks have thermal and sound insulation, and also reduce the overall cost of construction.
- This ensures no accumulation of plastic waste and further saves the quanta of sand/clay taken from riverbeds.

Why Plastic Bricks?

REDUCES PLASTIC ACCUMULATION / LANDFILLS

High mountain villages lack the necessary infrastructure for recycling waste plastic, making plastic bricks out of them reduces accumulation.

THERMAL AND SOUND INSULATING PROPERTIES

The bricks that are made of disintegrated HDPE/PE and sand, provide thermal and sound insulation, to control pollution

LOWERING THE OVERALL COST OF PRODUCTION

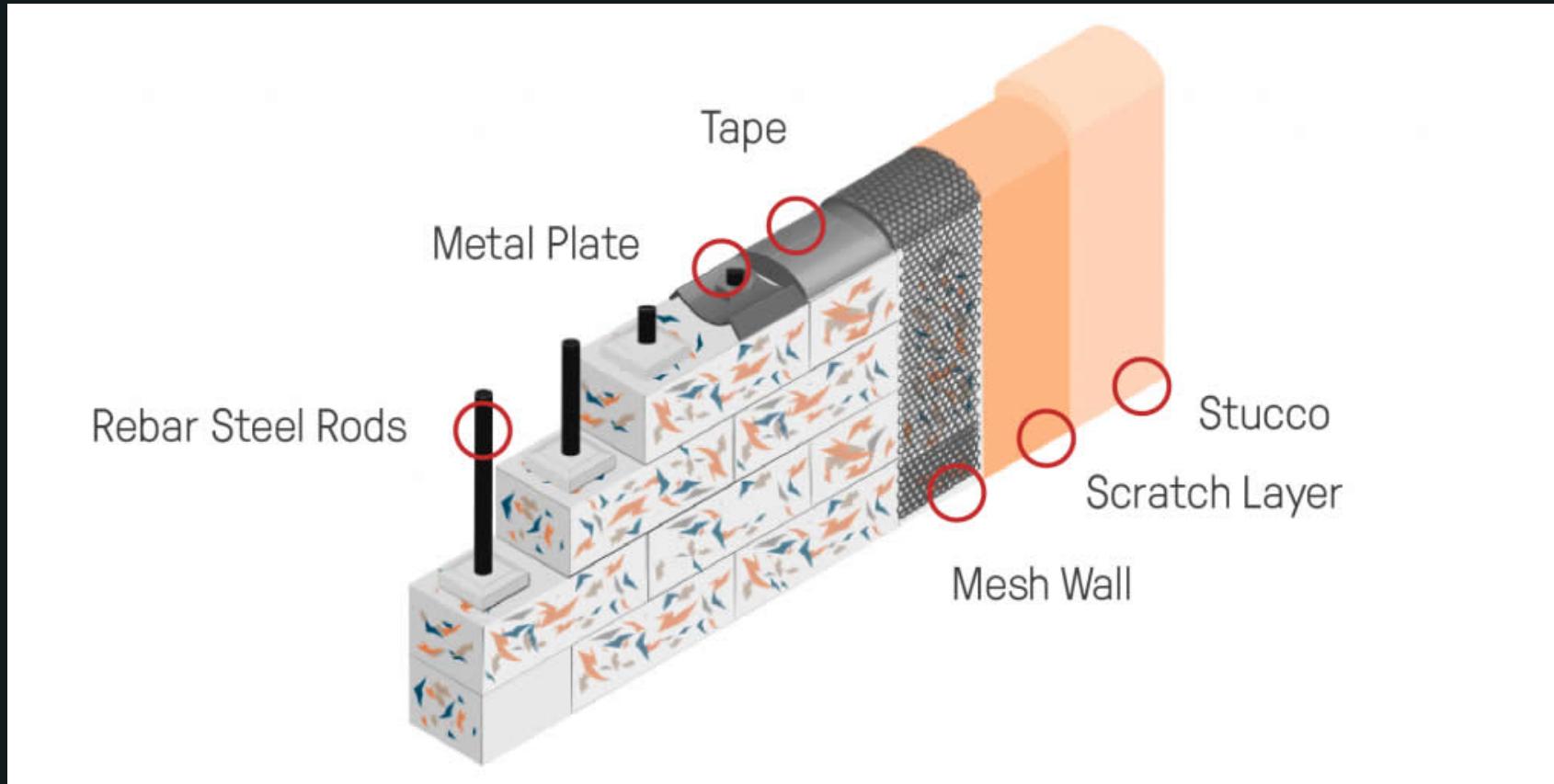
Since majority of the raw material is just waste plastic, cost of production is severely reduced.

LONG SERVICE LIFE

The waste is being removed from the waste stream for a long period.

CONTROL MIX DESIGN

For making the plastic bricks

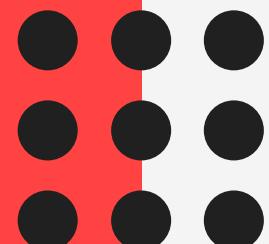


- In first step we should collect the waste plastic bags and the polyethylene bags are sorted out and remaining are disposed safely.
- Next the plastics are burned out by using stones and firewood. The drum is placed over the above setup and it is heated to remove the moisture present in it. Then the plastic bags are added to the drum one by one and the river sand is added to the plastic when it turns into hot liquid.
- The sand is added is mixed thoroughly using rod and trowel before it hardens. The mixture has a very short setting hence mixing process must not consume more time.
- Before placing the mixture into the mould, the sides of the mould are oiled to easy removal of bricks.



THE STRATEGY

**MAKING OUR IDEA
MORE APPEALING**



UBER FOR YOUR TRASH

We will work on a solution that is, the uberization of collecting waste plastic from homes, and segregating it, thus reducing pressure from municipal authorities.

FOOD FOR PLASTIC? WELL PROMISING :)

We will ensure we engage maximum people in the program by making the deal sweeter, literally. We would distribute chocolates for each kg of plastic donated.

PLASTIC OIL AND BRICKS FOR SLUMS

A certain amount of our profit surplus would go to the slum dwellers, to ensure replacement of Kerosene oil and raw bricks.



Clean Fuel



Lowering Waste
accumulation

Cheap Burning Oil

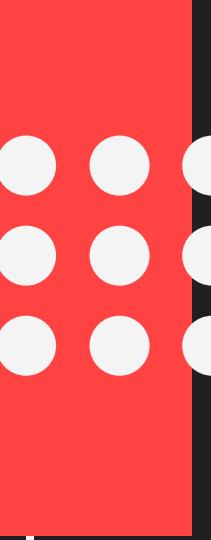


Inexpensive and
Efficient Insulation
Methods



Checking on Plastic
Pollution

**KEY
DIFFERENTIATORS**



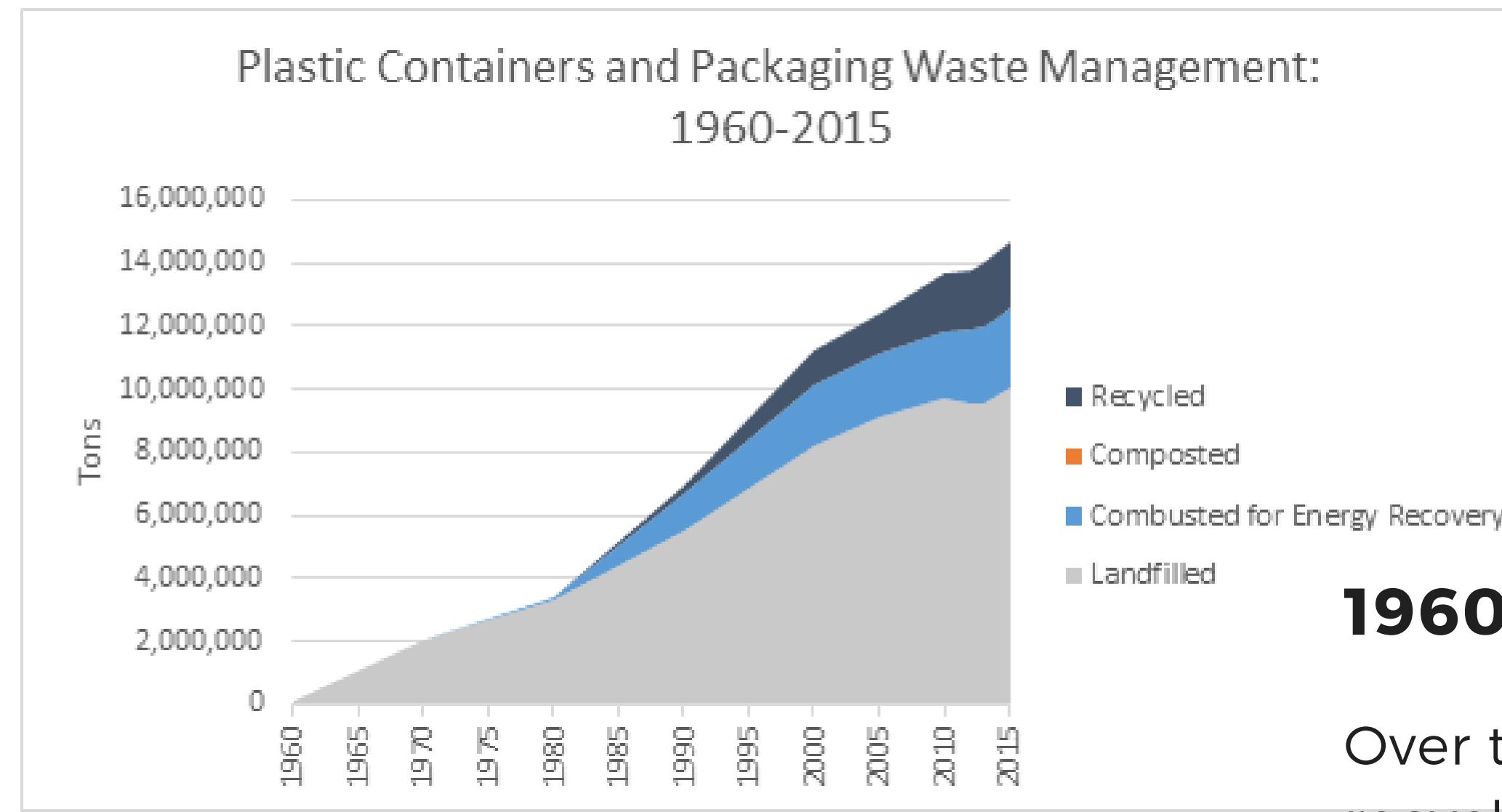
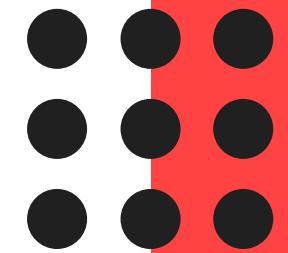
Our Plan to succeed as a
business...



Key Market Insights

HOW BAD IS THE PLASTIC POLLUTION

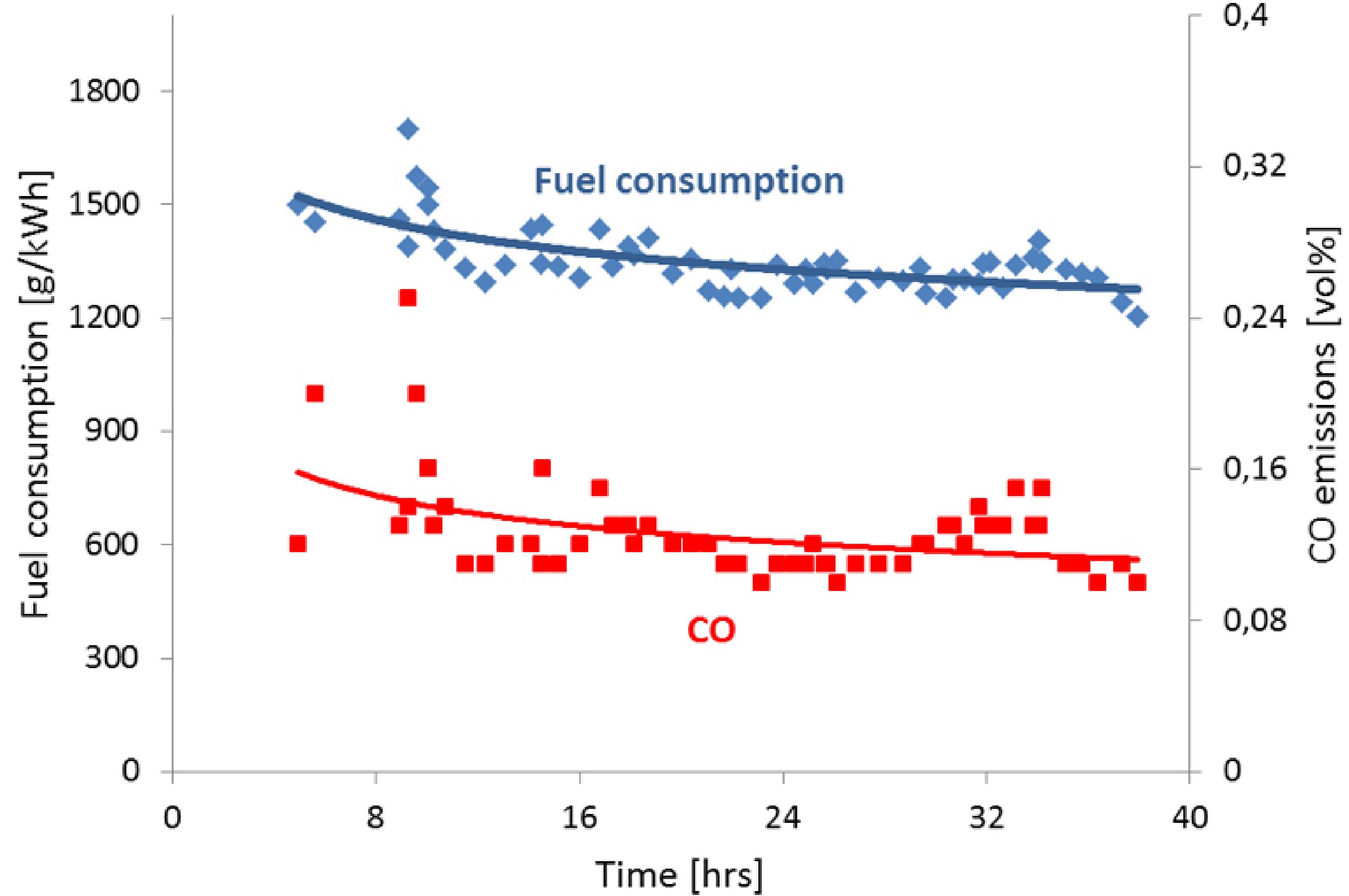
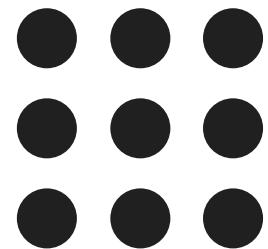
Recycling Plastic: Data Analysis



1960 - 2015 Data

Over the years, the proportion of recycled plastic has steadily grown

Pyrolysis Oil Efficiency



PIONEERS IN EAST INDIA

No waste management startup in the east of the country, we believe has come this far

SYNCHRONISES SEVERAL INDUSTRIES

Ours is not just a single-way solution, it incorporates in itself several industries

EASE OF USE

The solution would be as simple as operating Uber on your smartphone

GREAT POTENTIAL FOR GROWTH

THE CURRENT ESTIMATED VALUE OF WASTE PLASTIC MARKET IS ABOUT RS. 22000 CRORES

PROPER SDG STARTUP

Efficient solution and abides by the UN Sustainable Development Goals 2030

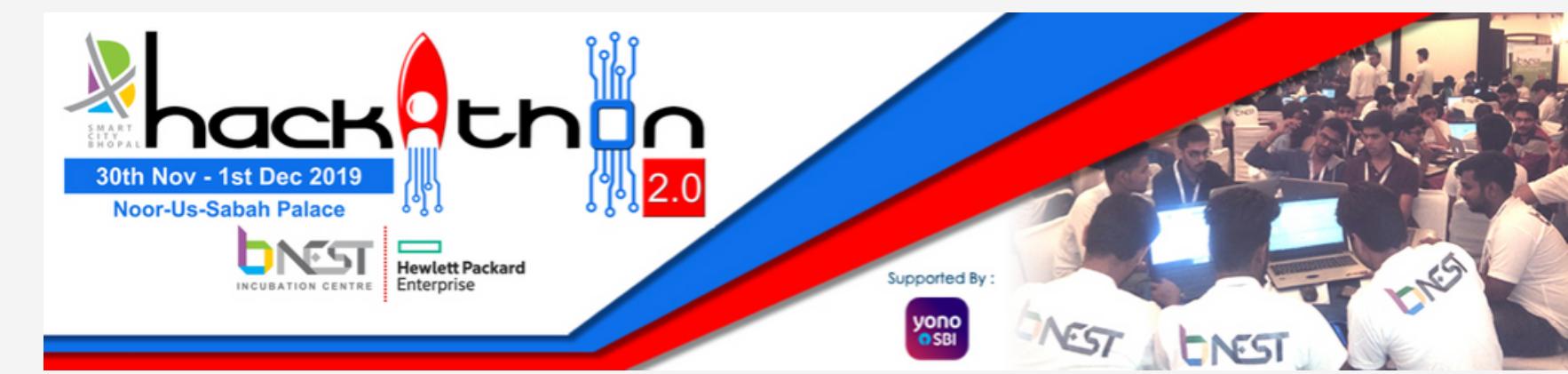
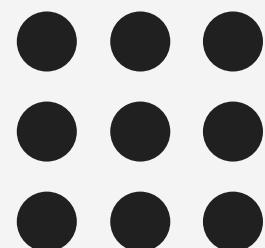
SCALABILITY

We can engage and impact more and more depending on the finances we receive

COMPETITIVE ADVANTAGES

We
believed in
the success
of the
project

This led us to take it to
multiple hackathons



BHOPAL SMART CITY HACKATHON
***TOP 10 IN THE COUNTRY**



NEC HACKATHON
#4 IN THE INDIA REGIONALS



Our Advisory Team

**There earnest support
has been a boon**



DR. PUNEET PATRA

Dept. of Civil Engineering, IIT KGP



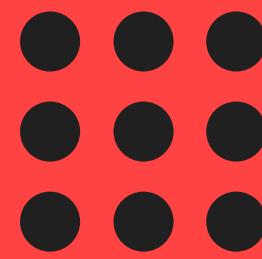
DR. SUPARNA BISWAS

Agricultural and Ecological Research Unit, ISI Calcutta



**DR. JOYDEEP
MUKHERJEE**

Department of Environmental Studies, Jadavpur University



FLOW OF INVESTMENT

WE'VE ALREADY ASKED THESE ORGANISATIONS FOR FINANCIAL SUPPORT FOR OUR CAUSE



Ministry of MSME, Govt. of India



MSME

Official funding for small and medium scale industries by Govt. of India

PIP: BCA

Applied under productivity innovation project

ALCHEMIST ACCELERATOR

Under green start-ups scheme

THANK YOU