An important REVOLUTION that puts
REDUCTION of RESOURCE
at the centre of packaging innovation.

packem umasree™

REIMAGINATION

Reimagining the world of tomorrow.

INDIA'S FIRST 100% BOTTLE-TO-BAG PROJECT

100% Sustainable FIBC
(Flexible Intermediate Bulk Container)/Jumbo Bags
made from PET/PCR (rPET)

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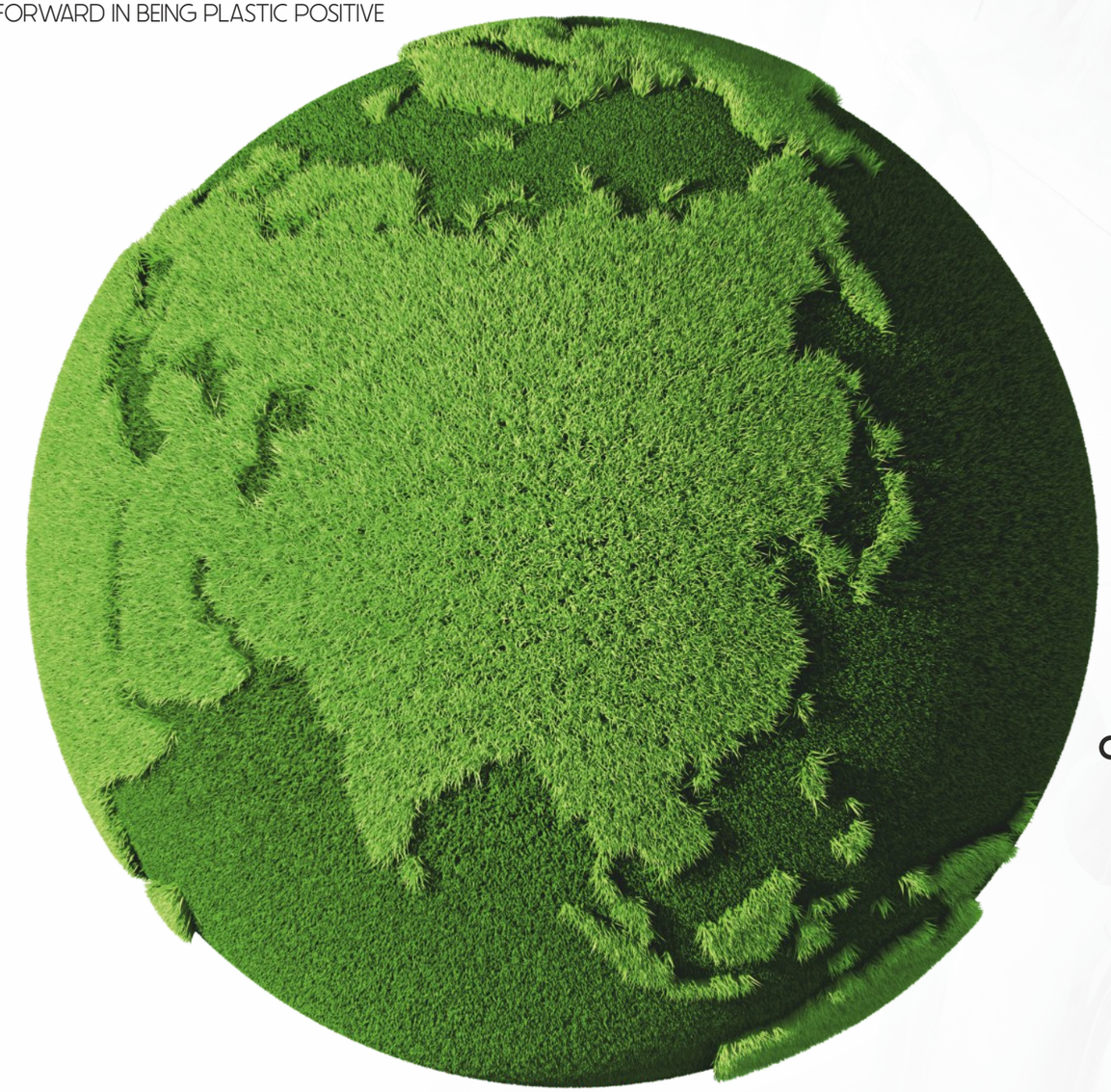
To achieve our sustainability goals, to orient all our actions towards circularity and to contribute to Government of India's Sustainable Development Goals (SDG) initiatives, we launch >

PACKEM UMASREE'S VISION WEEN™ a win for everyone

Waste Elimination & Environment Nurturing development

A MAJOR STEP FORWARD IN BEING PLASTIC POSITIVE



Reimagining the world of tomorrow.

India's Umasree Texplast partners with Brazil's Packem to produce 100% sustainable FIBC/Jumbo Bags from recycled PET/PCR. The project gives a massive enhancement to India's sustainability quotient, as well as adds a jewel to the crown of the MAKE IN INDIA global campaign. The project completely reimagines Big Bag manufacturing for making India self-reliant while positioning it as a hub for exports in this segment. It also reimagines the way plastic and plastic waste have been perceived for decades; the technology, as well as the methodology applied, is among the unique innovations that the country has witnessed in the domain of sustainable bulk packaging. Along with the goals of technological advancement, the project reimagines the role of a corporation in manifesting wider ecological and social benefits.

Changing the sustainability landscape of India & beyond

REIMAGINING
PLASTIC WASTE MANAGEMENT

We believe that the first step towards transformation is to dream a tomorrow - one that is better and brighter than today. The problem looks overwhelming, but taking committed steps in the right direction can bring in unexpected change. The plastic industry needs to rethink its approach, and as participants in the production chain, we are committed to leading the solution. With the economic incentives aligned to promote products with the necessary technical specifications and recycled material sources (PCR), the economic chain could be established and fostered to build the necessary supply, addressing environmental concerns.

Total plastic waste generation, 2016
(millions of metric tons*)

United States	42.0
India	26.3
China	21.6
Brazil	10.7
Indonesia	9.1
Russia	8.5
Germany	6.7
United Kingdom	6.5
Mexico	5.9
Japan	4.9

source: statista.com

TRUTH BE TOLD.

Plastic contributes to 12% of the world's solid waste.

Only 9% of plastic packaging used once is recycled.

Packaging contributes to 46% of plastic waste.

Annually, USD 80-120 billion in plastic packaging material is lost after a single use.

PACKEM UMASREE CONCENTRATES ON RESPONDING TO THE TWO MAJOR CHALLENGES:

- EXCESSIVE USE OF VIRGIN PLASTIC PACKAGING
- LOW LEVELS OF RECYCLING

REIMAGINATION

The problem is not in plastic - the material, but in its uncontrolled consumption and low recycling.

The world must rethink to change packaging with a focus on Green House Gases (GHG) emissions reduction and designed for recycling.

The most powerful action to be taken is thinking on raw material substitutes, to lower emissions and establishing a circular economy for recycling of the plastic waste into reusable resin.

Turning every waste bottle, into something useful.

REIMAGINING
LIVES OF THE MARGINALISED

There are an estimated 4 million ragpickers in India, and though unrecognised, their contribution to waste management is significant. Yet, their lives remain marred by harmful work environments and uncertain incomes. We are reimagining the waste collection ecosystem by creating opportunities that have begun to improve their quality of life and give them access to consistent incomes and various social benefits.

PACKEM UMASREE CONCENTRATES ON RESPONDING TO THE FOLLOWING CHALLENGES:

- LOW & UNCERTAIN INCOME
- IRREGULAR WORK

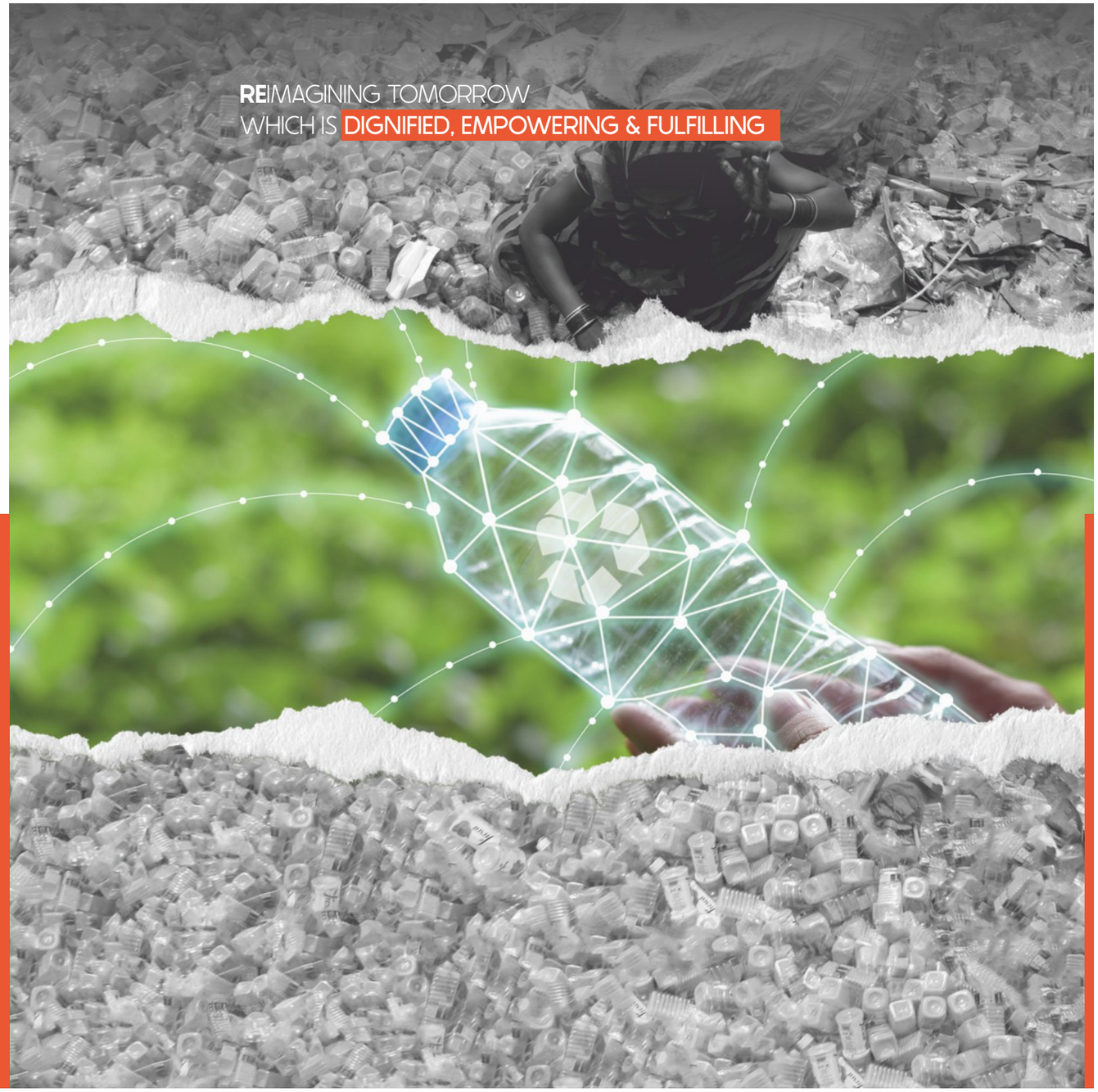
REIMAGINATION

A systematic procurement mechanism has been designed to ensure secure and consistent incomes for the people engaged in waste collection. The project is creating new employment opportunities in the collection and recycling industry and providing them with the dignity they deserve.

Being socially conscious,
win for all.

THE BITTER PILL

- A lot of garbage clearing in India is done informally, by rag-pickers who work without any job security, regular salary or dignity.
- For decades, rag-pickers have been working in unsanitary conditions.
  Between 1.5 and 4 million rag-pickers in India work without minimum wages and live with inconsistent incomes.



REIMAGINING
FIBC PRODUCTION

Manufacturing FIBC Bags from rPET.

Besides its strength and form stability, which makes PET fabric perfect for heavy-duty applications, PET can be recycled and refined so that its properties are restored to those of virgin material.

For FIBC producers this means that with PET they can kill two birds with one stone: produce high-quality FIBCs and meet sustainability criteria which are likely to become a must in future.

With PET, the recycled content of a FIBC can be up to 100%.

Packem Umasree has set up its manufacturing plant in Ahmedabad, Gujarat, India, to produce 100% sustainable FIBC/Jumbo Bags. The company is sourcing rPET/PCR PET Bottles as the raw material. The plant deploys the latest technology to convert 100% recycled PET into high-performance fabrics needed for product packaging.

Punit Gopalka
CEO, Umasree Texplast

"The world today needs innovative ideas to meet sustainable development goals. We are pushing our limits to discover and implement new ways to bring in sustainability in the packaging segment. At this stage we have initiated manufacturing of 100% recycled and recyclable products; in this journey of ours we found a perfect fit in Packem."

Eduardo Santos Neto
CEO, Packem

"This new facility in Asia will take Packem to global markets that are already served today by Umasree, in PP bags, especially the USA, Canada and Europe. We have been Umasree's business partners for over 10 years, and it was this relationship of trust that enabled the Join Venture to further strengthening this partnership."

REIMAGINING
RAW MATERIAL FOR FIBC

Currently, in Europe, only 58% of PET bottles are recycled, the rest end up in landfills, and pollute the earth. Every PET bottle sent for incineration or dumped in a landfill is a waste of valuable resources. A more sustainable future is possible and recycling PET can help us get there. We are reimagining the application of used bottles and want to deploy rPET as the basic raw material and reduce the use of virgin plastic in FIBC production.

PET IS MADE TO BE REMADE

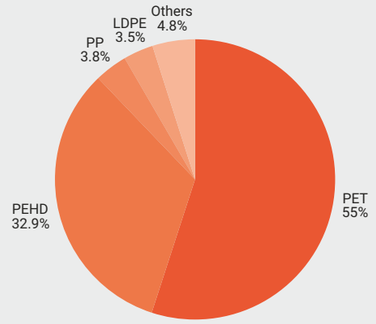
Why PET

RECYCLABLE
Manufactured from recycled material and is also recyclable.

FOOD GRADE
PET is one of the only recycled plastic for food contact.

BETTER MECHANICAL PROPERTIES
Oxygen barrier
Creep Resistance
Abrasion resistance
Lower thickness
Higher stiffness

Global Plastic Recycling by PLASTIC TYPE



PET accounts for 55% of global plastic recycling
source: theroundup.org

rPET IS THE WAY FORWARD

PET is not just sustainable it is technically better too - double the advantage

- Given identical GSM, PET fabrics are thinner and appear floppy compared to other plastic woven fabrics
- PET is the material of choice for hot fill applications
- PET has a lower residual shrinkage at high temperatures
- PET can operate at a minimum continuous temperature of -20°C
- PET has an improved abrasion resistance
- PET has a higher Youngs modulus and therefore provides higher stiffness
- PET has a higher creep modulus (time-dependent strain or deformation due to a stress)
- FIBCs made from rPET reduces CO_2 footprint

PET IS #1 PLASTIC, WAY BETTER THAN OTHER PLASTICS

PET Facts

PET (Polyethylene terephthalate) is a polyester. When PET is used for bottles, containers and other applications, it is called PET or PET resin. When PET is used as a fiber, it is typically called polyester.

According to EPA (US Environment protection agency), recycling one pound of PET bottles saves approximately 26,000 BTUs (6500 Kcal) of energy.

PET is the most recycled plastic in the US and the world.

REIMAGINATION

PET is light, strong and safe too.

PET is the only plastic that can be recycled Bottle-to-Bag & Bag-to-Bag in a closed loop.

By 2029, atleast **90%** of PET bottles will be collected for recycling.

One ton of PET can save **7.4 cubic yards** of landfill space.

PET can be recycled quickly and requires far less energy to do so than glass and aluminium, meaning it generates up to **75% less** greenhouse gas emissions.

By all means PET is complete opposite of disposable 'single-use' plastics.

Aiming Zero waste,
recycling PET again and again.

REIMAGINING
END OF WASTE

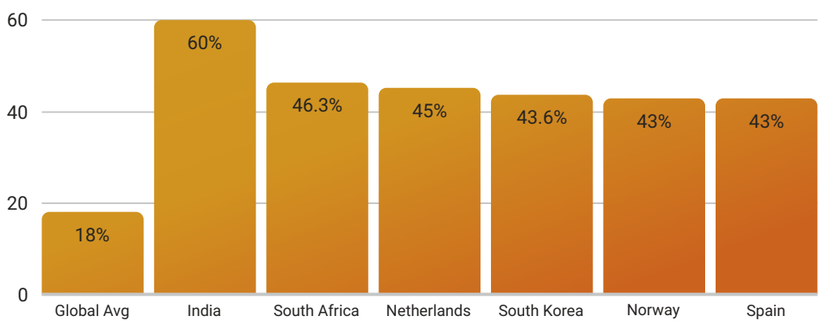
The rPET/PCR-to-FIBC/Jumbo bag is the most influential innovation in recent years in the packaging segment, which is helping the development of a circular economy. The first 100% Bottle-to-Bag/Bag-to-Bag project in the world is converting Big Bags used in the field and recycling them to be made into Big Bags again. The company reuses 100% of the rPET FIBC/Jumbo Bags, which helps in reducing the use of virgin plastic.

Comparison of chemical recycling capabilities of various polymers

POLYMER NAME	POLYETHYLENE TEREPHTHALATE	HIGH DENSITY POLYETHYLENE	POLYVINYL CHLORIDE	LOW DENSITY POLYETHYLENE	POLYPROPYLENE	POLYSTYRENE	All other plastics, including acrylic, fibreglass, nylon, polycarbonate and polylactic acid (a bioplastic)
Resin Identification Code	1	2	3	4	5	6	7
Abbreviation	PET or PETE	HDPE	PVC	LDPE	PP	PS	OTHER
Recyclable?	Commonly Recycled	Commonly Recycled	Sometimes Recycled	Sometimes Recycled	Occassionally Recycled	Commonly Recycled	Difficult to Recycle
Percentage Recycled Annually	36%	30-35%	<1%	6%	3%	34%	Low
How Long to Decompose Under Perfect Conditions	5-10 years	100 years	Never	500-1,000 years	20-30 years	50 years	Majority of these plastics: **never** Polylactic acid: **6 months**

source: www.plasticbusters.org/resources/the-7-types-of-plastic-plastic-busters

Countries with the best PLASTIC RECYCLING RATE



source: theroundup.org

OECD / Plastics Europe / UNEP

packem umasree™

This is how we will achieve the
BOTTLE TO BAG AND BAG TO BAG
processing >

Producing sustainable FIBC / Jumbo Bags

Technology driven circular economy model, that reduces dependence on virgin plastic

REIMAGINING
SUSTAINABLE DEVELOPMENT IN PLASTIC PACKAGING INDUSTRY

The world is changing, and to meet climate change targets, there is a growing demand for solutions that reduce carbon footprint. By launching the rPET project in India, Packem Umasree is making a significant contribution to environmental protection by providing sustainable packaging solutions to its customers worldwide.

The pandemic in 2020, made us realise that all businesses are deeply intertwined with environmental, social and governance (ESG) concerns. Packem Umasree is committed to strong value creation in the ESG space.

With a vision of becoming a company focused on Sustainable Packaging / ESG, Umasree signed a JV with Packem in 2022 to set up India's 1st plant to produce FIBC Bags out of recycled PET (rPET), which is now operational.

Packem Umasree's larger vision of sustainability

As a packaging manufacturer, Packem Umasree feels responsible for addressing the industry's challenges by developing technological solutions that reimagine its relationship with the environment. The company has taken multiple initiatives to achieve its goal of waste elimination and environment-nurturing development. This approach is called WEEN.

The packaging of the future must be 100% made from renewable or recycled materials through a production process that uses renewable energy and that after being used, fulfilling its purpose, returns to recycling and is renewed.

REIMAGINATION

REIMAGINING TOMORROW

WHICH IS
CLEANER, GREENER & SUSTAINABLE.

WHICH IS
DIGNIFIED, EMPOWERING & FULFILLING.

WHERE
EVERY PET BOTTLE IS RECYCLED.

WHICH IS
FREE FROM WASTE.

REIMAGINING
THE WORLD OF
TOMORROW.

"

Marcos Spitzner Filho
CFO, Packem

Our rPET big bag will bring great environmental and social benefits to India, in addition to direct jobs. It is estimated that every metric tonne of recycled plastic will create three local jobs for the collection and recycling industry. In addition, our project will create local demand for post-consumer PET bottles, with a positive impact on oceans, rivers and the environment in general.

"

PACKEM UMASREE'S

VISION WEEN™ a win for everyone

Waste Elimination & Environment Nurturing development

A MAJOR STEP FORWARD IN

MAKING INDIA PLASTIC POSITIVE

We have to move towards 'zero-defect' and 'zero-effect'. Zero defect in production with no adverse effect on the environment.

Shri Narendrabhai Modi
Honourable Prime Minister of India

Taking inspiration from the Prime Minister's commitment to Sustainable Development Goals, **Packem Umasree** reiterates its commitment towards a circular economy. As part of **'Vision WEEN',** the company has invested in technology and processes that contribute to **eliminating waste, improving the lives of the 'Safai Saathis', reducing CO_2 emissions**, and making India a hub of **eco-friendly** industrial **packaging** solutions.

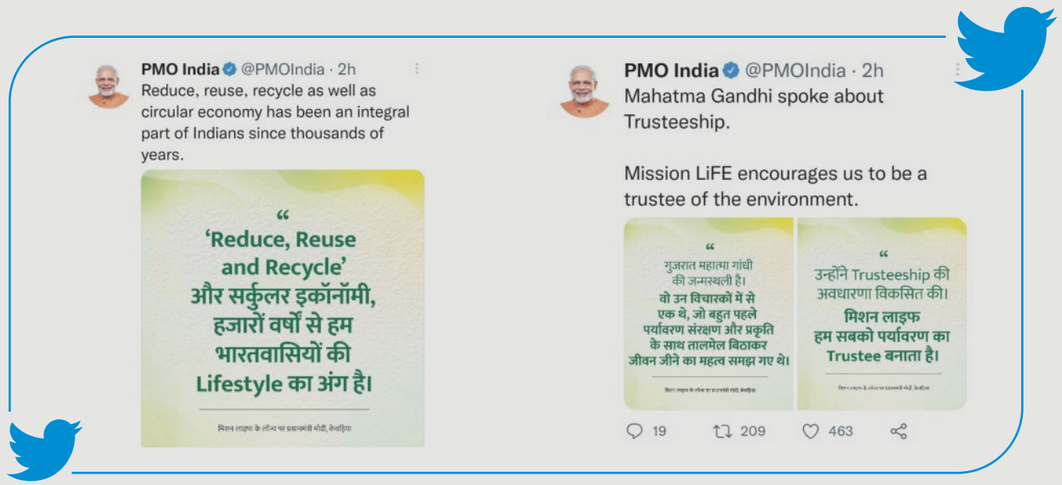
स्वच्छ भारत
एक कदम स्वच्छता की ओर

One of the key outcomes of sustainable FIBC production is the reduction in the generation of new plastic waste. At the same time, the used-PET bottle collection process has been incentivized and professionally monitored, resulting in optimized results. Over time, this will save a lot of landfill space in India.

MAKE IN INDIA

The Packem Umasree JV has resulted in the deployment of world-class technologies for sustainable plastic production. We have implemented special technology for producing high-performance fabrics from recycled rPET/PCR. Converting rPET/PCR to FIBC/Jumbo bags is a unique innovation in the domain of industrial packaging; this project is the first in India to use this technology. It has given a significant boost to the 'Make in India' campaign.

"The MISSION LIFE initiative, launched by the Prime Minister, encourages investment in the circular economy and environmental security. The sustainable production of FIBC Bags has given a significant boost to this initiative through Bottle-to-Bag processing and Bag-to-Bag recycling."



REIMAGINATION

The global FIBC market is led by five countries India, China, Vietnam, Turkey and Mexico. In 2021, these countries exported 250 million units, with India accounting for 50% of that volume. We estimate that within the global FIBC / Jumbo Bag / Big Bag market our innovation will develop a new market for sustainable FIBC made with recycled PET/PCR bags.

GROWTH IS IN BEING GREEN

700+
DIRECT EMPLOYMENT GENERATION

100,000+
CREATING DIGNIFIED LIVELIHOODS & SOCIAL SECURITY FOR SAFAI SAATHIS (Rag Pickers)

25 Million USD
INVESTMENT IN GREENFIELD PROJECT TO SUPPORT CIRCULARITY & MAKE IN INDIA

3+ MILLION KG
REDUCTION IN CO_2 EMISSION

ABOUT UMASREE

umasree.com

Umasree has been at the forefront of providing customised FIBC/Jumbo Bag solutions for over 15 years. It is based in Ahmedabad, in the state of Gujarat, India, and produces 3.50 Million units of big bags per year. The world is changing and to meet climate change targets there is a growing demand for solutions to reduce the carbon footprint. With the launch of the rPET project in India, Umasree aims to benefit from new technologies and contribute significantly to the environment by providing sustainable packaging solutions to its customers worldwide.

ABOUT PACKEM

packem.com

Packem has units in Brazil, employs over 1000 people and produces 6.0 Million units of big bags per year. With the rPET project, it will create more than 700 new direct job vacancies. Packem's commitment to sustainability intensified in late 2019 when it was purchased by the current Promoters. Renewed, the company decided to invest heavily in ESG actions to be the pioneer in the global market.

WORLDSTAR WINNER 2023
WPO WORLD PACKAGING ORGANISATION

r-PET:
THE FIRST FERTILISER APPROVED BAG-TO-BAG CLOSING THE LOOP TO 100%

packem™ umasree