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# PLEXCONNECT®

Edition 59, May 2024



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# Contents

# From the Chairman's Desk

As the nation gears up for the national elections, anticipation mounts amidst the unfolding of power battles, promises, and manifestos. The entire industry eagerly awaits the continuation of an era characterized by political and economic stability, recognizing its crucial role in fostering the growth of exports.

At the Council too, excitement abounds as the countdown to PLEXCONNECT 2024 has begun, with just a month remaining before this pivotal event showcases the pinnacle of the Indian plastics exports industry. Currently, nearly 800 international buyers from over 80 countries have already registered, highlighting the growing international spotlight on PLEXCONNECT. It's imperative for all members to seize this opportunity to participate in this vital event and leverage it to expand their business outreach to global markets.

To facilitate the MSME industries, PLEXCONCIL recently successfully concluded its roadshows at leading manufacturing hubs including Chennai, Ahmedabad, Kolkata, Bhubhaneshwar, Nagpur, etc and we not only received tremendous support from the local DGFT offices and associations, but also the plastics processing industries from around the cities.

The export performance for the last financial year has been published. During March 2024, India exported plastics worth USD 1,113 million, higher by 5.6% from USD 1,054 million in March 2023. Cumulative value of plastics export during April 2023 – March 2024 was USD 11,550 million as against USD 11,967 million during the same period last year, registering a decline of 3.5%.

India's plastic industry has experienced a notable surge in exports, particularly during the months of December and January 2024, signalling positive growth amidst fluctuating global economic conditions. This surge reflects not only the resilience of the Indian plastics sector but also the increasing demand for Indian plastic products in international markets. Amidst promising prospects, significant hurdles persist. High manufacturing costs hinder India's path to plastic dominance as manufacturers continue to face challenging conditions such as high cost of finance, land acquisition, inadequate infrastructure, raw material import dependencies & price fluctuations, etc demanding attention and innovation to level the playing field globally.

Transitioning towards sustainable agricultural practices is imperative for India's future prosperity. Leveraging innovative technologies, government initiatives, and grassroots efforts, the nation aims to minimize plastic pollution while enhancing productivity and farmer livelihoods. Recognizing the crucial role of plastics in modern agriculture, in this issue, Pranay Kumar, Circular Economy Specialist, Founder & Chief Sustainability Officer, Vasudhaecofriends Projects and Managing Trustee, Ecochakra Abhiyan Trust shares his thoughts on how we can seek innovative solutions to minimize plastic pollution while maximizing agricultural productivity and sustainability.

MSMEs operating in India have fuelled comprehensive growth and contributed in a profound manner towards constructing a radiating global India. In addition to numerous challenges, one of the primary hurdles that emerge are Payment defaults and currency fluctuations mainly because costs are in rupees and revenues are in foreign currencies making it important to manage risk due to Forex fluctuations.

In an interview with this magazine, Aditya Kashikar, International Trade Consultant explains the correlation between India's MSME, Exports & Forex.

In this issue, we also look at Silicones under our Product of the Month, delve into emerging trends in bioplastics as well as bring you a synopsis of a research published on reimagining plastics waste as energy solutions. The research emphasizes on the significance of Waste-to-Energy (W2E) and Waste-to-Fuel (W2F) technologies, identifies a critical gap in current research: the emission of $CO_2$ during these processes; and identifies turnkey solutions in making W2E and W2F methods more sustainable by unleashing the huge potential of using waste plastics as a dense-energy source.

Addressing challenges head-on and fostering an environment conducive to innovation and competitiveness is essential for India's plastics industry to thrive on the global stage. So, keep up the efforts and we hope to see you at PLEXCONNECT 2024!!

**Warm regards,**

**Hemant Minocha**
**Chairman**

**Meeting to discuss issues likely to be raised during the upcoming India-Tanzania and India Nigeria JTC on 1st March 2024 | Eastern Region:**

Above meeting organised by Deptt. of Commerce under the chairmanship of Shri Amardeep Singh Bhatia, Additional Secretary, Department of Commerce. Mr Nilotpal Biswas, RD(East) joined the meeting online.

**Meeting with the DP World - JAFZA Management, Dubai - 6th March 2024 | Eastern Region:**

Above Meeting organised by PLEXCONCIL. Mr Nilotpal Biswas, RD(East) joined the meeting online.

**Meeting with CIPET-IPT, Chennai on 06th March 2024 | Southern Region:**

Plexconcil Southern Region officials met with Mr. S. Ilangovan, Principal Director & Head, CIPET-IPT, Chennai to discuss and finalise the proposed Export Awareness Meet to be scheduled at Chennai during April 2024.

**Meeting with DG, CIPET H.O., Chennai on 12th March 2024 | Southern Region:**

Plexconcil Southern Region officials met with Mr. Shishir Sinha, Director General, CIPET-H.O., Chennai to discuss on the promotion of Plexconnect 2024 at CIPET centres across India and also to finalise the proposed Export Awareness Meet to be scheduled at Chennai during April 2024.

**Niryat Mahotsav 2024, Nagpur on 12th March 2024 | Western Region:**

The Office of The Additional Director General of Foreign Trade, Nagpur, organised Niryat Mahotsav 2024 at Dr. Babasaheb Ambedkar International Convention Centre, Nagpur, Maharashtra. Mrs. Bharti Parave (Deputy Director – Trade & Policy) and Mr. Manish Tulsian (Deputy Director – Research & Statistics) participated in the same through VC mode and delivered a presentation on the role of Plexconcil and PLEXCONNECT 2024.

**Industry Interaction Meet during 15th International Conference on Advancements in Polymeric Materials (APM 2024) on 14th March 2024 at CIPET, Ahmedabad | Western Region**:To provide a platform for academia, industries, institution for dissemination of applied knowledge among stakeholders CIPET organized 15th edition of APM 2024 at CIPET-IPT Ahmedabad from 14th March to 16th March, 2024. On the first day of the Conference, Industry interaction meet was organized. Mr Naman Marjadi, Assistant Director, Plexconcil attended the industry interaction Meet and gave details about PLEXCONNECT 2024 to participants.

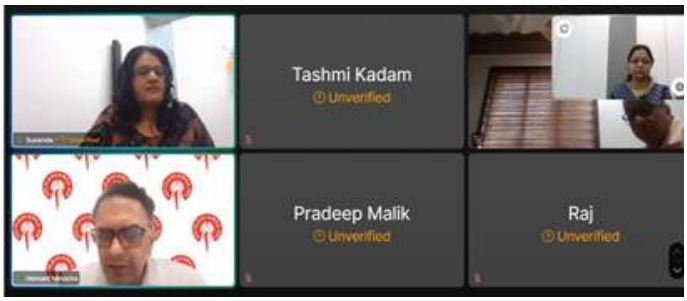
**PLEXCONNECT- Webinar on Recycle material in Food Contact Material Application on 14th March 2024 | Western Region:**

PLEXCONCIL organized a webinar for the “Recycle material in Food Contact Material Application”. The objective of this webinar was to enhance knowledge of participants about various regulations pertaining to “Recycle material in Food Contact material application when exporting to different countries.

Welcome address of the webinar was given by Mr. Hemant Minocha, Chairman, PLEXCONCIL. Ms. Sunanda Kadam, Regional General Manager-India & Middle East, Intertek Assuris gave presentation on introduction to Recycle Material, overview of Recycle packaging and recycle packaging requirements in Europe as per ESFA, India as FSSAI, United States as per US FDA. Webinar ended with vote of Thanks by Ms Bharti Parave, Deputy Director, Plexconcil

**Meeting with Commissioner of Industries, Govt. of Andhra Pradesh on 14th March 2024 | Southern Region:**

Mr. R. Dayanidhi, Asst. Director-South met with Commissioner of Industries, Govt. of Andhra Pradesh and other officials of Industries department to firm up their AP State Pavilion participation at Plexconnect 2024 show.




**Vapi Plast Show- 2024 on 15th March 2024 at Vapi, Gujarat | Western Region:**

Vapi Plast Show 2024 Exhibition was organized at VIA Ground Vapi from 15 to 18th March, 2024 in south Gujarat region for Plastic processing Machinery, Processors and Raw material by Sunline Infotech Events in association with Daman Industry Association and South Gujarat Plastics Manufacturers Association. Mr Naman Marjadi, Assistant Director, Plexconcil visited the exhibition and met exhibitors during the show. Exhibitors were briefed about benefits of Plexconcil membership and importance of participating in PLEXCONNECT 2024 to boost their exports. During the visit, meeting was also organized with office bearers of South Gujarat Plastics Manufacturers Association regarding their participation in Plexconnect 2024.

**Meeting on the issues relating to FTA with Eurasian Economic Union (EaEU) on 15th March 2024 | Eastern Region:**

Above meeting organised by Dept. of Commerce on 15th March 2024 under the chairmanship of Shri Anant Swarup, Additional Secretary, Department of Commerce. Mr Nilotpal Biswas, RD(East) joined the meeting online.

**India Pavilion at Cosmoprof Bologna 2024, Italy (21-24, March 2024) | Southern Region:**

HE Dr Neela Malhotra the Ambassador Embassy of India, Rome inaugurated the Indian Human Hair Pavilion at the CosmoProf worldwide Bologna show on 21st March 2024. The Indian human hair pavilion had 20 exhibitors representing pan India. The Ambassador interacted with the exhibitors and was well pleased with the councils initiative in getting the opening at this prestigious show in Europe for cosmetics and hair industry.

**Industry Interaction meet at CIPET: CSTS-Vijayawada on 26th March 2024 | Southern Region:**

The Industry Interaction Meeting was organised jointly by Commissioner of Industries, Govt. of AP and CIPET: CSTS-Vijayawada, the main agenda of the meeting is to interact with industries who were involved in plastics processing, Mould Designs, Plastics Testing and also to inform on the export opportunities by participating at Plexconnect 2024 show.

The meeting was addressed by Mr. R. Dayanidhi, Asst. Director-South, Plexconcil.

**VFS Special Window Visa service at Plexconcil R.O. Chennai on 26th March 2024 | Southern Region:**

The Plexconcil R.O. Chennai facilitated VFS Special Window Visa service for its Members participating in TECHTEXTIL 2024 at Germany.

**TAPMA Sub-Committee Meeting at R.O. Chennai on 29th March 2024| Southern Region:**

The Council's Southern Regional office facilitated in organising the Sub-Committee meeting of TAPMA at R.O. Chennai premises on 29th March 2024.

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# Pranay Kumar

**Circular Economy Specialist, Founder & Chief Sustainability Officer, Vasudhaecofriends Projects and Managing Trustee, Ecochakra Abhiyan Trust**

## Taking the Path to Sustainability in Agriculture

Transitioning towards sustainable agricultural practices is imperative for India's future prosperity. Leveraging innovative technologies, government initiatives, and grassroots efforts, the nation aims to minimize plastic pollution while enhancing productivity and farmer livelihoods. From promoting circular economy principles to fostering market integration and empowering rural entrepreneurs, India is forging a path towards a more resilient and sustainable agricultural sector.

Recognizing the crucial role of plastics in modern agriculture, Pranay Kumar, Circular Economy Specialist, Founder & Chief Sustainability Officer, Vasudhaecofriends Projects and Managing Trustee, Ecochakra Abhiyan Trust shares his thoughts on how we can seek innovative solutions to minimize plastic pollution while maximizing agricultural productivity and sustainability. He also shares an example of how through strategic utilization of plastics in farming practices, efforts are being made in India to address environmental challenges while enhancing food security and economic resilience.

(excerpts)

**There are the recent conversations suggesting environmental concerns associated with the accumulation of micro-, and nanoplastics in soils and other agricultural environments. How do these impact soil health and ecosystem functions?**

While concerns regarding microplastics in the environment, particularly in water and marine ecosystems, are valid, they should not overshadow the critical conversations and actions needed for climate change mitigation and addressing other pollutants, such as fossil fuels. Recent reports, such as the one by Oil Change International and Friends of the Earth, USA, have revealed significant investments in fossil fuels by G20 countries and multilateral development banks, despite pledges to reduce reliance on them.

It's essential to recognize that a substantial portion of oil consumption—97%—is attributed to industrial, vehicular, and related uses, causing direct damage to human health, soil, water, and air due to emissions and associated heavy metals from diesel and petrol nanoparticles. Engaging in activities like driving oil-powered vehicles to protest plastic pollution may inadvertently contribute to further environmental harm and increased greenhouse gas emissions, including the release of micro rubber particles from tires.

While advocating for the restriction and banning of single-use plastic items is crucial, addressing behavioral patterns around disposal practices is equally important. Implementing the principles of the Circular Economy, such as the 10 Rs, within the plastics and packaging industry can significantly reduce our plastic footprint while fostering productivity, profitability, and job creation in innovative sectors.

I believe in India adopting R0 Refuse, R1 Rethink, R2 Reduce, R3 Reuse, R4 Repair, R5 Refurbish specially in Electronics and Electrical Industry), R6 Remanufacture, R7 Repurpose, R 8 Recycle and R9 Recover. While Recycling is being hugely supported across the world and India, we must consider R8 and R9 as the last options. As India has one of the best Plastic and Solid Waste Management policies including EPR, it is possible to integrate rest of the Rs easily, as Indians traditionally practice many Rs like Reuse and Repair.

RETHINK PLASTIC

India's potential to adopt the 10 Rs, particularly emphasizing Rethink in design and leveraging digital technologies like AI, augmented reality, virtual reality, and blockchain, holds promise for driving creativity, innovation, and sustainable product development. Embracing traditional practices once again like refilling for local use can further reduce plastic consumption.

Furthermore, scientific studies indicating the biodegradation of major polymers such as PE, PP, PET by microbes underscore nature's ability to recycle materials over time. Trusting in nature's processes and focusing on effective waste management strategies can complement efforts to combat plastic pollution.

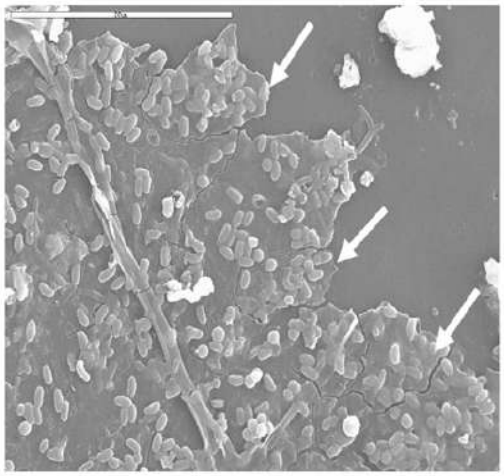


Photo 6. TBW3000b. Attached and desiccated biofilm in lower left half of image; edge is indicated by arrows. In upper right, the biofilm has sloughed off, exposing the bare plastic surface. Original magnification = 3000x. Scale bar = 20 µm.

*Biodegraded laminate of PE & BoPET under Microscope: Courtesy BioD*

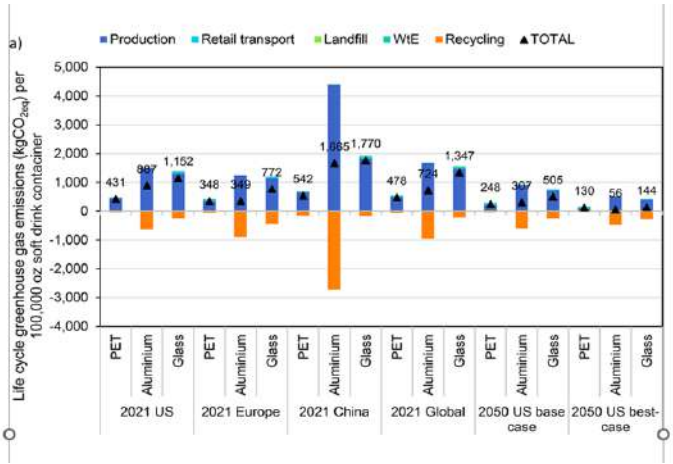
While concerns about the effects of nano plastics persist, it's crucial to prioritize scientific consensus and allocate resources towards addressing pressing issues such as climate change mitigation, reducing fossil fuel dependency, and minimizing food waste.

The definition of nano plastics is still not agreed upon and effects of Nano plastics is unsubstantiated scientifically. However, to conclude, by integrating the principles of the Circular Economy, leveraging technological innovations, and trusting in nature's resilience, we can address plastic pollution while advancing broader sustainability goals.

**What are the primary benefits of using plastics ?**

Let's talk of Plastics first. Plasticity is a property of any material of being rigid. But the term, Plastic has come to mean, artificial polymers of all kinds, even the most flexible, and elastic like LLDPE or rubber.

Foremost, we must accept we live in the age of plastics. This Acceptance will further our actions to mitigate any pollution created by any raw material. Plastic has the lowest ecofootprint, meaning least usages on resources like water, energy and material with least pollution.




Advantages of Plastics:

- Plastics save millions of lives daily and have been crucial during the COVID-19 pandemic.
- India's White Revolution (milk distribution) and Gold Revolution (edible oil) were made possible by plastics.
- Thousands of essential items, including life-saving drugs, vaccines, and food supplies, have low environmental impact thanks to plastics, saving trillions of tons of greenhouse gas emissions.
- Access to health and nutrition for the masses is made cost-effective through the use of plastics, minimizing environmental impact.
- Food waste is a significant contributor to methane emissions, implicating humanity in climate change hypocrisy. Cooked food waste has a long pollution chain, from soil nutrients to transportation emissions, and should be addressed as a crime due to its environmental impact and cultural significance.

**How do the benefits of using plastics in agriculture weigh against the environmental risks they are perceived to pose, particularly in terms of soil degradation and water contamination?**

Climate change poses significant threats to India's agricultural sector, with erratic weather patterns disrupting crop production cycles and exacerbating vulnerabilities. The country's agriculture system is still in the process of fortifying resilience, particularly as staple grains remain heavily reliant on rainfall.

Insufficient infrastructure, including transportation, cold storage, and distribution networks, contributes to post-harvest losses, especially for perishable goods like fruits and vegetables.

High-value crops, such as apples and cut flowers, rely on effective plastic packaging for protection and marketability. The quality of packaging often determines consumer preferences, as seen in the preference for Kashmiri and Himachali apples over those from Uttarakhand.

Plastics play a crucial role in modern farming practices, including the use of mulch films in open farms, greenhouses, and aquaculture. They aid in moisture conservation, weed control, and temperature regulation, essential for ensuring crop yield and quality amidst changing climatic conditions.

One of the most used Plastic in Agriculture or Plasticulture is Agriculture mulch films, which has following numerous advantages:

- Early planting and accelerated growth due to favorable conditions facilitated by plastic coverings.
- Essential soil moisture retention, crucial for mitigating the impact of variable rainfall patterns and limited irrigation resources.
- Prevention of weed growth, leading to increased crop productivity and improved crop quality.
- Efficient optimization of fertilizer usage, resulting in cost savings for farmers and reduced reliance on imported gas for fertilizer production.
- Enhanced soil aeration and minimized root damage by preventing soil compaction caused by heavy rains and direct water flow.
- Improved quality of fruits, vegetables, and flowers by avoiding direct contact with soil, reducing the risk of contamination.
- Reduced labor and water irrigation requirements, resulting in cost savings and increased sustainability by minimizing water, fertilizer, and seed wastage and optimizing crop cycles for profitability.
- Soil solarisation is a technique, using transparent mulch film to kill harmful insects and pests such as nematodes and weed to increase productivity of the crop.

According to a FICCI, TATA Strategic Management Report , " Role of Plasticulture in next generation Agriculture ( 2016 ) 68,000 Crores of additional value can be generated by Plasticulture in our food systems.

Besides Mulch films, other plastics contributing to Crop protection, optimising and saving resources thus contributing to sustainable agriculture are:

- Drip and Sprinkler pipes to reduce water usage by almost 90 % !
- Crop tunnels for protection against pest
- Shades and Greenhouses plastics for reduction in intense sunlight and capture of heat
- Plastic lining and covers for ponds (for algae production and pisciculture) , canals (reduce vapour loss), aquaculture houses (for growing highly valued vegetables (lettuce, cherry tomatoes ) , fruits and flowers (tulips).

Plastic use in farming brings advantages like enhanced productivity, but drawbacks include increased costs for farmers and environmental concerns due to non-biodegradability. However, despite these limitations, the potential for expanding plasticulture from more developed states like Maharashtra to less developed regions such as Bihar, Bengal, and Odisha is promising. Such expansion could unlock substantial prosperity and agricultural growth, contributing to the overall advancement of these states and the nation as a whole.

**How can innovative technologies and practices, such as biodegradable and biobased plastics, recycling of plastics and closed-loop systems be leveraged to minimize plastic pollution in agricultural settings while maintaining productivity?**

Bioplastics are derived using natural polymers like starch and are biodegradable in presence of Air/ oxygen (aerobic conditions, also called compostable ISO 17088 ). There are Biodegradable plastics, which integrate with petro based plastics and biodegrade in aerobic and anaerobic environments. [ ISO 17088 & ISO 15985 ]

Both, Petro based Biodegradable plastics and Bio based biodegradable plastics can be used for Agriculture mulch films, Fruits, vegetables and flowers packaging without causing damage to the soil and supply chain. Petro based Biodegradable plastics can remarkably be used for 2-3 times, thus reducing the cost by more than 66% and reducing the usage of even these plastics.

Recycling of plastics ensures proper disposal and reuse, while closed-loop systems promote circularity by reintegrating plastics into production processes. Implementing these strategies fosters sustainable agricultural practices, mitigating plastic pollution while sustaining productivity.


**What role can policy frameworks, such as the proposed Plastics Treaty (UNEA-5.2), play in regulating the use of plastics in agriculture and promoting more sustainable practices? How might these regulations impact agricultural producers and stakeholders economically?**

India's robust Plastic Waste Management rules present a prime opportunity to transition from a linear "make, use, and throw" culture to a circular economy model. Leveraging initiatives like the UNEP plastic treaty aligned with circular economy principles can significantly enhance and expand the economy. Government support, including funding micro and mini entrepreneurs akin to angel investors, and utilizing CSR funds for innovation implementation, can catalyze the emergence of new business domains. For instance, promoting refill and reuse businesses at the local level could lead to a substantial reduction in plastic waste, exemplified by initiatives like Rent a Cutlery in Bangalore. This shift not only benefits society but also holds the potential to boost exports manifold within a decade.

In agriculture, transitioning to sustainable practices can actually decrease upfront costs. Firstly, input costs for fertilizers, electricity for pumps, pesticides, and water can decrease by 30 to 90% for specific resources. Secondly, ongoing expenses and time invested by farmers can decrease, freeing up time for other opportunities or improving their social lives. Thirdly, profitability can increase due to enhanced productivity of input resources as pure farm produce will fetch better value in the health conscious market and buyers.

**How can governments and stakeholders collaborate to ensure effective awareness, enforcement of regulations and implementation aimed at reducing plastic pollution and implementing sustainable and climate resilience in agricultural contexts? How can these be monitored.**

The Central government designs effective systems and rules for implementation, which are crucial in India's federal system where the smallest units are responsible. Village committees and officers must collaborate with farmers and utilize central resources to establish a new farm economy that aligns with global standards and integrates seamlessly with buyers and partners worldwide.

Awareness campaigns in vernacular languages and the use of IT-enabled media can significantly multiply the efforts of the Central government, particularly in a diverse country like India where agricultural practices vary regionally.

Monitoring and indexing each region's sustainable farming practices by the Agriculture and Commerce Ministries, akin to Swachh Bharat Abhiyan, can foster cross-breeding of ideas, expand markets, and fund rural entrepreneurs for localized agro-waste utilization and food processing.

Integration of the agriculture market across India, akin to FMCG, requires an IT-enabled push and the freeing of farmers to sell their produce nationwide, fostering innovation and competition.

Dissemination of scientific knowledge on water use, synthetic and natural fertilizers, plasticulture, solar pumps, greenhouses, and circular agriculture via social media by the government, Indian NGOs, and multilateral agencies can empower farmers and organizations, including those contributing to CSR funds, to adopt sustainable practices and create new businesses.

And as Eleanor Roosevelt said “The future is literally in our hands to mold as we like. But we cannot wait until tomorrow. Tomorrow is now”

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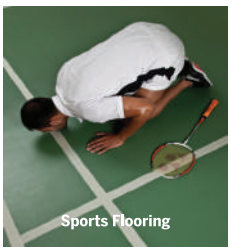





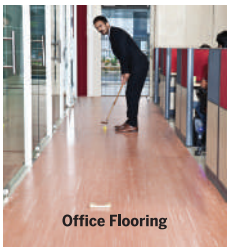


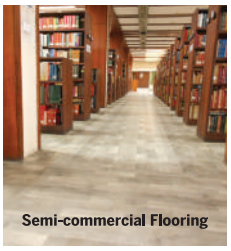


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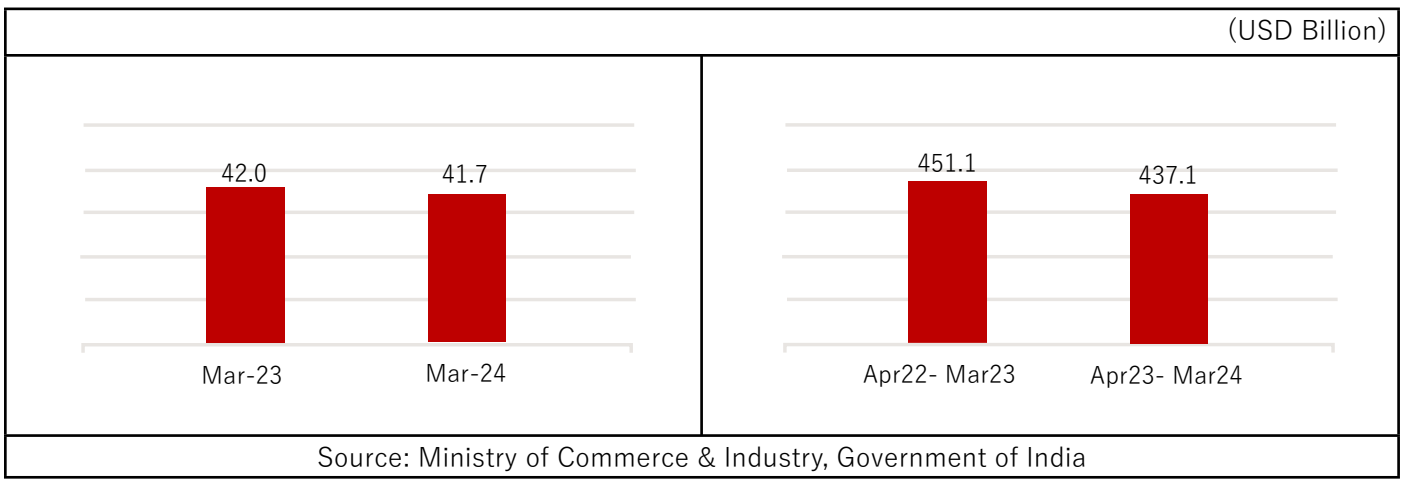
# Export Performance – March 2024

## TREND IN OVERALL EXPORTS

India reported merchandise exports of USD 41.7 billion in March 2024, lower by 0.7% from USD 42.0 billion in March 2023. Cumulative value of merchandise exports during April 2023 – March 2024 was USD 437.1 billion as against USD 451.1 billion during the same period last year, reflecting a decline of 3.1%.

**Exhibit 1: Trend in overall merchandise exports from India**

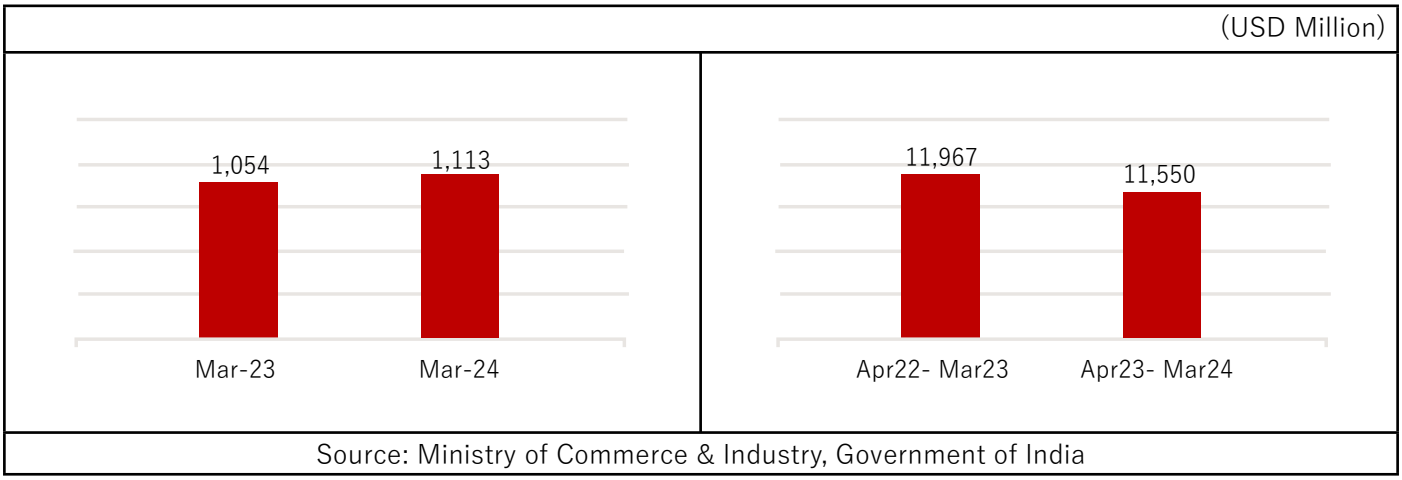



Source: Ministry of Commerce & Industry, Government of India

## TREND IN PLASTICS EXPORT

During March 2024, India exported plastics worth USD 1,113 million, higher by 5.6% from USD 1,054 million in March 2023. Cumulative value of plastics export during April 2023 – March 2024 was USD 11,550 million as against USD 11,967 million during the same period last year, registering a decline of 3.5%.

**Exhibit 2: Trend in plastics export by India**




Source: Ministry of Commerce & Industry, Government of India

## PLASTICS EXPORT, BY PANEL

In March 2023, most of the product panels, namely, Plastic films and sheets; FIBC, Woven sacks, Woven fabrics, Tarpaulin; Floorcoverings, leathercloth & laminates; Packaging items - flexible, rigid; Plastic pipes & fittings; FRP & Composites; Plastic raw materials; Medical items of plastics; Cordage, fishnets & monofilaments; and Human hair & related products reported higher exports. However, product panels like Miscellaneous products and items nes; Consumer & houseware products; and Writing instruments & stationery reported a negative growth in exports.

**Exhibit 3: Panel-wise % growth in plastics export by India**

| Panel | Mar-23 (USD Mn) | Mar-24 (USD Mn) | Growth (%) | Apr 22- Mar-23 (USD Mn) | Apr 23- Mar-24 (USD Mn) | Growth (%) |
|---|---|---|---|---|---|---|
| Consumer & houseware products | 71.6 | 69.7 | -2.6% | 752.6 | 828.1 | +10.0% |
| Cordage, fishnets & monofilaments | 25.3 | 26.2 | +3.7% | 272.6 | 259.8 | -4.7% |
| FIBC, woven sacks, woven fabrics, & tarpaulin | 110.7 | 128.5 | +16.1% | 1,405.4 | 1,354.6 | -3.6% |
| Floorcoverings, leathercloth & laminates | 57.2 | 68.1 | +19.0% | 579.9 | 693.7 | +19.6% |
| FRP & Composites | 38.0 | 44.9 | +18.4% | 425.1 | 480.1 | +12.9% |
| Human hair & related products | 75.9 | 79.9 | +5.2% | 683.9 | 765.0 | +11.9% |
| Medical items of plastics | 44.1 | 48.7 | +10.4% | 493.0 | 537.4 | +9.0% |
| Miscellaneous products & items nes | 89.1 | 59.1 | -33.6% | 1,031.9 | 715.9 | -30.6% |
| Packaging items - flexible, rigid | 51.9 | 62.3 | +20.2% | 624.7 | 633.7 | +1.4% |
| Plastic films & sheets | 154.6 | 176.8 | +14.3% | 1,818.1 | 1,750.2 | -3.7% |
| Plastic pipes & fittings | 23.4 | 30.4 | +30.2% | 290.4 | 289.6 | -0.3% |
| Plastic raw materials | 287.0 | 293.4 | +2.2% | 3,322.3 | 2,987.9 | -10.1% |
| Writing instruments & stationery | 25.0 | 24.5 | -2.0% | 266.9 | 254.0 | -4.8% |
| | 1,053.7 | 1,112.7 | +5.6% | 11,966.7 | 11,549.9 | -3.5% |

Source: Ministry of Commerce & Industry, Government of India

Exports of **Consumer & houseware products** witnessed a slight decline of 2.6% in March 2024 on account of lower sales of Other builders ware of plastics (39259090) and tooth brushes of plastics (96032100). India's export of tooth brushes has fallen to key destinations including the United States, Brazil, South Korea and Indonesia due to increased competition from Viet Nam.

Exports of **Cordage, fishnets & monofilaments** increased by 3.7% in March 2024 due to improved sales of twine, cordage, ropes and cables of polyethylene or polypropylene (560749) and made-up fishing nets (560811). It may be noted that India reported its highest-ever monthly export of made-up fishing nets during March 2024. India also closed this financial year with record high exports of made-up fishing nets.

In March 2024, the export of **FIBC, woven sacks, woven fabrics, & tarpaulin** showed a positive growth of 16.1% due to higher sales of sacks and bags of plastics (39232990) and flexible intermediate bulk containers (630532).

Export of **Floor coverings, leather cloth & laminates** surged by 19.0% during March 2024 on account of higher sales of floor coverings of polymers of vinyl chloride (391810); decorative laminates (48239019) and textile fabrics impregnated, coated, covered or laminated with plastics (590390). India closed this financial year with record high exports of decorative laminates.

Export of **FRP & Composites** demonstrated a growth of 18.4% during March 2024. This notable increase was due to higher exports of articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s (39269099).

Export of **Human hair & related products** moved up by 5.2% in March 2024 on account of higher sales of human hair, dressed, thinned and bleached (67030010) to China. India closed this financial year with record high exports of human hair, unworked (05010010).

**Medical items of plastics** exports were up by 10.4% in March 2024 due to increase in sales of spectacle lenses (90015000); syringes (90183100); catheters (90183910, 90183920); and cannulae (90183930). India closed this financial year with record high exports of spectacle lenses, contact lenses, syringes, and catheters.

Export of **Miscellaneous products & items nes** fell by 33.6% in March 2024 due to lower shipments of optical fibres, optical fibre bundles and cables (90011000).

**Packaging items - flexible, rigid** export increased by 20.2% on account of higher sales of sacks and bags of plastics (392321); caps and closures of plastics (392350); and other articles for the conveyance or packaging of goods (39239090).

In March 2024, the export of **Plastic films & sheets** was higher by 14.3% due to increased sales of self-adhesive films and sheets of plastics (3919); flexible films and sheets of polyethylene terephthalate (39206220); other sun and dust control films of plastics (39206929); and other flexible metallised films and sheets of plastics (39219094).

Export of **Plastic pipes & fittings** increased by 30.2% as higher sales of flexible tubes, pipes and hoses, having a minimum burst pressure of 27.6 MPa (39173100); and fittings like joints, elbows and flanges of plastics (391740) supported the growth. India closed this financial year with record high exports of tubes and pipes of polymers of vinyl chloride; and fittings like joints, elbows and flanges of plastics.

**Plastics raw materials** exports moved up by 2.2% in March 2024 due to a rise in sales of polyethylene having a specific gravity of 0.94 or more (390120); other acrylic polymers (39069090); other poly ethers (39072990); polyethylene terephthalate (390769).

Export of **Writing instruments & stationery** declined by 2.0% in March 2024 due to lower sales of ball- point pens (96081019).

**Exhibit 4: Details of % change seen in top 50 items of export**

| HS Code | Description | Apr 22- Mar-23 | Apr 23- Mar-24 | Growth |
|---|---|---|---|---|
| | | (USD Mn) | (USD Mn) | (%) |
| 63053200 | Flexible intermediate bulk containers | 861.1 | 785.4 | -8.8% |
| 90011000 | Optical fibres, optical fibre bundles and cables | 703.0 | 363.6 | -48.3% |
| 39076190 | Polyethylene terephthalate: Other primary form | 590.4 | 322.1 | -45.4% |
| 67030010 | Human hair, dressed, thinned, bleached or otherwise worked | 498.6 | 574.5 | +15.2% |
| 39269099 | Articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s: Other | 417.3 | 471.9 | +13.1% |
| 39232990 | Other sacks and bags, incl. cones, of plastics | 411.2 | 430.2 | +4.6% |
| 39021000 | Polypropylene, in primary forms | 365.5 | 360.6 | -1.3% |
| 48239019 | Decorative laminates | 286.0 | 308.7 | +7.9% |
| 39202020 | Plates, sheets, film, foil and strip, of non-cellular polymers of ethylene: Flexible, plain | 251.8 | 204.6 | -18.8% |
| 39269080 | Articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s: Polypropylene articles, not elsewhere | 212.2 | 222.2 | +4.7% |
| 39206220 | Plates, sheets, film, foil and strip, of non-cellular polyethylene terephthalate: Flexible, plain | 211.1 | 220.7 | +4.5% |
| 39232100 | Sacks and bags, incl. cones, of polymers of ethylene | 205.8 | 206.7 | +0.5% |
| 39069090 | Other acrylic polymers, in primary forms | 203.2 | 213.1 | +4.9% |
| 39076990 | Polyethylene terephthalate: Other primary form | 196.9 | 142.0 | -27.9% |
| 39239090 | Articles for the conveyance or packaging of goods, of plastics: Other | 174.2 | 188.2 | +8.0% |
| 05010010 | Human hair, unworked; whether or not washed or scoured | 169.2 | 179.6 | +6.1% |
| 39202090 | Plates, sheets, film, foil and strip, of non-cellular polymers of ethylene: Other | 153.4 | 149.4 | -2.6% |
| 39046100 | Polytetrafluoroethylene, in primary forms | 152.6 | 122.7 | -19.6% |
| 90015000 | Spectacle lenses of materials other than glass | 146.3 | 174.7 | +19.4% |
| 96081019 | Ball-point pens | 140.1 | 134.6 | -3.9% |
| 90183930 | Cannulae | 138.7 | 132.9 | -4.2% |
| 39011090 | Polyethylene with a specific gravity of < 0,94, in primary forms: Other | 124.5 | 98.5 | -20.9% |
| 59039090 | Textile fabrics impregnated, coated, covered or laminated with plastics other than polyvinyl chloride or polyurethane: Other | 121.4 | 181.0 | +49.1% |
| 56074900 | Twine, cordage, ropes and cables of polyethylene or polypropylene | 118.1 | 111.8 | -5.3% |
| 39219099 | Plates, sheets, film, foil and strip, of plastics, reinforced, laminated, supported or similarly combined with other materials: Other | 111.7 | 120.4 | +7.8% |
| 39046990 | Other fluoro-polymers of vinyl chloride or of other halogenated olefins, in primary forms | 105.7 | 88.0 | -16.7% |
| 96032100 | Tooth brushes | 99.7 | 79.3 | -20.5% |
| 39219094 | Plates, sheets, film, foil and strip, of plastics, reinforced, laminated, supported or similarly combined with other materials: Flexible, metallised | 99.1 | 84.9 | -14.4% |
| 54072090 | Woven fabrics of strip or the like, of synthetic filament, incl. monofilament of >= 67 decitex and with a cross sectional dimension of <= 1 mm: Other | 99.1 | 111.5 | +12.6% |

| | | | | |
|---|---|---|---|---|
| 39206919 | Plates, sheets, film, foil and strip, of non-cellular polyesters, not reinforced, laminated, supported or similarly combined with other materials: Other | 95.3 | 95.8 | +0.6% |
| 39073010 | Epoxy resins | 95.1 | 62.1 | -34.7% |
| 39206290 | Plates, sheets, film, foil and strip, of non-cellular polyethylene terephthalate, not reinforced, laminated, supported or similarly combined with other materials: Other | 95.1 | 78.4 | -17.6% |
| 39129090 | Other cellulose and chemical derivatives thereof, n.e.s., in primary forms | 92.0 | 101.3 | +10.2% |
| 39241090 | Other tableware and kitchenware, of plastics | 90.2 | 99.6 | +10.5% |
| 39095000 | Polyurethanes, in primary forms | 89.7 | 79.8 | -11.1% |
| 39199090 | Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics, whether or not in rolls > 20 cm wide: Other | 88.1 | 118.0 | +33.9% |
| 39140020 | Ion-exchangers based on polymers of heading 3901 to 3913, in primary forms | 85.3 | 80.8 | -5.3% |
| 39014010 | Linear low-density polyethylene | 83.6 | 131.2 | +57.0% |
| 39204900 | Plates, sheets, film, foil and strip, of non-cellular polymers of vinyl chloride, containing by weight < 6% of plasticisers, not reinforced, laminated, supported or similarly combined with other materials | 83.2 | 78.5 | -5.6% |
| 39219096 | Plates, sheets, film, foil and strip, of plastics, reinforced, laminated, supported or similarly combined with other materials: Flexible, laminated | 80.0 | 67.8 | -15.2% |
| 39119090 | Other polysulphides, polysulphones and other polymers and prepolymers produced by chemical synthesis, n.e.s., in primary forms | 77.5 | 96.5 | +24.4% |
| 59031090 | Other textile fabrics impregnated, coated, covered or laminated with polyvinyl chloride | 75.2 | 74.4 | -1.1% |
| 39235010 | Stoppers, lids, caps and other closures, of plastics | 68.6 | 68.0 | -0.9% |
| 39100090 | Silicones in primary forms: Other | 68.0 | 52.0 | -23.6% |
| 39249090 | Other household articles and toilet articles, of plastics | 68.0 | 66.7 | -1.9% |
| 39172390 | Rigid tubes, pipes and hoses, and fittings therefor, of polymers of vinyl chloride: Other | 67.3 | 70.7 | +5.0% |
| 39201019 | Plates, sheets, film, foil and strip, of non-cellular plastics, not reinforced, laminated, supported or similarly combined with other materials: Other | 65.8 | 71.2 | +8.1% |
| 39206929 | Plates, sheets, film, foil and strip, of non-cellular polyesters, not reinforced, laminated, supported or similarly combined with other materials: Other | 65.6 | 65.1 | -0.8% |
| 39019000 | Other ethylene-alpha-olefin copolymers, having a specific gravity of less than 0.94 | 65.0 | 60.2 | -7.4% |
| 39011020 | Low density polyethylene | 64.9 | 21.4 | -67.0% |

Source: Ministry of Commerce & Industry, Government of India

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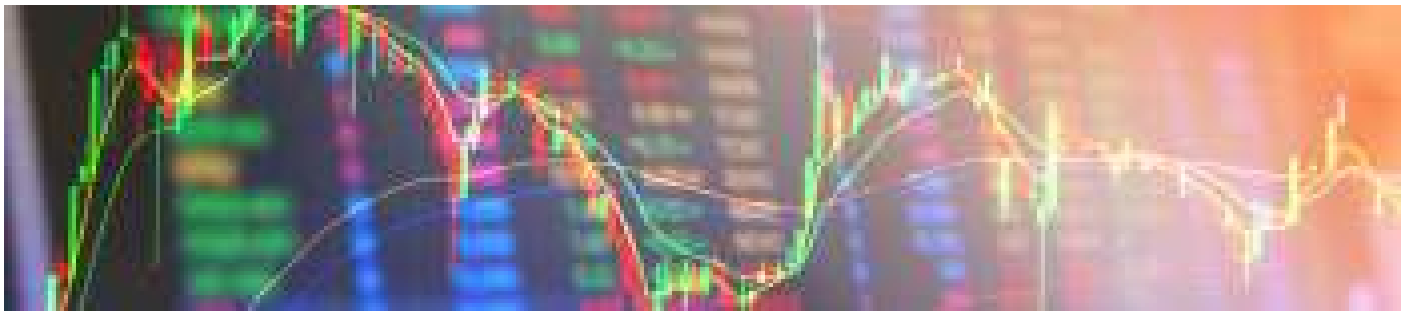

# POLYMER PRICE TRACKER (DOMESTIC MARKET) MARCH 2024

| | |
|---|---|
| **High Density Polyethylene (HDPE)**<br>↑ ↑ ↔<br>Jan-24 Feb-24 Mar-24 | • HDPE prices remained unchanged in March 2024. HDPE prices were up by Rs 1,000 per MT in February 2024 and by Rs 1,500 per MT in January 2024.<br>• In March 2024, HDPE prices remained flat with no changes whatsoever being announced during the entire month. |
| **Linear Low-Density Polyethylene (LLDPE)**<br>↑ ↔ ↔<br>Jan-24 Feb-24 Mar-24 | • LLDPE prices remained unchanged for the second consecutive month in March 2024. LLDPE prices had increased by Rs 3,500 per MT in January 2024.<br>• In March 2024, LLDPE prices remained flat with no changes whatsoever being announced during the entire month. |
| **Low Density Polyethylene(LDPE)**<br>↑ ↑ ↑<br>Jan-24 Feb-24 Mar-24 | • LDPE prices inched up by Rs 1,500 per MT in March 2024 after an increase of Rs 3,000 per MT in February 2024 and Rs 6,000 per MT in January 2024.<br>• In March 2024, LDPE prices were up by Rs 1,500 per MT during the first half of the month. Thereafter no price changes were announced. |
| **Polypropylene (PP)**<br>↑ ↑ ↔<br>Jan-24 Feb-24 Mar-24 | • PP prices remained unchanged in March 2024. PP prices were higher by Rs 1,500 per MT in February 2024 and by Rs 4,000 per MT in January 2024.<br>• In March 2024, PP prices remained flat with no changes whatsoever being announced during the entire month. |
| **Polyvinyl Chloride (PVC)**<br>↓ ↑ ↑<br>Jan-24 Feb-24 Mar-24 | • PVC prices moved up by Rs 1,000 per MT in March 2024 after witnessing a similar increase in February 2024. PVC prices had declined by Rs 3,000 per MT in January 2024.<br>• In March 2024, PVC prices were up by Rs 1,000 per MT in the first week of the month itself. Thereafter no price changes were announced. |

Source: Industry, Plexconcil Research

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# Aditya Kashikar

**International Trade Consultant**

## The Relationship of Exports, Forex & MSMEs in India

India's exports have been witnessing unprecedented growth in recent years. These are the highest common denominators that attest to the fact that India is emerging as an economic powerhouse and MSMEs operating in India have fuelled comprehensive growth and contributed in a profound manner towards constructing radiating global India. In addition to numerous challenges, one of the primary hurdles that emerge are Payment defaults and currency fluctuations mainly because costs are in rupees and revenues are in foreign currencies making it important to manage risk due to Forex fluctuations.

In this interview, Aditya Kashikar, International Trade Consultant explains the correlation between India's MSME, Exports & Forex.

(excerpts)z

**What specific contributions do MSMEs make to India's plastic exports, both in terms of production and innovation?**

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in India's plastic industry, contributing significantly to both production and innovation. MSMEs are responsible for manufacturing a diverse array of plastic products, including packaging materials, consumer goods, and industrial components, constituting a substantial portion of India's plastic goods output.

These enterprises are major job creators, offering employment opportunities to millions across various skill levels, thereby fostering economic growth and livelihoods nationwide. Additionally, MSMEs form an integral part of the plastic industry's supply chain, supplying raw materials, semi-finished products, and components to larger manufacturers and exporters.

In terms of innovation, MSMEs exhibit agility by adapting existing technologies or customizing products to meet specific market demands swiftly enabling them in exploring new product lines, experimenting with materials, and developing innovative plastic products.

By focusing on enhancing production processes, optimizing resource utilization & minimizing waste, they demonstrate improved efficiency gains and cost savings. Some MSMEs also engage in collaborations with research institutions and universities to develop novel plastic materials, recycling techniques, and sustainable practices, further driving innovation within the industry.

**How do MSMEs in the plastics industry utilize government incentives and support schemes to enhance their export capabilities?**

Micro, Small, and Medium Enterprises (MSMEs) in the plastics industry can leverage various government incentives and support schemes to bolster their export capabilities. Let's explore some of these initiatives:

1. MSME Champions Scheme:
- This Central Sector Scheme aims to promote competitiveness among MSMEs through three components:

**a** MSME-Sustainable (ZED): Encourages wastage reduction through Lean Manufacturing.
**b** MSME-Competitive (Lean): Supports design improvement and awareness on Intellectual Property Rights.
**c** MSME-Innovative: Facilitates incubation, IPR, design, and digital MSMEs.

- The objective is to modernize manufacturing

processes, reduce wastage, encourage innovation, and enhance business competitiveness. It also facilitates national and global reach for MSMEs.

2. Production Linked Incentive (PLI) Schemes:
- These schemes, with an outlay of Rs. 1.97 lakh crore (over US$26 billion), aim to enhance India's manufacturing capabilities and exports.
- By participating in PLI schemes, MSMEs in the plastics industry can benefit from financial incentives and support.

3. Export Promotion Schemes:
- While not specific to plastics, MSMEs can explore existing export promotion schemes.
- These schemes may include financial assistance, market development, and export facilitation.
- MSMEs should actively engage with relevant government bodies to access these benefits.

4. Tax Benefits:
- MSMEs can take advantage of tax benefits provided by the government.
- These may include exemptions, deductions, or reduced tax rates.
- Consult with tax experts to optimize tax planning and compliance.

5. Skill Development Programs:
- Enhancing the skills of the workforce is crucial for export readiness.
- MSMEs can participate in skill development programs funded by the government.
- Upskilling employees improves productivity and quality.

**What challenges do MSMEs face in accessing foreign markets for their products, and how can they overcome these challenges?**

When venturing into foreign markets, Micro, Small, and Medium Enterprises (MSMEs) in India face numerous challenges with their products. To put in a nutshell:

Competitiveness and Quality Compliance: Need to meet/ comply with international quality standards to compete.
Solution: Focus on product quality, improve manufacturing efficiencies, invest in R&D, comply with regulations, and obtain necessary certifications.

Export Knowledge and Expertise: Lack of understanding about export procedures and market dynamics.
Solution: Seek guidance from export promotion agencies and attend workshops.

High Export Costs: Strain on resources due to logistics, shipping, and customs duties.
Solution: Explore cost-effective shipping options and negotiate with providers.

Marketing and Branding Challenges: Difficulty in creating a strong brand presence.
Solution: Invest in branding and digital marketing, participate in trade fairs.

Market Information Gap: Limited access to accurate market data.
Solution: Collaborate with trade associations and use market research services.

Inadequate Market Linkages: Challenges in connecting with distributors and buyers.
Solution: Network, participate in trade missions, and leverage e-commerce.

Infrastructure Constraints: Hindered access due to inadequate transportation and communication.
Solution: Advocate for improved infrastructure and use technology for communication.

Currency Fluctuations and Payment Risks: Risks related to currency exchange rates and delayed payments.
Solution: Hedge against currency fluctuations and use secure payment mechanisms.

**How does the exchange rate of the Indian Rupee against major foreign currencies impact the competitiveness of Indian plastic exports in international markets?**

The exchange rate of the Indian Rupee (INR) against major foreign currencies significantly affects the competitiveness of Indian plastic exports in international markets. When the INR depreciates, Indian plastic exports become more competitive globally, as a weaker rupee makes products cheaper for foreign buyers, potentially increasing demand and benefiting exporters with higher revenue upon conversion. Additionally, an undervalued INR enhances price competitiveness, while a favorable exchange rate can improve India's trade balance by boosting exports. Exporters often employ hedging strategies to manage currency risk, especially if further depreciation is expected. Global economic factors, including geopolitical uncertainties and monetary policies, also influence the INR's value, further impacting the competitiveness of Indian plastic exports.

**What strategies do MSMEs employ to hedge against currency fluctuations and minimize the risks associated with Forex volatility?**

MSMEs facing currency risk in international business can employ these strategies to hedge against Forex volatility:

- Forward Contracts: Lock in exchange rates for future transactions to mitigate adverse currency movements.
- Currency ETFs: Use ETFs to offset portfolio exposure to currency fluctuations, investing in short ETFs if expecting currency value declines.
- Currency Swaps: Manage long-term currency exposure by exchanging cash flows in different currencies.
- Currency Options: Hedge against unfavorable currency movements with flexible options contracts, utilizing call and put options.
- Hedged Foreign Bond Funds: Invest in hedged funds to neutralize currency fluctuations' impact on bond returns, reducing exposure to currency volatility.

**To what extent does India's Forex reserves influence the stability and growth of its plastic exports, especially during economic downturns or global market uncertainties?**

India's foreign exchange reserves, managed by the Reserve Bank of India (RBI), are instrumental in ensuring the stability and growth of its currency and economy, thereby influencing the performance of its plastic exports, particularly during economic downturns or global market uncertainties.

Comprising foreign currency assets, gold reserves, Special Drawing Rights (SDR), and India's reserve position in the International Monetary Fund (IMF), these reserves act as a cushion, enabling the country to meet external obligations and manage exchange rates effectively.

In times of economic uncertainty, substantial forex reserves provide liquidity, stabilizing the currency and preventing abrupt depreciation, thus fostering investor confidence and supporting economic growth, which in turn positively impacts plastic exports.

The RBI utilizes forex reserves to manage monetary policies, indirectly benefiting the plastic industry. Historical trends indicate that factors like foreign direct investments, IT and service exports, and prudent economic policies have influenced India's forex reserves. The stability and growth of these reserves, coupled with increased exports, significantly contribute to the growth of the plastic industry, reinforcing economic stability and resilience amidst global uncertainties.

**How does the availability of Forex impact the ability of MSMEs to import raw materials and machinery necessary for plastic production, and subsequently affect their export competitiveness?**

Foreign exchange (Forex) availability significantly shapes the trajectory of Micro, Small, and Medium Enterprises (MSMEs), particularly in India's plastic industry. These enterprises heavily rely on Forex to import crucial raw materials and machinery essential for plastic production. When Forex is readily accessible, it streamlines the procurement process, enabling MSMEs to purchase necessary inputs from international markets efficiently. Moreover, favorable Forex conditions contribute to lower import costs, thereby enhancing the compet-

itiveness of MSMEs in both domestic and international markets. Conversely, scarcity or fluctuations in Forex rates can lead to increased import costs, posing challenges for MSMEs in procuring essential inputs.

Currency depreciation and appreciation also play a pivotal role in shaping the fortunes of MSMEs in the plastic industry. Depreciation of the local currency can benefit exporters by making their products more competitively priced in foreign markets. However, this may also lead to increased costs for importing raw materials and machinery, potentially offsetting the gains from exports. On the other hand, currency appreciation may lower import costs, but it can diminish export competitiveness as products become relatively more expensive for foreign buyers.


**How are government policies regarding Forex management and trade facilitation tailored to support the growth of MSMEs in the plastics sector and boost their export potential?**

Let's see how government policies are designed to bolster the growth of Micro, Small, and Medium Enterprises (MSMEs) in the plastics sector and enhance their export potential.

1. Foreign Trade Policy (FTP) 2023:
- The recently announced Foreign Trade Policy 2023 is a dynamic and open-ended policy that aims to accommodate emerging needs. Key highlights include:

**a** Incentives to Remission: Encouraging exports by providing incentives.
**b** Export Promotion through Collaboration: Collaborating with exporters, states, districts, Indian missions, and other stakeholders.
**c** Ease of Doing Business: Reducing transaction costs and promoting e-initiatives.
**d** Emerging Areas: Focusing on e-commerce, developing export hubs, and streamlining SCOMET (Special Chemicals, Organisms, Materials, Equipment, and Technologies) policy.
**e.** The overarching vision is to elevate India's exports to 2 trillion dollars by 2030.

2. Measures for MSMEs:
- The Government of India has taken several steps to enhance MSME exports:

**a.** Make in India Program: Encouraging domestic manufacturing and export-oriented production.
**b**. Ease of Doing Business: Simplifying processes for MSMEs.
**c**. MUDRA: Improving credit availability.
**d.** Stand Up India: Promoting entrepreneurship among marginalized sections.
**e** Schemes and Programs: The Ministry of MSME has launched various schemes to facilitate MSME development.

3. Foreign Trade Policy Extension:
- The Foreign Trade Policy has been extended to provide stability during the Covid-19 pandemic.
- Schemes like the Advance Authorization Scheme and the Export Promotion Capital Goods (EPCG) Scheme enable duty-free import of raw materials and capital goods for export production.

I hope, this article helped you to get insights about the relationship of Exports, Forex & MSMEs in India, so that you can decide your business (import-export) strategy in more dynamic and effective manner by leveraging this information.

If you have any questions or comments, please do not hesitate to approach me!

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# SILICONES

Silicones are modern synthetic products that have unique properties unsurpassed in their versatility by any other polymer. Silicones are flexible and resist moisture, chemicals, heat, cold and ultraviolet radiation. Due to these numerous advantages, Silicones are used across a range of industries including automotives, building and construction, personal care products, electronics, healthcare, and textiles among others. Silicones in primary forms incl. resin and oil are classified under Subheading 391000 of the Harmonized System (HS) of Coding.

World-wide import of Silicones is valued at USD 1.1 billion per year approximately.

- In 2022, top-5 exporting countries of Silicones were: China (23.0%), United States of America (17.7%), Japan (10.6%), Belgium (8.0%), and the United Kingdom (6.6%).
- Likewise, top-5 importing countries of Silicones were: United States of America (10.9%), China (7.9%), Germany (6.7%), Belgium (6.4%) and South Korea (5.3%).

In 2023, India exported 20,888 tonnes of Silicones valued at USD 70.3 million to the world. Indonesia and Bangladesh were the top-2 export destinations both in terms of value as well as volume.

| Destination Country | Value (USD Mn) | Destination Country | Qty. (tonnes) |
|---|---|---|---|
| Indonesia | 11.9 | Indonesia | 3,666 |
| Bangladesh | 9.9 | Bangladesh | 3,470 |
| Thailand | 5.9 | Thailand | 1,776 |
| United States of America | 5.2 | United States of America | 1,429 |
| Viet Nam | 4.2 | Viet Nam | 1,147 |
| United Arab Emirates | 2.8 | Türkiye | 962 |
| Türkiye | 2.5 | United Arab Emirates | 813 |
| Philippines | 2.1 | Angola | 736 |
| Singapore | 1.9 | Philippines | 707 |
| South Korea | 1.9 | Canada | 613 |

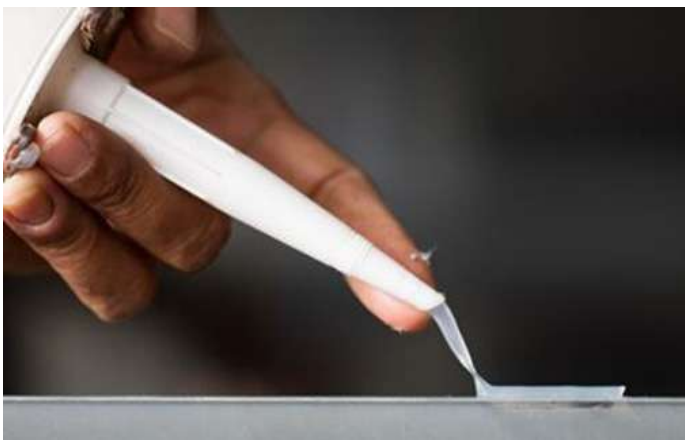
Source: Department of Commerce, Govt. of India, Plexconcil Research

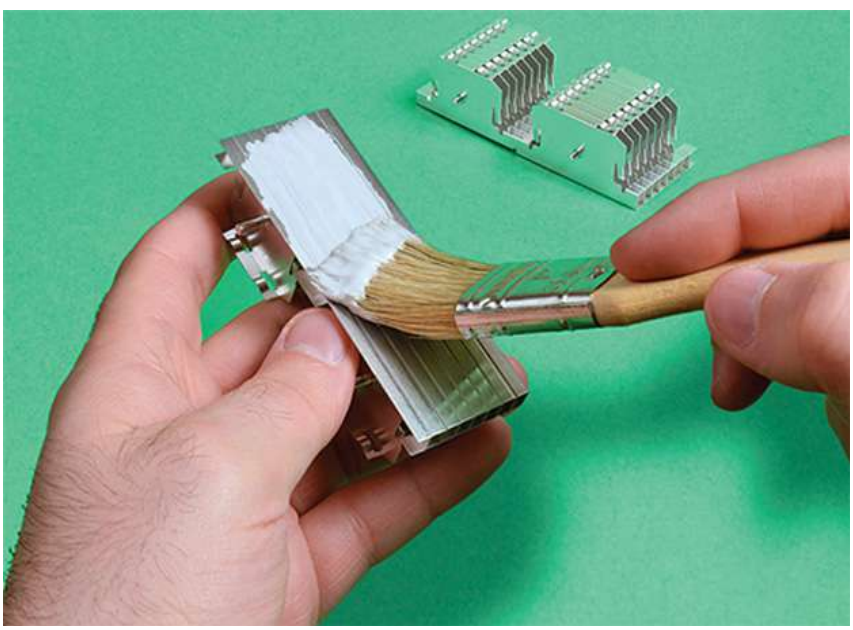
# Product of the month

In 2023, India imported 88,815 tonnes of Silicones valued at USD 317.9 million. China was the top supplier of Silicones to India, both in terms of value as well as volume.

| Source Country | Value (USD Mn) | Source Country | Qty. (tonnes) |
|---|---|---|---|
| China | 127.8 | China | 45,534 |
| Germany | 76.5 | Germany | 21,535 |
| United States of America | 29.9 | United States of America | 7,780 |
| South Korea | 17.7 | Thailand | 3,981 |
| Thailand | 15.1 | South Korea | 2,850 |
| Japan | 13.5 | Belgium | 1,823 |
| Belgium | 13.0 | Japan | 1,404 |
| Netherlands | 6.1 | United Kingdom | 923 |
| United Kingdom | 3.8 | France | 672 |
| Singapore | 2.7 | Netherlands | 603 |

Source: Department of Commerce, Govt. of India, Plexconcil Research

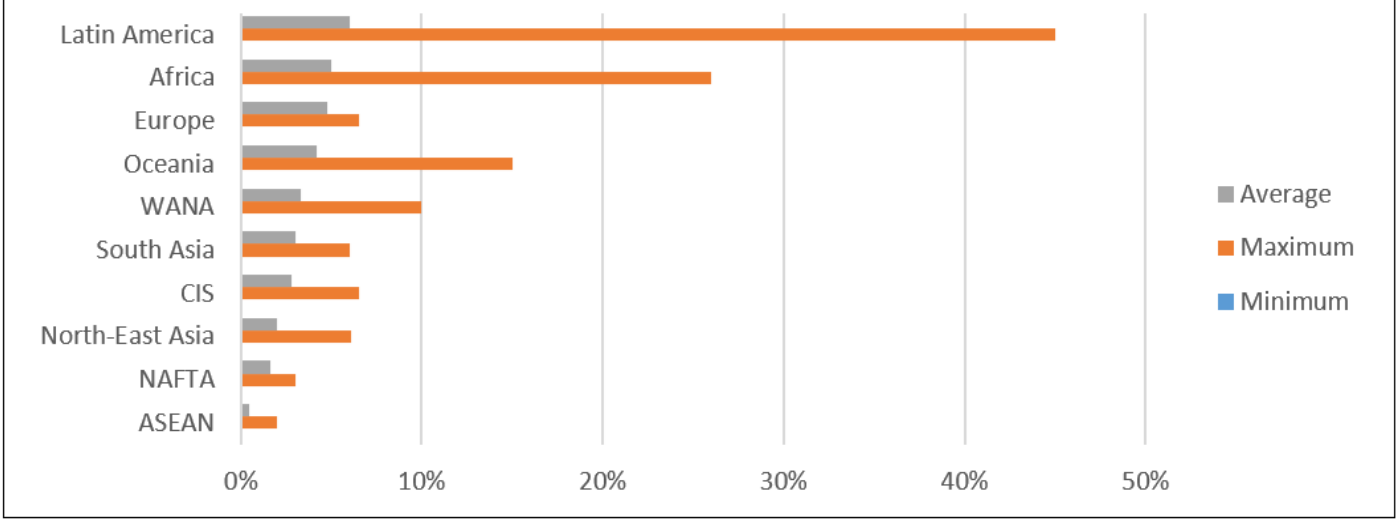




Indian firms dealing in Silicones can target exports destinations like Australia, Bangladesh, Colombia, Indonesia, Malaysia, Nepal, Philippines, Singapore, United Arab Emirates, and Viet Nam as these are lucrative markets.

There is zero duty applicable on import of Silicones from India in Australia as well as the United Arab Emirates under India-Australia Economic Cooperation and Trade Agreement and India-UAE Comprehensive Economic Partnership Agreement, respectively. Import of Silicones from India by some of the ASEAN countries (particularly Indonesia, Laos, and the Philippines) is also eligible for preferential customs duty under the ASEAN-India Free Trade Agreement. India's export of Silicones to Nepal also enjoys preferential customs duty under the India-South Asia Free Trade Agreement. Silicones do not attract any customs duty in Colombia, Malaysia, Singapore and Viet Nam.

Effective tariff applied by various regions on import of Silicones from India




Source: Market Access Map, Plexconcil Research

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MAKE IN INDIA

# Emerging Trends in Bioplastics Market

100% Biodegradable, Edible packaging and plant-based bottles are some vows made by global brands foreseen to drive bio plastic market investment in the coming decade. The world is witnessing a climate change crisis motivating industries to reuse, recycle, and think of compostable for reduced carbon footprint. Shifting focus from both consumers and businesses to sustainable production has raised bio plastic market share in recent years. The remarkable growth in the biodegradable plastic market is driven by fast-moving consumer goods (FMCG), quick meals, and beverages which have led to escalating plastic production. Companies are striving to create a resilient business ecosystem in the context of propelling circular economy concerns.

Bioplastics are made from natural renewable resources such as sugarcane, soybeans, and corn. Starches and sugars extracted from natural resources are used for bio plastic production. Rising plastic dumps are calling for investment in R&D, technologies, and production of bio plastics before we drown in plastic oceans.

UN Environment Program (UNEP) report highlighted an estimated rise of 15% in the global carbon budget due to fossil-based plastic materials. Greenwashing further increases the complexity of this issue with brands claiming corn-plastic is compostable which doesn't degrade as per the promises if they are left in oceans.

Renewable resources have gained traction of attention from industries addressing overall waste management. Government policies are being reshaped to promote eco-friendly materials. Substantial concerns such as climate change, and pollution are primary drivers of bio plastic research globally. Start-ups are trying to develop innovative materials that address biodegradability claims.

Bio plastics are organic materials that differ from biodegradable plastics that are formed using petroleum-based additives. However, there are some substantial concerns linked with biodegradable plastics leaving them subject to temperature conditions. On the other hand, bio-plastics are made of entire organic components leading to an edge over biodegradable plastic market alternatives in various industries addressing ecological issues.

**The bio-plastic market is foreseen to grow from USD 5,799.8 million in 2021 to USD 13,806.1 million by 2028. This market is estimated to grow with a CAGR of 13.2% in 2021-2028.**

## Bio Plastic Market - Modeling Through Novel Bio plastic Market Niches with High ROIs

*Bio plastic Market – A Green Credit Opportunity*

The growing traction of sustainable fashion imposes pressure on textile companies to manage the environmental aspects of their production cycle. Biopolymers and bio-plastics are promising materials to be used in sustainable fabrication. The fashion industry undergoing a cusp of conversion in terms of material research and manufacturing to address its carbon footprint. Eco-friendly alternatives are explored by the key players instead of relying upon traditional synthetic fabrics.

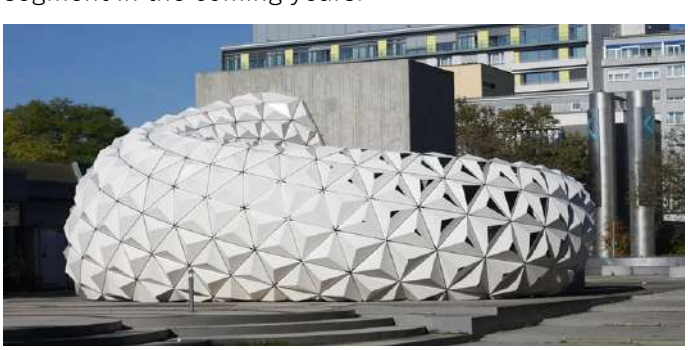
Plant-based fibers are foreseen to open new opportunities for companies. However, huge capital costs and expensive production processes remain a restraining factor ahead of bio-plastic textile market players.

Synthetic textile materials such as polyester, nylon, and other traditional alternatives take hundreds of years to decompose. Bio-plastic decomposition is a matter of some months. They can reduce the natural impact of textile waste. Globally, the bio-plastic textile market is anticipated to gain a lucrative CAGR in the coming years.

Bio-plastic reduces reliance on fossil fuels and contributes to sustainable textile production. Despite wastewater treatment initiatives considerable amount of microfiber waste entering into rivers is increasing demand for bio-plastic alternatives due to green credits associated with them.

### Bio Plastic Market – Home ware Fabrication Arsenal

Architecture is the next field where bio-plastics are expected to take a swift uptake in the future. This industry uses a high amount of bio-plastic after packaging. With many companies realizing the negative impact on climate, started to work on sustainable prospects. The usage of bio-plastics in interiors, 3D flooring, and terrazzo flooring already attracting the company's attention. 3D printing technology further improves accuracy and enables architects to create their designs. Bio-plastics in terrazzo flooring are anticipated to remain the dominant segment in the coming years.



Thermoformable sheets are seen as a resource-efficient alternative to oil-based plastics. Beyond architecture, bio-plastics have entered into the homeware fabrication arena. Apart from flooring, the construction sector finds the use of bio-plastics as an additive in concrete making it lighter and improving its resistance than traditional counterparts.

*Bio Plastic Market – Locks Nutrition of Quick Meals*

Packaging remains the topmost end-use industry for bio-plastic applications. These constitute eco-friendly packaging material for cheese and dairy alternatives with a cost of 25% less than traditional options. Combining different layers of bio-plastics and wax coatings makes it possible to form an ideal packaging for quick meals. These packages insulate packed food from oxygen and humidity. Restraining the growth of bacteria and fungi, bio-plastic packaging ensures the quality of packaged food throughout its lifecycle.

Leading market players performing consistence scrutiny on improving bio-based plastics to do away with fossil-based plastic in food packaging. Technologies in designs and waste management recovery are being developed to promote the circularity of packaging in the food and beverage industry. Water vapor barrier technology is gaining traction of attention from bio-plastic packaging market players foreseen to give a second life to packaging solutions. Growing awareness of the harms of current plastics in packaging is the key driver of expanding the bio-plastic packaging market share.

*Regional Landscape for Profitable Bio Plastic Pursuit*

Asia Pacific bio-plastic market remains at the forefront with a major share and market size. This region held a lucrative potential worth USD 2535.91 million in 2022. China, South Korea, and India are leading countries in the APAC region showing promising prospects in bio-based polymers. China is the biggest market to target for the bio-plastic niche owing to the high vacancy of bio-plastic feedstock.

Fueled oil prices and fluctuating climate status also foster R&D in the bio-plastic market. Both private and public sector participants are foreseen to achieve novel bio-plastic milestones. China initiated a move towards sustainable niches by banning single-use plastics in 2021. Even though the pro-activeness of the Chinese government was grasped, regulation has created a void in the market. Bio-plastic market players can position their products into market gaps to address the void for environment-friendly products. Market players can expand their production capacity to meet demand and supply stability.

Europe follows the APAC region in terms of a second contributor to the bio-plastic market globally with 25% of the total bio-plastic market share. European Green Deal and Circular Economy Action Plan aims to generate a sustainable plastic economy. Significant attention is being paid by EU countries to accommodate bio-plastic in their law space. EU taxonomy, Plastic Carrier Bags Directives are foreseen to improve investment in the bio-plastic market.

North America is another lucrative bio-plastic market owing to the widely spread packaging industry. The majority of bio-plastic usage in these regions is done in the production of bags and bottles. The automotive industry in this region is the most advanced leading to substantial investments in R&D and new production methods. Bio-plastics and polylactic acids are novel niches being explored by automotive companies to bring an upward trajectory for the bio-plastic market in the coming decade.

*Recent Moves from Bio Plastic Market Players*

- Companies are switching to potato starch plastic as packaging solutions. This packaging takes six weeks to dissolve completely.

- US-based leading market players produced sustainable plastic from technology that uses starch, wood, and hemp resources.
- Companies are investing in bioplastic bricks that are sourced from plant-based compounds as the first step to their bio-plastic commitment.
- Australia-based companies primarily focused on the development of renewable bio-plastic packaging made from corn.
- UK-based Polymateria has collaborated with Imperial College of London to create new standards in polymer analysis and eco-toxicity. British Standard for Biodegradable Plastic (BSI PAS 9017) is a milestone development of his concert.

*Recycling and Reuse- Only Breakthrough for Global Plastic Problem?*

Plant-based bottles are made by combining sugarcane and oil-based plastics in 30-70 proportion amounts major bottle volume in North America. But it is hard to conclude that companies have cracked the rising menace of the plastic problem. Products that are branded under the tag of plant-based plastic still have the major share of traditional plastic contains that never decompose completely.

Leading F&B companies are under consistent pressure to invest in solutions that address plastic waste. However, so far companies have not discovered cheap and effective alternatives to single-use plastics. Bio-plastic packaging has been touted to resolve the plastic crisis. Coming up with cheap completely organic plastic is still a challenge ahead of bio-plastic market players.


Industrial ecologists acknowledge that the development of bio-plastics is not the only way to address the plastic problem. Recycling and reuse are conveniences for circular economy overhauls and should be the next priority. With the skyrocketing use of plastic, waste is foreseen to be estimated to increase three-fold by 2040. Small-scale changes and the introduction of bio-plastics should accompany the reuse and recycle focus.

Companies need to eliminate plastic wherever possible and replace it with compostable alternatives. 'Extended Producer Obligation' is gaining traction of attention across the beverage industry where brands and import-

ers of brands are expected to take responsibility for handling plastic throughout the product lifecycle.


There are massive challenges ahead of bio-plastic market participants as it's hard to replace traditional plastic content polluting the planet for many years. However, it has promising potential for R&D and business opportunities in the long term. New approaches as required to design plastic products and think of compostable mechanisms. Innovative small-scale and mid-scale companies are foreseen to scale up with new plastic technologies.

The lethargy of relying on the production of virgin resin pulls companies back from recycling and reuse policies. Companies need to invest in the entire decomposition mechanism of bio-plastic along with improving materials for a durable competitive advantage in this market.

Due to the complexity and size of the worldwide plastic menace, it can often feel unresolved. However, it's crucial to recognize the efforts of bio-plastic market players that come up with solutions for environmental clean-up. Startups and mid-scale companies have come up with solutions that address single-use plastic pollution. On proven technologies and material efficiencies, the bio-plastic market pursuit has been foreseen to present a high rate of returns on investments.

*This article was originally published on theinsightpartner.com and has been republished with all its original contents.*

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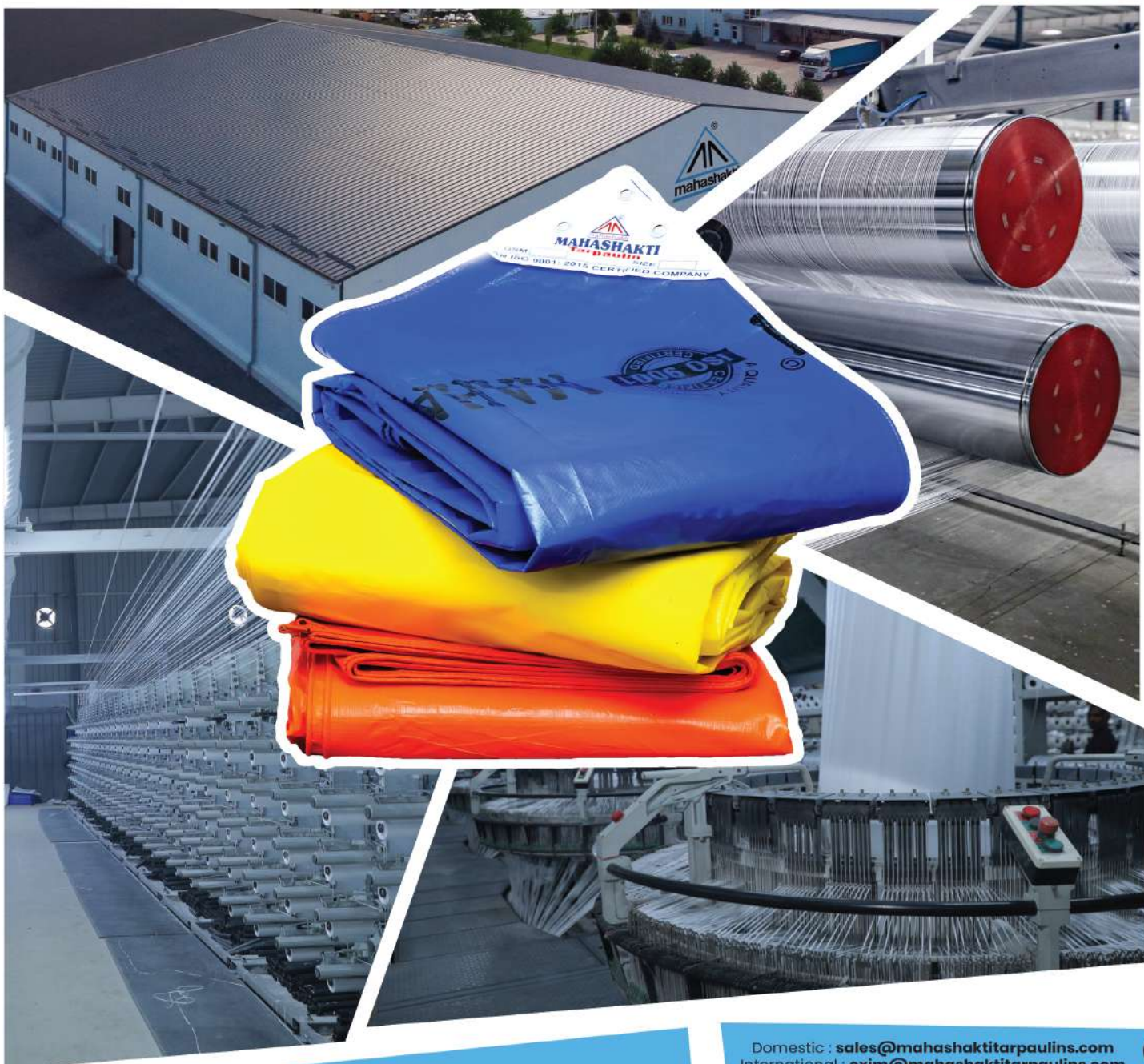


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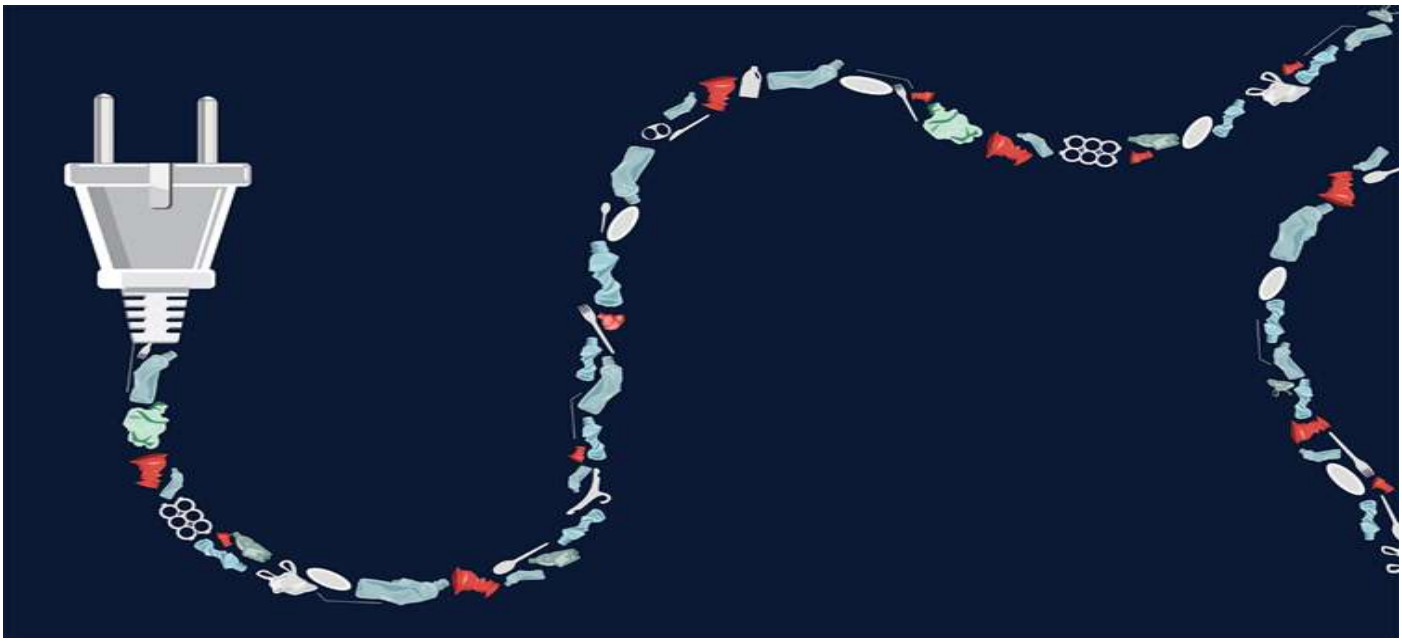


# Reimagining plastics waste as energy solutions

Recent statistics portray a stark reality, particularly highlighting the inadequate recycling measures and the consequent environmental threats, most notably in developing nations. The global ramifications of plastic pollution are elucidated, specifically focusing on the alarming accumulation in regions such as the “Great Pacific Garbage Patch” and evolving waste management practices in Southeast Asian countries.

We emphasize the significance of Waste-to-Energy (W2E) and Waste-to-Fuel (W2F) technologies and identify a critical gap in current research: the emission of CO2 during these processes. This perspective spotlights emergent CO2 capture and utilization technologies, underscoring their role as a robust turnkey solution in making W2E and W2F methods more sustainable and unleashing the huge potential of using waste plastics as a dense-energy source.

The scientific community is urged to develop tailored solutions for reducing CO2 emissions in plastic waste conversion processes. This approach promotes circular resource utilization and realizes the socio-economic and environmental advantages of plastic waste utilization technologies, advocating their implementation in economically disadvantaged regions.

Borrowing a scene from “The Fabelmans”1, the culture of single-use plastics in the United States can be traced back to the late 1950s. In the late 1950s, the culture of single-use plastics in the US began its rise, with widespread usage and disposal becoming the norm in average households. Despite growing environmental awareness, especially regarding microplastics, little has changed in our habits. The COVID-19 pandemic worsened the issue as reliance on single-use plastics surged, driven by both choice and necessity, from food packaging to medical supplies like masks and gloves.

The most pressing problem, we argue, is not with plastic as a material but instead with its lifecycle management and disposal, suggesting a critical re-evaluation of such practices. As a point of reference, the production of plastics in 1950 amounted to 2 million tonnes (Mt). By 2019, on the cusp of the COVID-19 pandemic, that number skyrocketed to 460 Mt.

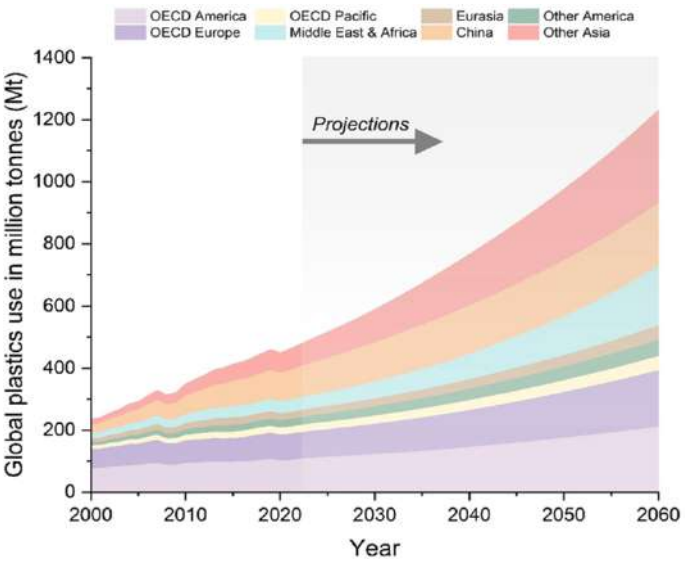
**According to projections by the Organisation for Economic Co-operation and Development (OECD), global plastic use is expected to more than triple by 2060, reaching an astounding 1231 Mt.**

Plastic waste generation per capita correlates strongly with GDP, though the extent varies by region due to consumption habits. High-income nations like the United States exhibit high consumption, while others like Norway prioritize recycling.

In 2016, major contributors to plastic waste included the US, India, and China. Despite GDP growth, there hasn’t been a significant reduction in plastic waste generation, indicating insufficient recycling efforts, even in wealthy nations. Many of these nations export plastic waste.

For instance, in 2010, the US exported approximately 5% of its plastic waste, while France and the Netherlands exported 11% and 14%, respectively.

**Global Plastics Production Trends**




The figure illustrates the exponential growth in plastics production in the next four decades on OECD forecasts.

**Sankey diagram of the production, end-of-life, and recycling of packaging plastics.**


98% of packaging plastics originate from fossil fuels, of which 32% of these plastics are mismanaged, with 2–5% of this mismanaged waste entering the oceans via rivers79.

As a matter of fact, land waste plastics are easily strayed into waterways and ultimately carried by ocean currents. A sea area of ~1.6 million km2 between Hawaii and California earned the moniker the “Great Pacific Garbage Patch” for trapping ~1.8 trillion pieces (or 80,000 tonnes) of plastics in the swirling ocean current10. Similar patches exist in every ocean around the world.

The positively buoyant and float plastics represent just the tip of the iceberg, comprising ~1% of the total plastic waste entering the oceans. The rest, including those that break down into microplastics, are found among the sediment layers on the seafloor, sinking, and trapped or drifting near shorelines.

The presence of microplastics, whether in their original form or as fragments from larger pieces, has raised significant environmental and health concerns. Nations surrounded by vast water bodies, which act as conduits for drifting plastics, are particularly vulnerable to microplastic pollution. They include, for example, members of the Association of Southeast Asian Nations (ASEAN), India, Central and South America, New Zealand, the Pacific Islands, and the Mediterranean.

While most plastics in their pristine states are inert and a nuisance in larger pieces. However, when these plastics break down into micron-sized fragments, they become small enough to be ingested by marine life, thereby entering the human food chain.

**Recycling challenges and transboundary disposal**

By 2040, UN forecasts predict that traditional plastic production could emit around 2.1 gigatonnes of CO2 equivalent, contributing 19% to the global carbon budget. Currently, almost all plastics come from fossil fuels, highlighting the importance of recycling to reduce emissions.

Despite increased global recycling efforts, focus remains on a few high-demand plastics like PET, HDPE, and PP containers. Other plastic types often end up as contaminants due to recycling machinery limitations. Effective recycling requires significant infrastructure, which is often lacking in poorer regions already struggling with plastic waste.

Plastic waste distribution varies globally, with some countries exporting to less developed economies. China’s 2017 ban on certain plastic waste imports led to increased waste imports in neighboring countries.

Despite international treaties like the Basel Convention, loopholes still allow the import of plastics labeled for recycling. In response, countries like Malaysia and the

Philippines have begun returning waste to its origin, including countries like the US, Canada, Australia, and the UK.

**Navigating beyond conventional waste plastics management**

Despite the challenge of the rapid accumulation of waste plastics, age-old landfilling, and incineration remain the most prevalent disposal methods. One preference over the other is essentially critical decision-making between the "lesser of two evils," which in turn hinges on prioritizing key environmental and, to some extent, economic goals. Landfilling, while widespread, leads to long-term environmental contamination and space constraints.

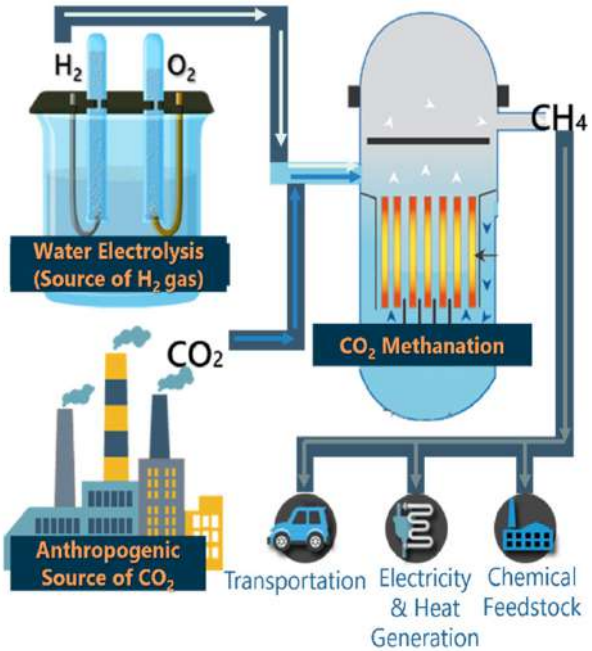
Incineration, while efficiently eliminating solid wastes, adds to direct CO2 emissions and is disastrous if adopted as the world's sole disposal method.

Conversion of plastics waste to textiles, building materials and 3D printing filaments are innovative solutions to circumvent the accumulation of waste plastics or direct emission of CO2. However, adoptions may be limited at the current trial stages.

In waste plastics incineration, direct CO2 generation is unavoidable, but W2E conversion can partially offset carbon emissions. This process involves using the heat from burning plastic-containing waste to produce hot water or steam for various purposes, including electricity generation. Several countries like Germany, Sweden, and Japan have successfully implemented such systems, with others like China and India beginning to explore similar approaches.

However, this method faces criticism due to dioxin and CO2 emissions. To address this, strict exhaust treatment and CO2 capture and storage (CCS) are essential. Despite its potential, W2E plants with CCS remain rare due to limited access to CO2 reservoirs. Fly ashes recovered from incineration can be used for CO2 adsorption and creating materials like geopolymers, further offsetting GHG emissions from waste plastics incineration.

Managing direct CO2 emissions is crucial for maximizing the benefits of waste plastic conversion. Carbon capture and utilization (CCU) is a key technology for this purpose. CCU involves two main steps: capturing CO2 from gases and converting it into valuable products. The first step improves reaction kinetics and CO2 conversion selectivity, increasing yield per unit of energy input.




Once CO2 is captured, it can be converted into fuels through various methods, including chemical, photo(electro)chemical, and electrochemical processes. The Sabatier or methanation reaction is efficient for this purpose and can be easily integrated into existing natural gas pipelines.

Converting CO2 to methanol is particularly desirable because methanol is easily transportable and a versatile chemical intermediate. Catalysts like Cu-ZnO-ZrO2 (CZZ) and palladium-promoted In2O3 show high methanol selectivity and stability. Methanol can then be further converted into higher hydrocarbons like olefins, dimethyl ether, or formaldehyde using acidic zeolite catalysts. Olefins can be reused as monomer feedstocks for plastic recycling, while other products can be used as chemicals or fuels for various applications.

**Concluding Remarks**

Managing waste plastics involves addressing environmental impacts, carbon emissions, and economic viability. Unlike metal scraps or E-waste, waste plastics have low economic value, making resource recovery challenging. Political commitment and collaboration are necessary to combat transboundary disposal issues.

Efforts to close the recycling loop are considered the most environmentally friendly. Recovering or reforming monomers is ideal but requires meticulous sorting and segregation of waste plastics. When monomer recovery isn't feasible, energy recovery from incineration (W2E) or converting plastics into non-monomer fuels via pyrolysis (W2F) are alternatives. However, CO2 emissions remain a concern. Comparisons with landfilling should consider environmental implications, land costs, maintenance, and carbon emissions. Different countries prioritize solutions based on their unique circumstances.

**Case Study**

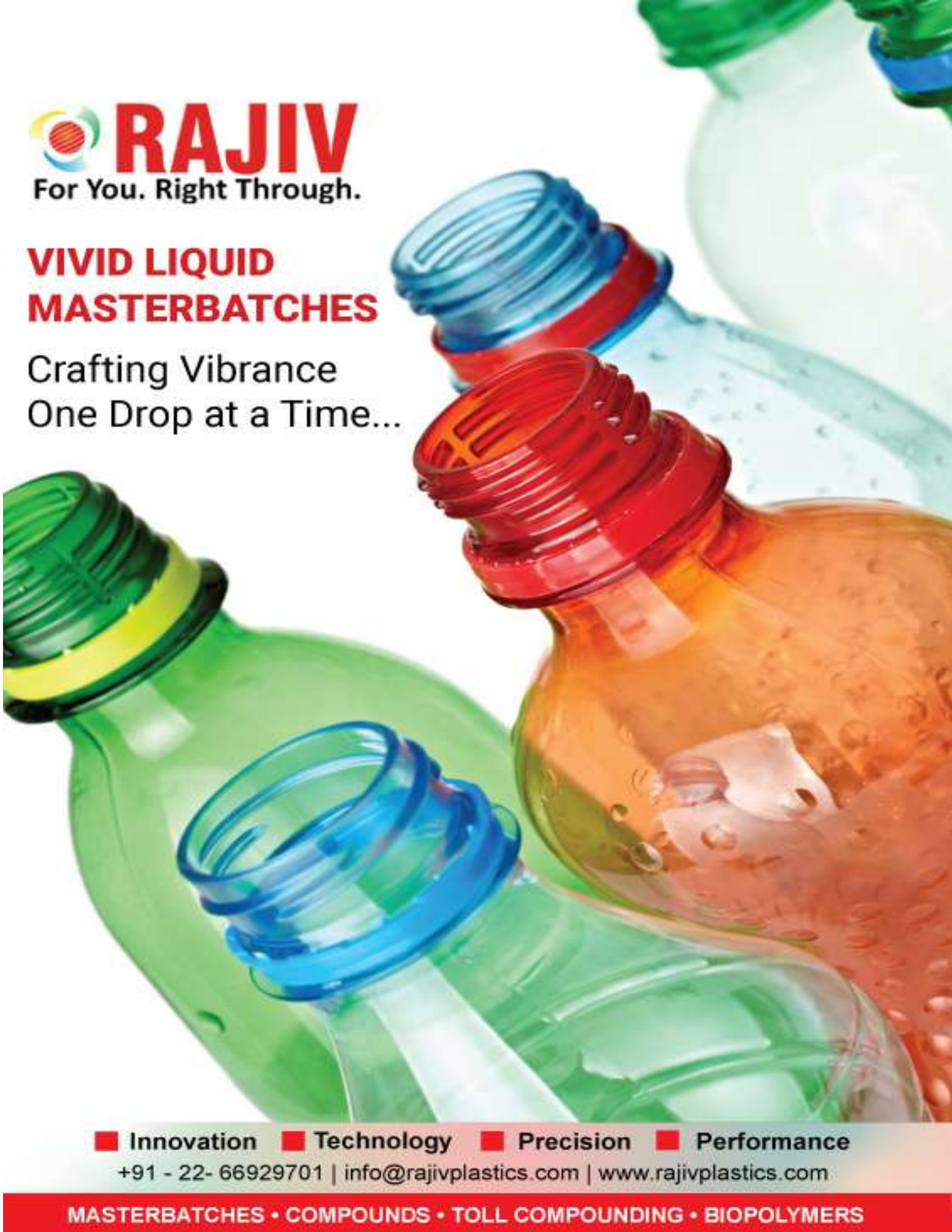
The Maldives, an island nation, is a notable case study of adopting W2E solutions for plastic waste management. Since the 1990s, the Maldives have been disposing of its waste in a lagoon known as Thilafushi64, which has transformed into a landfill over time.

In this lagoon, waste plastics were commonly burned in the open air. It is estimated that the Maldives produces around 20,000 tonnes of waste plastic annually, with only 5% being recycled65. Most of this waste ended up in the lagoon landfill, where it was either openly burned or leaked into the ocean.

In a significant shift towards sustainability, the government, since late 2021, has committed to transforming this waste lagoon into a large-scale "plastics-to-energy" facility. This project, costing around US$211 million, is targeted for completion in 2024. The initiative includes establishing a modern waste collection, transfer, and disposal system across the nation, covering 32 islands.

When the produced energy reduces the demand for fossil fuel to do the same, it signifies a mutually beneficial outcome in terms of environmental sustainability and economic growth. An intriguing question remains concerning the large amount of drifting waste plastics at or near the shoreline that was washed from other countries, or for that matter, illegally imported waste plastics—whose carbon emissions should be accounted for in cleaning up, and are there adequate economic benefits to do so?

Source: This article has been reproduced from the original content published on nature.com. It has been simplified and edited for easier reading. All data mentioned is as per the original article.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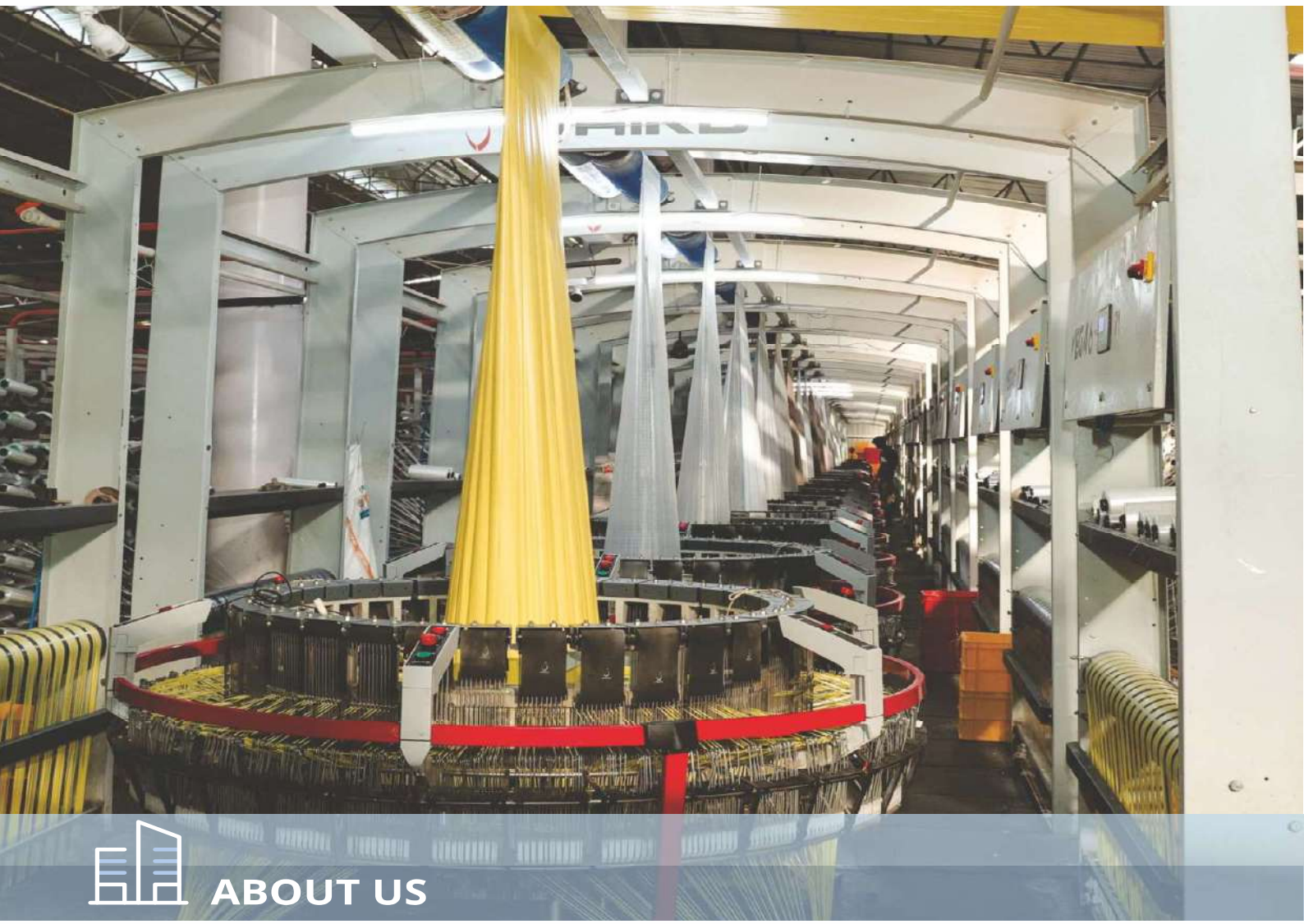

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**Pivotal fourth session of negotiations on a global plastics treaty opens in Ottawa**

The fourth session of the Intergovernmental Negotiating Committee to develop an international legally binding instrument on plastic pollution, including in the marine environment (INC-4), opened in Canada's capital, Ottawa. The session aims to advance negotiations so that the Committee can finalize, at its fifth session (INC-5) in November, the text of the instrument.

Members will also decide on intersessional work – informal INC sessions taking place between the official meetings – required between the INC-4 and INC-5, to support the further development of the text.

INC-4 is the penultimate stage of the negotiations; it follows three earlier rounds of negotiations: INC-1, which took place in Punta del Este, in November 2022, INC-2, which was held in Paris in June 2023, and INC-3, which happened in Nairobi in November 2023.

"We are seeing convergence on eliminating the uses that are problematic and avoidable. We will continue to need plastic for specific uses, such as renewable energy technologies. But there is growing agreement that short-lived and single use can go," said Inger Andersen, Executive Director of the UN Environment Programme.

"We can be proud of what we have achieved. But a job half-done is a job not done. Time is against us – both in terms of finalizing the instrument and how much more the planet can take. As we deliberate, plastic pollution continues to gush into ecosystems," she added. "So, I ask for INC-4 to show energy, commitment, collaboration, and ambition. To make progress. And set the stage for INC-5 to finalize an instrument that will end plastic pollution, once and for all."

INC-5, to be held in Busan, the Republic of Korea, from 25 November to 2 December 2024, is intended as the end of the INC process. It will be followed by a Diplomatic Conference where Heads of State will sign the agreement.

"We are here seeking to advance these negotiations and deliver a treaty because collectively we have recognized that multilateral cooperation – this INC process, a new legally binding international instrument – have a critical role to play in providing the effective and impactful solutions needed to end plastic pollution. The spirit of multilateralism is: "together, we are stronger"," said Luis Vayas Valdivieso, Chair of the INC.

"Let us negotiate with accountability and integrity – grounded in the scientific evidence and facts on the scale and urgency of ending plastic pollution. Let us also approach this task with optimism, that it is both necessary and possible for us to achieve this new treaty," he added.

The start of INC-4 was preceded by regional consultations and a conversation with Observers, and Canada hosted a Partnerships Day and a Ministerial Day on the sidelines of the session.

"Agreeing to a global agreement on plastic pollution by the end of 2024 would mark one of the most significant environmental decisions and would be a first-of-its-kind

agreement to unite the world around a shared goal to end plastic pollution," said Steven Guilbeault, Canada's Minister of Environment and Climate Change.

"Canada has put in place a number of measures to stem the tide of plastic pollution at home, and we are keen to keep up the momentum for a global agreement that aligns with our ambition. We welcome delegations, partners, and stakeholders from around the world to Ottawa for INC-4 to continue the ambitious work needed to achieve this united goal."

At the sixth session of the United Nations Environment Assembly in February 2024, Canada convened the other host countries of the INC process – France, Kenya, the Republic of Korea, and Uruguay – for a Ministerial meeting, under the umbrella of the Host Country Alliance, to galvanize momentum toward the global instrument.

"Seize this opportunity, make these seven days count, deliver a text that is as close as possible to the final agreement that we all want to see," said Jyoti Mathur-Filipp, Executive Secretary of the INC. "You delegates know the issues that need to be addressed at this session, and that flexibility will be needed to reach consensus. This is the only way forward."

Source: unep.org

**Coca-Cola Is Not the 'World's Biggest Known Plastic Polluter'**

Coca-Cola, Pepsi, Nestle and a ton of other consumer product producers are getting dragged through the trash heap over a new report claiming they are the "… world's biggest known plastic polluters" (to quote the Washington Post).

Utter nonsense.
I'll completely overlook the glaringly obvious fact that Coca-Cola is not polluting with plastic, but rather it is the consumers of Coke products that are polluting. I'll just go with the premise that Coke (and Pepsi and Nestle and…) are the ones that are taking empty plastic containers and tossing them around.

It's the methods behind the report that are so maddeningly stupid. The report is the result of looking at plastic pollution collected around the world and then looking for identifying brands to which it can be pinned.

Garbage in, garbage out.

The Earth is a really big place, and so it's impossible to collect all the plastic from everywhere, which means that only selective samples can be taken. It all comes down to the sampling technique: Good technique means good results; bad technique means bad results. It's no different than polling ahead of an election.

Let's look at how bad the sampling technique was.

First, they were not able to identify half of the plastic pieces, so they were not included in the report. Wow! I wish I could throw out half the data whenever I do an experiment.

Second, for similar reasons, microplastics (and nanoplastics) were not part of this, since finding a brand name of a fiber isn't going to happen. More selective sampling.

The world's largest consumer of plastics is not the worst polluter.

Third, sample amounts in various countries were incorrect. Prior studies about pollution have shown that not all countries in the world have equal amounts of plastic in their environment. Since the United States consumes the largest amount of plastic, you would be tempted to believe that it has the largest amount of plastic pollution, but that is not the case. A report published in Nature in 2017 found that the Yangtze River in China transported the most plastic to the oceans. Fifteen of the top 20 rivers were in Asia, three were in Africa, and two in South America. China, in fact, has three of the top four rivers, with the Ganges at number two. North America and Europe are not on the list at all. Since rivers represent the waste disposal system — i.e., flushed toilet — of a country, this list tells me how the world should be sampled for plastic.

That was not done. While the most sampled country in this new report was Indonesia, the United States was second, and sampled nearly as much. The exact data isn't available but looking at the chart showing the number of samples (note — the chart has a logarithmic scale), it appears that China was sampled at 1/10 the rate of the United States.

Feeding a pre-established narrative.

Since China's contribution to ocean plastic is at least 20 times greater than the United States, shouldn't it have been sampled at 20 times the US rate (or more)? Why weren't the authors questioned about this prior to publication? The Nature article is hardly a secret — it just doesn't fit a lot of the pre-established narratives to which people cling.

With sampling this bad, it should be impossible to convince anyone that the results are accurate. Nonetheless, the article was published, the PR machine is cranked up, and a bunch of consumer companies are having to deal with the backlash of this pseudoscience.

Source: Plastics Today

**Evonik Debuts Single-material PA-12 Car Seat Concept at Chinaplas**

Germany's Evonik is promoting the monomaterial approach to accelerating material recycling in the auto sector. At this year's Chinaplas in Shanghai (Hall 7.2 C31), the engineering materials supplier unveiled a concept car seat made solely of Vestamid polyamide (PA) 12. Made entirely of the same material, the seat not only contributes to less material consumption during production, but also is in line with design for circularity. Vestamid PA 12 is employed in the seat's flexible foam realized via a supercritical foaming process, structural parts, and textiles, while Infinam PA 12 is used for 3D-printed parts.


Multiple applications in new energy vehicles.

Evonik's PA 12 has been widely applied in the manufacture of automotive fuel lines, and now also of cooling lines, hydrogen fuel lines and tanks, and high-voltage electrical busbars for new energy vehicles, meeting the thermal and power management needs of new energy vehicles. In combination with Vestape carbon-fiber PA 12 tape, Vestamid PA 12 exhibits excellent resistance to hydrogen penetration coupled with low-temp resistance and high impact resistance.

Evonik is also doubling capacity for Vestamid E and L PEBA grades to meet demand from the global footwear sector through an expansion in China. The grades are used in midsoles and outsoles. Construction of the new PEBA plant started in December 2023 and the new capacity is due to come on stream in 2025. This followed a 50% increase in global Vestamid PA 12 capacity at Marl, Germany.

Half of product portfolio sustainable by 2030.

By 2030, Evonik aims to have 50% of its product portfolio in the sustainable category, and this encompasses renewable, recycled, and bio-based raw materials for PA. One recent example of this drive is Infinam eCO PA12, which debuted in December 2023 as the world's first PA 12 powder material for industrial 3D printing that substitutes 100% of fossil feedstock with bio-circular raw material from waste cooking oil in a mass balance process.

Evonik is also using renewable resources in the production of PEBA. Outsole-grade Vestamid LX9012, for example, is produced using green electricity and bio-methane. Vestamid eCo E40, meanwhile, is made using end-of-life tires as a feedstock and renewable energy.

Additives improve processing and quality of recyclate.

To promote the recycling of plastics, Evonik has introduced a diverse range of additives under the brand name Tego Cycle to help its customers improve processing and increase the final quality of recycled plastics. During the wet stage, Evonik's antifoams and wetting agents can be used to make washing, separation, de-inking, and drying processes more efficient and help to significantly reduce energy.

Additionally, during compounding — the dry stage — Evonik's odor absorbers, compatibilizers, and dispersants help to improve processing and enhance polymer properties, leading to more competitive costs and a much higher quality of recycled plastic content. In addition to the Tego Cycle products, Evonik has also introduced organo-modified siloxane-based Tegomer polymer processing aids (PPA) for converters looking to replace standard PPAs made from fluoroelastomers in

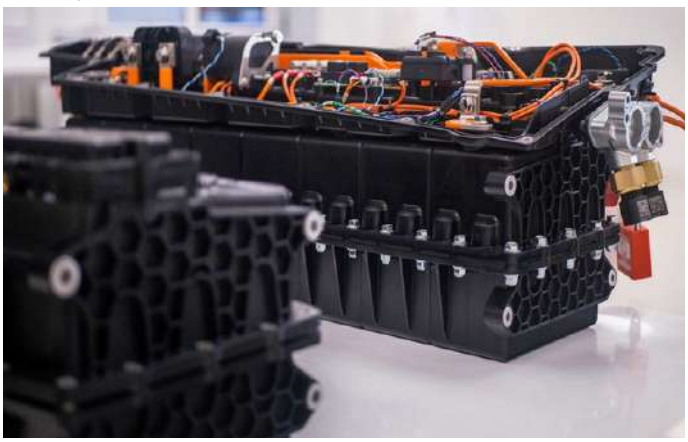
polyethylene and polypropylene processing.

Source: Plastics Today

**Lightweight, High-output Battery Powered by Engineering Plastics**

Materials supplier BASF has supported RML Group in the development of an innovative, immersion-cooled battery for a high-performance hybrid "hypercar" that sets new performance and safety standards using next-generation plastic materials. The 800-V battery features a capacity of 4.2 kWh and a >100C discharge rate, while weighing in at less than 75 kg.

The extremely high power output, especially during rapid acceleration and regeneration, requires a cooling system capable of tempering heat generated by the cells. To prevent extreme temperatures and ensure a more even temperature distribution throughout the pack, immersion cooling is used, which greatly improves the entire battery system's efficiency and service life. Two BASF polyamide (PA) plastics are employed in RML's battery unit.



Handling the heat.

Ultramid B3EG7 (PA 6 GF35) is utilized in both the housing for the battery unit itself and the housing of the high-voltage electrical components of the battery control system. This material is noted for its robustness and resistance to mechanical stress, which is particularly important for the battery housing. The design not only has to satisfy crash requirements, but also must pass the UNCE Reg 100.03 fuel fire test. Protected only by a thin carbon sheet, Ultramid B3EG7 passes the fire test without damage to the housing, making it ideal for this application.

Ultramid A3EG6 EQ (PA 66 GF30) is used for the individual battery cell holders within the battery housing. The Ultramid EQ grades (EQ = electronic quality) are extremely pure-grade, meaning they contain hardly any electrically active or corrosion-accelerating components, yet still deliver outstanding heat aging resistance. In contact with the dielectric fluid, the material minimizes any kind of diffusion out of the material. Since dielectric fluids are used for electrical insulation and as coolants in high-voltage applications, contamination by contact materials must be avoided at all costs. A partnership of strength.

The RML name is synonymous with engineering achievements in the field of luxury and racing cars. The company is also a pioneer in the electrification of its automotive fleet through its development, design, and production of innovative battery systems. Particularly noteworthy is the close cooperation between BASF and RML, even at the development stage, and the early involvement of BASF as a materials supplier in decision-making processes.

"RML needed to explore state-of-the-art materials for battery systems to meet the mass and structural targets set by customers for high-performance applications. We worked closely in collaboration with BASF to achieve the desired properties, and I look forward to working together evolving and enhancing material development with BASF on future projects," said James Arkell, head of powertrain at RML.

Thanks to its extensive expertise in the new battery sector and in the field of electrical and electronic materials, BASF managed to significantly accelerate the development of the overall battery unit. The rapid recommendation of suitable materials as well as the timely, global delivery of sample quantities were instrumental in ensuring that RML was able to meet its ambitious schedule for this project.

"Our in-depth materials expertise and commitment to sustainable solutions enable us to meet customer requirements in the shortest possible time and advance electrification in the transport sector," said Jasmina Simon, BASF's plastics materials expert for e-mobility.

In addition to its materials solutions, BASF also provides comprehensive services such as component simulation. Ultrasim, for example, can be used to develop components for specific requirements, so as to create heavy-duty, efficient, and lightweight custom components.

Source: Plastics Today

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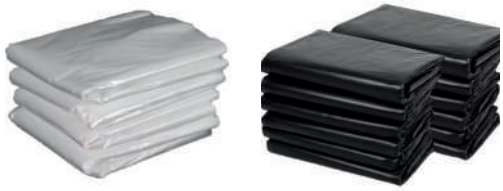

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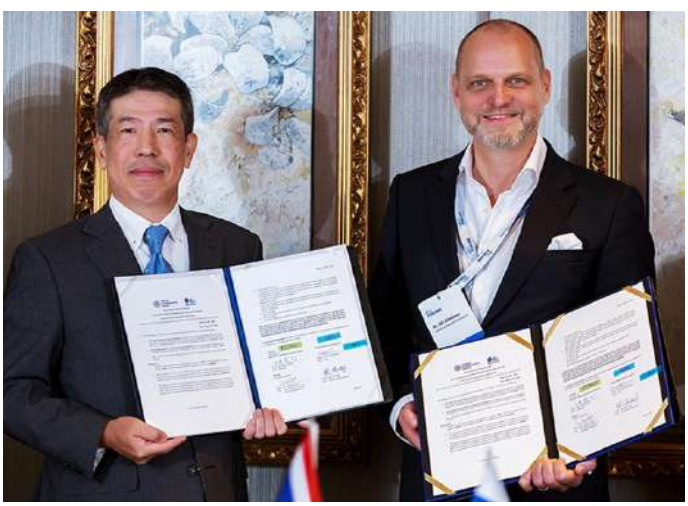
**Bioplastic, Meet Woody Biomass**

Finnish startup Nordic Bioproducts Group (NBG) and Bangkok-based PTT MCC Biochem are partnering to develop bioplastic that incorporates cellulose. Target applications include single-use products made of conventional plastics.

The partnership focuses on new grades of bio-based polybutylene succinate (PBS) that incorporate NBG's advanced, sustainable cellulosic materials, including activated cellulose fibers. The fibers can be used as a replacement for petroleum-based substances in the production of bioplastics.

NBG is a spin-off of Aalto University that specializes in cellulose innovation, bioproduct development, and commercialization. PTT MCC Biochem, a joint venture of PTT Global Chemical Public Company Limited and Mitsubishi Chemical Corp. (MCC), is a leading producer of biodegradable, compostable bio-based PBS, trade named BioPBS.



Mr. Takeyuki Doi, president of PTTMCC Biochem Ltd., and Olli Kähkönen, CEO and cofounder of NBG.

Coffee capsules: A hot application.

The partners are aiming to develop high-performance, home-compostable bioplastics for production of single-use consumer products such as coffee capsules, cutlery, containers, plates, and mugs — items typically made from conventional, petroleum-based plastics.

Data from Allied Market Research indicate the coffee-capsule market alone will grow at a CAGR of 7.6% in the run-up to 2032, when it expected to reach a value of $11.9 billion. Many coffee-capsule formats are challenging to recycle because they incorporate non-residentially recyclable plastics or a combination of aluminum and plastic. Compostable capsules address that sustainability pain point.

BioPBS is food-contact approved in the United States, Europe, China, and Japan. NBG's activated cellulose fibers also meet food-container safety regulations; the fibers are derived from clean water and Forest Stewardship Council (FSC)-certified, traceable, sustainably managed forests in Finland.

NBG's collaboration with PTT MCC Biochem "represents a significant step forward in the green transition through innovative, high-performance, and environmentally friendly alternatives to traditional plastics. Bringing high-quality and competitive solutions to the market is key to making alternatives to plastic attractive and scalable," says Olli Kähkönen, CEO and cofounder of NBG, in the memorandum of understanding (MOU) announcement.

Woody biomass to displace petrochemicals.

In January 2024, shortly before partnering with PTT MCC Biochem, NBG signed a separate MOU with Japanese multinational Marubeni.

NBG and Marubeni are collaborating to create a biorefinery that uses NBG's lignocellulose-hydrolyzation technology, called AaltoCell. The venture, which aims to reduce dependence on fossil-based resources, will process woody biomass from Marubeni's Indonesian plantations, including kraft pulp and plantation residues.

With NBG's AaltoCell method, lignocellulosic materials are hydrolyzed — decomposed through a chemical reaction with water — to produce high-quality cellulose derivatives that can be used to produce pharmaceuticals and foods.

Close look at food-quality microcrystalline cellulose powders. NBG

The technology is environmentally friendly, with a smaller carbon footprint to produce resins and textiles vs. methods based on fossil fuels and chemical-intensive processes. An independent third-party assessment indicates the AaltoCell technology can reduce the carbon footprint of cellulose-derivative production by 80% vs. conventional methods.

"We are delighted that big companies like Marubeni and PTT MCC have trusted us and our technology to help them achieve their ambitious goals," Kähkönen said. "As we are gearing towards impact at scale and mass production, we can be a vital partner for more and more big, global companies, helping them create environmentally conscious products that meet the highest standards of quality and sustainability."

World's first for microcrystalline cellulose production.

NBG continues to expand its technology. The company announced April 24 the opening of its commercial-scale production facility for microcrystalline cellulose and other cellulose derivatives in Lappeenranta, Finland. The new factory features the world's first continuous production line of up to 10,000 tons of high purity microcrystalline cellulose annually. It employs 20 and plans to double that number soon.

Sustainability in the facility's production practices is also a priority. It anticipates producing zero solid waste and using only a fraction of the chemicals, water, and electricity compared to traditional MCC production processes.

The factory is expected to create 40 million euros (about $42.8M) in revenue in the first full operating year, aiming to triple revenue in three years.

With full production capacity now operational, NBG is poised to welcome additional clients from various industries and countries for several product markets, especially bioplastics.

Microcrystalline cellulose has been used in a range of industries for decades from pharmaceuticals and food supplements to food ingredients, cosmetics, and skincare.

Source: Plastics Today

**First fully recycled bread packaging launched in Saudi Arabia**

SABIC, a specialist in the chemical industry, has announced the successful roll-out of the first circular packaging project in Saudi Arabia as part of its TRUCIRCLE program to accelerate the implementation of a circular plastic economy. FONTE, a major player of the bakery industry in the Kingdom of Saudi Arabia (KSA), has introduced bread bags made with SABIC's certified circular polyethylene (PE) in their Oat Arabic Bread.

The bags are made by Napco National, a vertically integrated Saudi manufacturer of flexible film and packaging products, using two food-contact certified circular polyethylene resin grades (LLDPE) from SABIC's TRUCIRCLE portfolio. Following the kick-off of the joint project in March 2023 and successful completion of the trial phase at Napco, FONTE has started to introduce the flexible bags to stores throughout Saudi Arabia.


The new FONTE bread bags incorporate 100% mass balanced certified content of recycled feedstock from mixed post-consumer used plastics, which is converted into pyrolysis oil in an advanced recycling process. SABIC then uses the oil in the production of new polymers with the same purity and quality as traditional virgin plastics at the company's plant in Jubail, KSA.

Sanjay Mishra, who heads the ETP and Performance Polymers business at SABIC, stated: "With our TRUCIRCLE program, we are pushing for innovative business models to transform our industry from a linear to a circular one and help prevent the valuable material of end-of-life plastic applications from being wasted. Within a relatively short time, this remarkable joint project has shown what can be achieved to make this vision come true if all players work together to maximise post-consumer plastic recycling and sustainability.

"Moreover, the project also addresses a major trend towards more sustainable food packaging in Saudi Arabia, and is the first circular packaging application of its kind in the country."

SABIC's circular materials are produced using mass balance accounting according to the International Sustainability & Carbon Certification (ISCC) PLUS program, which follows a set of predefined and transparent rules for tracking the material flow across complex supply chains from the feedstock to the final application.

Mohammed Binmahfoodh, CEO at Masdar Alhayat for Food Industries (FONTE), added: “At Masdar, our strategic focus extends across the entire spectrum of Fast-Moving Consumer Goods (FMCG). Our mission to integrate quality and sustainability into every aspect of our operations aligns seamlessly with Vision 2030. As Masdar’s leading brand, FONTE is fully committed to addressing the plastic challenge that all food producers are facing.

“While this new bread bag is just one of our products, it demonstrates how important value chain players can work together to bring about much needed change. As the availability of high-quality recycled plastics in KSA is increasing, we look forward to transferring the success of this partnership project with SABIC and Napco as a role model to further packaging applications in our ‘Saudi Made’ food products offering.”

Chadi Radi, senior director at Napco National, commented: “Napco is firmly dedicated to the advancement of sustainable packaging across various sectors in the plastic industry within the Kingdom of Saudi Arabia and throughout the Gulf region. We understand the pressing need to address environmental challenges and are committed to supporting our customers in achieving their sustainability objectives. Through our innovative approach, we strive to develop packaging solutions that minimise environmental impact, promote circularity and maximise the value of the plastic life cycle. At Napco National, we welcome the advanced recycling route offered by SABIC as an opportunity to contribute to the circularity of plastics in flexible packaging films. This collaboration has led to a successful implementation of circular plastic film in the food sector.”

SABIC’s certified circular polymers form part of the company’s TRUCIRCLE portfolio and services. Besides certified circular polymers, this also includes design for recyclability, mechanically recycled products, certified renewable polymers from bio-based feedstock and closed loop initiatives to recycle plastic back into high quality applications and help prevent valuable used plastics from becoming waste.

Source: Interplas Insights

**Industry recycling project sees pill packaging turned into PVC fencing**

Portarlington-based Think Fencing has partnered with Pharmacycle to recycle blister packaging collected via Pharmacycle’s drop-off points, located in pharmacies, hospitals, and local council sites right across Australia. Joining early adopters, Bloom The Chemist and National Pharmacies, leading retail pharmacy chain Chemist Warehouse has recently partnered with Pharmacycle to expand the number of drop-off locations on offer, introducing the program in 100 stores across Victoria.

Once collected, Pharmacycle weigh and sort collected material, removing any contaminants, such as unused pills or other medical packaging, to ensure that the material streams are as clean as possible. The material then undergoes a size reduction and granulation process, before the PVC (and a small volume of other plastics) are separated from the aluminium through an electrostatic separation process - the same machinery used by PanelCycle to separate aluminium composite panel (ACP) cladding. The aluminium is sent to Weston Aluminium in NSW where it is reused, while the PVC component is sent to Think Fencing.

Significant interest in recycling

“We are seeing significant interest from consumers, pharmacies, and the healthcare sector in being able to recycle this type of material, in part driven by the focus on blister packaging in the ABC’s ‘War on Waste’ program,” said Pharmacycle’s business development manager, Michael Klapsogiannis.

To date, Pharmacycle has recycled over 32 tonnes of blister packaging, adding up to more than 21 million individual blister packs. And with plans to increase the number of collection points from 400 to 1000 by mid-2024, Pharmacycle are confident that with industry support, they will be able to continue growing the program.

The Pharmacycle material is sent as a powder to Think Fencing. Using an AI-driven prototype device developed by the CSIRO, Think Fencing analyses the material to understand key material properties because each batch varies slightly depending on the level and type of contamination. The results of this analysis are used to optimize the mix of the material with other recycled content streams, including credit card surplus material from Placard, window profile offcuts from VCA member aluplast, and necessary additives, to ensure the blend meets Think Fencing’s required specifications.

"With such a variety of material streams, it's really important that we can understand the properties of the recyclate we're using," said Think Fencing chief technical officer, Jack Fitzgerald.

## Gamechanger for recycled material

"The CSIRO analyser has been a game-changer in the way we understand and incorporate recycled material." Jack and his team at Think Fencing have the numbers to back it up as well. Since the introduction of the analyser, Think Fencing's recycled content usage has increased from 15% to 85% in their primary PVC fencing ranges, and makes up a similar proportion in the soon-to-be released OneDeck decking range.

## Virgin material is used to 'cap' the products to ensure the same, reliable visual finish.

Given that the cost of the recycled feedstock used by Think Fencing is almost 70% cheaper than the virgin material they used to source, they are looking to use a variety of other recycled PVC materials, including PVC pipe scrap, playing cards, and vinyl flooring.

"This collaboration highlights the recycling potential of diverse product types when they're kept out of mixed waste streams - given that existing recycling infrastructure is currently ill-equipped to manage these materials effectively," added Vinyl Council of Australia chief executive, Jim Coulston.

Think Fencing's willingness to recycle everyday materials into durable, high-performing products has seen overwhelmingly positive public support. At a recent trade expo, several attendees were visibly shocked to learn that the Pharmacycle blister packaging was being reused within PVC fencing.

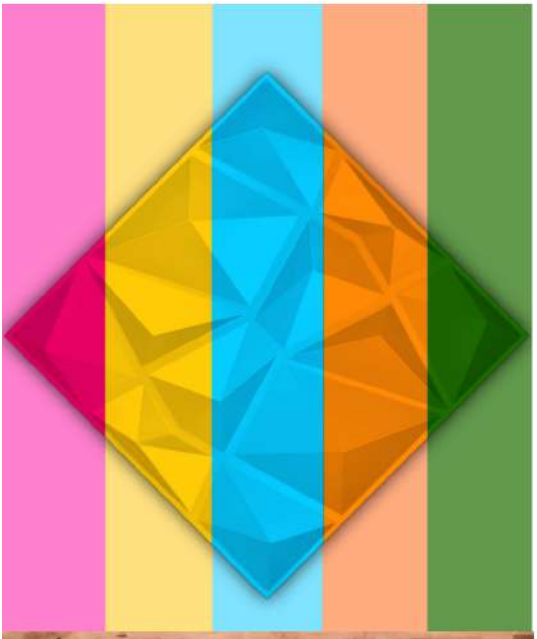
## Increasing desire for recycled content

And with the increasing desire for recycled content in consumer products and the increasing analytical efficiency at Think Fencing to match, the company is forecasting significant growth, with plans to develop a new recycling plant and warehousing facility in Victoria and warehousing facility in Brisbane to allow more PVC products to be collected and recycled. Funding and industry partners are being sought to support this growth. The CSIRO analyser is currently undergoing a patent process, with a formal demonstration of the technology to be presented by CSIRO's Melissa Skidmore at the PVC AUS 2024 conference in June.

Source: Interplas Insights

Teklight
Innovation in Plastics

# UPDATE YOUR STYLE!!!



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**Modern Design:** Adds depth and sophistication to any space

- **Why Choose Us?**

**Modern Luxury:** Contemporary designs to transform your interiors and exteriors as well.

**Sustainable Luxury:** Eco friendly and 100% recyclable.

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# India News

**Packem Umasree Pvt Ltd inaugurates India's First 100% Sustainable rPET Bottle to FIBC Bag Plant in Gujarat**

Packem Umasree Pvt Ltd, a joint venture between Packem SA of Brazil and Umasree Texplast of India, proudly announces the inauguration of India's First 100% sustainable rPET (recycled polyethylene terephthalate) bottle to FIBC (Flexible Intermediate Bulk Container/ Jumbo Bag) bag plant. The ceremony, graced by the esteemed presence of the Honourable Governor of Parana, Brazil, Mr. Carlos Roberto Massa Junior, and Ambassador of Brazil, H.E. Mr. Kenneth Felix Haczynski Da Nobrega marks a historic moment in India's journey towards environmental sustainability.

Located at Gangad village near Ahmedabad, Gujarat (India), the plant represents a collaborative effort between two industry leaders committed to advancing environmental stewardship. Through cutting-edge technology and innovative processes, Packem Umasree Pvt Ltd will transform recycled PET bottles into high-quality FIBC bags, pioneering a closed-loop system that minimises waste and promotes circular economy principles.

Mr. Punit Gopalka, CEO of Packem Umasree Pvt Ltd, expressed his gratitude to Governor Carlos Junior and Ambassador of Brazil, H.E. Mr. Kenneth Felix Haczynski Da Nobrega for his presence and shared his vision for the project, stating, "We are honored to have Governor Carlos Roberto Massa Junior inaugurate our plant, symbolising the strong partnership between Brazil and India in driving sustainable development. With his support, we are confident in our ability to make a significant impact on the environment while contributing to economic growth and social progress."

The inauguration ceremony, attended by dignitaries, industry experts, and local officials, served as a testament to the significance of this milestone in India's sustainable development agenda. Packem Umasree Pvt Ltd is poised to create employment opportunities, foster innovation, and position India as a global leader in sustainable packaging solutions.

As the first of its kind in India, the plant embodies the shared values of Packem SA and Umasree Texplast, promoting collaboration, innovation, and environmental responsibility. Through this joint venture, the companies aim to inspire positive change and set new standards for sustainability in the packaging industry.

## Indian and Brazilian company partners to set up sustainable manufacturing plant for waste to wealth

Umasree holds a 49% equity in Packem Umasree Pvt. Ltd., the JV, and Packem, which became the first Brazilian company to produce 100% sustainable FIBC/Jumbo Bags made of PET/PCR (rPET), holds 51%. Packem Umasree is the first company in India to start producing FIBC/ Jumbo Bags made from 100% rPET/ PCR (Recycled PET) with the concept of Bottle to Bag.

The new production unit near Ahmedabad which will produce 100 % sustainable FIBC / Jumbo Bags is expected to create about 700 Direct Jobs and 1200 Indirect Jobs. The plant will help India become self-reliant as well as emerge as a hub for exports of the bags.

"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 Joint Venture to further strengthening this partnership," said Eduardo Santos Neto, CEO of Packem.

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. At least two per cent of the global FIBC / Jumbo Bag market will be able to immediately replace the polypropylene product with recycled PET/PCR bags and this replacement will increase over the years.

"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," pointed out Marcos Spitzner Filho, CFO of Packem.

The rPET/PCR to FIBC/Jumbo bags is the greatest innovation of recent years in the segment of packaging for agriculture and will help in developing a circular economy. The first 100% bag-to-bag projects in the world will see big bags used in the field processed and recycled to be made into big bags again. The company will reuse 100% of the rPET FIBC / Jumbo Bags and help reduce virgin plastic from agribusiness and industry.

The special technology for the production of high-performance fabrics from recycled rPET/PCR is exclusive to the Austrian Company Starlinger, the world leader in the production of machines for raffia plastic packaging and recycling equipment for plastics.

**India-South Korea CEPA review talks likely in May or June**

India and South Korea will begin a fresh round of negotiations to upgrade the CEPA (Comprehensive Economic Partnership Agreement) in May-June after the conclusion of the 10th round of negotiation earlier this year, two people aware of the matter said.

India has been seeking greater market access for some of its commodities like rice, steel, and shrimp, and also in sectors like healthcare and information technology (IT) in a bid to boost exports of Indian products in the Southeast Asian country, the first person mentioned above said requesting anonymity. "Currently, the trade balance is heavily in favour of the Republic of Korea (South Korea)," the person added.

Eclipsed exports

South Korea and India signed the CEPA in Seoul in 2009 to increase economic exchange and facilitate trade between the countries. The agreement, negotiated over 12 rounds and for over three years, came into effect from 2010. However, India's imports from South Korea have eclipsed exports to the country.

During calendar year (CY) 2023, India's exports to South Korea stood at $6.286 billion, down 16.61% annually, while imports from the Southeast Asian country stood at $21.361 billion, up 3.19% annually, according to data from the ministry of commerce and industries.

"The government has raised concerns about the growing trade deficit between India and the Republic of Korea," the first person mentioned above said. "The upcoming negotiations will address some of the issues," the person added.

## Trade gap

India's key trading partners in Asia include the ASEAN, Japan and South Korea. India's trade balance with all these countries/regions is in deficit, with imports exceeding exports.

Mint had on 17 April reported that India's 2011 free trade deal (FTA) with Japan is likely to be reviewed in the coming months, with New Delhi keen to minimize the trade deficit with Tokyo.

During CY23, India's imports from Japan stood at $17.506 billion, while Indian exports to Japan stood at $5.084 billion, according to the Commerce Ministry data. Japan's exports to India have doubled since 2010-11, when it stood at $8.62 billion, while India's exports to Japan have largely remained static.

The commerce ministry spokesperson didn't respond to emailed queries.

The analysis of India's three key Free Trade Agreements (FTAs) with ASEAN, South Korea, and Japan, signed in 2010-2011, reveals India's merchandise trade deficit with these partners increased significantly more than its global trade deficit, and India's exports to these FTA partners have increased at a lower rate than its imports, economic think tank Global Trade Research Initiative (GTRI) said in a recent report.

"Many Indian firms choose not to use the FTA route when (Korean) duties are low, as FTA-related compliance costs do not justify the tariff benefits," the report said.

Source: MInt

**India's Import Curb Will Cost China Its Biggest Solar Panel Export Market**

The world's largest solar panel manufacturer, China, may soon lose its top export market as India steps up with import restrictions effective April 1. The government, in a bid to prioritise self-reliance and curb the heavy reliance on Chinese imports despite being self-sufficient, has revised the Approved List of Models and Manufacturers List, or ALMM, mandating future government-subsidised or sponsored solar projects to use modules made by the approved domestic manufacturers.

Companies from Adani Green Energy Ltd. to Tata Power Ltd. and Insolation Energy Ltd. including ITI Ltd, and Bharat Heavy Electricals Ltd. are likely to benefit as these companies or their subsidiaries are listed in the revised ALMM List.

## What is the Trade Barrier?

The government has revised the policy and reintroduced strict restrictions on importing solar panels, effective April 1.

This means projects commissioned in India from April 1 are mandated to use only panels from suppliers mentioned in "The Approved List of Models and Manufacturers". The revised list now excludes all overseas manufacturers, as opposed to the earlier relaxed list that the government formulated after realising that domestic capacity couldn't meet demand.

The revised norms would also cause a decline in the import of solar and wafers—two key precursors to producing solar panels—over the next few years as more Indian manufacturers announce their involvement in these areas.

## China's Exports To India

In the last three years, China has accounted for, on average, 82% of India's total imports of photovoltaic cells assembled in modules or panel form. However, after the import curb, this trade is likely to crash.

While India's total imports from China did see a drop in the April 2023 to January 2024 period, a US Federal investigation determined that China was using loopholes in order to avoid the customs duty India imposes on Chinese imports of modules or panels. The investigation's final findings stated that China was using Southeast Asian countries such as Vietnam, Malaysia, Singapore, and Cambodia.

According to Bloomberg, mainland China factories shipped $2.1 billion of solar panels to India in the six months through March 2024, making it China's top export destination. These shipments boosted solar cell demand due to rising local solar module production, reflecting how Indian project developers were racing to secure module supplies before the imposition of a trade barrier.

Which Indian Firms Stand To Benefit

Companies like Adani Green Energy Ltd., Tata Power Ltd., Insolation Energy Ltd., ITI Ltd., and Bharat Heavy Electricals Ltd. stand to benefit in the Indian listed space, as these companies or their subsidiaries are listed in the revised ALMM List.

The approval of the companies increases their potential to obtain solar module orders for any government-subsidized sponsored project going forward.

In terms of enlisted capacity, Adani Enterprises subsidiary Mundra Solar has the highest capacity at 4,100 megawatts per year, followed by Insolation Energy with 604 megawatts per year and Tata Power Solar with 499 megawatts per year.

Adani Enterprises also stands to benefit more from the solar value chain potential, as its subsidiary, Mundra Solar PV Ltd., recently began commercial production of wafers and ingots. Furthermore, First Solar Inc. has also started shipping from its fully integrated India factory.
Source: NDTV Profit

**India's Export Promotion Measures Announced**

India has announced a series of export promotion measures aimed at enhancing the country's export competitiveness and facilitating trade growth. These initiatives are part of the government's ongoing efforts to promote exports and boost economic recovery in the post-pandemic period.

One of the key measures introduced is the expansion of the Production Linked Incentive (PLI) Scheme to cover more sectors, including textiles, auto components, and advanced chemistry cell batteries. This expansion is expected to incentivize domestic manufacturing and boost exports in these sectors, thereby contributing to India's overall export growth.


Additionally, the government has announced the implementation of the Remission of Duties and Taxes on Exported Products (RoDTEP) Scheme for all export goods. Under this scheme, exporters will be reimbursed for various embedded taxes and duties, further enhancing their competitiveness in international markets.

Furthermore, the scope of the Service Exports from India Scheme (SEIS) has been expanded to include more services, such as legal, accounting, and architectural services. This move is aimed at promoting India's service sector exports and capitalising on the country's strengths in these areas.

The government has also simplified procedures and documentation requirements for exporters, streamlining the export process and reducing transaction costs. These reforms are expected to make it easier for businesses to engage in export activities and expand their presence in global markets.

Overall, the announced export promotion measures demonstrate the government's commitment to supporting exporters and catalysing India's export-led growth trajectory. By providing incentives, simplifying procedures, and expanding the scope of existing schemes, India aims to boost its export competitiveness and achieve sustainable economic growth in the long term.

Source: Construction World

**Hyundai Motor Group to make India a global export hub: Says the chief**

Hyundai Motor Group's chief visited India recently and laid out a vision to bolster its operations there to utilise the country as a key export hub for the South Korean automaker. The news surfaced on Thursday when the chief officially declared the plan.


He further stated that over the past year, Hyundai Motor Group has announced new investment plans in the country with approximately 5 trillion won (USD 3.75 billion), which reflects the group's intent to target one of the fastest-growing majors in the automotive markets in the world.

Euisun Chung, Hyundai Motor Group's executive chair, visited the group's Indian headquarters in Gurugram, Haryana on Tuesday and discussed medium- to long-term strategies for the Indian market with employees.
He also held a town hall with some 400 employees and

shared his future visions. It marked the first time Chung held a town hall with employees overseas, reports Yonhap news agency.

At the meeting, Chung shared his vision to nurture India as the group's global export hub for Hyundai as it expands its business to Africa, Asia and the Middle East.

He further highlighted employees' dedication, customer trust and technological expertise as the key growth factors of the country, while expressing pride in the group which consistently achieved the second position in the Indian market share.

Regarding Hyundai's electric vehicle (EV) business direction, Chung said Hyundai will "play an active role in electrification through specialised EV development for the Indian market" and envisioned the group leading India's clean mobility sector by the time EV adoption becomes mainstream by 2030.

Hyundai Motor has long established India as one of its largest global production bases. The company established its first Indian manufacturing plant in 1998 and a second one in 2008.

Hyundai Motor Group has recently finalized a significant agreement, by signing a 174-megawatt power purchase agreement (PPA) with a solar energy project which is led by Matrix Renewables, a company based in Spain. The new collaboration is focused on supplying renewable energy to Hyundai's upcoming electric vehicle (EV) manufacturing facility in the United States.

Source: India TV

## Medical device makers look to hike Russia exports to Rs 2,000 cr in 5 years

India's exports of medical devices to Russia can be tripled in the next five years through collaborative efforts by both countries, according to the Association of Indian Medical Device Industry (AiMeD).

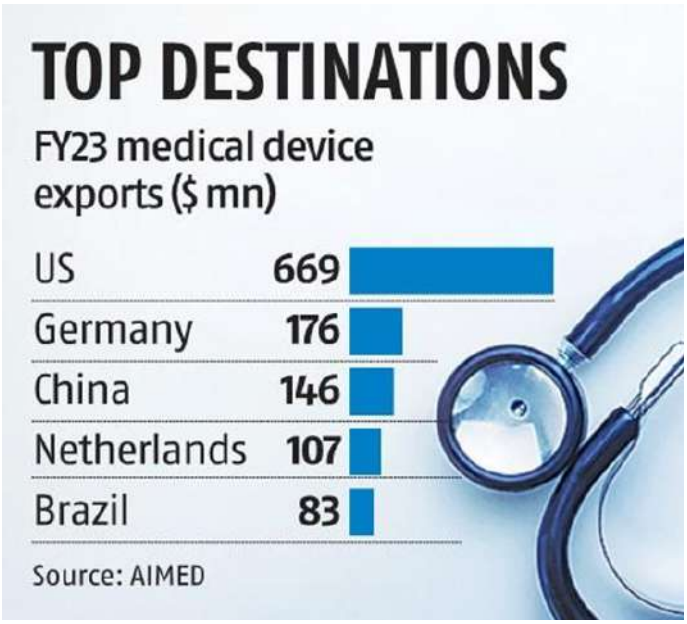
The push to shore up Indian medical device exports to Russia comes after players from both countries recently held an online meeting to explore opportunities in the areas of manufacturing and marketing life-saving medical equipment and devices.

"They stressed the need for a dynamic and multifaceted economic engagement, guided by shared interests and a commitment to further deepen bilateral cooperation. The two organisations will contribute in their own humble manner in line with that objective," AiMeD said in an official statement.

The online event was attended by over 70 Indian manufacturers and exporters alongside some key Russian investors.

Data compiled by AiMeD shows that India exported most medical devices to the US at $668.9 million in FY 2022-23. This was followed by Germany ($176.2 million), China ($145.6 million), and the Netherlands ($106.5 million).

Russia currently does not feature in the top five countries that import medical devices from India.




Speaking on the state of India's medical device exports to Russia, Rajiv Nath, forum coordinator at AiMeD, said that medical device exports to Russia currently stood at Rs 625.68 crore (around $75 million) in FY 2022-23.

"This figure can possibly increase to Rs 2,000 crore (around $239 million) in the next five years if there is a coordinated strategy between both countries and regulatory approvals are fast-tracked," he said.

The region has seen an increased focus in recent years, with Russia being among the top destinations of India's medical device exports in the Commonwealth of Independent States (CIS) region.

According to a report by the Engineering Export Promotion Council of India (EEPC), Russia accounts for 60 per cent of India's medical device exports in the CIS region.

"Given the enormous opportunities in the medical device industry for multifaceted bilateral engagements, experts from India and Russia have vouched for faster efforts to give a boost to collaborations and make the most of emerging opportunities in the areas of manufacturing and marketing life-saving medical equipment and devices," the body said.

Keeping this in mind, AiMeD had signed a Memorandum of Understanding (MoU) with the Centre for the Development of Russia-India Strategic Partnership (DRISP) last year.

"There is a huge scope for partnerships between Indian stakeholders and their Russian counterparts in the field of the medical device industry. DRISP and AiMeD have joined hands to accelerate the pace of bilateral engagements," he said.

"We are now moving ahead towards strengthening the bilateral relations through collaborative efforts, including demanding the fast-tracking of regulatory processes and making new partnerships in areas of manufacturing and marketing of medical devices between the two countries," the body added.

Source: Business Standard

**Apple's iPhone Exports from India Doubles in FY 2023-24**

The export size of the Apple iPhone from India has doubled from US$6.27 billion in 2022-21 to US$12.1 billion in 2023-24, demonstrating the company's strong presence in the Indian manufacturing sector. The overall smartphone shipment size from India stood at US$16.5 billion in 2023-24, up from US$12 billion in 2022-23.

According to a report from trade intelligence platform Trade Vision, Apple Inc.'s iPhone shipments from India increased dramatically in the fiscal year 2023-24 by almost 100 percent. The startling increase in its India shipment size – likely an outcome of domestic incentive schemes like the Production-Linked Incentive (PLI) Program – have contributed to Apple's global supply chain expansion.


Becoming a favorable destination for manufacturing and exports

Among factors motivating Apple's decision to establish its manufacturing operations in India was the need to diversify its supply chain, mitigate the risk of geopolitical instability, and capitalize on the country's growing consumer market.

Moreover, initiatives like the PLI scheme for large-scale electronics manufacturing have incentivized companies like Apple to invest in the Indian market.

Successful sales of India-assembled iPhones in the American market will only encourage Apple's pursuit of more global suppliers and vendors.

India's PLI program was introduced in April 2020 to encourage domestic smartphone manufacturing. In October 2020, the government formally approved 16 businesses, including Samsung and Apple's three contract manufacturers in India, as part of the US$6.65 billion PLI initiative.

The PLI scheme for large-scale electronics manufacturing, notified via gazette notification no.CG-DL-E-01042020-218990, shall provide financial incentives to boost domestic electronics manufacturing and attract large investments. The scheme shall extend an incentive of 4 percent to 6 percent to eligible companies on incremental sales (over the base year, i.e., 2019-20) of manufactured goods, including mobile phones and specified electronic components, for a period of five years subsequent to the base year.

In FY 2023-24, the US remained the largest importer of smartphones from India, with imports reaching approximately US$6 billion. Notably, iPhones accounted for US$5.46 billion of this total, reflecting a significant surge from the US$2.1 billion reported in the preceding fiscal year, and indicative that American consumers were in favor of India-manufactured devices.

## Apple diversifying its manufacturing roots

In 2021, Apple made the strategic decision to diversify its manufacturing of Mac, iPad, and iPhone products beyond China. To strengthen its global presence, it opted to establish facilities in Vietnam and India, aiming to diversify production lines and boost iPhone and iPad output.

According to Bloomberg News, the US tech giant significantly expanded its iPhone manufacturing in India during fiscal year 2024, investing a substantial $14 billion in constructing iPhones. Currently, the company manufactures 14 percent of its flagship products in India, equating to approximately 1 in every 7 iPhones.

The surge in iPhone manufacturing in India is also credited to major Taiwanese manufacturers, Foxconn and Pegatron. Foxconn reportedly assembled over 67 percent of iPhones manufactured in India, while Pegatron Corp. contributed around 17 percent. Pegatron Corp. is reportedly in advanced negotiations with the Tata Group to transfer management of its sole iPhone production plant, located in Hosur, Tamil Nadu, by May 2024.

India has provided major incentives to Apple's contract manufacturers under the PLI Program. Its leading contract manufacturers, Taiwan-based companies Foxconn (Hon Hai), Wistron (now owned by the Tata group), and Pegatron are set to receive over INR 44 billion (US$527 million) in incentives from the central government for achieving PLI progress targets in FY 2022-23.

Under the PLI Program, beneficiary companies receive incentives a year after meeting the targets.

Though Apple is deliberately growing its global production footprint to lessen dependency on a single market, China continues to be the world's largest center for iPhone manufacturing.

## India reaping benefits of the PLI scheme

According to Rajesh Kumar Singh, secretary of the DPIIT, in 2023, the PLI Scheme led several large smartphone manufacturers, including Foxconn, Wistron, and Pegatron, to move their supply chains to India since 2020. This has had a cascading effect – increasing employment in the nation for high-end phone manufacturing and resulting in a 20-fold growth in the localization of IT hardware, including laptops and batteries.

Singh claimed that within three years, India was able to raise the value addition in mobile manufacturing to 20 percent. According to data made public by the Ministry of Electronics and Information Technology (MeitY), the PLI scheme for large-scale electronics has led to creating 28,636 jobs and increasing smartphone exports by 139 percent since 2020.

### Conclusion

Apple primarily focuses on designing its products and developing the software that powers its digital devices. The manufacturing of its products' hardware components is outsourced to various vendors.

The smartphone giant initiated contract manufacturing of its phones in India in 2020, with Foxconn being the first company to commence assembly operations in the country. In 2023, Tata Electronics acquired Wistron, and now it is actively establishing Apple's largest assembly plant in Hosur, Tamil Nadu.

Source: India Briefing

### India's overall exports hit record $776.7 bn in FY24

New Delhi India's overall exports reached a record $776.68 billion in the financial year ended March 31, despite global headwinds, according to provisional data released by the commerce ministry on Monday. The increase, while marginal over the previous year's $776.40 billion, a record at the time, was driven by strong services exports, which compensated for a 3.11% contraction in merchandise exports.

The country's overall trade deficit improved by 35.77% from $121.62 billion in FY23 to $78.12 billion in FY24. (Bloomberg)

Merchandise exports fell to $437.06 billion in FY24, while services exports grew by 4.4% to a record $339.62 billion. The country's overall trade deficit improved by 35.77% from $121.62 billion in FY23 to $78.12 billion in FY24.

"We have beaten all the odds as we have surpassed the overall (exports) figures of 2022-23," said commerce secretary Sunil Barthwal, attributing the positive growth to the government's strategy of exploring new markets and expanding its export basket.

Barthwal contended that the overall exports growth was positive on a high base and noted that the other major achievement in the fiscal year was the sharp reduction in trade deficit due to policy focus on import substitution and curbing non-essential imports.

He added that exports are completely dependent on demand from global markets that was depressed because of adverse geopolitical developments, alluding to the conflicts in Ukraine and Gaza.

The government's strategy to explore new markets and expand its export basket with new products helped in maintaining the last year's (2022-23) momentum, he said. According to him Indian exporters are better prepared in 2024-25, but there are new challenges to cope with too. Commenting on the recent escalation of the Israel-Iran conflict, he said: "We are monitoring the situation and will take appropriate action."

In March , merchandise exports fell marginally by 0.67% to $41.68 billion, while imports fell sharply by 5.98% to $57.28 billion.

According to the provisional data released on Monday, India's merchandise exports in 2023-24 fell by 3.11% to $437.06 billion as against $451.07 billion in 2022-23. Merchandise imports in 2023-24 too fell, by 5.41% to $677.24 billion as against $715.97 billion in 2022-23.

In services, India saw expansion in exports and contraction of imports. Services export in 2023-24 were estimated at $339.62 billion, 4.39% up from $325.33 billion achieved in 2022-23. Services imports were estimated at $177.56 billion in FY24 as compared to $182.05 billion in FY23, a contraction of 2.46%.

Federation of Indian Export Organisations (FIEO) president Ashwani Kumar praised the resilience and dedication of the exports sector despite global challenges, picking out electronic goods, drugs and pharmaceuticals, engineering goods, iron ore, cotton yarn, and handloom products as major growth drivers. It "goes to show not only the firm resolve of our resilient, gritty and vibrant exports sector of the economy but also of the overall exporting community."

He added that "such an impressive increase" in overall exports growth despite the geopolitical tensions such as the Russia Ukraine war and the Red Sea crisis, the tight monetary stance of central banks in the developed world and falling commodity prices, highlights the dedication and commitment of the sector, which has continuously been braving such odds post Covid.

Major growth drivers of merchandise exports in FY24 were electronic goods, drugs and pharmaceuticals, engineering goods, iron ore, cotton yarn, and handloom products, a "good sign" as these sectors are mostly labour-intensive, Kumar said.

Aditi Nayar, chief economist at ICRA Ltd, said the easing of the merchandise trade deficit in March 2024 is expected to augur well for the current account number in the fourth quarter of FY2024. "Led by a larger YoY decline in merchandise imports vis-à-vis such exports, India's merchandise trade deficit eased to an 11-month low of $15.6 billion in March 2024, while also trailing the levels seen in the year-ago month, amid a halving of gold imports and a fall in non-oil non-gold imports. This is expected to augur well for the current account number in Q4 FY2024," said Nayar.

Source: HT

# Why become a Plexconcil Member?

Established since 1955, the Plastics Export Promotion Council, PLEXCONCIL, is sponsored by the Ministry of Commerce and Industry, Department of Commerce, Government of India. PLEXCONCIL is a non-profit organization representing exporters from the Indian plastics industry and is engaged in promoting the industry exports.

The Council is focused on achieving excellence in exports by undertaking various activities and initiatives to promote the industry. The Council undertakes activities such as participation at international trade fairs, sponsoring delegations to target markets, inviting foreign business delegations to India, organising buyer-seller meets both in India and the overseas etc.,

The Council also routinely undertakes research and surveys, organizes the Annual Awards to recognize top performing exporters, monitors the development of new technology and shares the same with members, facilitates joint ventures and collaboration with foreign companies and trade associations as well as represents the issues and concerns to the relevant Government bodies.

The Council represents a wide variety of plastics products including – Plastics Raw Materials, Packaging Materials, Films, Consumer Goods, Writing Instruments, Travel ware, Plastic Sheets, Leather Cloth, Vinyl Floor Coverings, Pipes and Fittings, Water Storage Tanks, Custom made plastic Items from a range of plastic materials including Engineered Plastics, Electrical Accessories, FRP/GRP Products, Sanitary Fittings, Tarpaulins, Laminates, Fishing Lines/Fishnets, Cordage/ Ropes/Twines, Laboratory Ware; Eye Ware, Surgical/ Medical Disposables.

**Membership Benefits**

- Discounted fees at International Trade Fairs and Exhibitions
- Financial benefits to exporters, as available through Government of India
- Disseminating trade enquiries/trade leads
- Instituting Export Awards in recognition of outstanding export performance
- Assistance on export financing with various institutions and banks
- Networking opportunities within the plastics industry
- Special price for Dun & Bradstreet's DUNS Registered Solution, Global Profiler, and ESG Report

# New Members

**The Plastics Export Promotion Council added the following companies/firms as new members during March-2024. We would like to welcome them aboard!**

| Sr.No | Name Of The Company | Address | City | Pin | State | Email |
|---|---|---|---|---|---|---|
| 1 | Anvi Exports | C-2/13 Aboli Damodar Vihar, Hingne Khurd Sinhgad Road, | Pune | 411051 | Maharashtra | vikas.gawali799@gmail.com |
| 2 | Arrowmed India | Shop No 4, Sanidhya Skyrose, Near Gota Railway Crossing, | Ahmedabad | 382481 | Gujarat | arrowmed.export@gmail.com |
| 3 | Dalal Plastics Private Limited | Plot No. B18/19, Midc, Ttcindustrial Area, Digha ,Post Airoli, | Navi Mumbai | 400708 | Maharashtra | murtaza@dalal-plastics.com |
| 4 | Dura Polymers | Ground Floor, B2, 9 & 10, Radhesham Industrial Complex, National Highway 3,Asangaon, | Thane | 421601 | Maharashtra | prashant.mhatre@durapolymers.com |
| 5 | Easy Plastics Private Limited | B-1602, E-6, Sarvodaya Heights , Jain Mandir Road, Mulund West, | Mumbai | 400080 | Maharashtra | paras@easyplastics.com |
| 6 | Endura Polyplast Private Limited | Survey No. 618, Paiki 1 - 619, At Moti Marad, Taluka Dhoraji, | Dhoraji | 360421 | Gujarat | endurapoly@gmail.com |
| 7 | Euphoria Packaging Private Limited | Survey No 396, Paiki 4,Block Noa-3, Gsl Nova Compound, Moraiya,Sanand, | Ahmedabad | 382213 | Gujarat | vinayak@euphoriapack.com |
| 8 | Flexochem Ventures Private Limited | Shade No. 115, Plot No 27/1tps 87, S.No.1030, Platinum Indstrial Park, S.L.M.Mill Compound, Vatva | Ahmedabad | 382445 | Gujarat | jainam@flexochem.in |
| 9 | Fraistek Ideacs | Ground Floor,B-31,Rajdanga Nabapally. Kasba | Kasba | 700107 | West Bengal | indrajitsaha@fraistek.com |
| 10 | Gayatri Microns Limited | 217-218, Advait, Nr.Sandesh Press, Vastrapur | Ahmedabad | 380054 | Gujarat | maulik@gayatri-microns.com |
| 11 | Hp Composites Llp | 11, Unique House, Chakala Road, Andheri East, | Mumbai | 400099 | Maharashtra | frp.accounts@hpcompositesllp.com |
| 12 | Jk Master Batch Poly Private Limited | Plot No 305, Sector-17, Footwear Park, Hsiidc, Jhajjar, Bahadurgarh, | Jhajjar | 124507 | Haryana | info@jkpmaster-batch.com |
| 13 | Krystal Krokery | 1a18 C, Chopasani Road 1st Puliya, Jodhpur, | Jodhpur | 342008 | Rajasthan | krystalkrokery@gmail.com |
| 14 | Lenexa Industries Llp | Sr No. 54/2 Paiki 3, Sr No. 54/2 Paiki2, Plot No. 12 And 13 Lakhdhirnagar | Morbi | 363641 | Gujarat | lenexaindustries@gmail.com |
| 15 | Mamata Machinery Private Limited | 423-P, Moraiya, Sarkhej-Bavla Road, Taluka- Sanand | Ahmedabad | 382213 | Gujarat | sales@mamata.com |
| 16 | Multiline Exports | No.360 Manomani Street Grand Line Sri Krishna Nagar Redhills Chennai Thiruvallur Tamil Nadu 600052 Tamil Nadu | Chennai | 600052 | Tamil Nadu | multilineexportz@gmail.com |
| 17 | Nitrex Chemicals India Limited | 905, 9th Floorshapath V, Opp. Karanavati Club, S.G.Highway, Jodhpur Char Rasta, Ahmadabad City, | Ahmedabad | 380015 | Gujarat | d.sanghavi@nitrex.in |
| 18 | Packing Solutions | H-1159, 3rd Phase, Sitapura Industrial Area, | Jaipur | 302022 | Rajasthan | packingsolutions-jpr@gmail.com |
| 19 | Parth Specialty Resins And Marketing Private Limited | 11,2nd Floor, Teresa Apartments, Samata Nagar, | Thane | 400606 | Maharashtra | sales.psr@gmail.com |
| 20 | Pragati Polyking | Block No 4b, Ratnakar Developer Por-Ramangamdi, | Vadodara | 391243 | Gujarat | pragatipolyking@hotmail.com |
| 21 | R Mech Machines Llp | Block Survey No 896 Kuha Pasunj Road Pasunj, Post Office Daskroi Ahmedabad | Ahmedabad | 382430 | Gujarat | info@rmech-machines.com |
| 22 | Rixon Polypack Llp | Survey No.171/1, Plot No.7, | Rajkot | 360024 | Gujarat | rixonpolypack@gmail.com |

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| 23 | Seven Star Engineers Fabricators Contractors | Plot No. C-1/704-705, Phase Iv, G.I.D.C. Vatva, | Ahmedabad | 382445 | Gujarat | jitendra_bhatia@hotmail.com |
| 24 | Shantanu Poly Plast Private Limited | 46/3/B, Nashirabad, Umale Road, | Jalgaon | 425003 | Maharashtra | gautamladdha790000@gmail.com |
| 25 | Shri Durga Surgical | 35, Bharat Estate, B/H. L.B.S Stadium, Bapunagar, | Ahmadabad | 380024 | Gujarat | shridurgasurgical@gmail.com |
| 26 | Shri Ram Plastofab Private Limited | L.S.No.186 Opp. Khatraj S/S, Karoli, | Kalol | 382305 | Gujarat | info@srplastofab.com |