

Indian Polymer Industry And Its Coming Of Age

With Make in India gaining prominence, India's polymer sector is not privy to the movement. The article elaborates on how the Make in India movement could elevate India's polymer sector globally.

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Indian plastic processors are ramping up their game, and the world is taking note. Favourable population dynamics along with low penetration of the wonder material puts India in a unique position: of leading the growth charts, both in production and consumption.

India is on the precipice of becoming a globally recognised, developed nation within the next

couple of decades. What is tipping the scales in the favour of the country is an ebullient polymer ecosystem (projected to be a whopping \$30 billion by 2025) that is responsible for strengthening the Indian economy. Fathom this: An average Indian consumes



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15 kgs of plastics per year, compared to 62 kgs for an average Chinese.

A Brief Context

• A strategic five-year plan led by expert committees greatly accelerated the polymer industry's growth after 1970. In 1979, Indian

Polymers Corporation Ltd (IPCL) commissioned India's first integrated polymer complex with six downstream units at Vadodara, Gujarat, which sparked the development of downstream process industries.

- Today, with 44 producers, 50,000 plastic processors and a thriving ecosystem, comprising machinery manufacturers, masterbatches and additive processors, and a high number of small and large distribution companies, India's polymer industry is not only thriving but also attracting global attention.
- There has been a handsome growth in technology and advancement of machines, and more complicated chemistry is being tried to result in India producing most of its plastic components in-house.
- As of today, India ranks sixth in the global sale of chemicals and fourth in Asia. Over two million people are employed in the country's chemical and polymer industries, which produce over 80,000 varieties of chemicals.



Key Growth Indicators of Self-Reliant Indian Polymer Domain

As a self-reliant manufacturing and distribution powerhouse, the polymer sector has also demonstrated six key growth indicators:

1. Raw Material Production

Indian polymer producers are stepping up their game. The total increase in PE & PP capacity alone is expected to be ~11 million Mt a growth of 90 per cent of the current capacity of 12.3 million Mt over the next five years (Source: Plastics Industry Status Report – India – 2021-22)

The next five years will also witness the entry of at least five new players into the polymer production domain, including the Adani group. Roughly 60 per cent of new capacity installation is led by new entrants: a testimony to the potential and confidence enjoyed by the Indian polymers industry. The producers are not shying away from tie-ups and joint ventures, to explore synergies of finance and technological know-how.

There is an increasing interest towards producing high-value, high-realisation polymers i.e., CPVC, engineering polymers. While achieving self-sufficiency remains a pipedream, Indian producers are



increasingly exporting the resins, and monetising the global volatility: the sign of a matured trade ecosystem.

2. Investment

Indian manufacturers have not only been investing more but also smarter in the last few years. According to PMMAI, the total new investment in plastic processing machinery, in FY22, was \$1.32 bn, to install 15000 new machines. And the core processing machinery growth has been 8.5 per cent over the past four years. The expected investment for the next five years, in machinery, moulds and converting lines, is \$14 bn! 70 per cent of this continues to

be in injection moulding.

Indian machinery manufacturers now export to 50+ countries, mostly focussed on high-value segments medical and electronics (Source: PMMAI). With the stupendous growth in installed processing capacity, and raw material production, the final jigsaw in the growth puzzle is consumption.

3. Consumption:

While plastics consumption has ever been growing, covid has put this in high gear: not only by nudging millennials and middle-class to embrace packaging into their lifestyles, but also pushing work towards comfort, something that boosts demand for lifestyle goods.

An average Indian is today 28 years, and will only age by a few years, over the coming decade. This plays into the consumption pattern: not only growth in the quantity of consumption, but also quality, as more areas of consumption will be dominated by plastics and replacing their alternatives.

The demand for engineering plastics and high-performance materials is increasing with rapid urbanisation and industrialisation led by the aforementioned transitions in automotive, electronics, consumer goods, construction, and other sectors.



There are a lot of areas where plastic applications are yet to enter, leave alone dominate. This ranges from high-end medical applications to run-of-the-mill packaging applications. E.g., we still have Roto moulding applications geared largely towards water tanks. The application has global usage in varied industries like transportation and toys, something we have not witnessed yet.

4. Per Capita Growth:

India's low per capita consumption, at 15 kgs, remains the biggest growth opportunity. Though this per capita number has been increasing at 15-18 per cent each year (this number was 12 kgs in 2016), it is still paltry compared to the top two consumption countries: seven times (the US at 112 kgs) and four times (China at 62 kgs).

Indian Poly-Ethylene consumption (4.6 kgs) is still roughly equal to that of Polypropylene (4.4 kgs). With increasing urbanisation and a shift towards packaged and pre-packaged products, will increase by 40 per cent over the coming few years.

Increased consumption of packaged food & beverages, and increased spending on mobile phones, automobiles, and other electronic devices, will shape a lot of patterns.

5. Global Trade & China Factor

Although many high-valued finished products are still imported, there is now considerable investment in plastics processing operations, driving polymer demand upwards. With a higher per capita income, the demand for personal care and hygiene products has increased leading to an increased demand for plastics.

Industrial opportunities for the Indian market have further arisen from disruptions in the Chinese polymer supply chain due to even stricter environmental norms creat-



ing uncertainty in the market. This has mobilised international buyers to shift their sourcing destination from China to India.

Indian plastic and polymer manufacturers are, therefore, on the lookout to upgrade their technology to gain credence in a rapidly digitising global market. This in turn establishes a playing field for machinery manufacturers, robotics & industrial automation service providers, as well as polymer R&D companies to target Indian manufacturers.

India stands third in polymer consumption globally after China and the US. Although demand for Polymers has increased 20 times in the past 20 years, compared to the 1.5x population increase in the same period. This is quite low compared to the global average.

6. Circular Economy

There is a circular economy principle at play here. A gravitating trend toward sustainability and value-added principles for balancing the social, environmental, and economic ramifications of innovation has accel-

erated the polymer industries' transition into a sustainable business culture.

Increased consumer demand for environmentally friendly products is helping these committed businesses meet their sustainability targets through a shift towards responsible investing and new standards and a reduction in greenhouse gas emissions. The lightweight and durability factor of polymers has further motivated a shift from the use of metal-based components across industries, to polymer-based parts.

The Way Ahead

More investments, specifically in infrastructure and consumer electronics will ensure that India becomes a hub for plastic products, leading to increases in plastic production. Reinforced plastic is now being tried in a big way, to become the best alternative to metal components in demand from sectors like construction, aerospace, pharma, military, etc., utilising reinforced plastics on a large scale owing to their versatility, lightweight and durability.

Some other growth sectors that are looking to drive the impetus on India's polymer ecosystem supply-demand, are solar energy, rail, road & port infrastructure, packaging, and defence. New joint ventures and R&D spending can help us attain a more proactive Polymer supply chain that can sustain the growth of >8 per cent.

India already enjoys the industry ranking of the world's largest two- & three-wheeler manufacturer, with some 29 odd two-wheelers sold per minute. We are now also the world's largest vaccine maker, virtual incubator, second largest smartphone manufacturer.

To truly make it India's decade, India's polymer industry will play an instrumental role. 🇮🇳