

Road Map formulation for Petrochemicals.

Inputs from AIPMA

The subgroup on Roadmap Formulation held its meeting on **18th Sept** at Kartavya Bhawan-2. Subsequently the Petrochemical Roadmap workplan was shared on **21st Sept** assigning the inputs for the Sub group members. All were requested to send their inputs by **28th Sept 26**

AIPMA was assigned the inputs to be given.

Demand/Supply and projections data till 2047 on downstream Plastics Industry including emerging segments and processing technology imperatives	• Demand & Supply till 2047 for key identified Sector/ Segments, emerging demand segments based on Petrochemicals Value Chain in the plastic industry including export potentials. • Plastic Processing technology Gaps – domestic availability status present and till 2047, indigenization opportunities of processing technologies, additives etc.	AIPMA
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AIPMA inputs for the Sub-Group on Roadmap Formulation for Petrochemicals.

Plastic processing sector in India.

The plastics consumption in India is equated approximated to the Polymer consumption in India comprise domestic sales of polymer and import of raw materials. The imports of finished products and use of Recyclates are not included in the consumption. Which may add another 15-20% to the consumption estimates.

The basis for this study for data is Plastindia report of FY 24-25. This study estimates the total consumption at app 28 million Mts in 24-25. The endues analysis and projections are based on this study only.

The broad applications in India for polymers are:

- 1.Packaging
- 2.Building & construction / infrastructure
- 3.Agriculture / plasticulture
- 4.Automotive & transportation
- 5.Electrical & electronics
- 6.Consumer durables / appliances
- 7.Household and consumer products
- 8.Healthcare & pharmaceuticals
- 9.Industrial products
- 10.Textiles, fibers, footwear and technical applications
- 11.Furniture
- 12.Renewable energy
- 13.Defence, aerospace and other specialty applications

Packaging and Infrastructure are by far the largest segments of Plastics end use and the emerging sectors are Renewable energy and Defense and Aerospace which have the smallest base at present.

Polymer category wise consumption in India in 24-25 was 28190 KTs

Polymer Type	Demand in KTs
Commodity plastics	24440
Engineering/high-performance/specialty plastics	1180
Thermosets	2530
Bioplastics	40
Total	28190

Among the commodity polymers, largest consumption was of PE at 8236 Kts with dominant share of Films for flexible packaging followed by Blow molding for rigid packaging.

Application	Demand KT	Share
Film & sheet	4020	48.8%
Blow moulding	1284	15.6%
Injection moulding	784	9.5%
Pipe & profile	685	8.3%
Raffia	480	5.8%
Extrusion coating	312	3.8%
Rotomoulding	253	3.1%
Wire & cable	156	1.8%
Fibre	110	1.3%
Others	152	1.9%
	8236	100.0%

PP consumption was at 7600 KTS with Raffia being the largest. PP is much more diversified than PE—woven/raffia products, packaging (BOPP), injection molded products, automotive, appliances, fibers and films are all important sectors for PP.

Application	Demand KT	Share
Raffia	2436	32.1%
Injection moulding	1288	16.9%
Industrial/consumer products (ICP)	1262	16.6%
Fibre & filament	808	10.6%
BOPP	911	12.0%
RCP	370	4.9%
TQ film	284	3.7%

Others	242	3.2%
	7601	100.0%

PVC, at 4560 KTS, the clearest example of a polymer being dominated by one end-use i.e. Pipes. PVC in India is fundamentally an infrastructure/construction/agriculture polymer. PVC also defies the assumption that non availability of material restricts growth. App 2/3 of requirement of polymer being met by imports, Still PVC has shown a good consumption growth in line with Infrastructure growth story of India.

Application	Demand KT	Share
Pipes	3339	73.6%
Wire & cable	339	7.5%
Calendaring	208	4.6%
Profiles	217	4.2%
Fittings	229	5.1%
Sheets	144	3.2%
Films	34	0.8%
Others	50	1.1%
	4560	100%

PET is largely a liquid packaging polymer. FY25 PET was demand 1.91 MMT PET + 0.96 MMT BOPET = 2.87 MMT.

The PET rigid-packaging market is dominated by carbonated soft drinks and is overwhelmingly a packaging and consumer-products polymer.

Segment	Share
Carbonated soft drinks/fruit drinks	41%
Bottled water	19%
Liquor	10%
Pharmaceuticals	8%
Personal care	6%
Edible oil	5%
Wide-mouth jars	4%
Home care	3%
Agrochemicals	2%
Dairy	2%
Total	100%

Engineering plastics are a smaller volume compared to commodity polymers but very important in terms of applications. Here India's plastics processing industry is moving up the value chain. FY25 engineering/high-performance/specialty plastics consumption is about 1.17 MMT.

Major polymers:

Polymer	FY25 demand
Polycarbonate	309
ABS	290
Polyamide	175
TPE	141
POM	65
TPU	40
PMMA	38
PBT	34
SAN	36
Others/specialties	52
Total	1180

Here the end-use sectors change dramatically to Automotive, Electrical and Electronics and medical devices.

Automotive are playing a major role in the growth of consumption of engineering plastics because of lightweighting, EVs, improved fuel efficiency, thermal management. design freedom. corrosion resistance and integration of multiple components

An analysis of a passenger car components shows plastics as the second-largest material category after metals in an ICE vehicle. EVs have a higher total vehicle weight because of the battery, but plastics remain important in interiors, underbody components, battery systems, electrical systems, cooling systems and structural/semi-structural applications.

Important polymers include: PP compounds, ABS, PC/ABS, PA, POM, TPU, TPE, PC and engineering compounds.

Recycling of Plastics,

Recycling of plastics is emerging as a big economic sector and is currently values at app Rs 25000-30000 Crores per annum and set to become Rs 60000 Crs by 2030. It was in un-organised sector but of late large player in organised sector have entered the plastics recycling ecosystem. There is no dearth of recyclers and no dearth of application to which the recycled plastics can be put to use. It is well established business segment at present. The recycled plastics are sought by FMCG companies also for fulfilling their EPR (Extended Producer Responsibility) by adding certain percentage of recycled plastics in their packaging as mandated by Government. The plastics consumption in the country has reached app 25 million MTA and the waste generation and recycling has increased manifolds. EPR framework has brought in brand owners to increase percentage of Recyclates in their products and the structure of recycling industry is undergoing a change with entry of organised players in recycling and adoption of modern technology.

The relevance of consuming sector to overall growth of plastics can be summarized in the following table.

Sector	Major plastic applications	Relative importance
Packaging	Films, pouches, laminates, bottles, containers, caps, crates	☆☆☆☆☆
Construction & infrastructure	Pipes, fittings, profiles, flooring, membranes, conduits	☆☆☆☆☆
Agriculture	Irrigation, mulch, greenhouse, nets, tanks, films	☆☆☆☆
Automotive	Components, interiors, underbody, EV components	☆☆☆☆
Consumer durables	Refrigerators, washing machines, ACs, appliances	☆☆☆☆
Electrical & electronics	Components, housings, cables, connectors	☆☆☆☆
Textiles/fibres	PP/PE/PET fibres, nonwovens, technical textiles	☆☆☆☆
Healthcare/pharma	Syringes, bottles, IV systems, devices, packaging	☆☆☆
Household	Furniture, storage, kitchenware, consumer products	☆☆☆
Industrial	Tanks, drums, engineering components, material handling	☆☆☆
Footwear	EVA, PVC, TPU, PU	☆☆
Renewable energy	Solar encapsulants, components, wind composites. Rapidly growing	☆☆
Defence/aerospace	High-performance polymers/composites. Emerging Applications	☆
Recycling/circular products	PCR packaging, recycled compounds, recycled products. Very fast growth expected	☆

Looking at the 2047 roadmap, we can broadly put all the major application in three categories:

- 1.Mature applications** -large today, still growing broadly with GDP/population, but unlikely to grow much faster than the economy.
- 2.High-growth applications** =relatively smaller today but likely to gain substantial share by 2035–2045.
- 3.Declining/structurally challenged applications**-where volume may stagnate or decline because of substitution, regulation, circularity or changing consumer behavior.

Packaging, automotive components, speciality polymers, sustainable materials and plastics in renewable energy and defense applications are among the important emerging areas.

Complete canvass of application, their relative size, future outlook and growth potential is captured in the table below.

Application	Present Size	10–20 year outlook	Assessment for future Growth
Flexible Packaging	Very large	Continues growing, but sustainability pressure	High volume growth
Rigid packaging	Very large	Strong growth	High
Pipes & fittings	Very large/mature	Strong but progressively more mature	Moderate-high
Agricultural plastics	Large	Major growth opportunity	High
Automotive plastics	Established	EVs + lightweighting	Very high
Electrical & electronics	Established	Electronics manufacturing + EVs	Very high
Consumer appliances	Established	Rising penetration/income	High
Healthcare/medical plastics	Smaller	Strong structural growth	Very high
Infrastructure/geosynthetics	Medium	Very strong	Very high
Renewable-energy plastics	Emerging	Solar, batteries, wind, hydrogen	Very high
Engineering/speciality plastics	Smaller	Strong value growth	Very high
Recycled/PCR products	Emerging	Extremely strong	Very high
Bioplastics	Very small	Rapid percentage growth, but small base	High growth
Furniture/household moulded goods	Mature	Steady growth	Moderate
Traditional woven sacks	Mature/large	Slow growth/substitution in some areas	Low-moderate
Conventional PVC applications	Mature	Continues growing with infrastructure	Moderate
Single-use thin bags	Mature	Regulation/substitution	Declining
Some disposable food-service items	Mature	Regulation/reuse/substitution	Declining
Low-end commodity products	Very mature	Margin and substitution pressure	Relative decline

A look at the applications across polymers.

So far, we have seen a polymer and its end use, but many end uses are using different polymers such as Flexible packaging, Rigid Packaging, Pipe etc., The total consumption of 28 million mts when looked from the end use application the scenario looks something like below.

Packaging, Pipes and Fittings and Raffia/ Woven sacks emerge as the application of maximum volume The results are quite interesting.

The polymer consumption is shown in three categories.

1. Above 1000 KT's per annum
2. 500 to 1000 KT's per annum and
3. Below 500 Kts per annum.

S No	Major application sector	Major applications	Main polymers	FY25 polymer consumption in KTs	Processing Technologies	Processing-unit Spread	Import Dependence	Export Potential
1	Packaging	Flexible films, pouches, laminates, bottles, jars, caps, closures, trays, thermoformed packs	PE, PP, PET, BOPP/BOPET, PS/EPS, EVOH/EVA, PC	9550	Film extrusion, blown/cast film, BOPP/BOPET, extrusion coating, lamination, printing, injection/blow moulding, thermoforming	Very large fragmented converter base; thousands of film, pouch, bottle, closure & thermoforming units	Medium	Very high
3	Pipes & fittings	Water, irrigation, sewerage, SWR, plumbing, gas, casing, industrial and optical-fibre ducts	PVC, CPVC, HDPE, LLDPE, PP/PPR	4936	Pipe extrusion, co-extrusion, injection moulding, socketing, compounding	Large fragmented processor base; PVC profile segment alone has 140+ manufacturers; many regional pipe clusters	High Upstream	Medium-High
2	Raffia / woven packaging	PP/HDPE sacks, FIBC, tarpaulins, woven fabric, jumbo bags, technical woven products	PP, HDPE, rPP, rPET	2900	Tape extrusion, circular weaving, extrusion coating, printing, bag making, FIBC conversion	2,200+ machines and ~6.6 MMT installed capacity; highly MSME/converter intensive	Low-Medium	Very high
4	Automotive & mobility	Interiors, bumpers, trims, under-hood, battery systems, ducts, connectors, EV components	PP compounds, ABS, PA, PC/ABS, POM, TPE/TPU, PC, PU	1650	Injection moulding, compression, thermoforming, extrusion, blow moulding, compounding	OEM-Tier 1-Tier 2 network; dedicated compounders and moulders;	Medium-High	High
8	Textiles, fibres & nonwovens	PET/PP fibres, filament, nonwovens, geotextiles, technical textiles, hygiene products	PET, PP, PE, PA, PLA	1350	Spinning, melt spinning, spunbond/meltblown, extrusion, weaving, needle-punching	Large fibre producers plus thousands of downstream textile/conversion units	Medium	Very high
6	Consumer durables / appliances	Refrigerators, washing machines, A/Cs, small appliances, RO systems, brown goods	PP, ABS, HIPS, PC/ABS, SAN, PS, PU	1150	Injection moulding, blow moulding, thermoforming, PU foaming, extrusion	OEM/Tier-1 supplier ecosystem; large injection moulders plus specialised assemblers	Medium	High
5	Electrical & electronics	Housings, connectors, switches, plugs, cable components, consumer electronics, telecom parts	PC, ABS, PC/ABS, PA, PBT, POM, PP, PVC	1000	Precision injection moulding, insert moulding, extrusion, overmoulding, thermoforming	High-precision moulders, contract manufacturers, component suppliers; fragmented below Tier-1 level	High	Very high
15	Thermoset composites / FRP	Tanks, pipes, infrastructure, transport, electrical, wind, defence	Polyester, epoxy, vinyl ester, PU + glass/carbon fibre	874	RTM, pultrusion, filament winding, SMC/BMC, compression, hand lay-up	Specialist composite fabricators; 300+ KT installed and 135+ NFC manufacturers separately	Medium	Very high
11	Household / consumer products	Storage, kitchenware, furniture, toys, buckets, containers, utility products	PP, PE, ABS, PS, PVC, TPE	850	Injection moulding, blow moulding, rotational moulding, thermoforming	Very large MSME/SME base; highly fragmented	Low-Medium	High
12	Industrial products & material handling	Tanks, drums, pallets, crates, bins, industrial containers, components	HDPE, PP, PVC, ABS, PE, engineering	800	Injection, blow, rotational moulding, extrusion, thermoforming	Regional processors, industrial moulders, rotomoulders; fragmented	Medium	High
7	Agriculture / plasticulture — excluding pipes	Mulch film, greenhouse film, shade nets, pond liners, trays, crates, silage film, irrigation accessories	PE, PP, PVC, HDPE, EVA, PC	750	Film extrusion, net extrusion, injection moulding, thermoforming, rotomoulding	Highly fragmented regional MSMEs; strong cluster concentration	Medium	High
13	Construction products — non-pipe	Profiles, doors/windows, flooring, membranes, insulation, roofing, panels, conduits	PVC, PE, PP, EPS, PU, PC, composites	750	Profile extrusion, sheet extrusion, calendaring, thermoforming, PU foaming, lamination	Large regional converter network; PVC profiles alone 140+ manufacturers	Medium	High
14	Wire & cable	LV/MV/HV cables, optical-fibre cables, solar cables, data cables	PVC, PE, XLPE, PP, fluoropolymers	583	Wire extrusion, crosslinking, jacketing, insulation extrusion	Specialist cable manufacturers; relatively concentrated versus general plastics	Medium-High	High
10	Healthcare & pharmaceuticals	Syringes, IV sets, tubing, bottles, diagnostic consumables, device housings, medical packaging	PP, PE, PVC, PC, ABS, PS, TPU, PSU/PES	300	Medical injection moulding, extrusion, blow moulding, thermoforming, clean-room assembly	Specialist medical moulders and device manufacturers; smaller but high-value processor base	High	Very high
16	Natural-fibre composites (NFC)	Automotive panels, furniture boards, doors, partitions, decking, cladding	PP, PE, PVC, ABS + natural fibre	270	Compounding, extrusion, compression, injection, thermoforming	135+ manufacturers; 300+ KT installed capacity	Low-Medium	High
9	Footwear & foam	Soles, midsoles, slippers, footwear components, foam sheets	EVA, PU, PVC, TPU, TPR	250	Injection, compression moulding, foaming, sheet extrusion, die cutting	Large MSME base plus organised footwear manufacturers	Medium-High	High
17	Renewable energy / solar	Solar-module components, encapsulation, backsheets, cable components, structural parts, storage-related components	EVA, POE, PET, PVDF, PC, PA, PP, composites	200	Film extrusion, calendaring, lamination, injection, compression, composite processing	Emerging specialised processors; increasingly integrated with solar-component manufacturing	High for specialty materials	Very high
19	Other specialty / cross-sector polymers	Adhesives, coatings, masterbatch, compounds and applications not cleanly assigned above	PU, epoxy, phenolic, melamine, specialty PE/PP, additives	47	Compounding, reactive extrusion, coating, casting	Specialist compounders/formulators	High	High
18	Aerospace & defence / high-performance	Lightweight structures, ducts, electrical parts, seals, high-temperature components	PEEK, PEKK, PEI, PPS, PES, PA, PC, fluoropolymers, composites	30	Precision injection, compression, machining, additive manufacturing, composite RTM	Small specialist base; qualification-heavy, concentrated around aerospace/defence clusters	Very high	Very high
				28240				

Outlook of growth for 2035-36 and 2047-48

For estimating the demand for 2035-36 and 2047-48, we are projecting the demand endues wise rather than polymer wise. The following approach is used.

Three scenarios of growth

Polymer consumption has grown more than GDP in the past. The GDP growth rate in future with all the initiatives of Viksit Bharat is estimated to remain in the 6-8% band. We are taking following three scenario of growth

- | | |
|-----------------|-------|
| 1. Conservative | 6% pa |
| 2. Likely | 7% pa |
| 3. Optimistic | 8% pa |

The applications are also divided in following three categories of annual consumption.

1. Above 1000 KTs per annum
2. 500 to 1000 KTs per annum and
3. Below 500 Kts per annum.

The large base application is matured application and growth is taken at 6% for them. The medium base application is fairly well established and likely to grow faster, and the small base application will grow fastest. For the growth is taken at 8% pa

Applying the above methodology for demand estimation, the **28 MMT consumption is likely to grow to 55 MMT by 2035-36 and 114 MMT by 2027-48**. It is very difficult to predict the geo political and natural environmental happening and these numbers may finally end **at +/- 10 to 15 %**. This is broad range of likely consumption.

One can tweak with the three categories of consumption and 3 likely scenarios of growth rate and do some simulation of likely events. But these numbers give us a macro scale for which we need to plan for next 20 years.

The next 20 years will see a shift in the composition of plastics processing:

From commodity to engineered
From domestic to export-oriented
From virgin to virgin + recycled
From conventional to recyclable/circular
From general-purpose to application-specific
From labour-intensive to automated
From simple products to high-value components.

The structure will change but growth will continue unabated.

Enduse wise demand prjections for 2035-36 and 2047-48

S No	Major application sector	Major applications	FY25 polymer consumption in KTs	Estimates for 2035-36 (base 24-25)			Estimates for 2037-48 (base 35-36 _7%)		
				Conservative CARG of 6%	Likely CARG of 7%	Optimistic CARG of 8%	Conservative CARG of 6%	Likely CARG of 7%	Optimistic CARG of 8%
1	Packaging	Flexible films, pouches, laminates, bottles, jars, caps, closures, trays, thermoformed packs	9550	18129			36479		
2	Pipes & fittings	Water, irrigation, sewerage, SWR, plumbing, gas, casing, industrial and optical-fibre ducts	4936	9370			18854		
3	Raffia / woven packaging	PP/HDPE sacks, FIBC, tarpaulins, woven fabric, jumbo bags, technical woven products	2900	5505			11077		
4	Automotive & mobility	Interiors, bumpers, trims, under-hood, battery systems, ducts, connectors, EV components	1650	3132			6303		
5	Textiles, fibres & nonwovens	PET/PP fibres, filament, nonwovens, geotextiles, technical textiles, hygiene products	1350	2563			5157		
6	Consumer durables / appliances	Refrigerators, washing machines, ACs, small appliances, RO systems, brown goods	1150	2183			4393		
7	Electrical & electronics	Housings, connectors, switches, plugs, cable components, consumer electronics, telecom parts	1000	1898			3820		
8	Thermoset composites / FRP	Tanks, pipes, infrastructure, transport, electrical, wind, defence	874		1840			4143	
9	Household / consumer products	Storage, kitchenware, furniture, toys, buckets, containers, utility products	850		1789			4029	
10	Industrial products & material handling	Tanks, drums, pallets, crates, bins, industrial containers, components	800		1684			3792	
11	Agriculture / plasticulture — excluding pipes	Mulch film, greenhouse film, shade nets, pond liners, trays, crates, silage film, irrigation accessories	750		1579			3555	
12	Construction products — non-pipe	Profiles, doors/windows, flooring, membranes, insulation, roofing, panels, conduits	750		1579			3555	
13	Wire & cable	LV/MV/HV cables, optical-fibre cables, solar cables, data cables	583		1227			2764	
14	Healthcare & pharmaceuticals	Syringes, IV sets, tubing, bottles, diagnostic consumables, device housings, medical packaging	300			699			1761
15	Natural-fibre composites (NFC)	Automotive panels, furniture boards, doors, partitions, decking, cladding	270			630			1585
16	Footwear & foam	Soles, midsoles, slippers, footwear components, foam sheets	250			583			1468
17	Renewable energy / solar	Solar-module components, encapsulation, backsheets, cable components, structural parts, storage-related components	200			466			1174
18	Other specialty / cross-sector polymers	Adhesives, coatings, masterbatch, compounds and applications not cleanly assigned above	47			110			276
19	Aerospace & defence / high-performance	Lightweight structures, ducts, electrical parts, seals, high-temperature components	30			70			176
			28240	42780	9697	2558	86082	21840	6441
			Most Likely	55035			114362		

Export Potential of Plastics Finished products:

India exported plastics finished products in 2025-26 worth US\$ 4.7 Bn and imported plastics finished products worth US\$ 6.26 Bn. India has a very small share in export of finished products to the world. The share of India in world import is just about 1 %.

AIPMA has conducted a study of imports from the world by top 15 importing countries of the world for 7 HSN chapters. The finding is as below,

2025-26 Imports from the world by top 15 importing countries for 7 Chapters containing Plastics End Products																	
Imports from the world in Million US\$																	
Chapter	Belgium	Brazil	Canada	Chile	China	France	Germany	Italy	Japan	Netherlands	Poland	Spain	Turkey	UK	USA	Total	Chapter Share
39	5,998	2,873	6,991	1,250	15,077	11,708	21,910	8,118	8,148	9,694	7,603	6,900	3,086	9,176	31,348	1,49,881	26%
56	467	304	711	93	995	605	1,314	567	860	565	609	423	213	643	2,269	10,639	2%
63	258	47	284	118	31	616	930	273	518	616	213	323	42	391	1,624	6,284	1%
90	6,471	2,283	5,091	746	21,570	8,992	18,912	7,081	10,643	22,040	3,117	4,782	1,745	7,213	47,678	1,68,363	29%
94	3,651	1,320	5,596	688	1,854	9,126	16,776	3,680	6,845	8,469	3,680	4,487	820	10,234	38,811	1,16,039	20%
95	2,348	1,125	4,438	650	2,809	6,088	9,771	3,048	8,030	7,747	4,630	4,097	711	9,337	33,505	98,332	17%
96	1,106	570	1,647	308	729	2,031	3,163	981	1,170	1,407	953	1,092	545	1,999	4,352	22,052	4%
Total	20,300	8,522	24,758	3,854	43,064	39,165	72,775	23,747	36,214	50,539	20,805	22,103	7,162	38,993	1,59,588	5,71,590	100%
Country Share	3.6%	1.5%	4.3%	0.7%	7.5%	6.9%	12.7%	4.2%	6.3%	8.8%	3.6%	3.9%	1.3%	6.8%	27.9%	100.0%	
Export from India in 2025-26 in US\$ Millions																	
Chapter	Belgium	Brazil	Canada	Chile	China	France	Germany	Italy	Japan	Netherlands	Poland	Spain	Turkey	UK	USA	Total	Ch Share
39	35	40	73	17	60	69	152	66	20	68	44	68	22	212	554	1,501	25%
56	1	5	21	9	3	4	7	5	1	6	3	7	2	27	171	272	5%
63	58	9	36	29	2	102	114	73	2	107	27	112	1	92	370	1,135	19%
90	35	59	18	6	64	133	107	37	17	99	34	10	23	69	296	1,007	17%
94	28	32	44	5	9	114	198	19	12	114	19	74	6	116	484	1,272	22%
95	5	2	32	2	3	23	42	6	4	19	22	10	3	93	241	507	9%
96	8	23	6	5	4	6	30	8	3	5	4	2	3	29	59	195	3%
Total	170	170	230	72	145	451	651	213	59	416	152	283	61	638	2,175	5,887	100%
Country Share	2.9%	2.9%	3.9%	1.2%	2.5%	7.7%	11.1%	3.6%	1.0%	7.1%	2.6%	4.8%	1.0%	10.8%	36.9%	100.0%	
Share of India in Imports from the world in 2025-26																	
Chapter	Belgium	Brazil	Canada	Chile	China	France	Germany	Italy	Japan	Netherlands	Poland	Spain	Turkey	UK	USA	Total	
39	0.6%	1.4%	1.0%	1.4%	0.4%	0.6%	0.7%	0.8%	0.2%	0.7%	0.6%	1.0%	0.7%	2.3%	1.8%	1.0%	
56	0.2%	1.8%	3.0%	9.4%	0.3%	0.6%	0.5%	0.8%	0.1%	1.0%	0.4%	1.7%	1.1%	4.3%	7.6%	2.6%	
63	22.5%	19.8%	12.6%	24.2%	7.7%	16.6%	12.3%	26.6%	0.4%	17.3%	12.8%	34.8%	3.5%	23.6%	22.8%	18.1%	
90	0.5%	2.6%	0.3%	0.8%	0.3%	1.5%	0.6%	0.5%	0.2%	0.4%	1.1%	0.2%	1.3%	1.0%	0.6%	0.6%	
94	0.8%	2.4%	0.8%	0.7%	0.5%	1.2%	1.2%	0.5%	0.2%	1.3%	0.5%	1.6%	0.7%	1.1%	1.2%	1.1%	
95	0.2%	0.2%	0.7%	0.4%	0.1%	0.4%	0.4%	0.2%	0.1%	0.2%	0.5%	0.2%	0.4%	1.0%	0.7%	0.5%	
96	0.7%	4.0%	0.4%	1.7%	0.5%	0.3%	1.0%	0.8%	0.2%	0.3%	0.4%	0.2%	0.6%	1.5%	1.3%	0.9%	
Total	0.8%	2.0%	0.9%	1.9%	0.3%	1.2%	0.9%	0.9%	0.2%	0.8%	0.7%	1.3%	0.9%	1.6%	1.4%	1.0%	
56 for rope and net, non-woven fabric,							90 Optical, Photographical, surgical etc					95 for toys, and					
63 for woven fabric, bags FIBC,							94 for furniture,					96 for brushes and some other items.					

As can be seen from the above table total imports from the world by top 15 countries is US\$ 571 Bn, Indian exports to these countries are at US\$ 5.8 Bn which is just 1%.

In woven sacks and FIBC, India has share in these countries of 18% but woven sacks and FIBC are just 1% of total imports by these countries.

Indian exports to USA are at 37% of its exports followed by 11% each to Germany and UK.

Further analysis of chapter 39 import from the world of US\$ 149 billion has India's share of US\$ 1.5 Bn again at 1 %. The top imports by these 15 countries by HSN codes for chapter 39 is given in next table.

HSN code wise opportunities over a Billion Dollar are shown in Green and between US\$ 500 to US\$ 1000 Million are shown in red.

So, the sky is the limit for India to increase its exports of finished products.

Imports from the World of Top 25 HSN codes for Top 15 countries in 2025																					
			Green Cells Imports of over US\$ 1 Bn					Red Cells Imports of US\$ 500 Mn to US\$ 1 Bn							In US \$ Million						
	HSN Code	HSN description	Belgium	Brazil	Canada	Chile	China	France	Germany	Italy	Japan	Netherland	Poland	Spain	Turkey	UK	USA	Total	%age Share	Cum %age	
1	39269097	ARTICLES OF PLASTICS AND ARTICLES OF OTHER MATERIALS OF H	1481					3496	7614	1920		2628	2309	1600	975	2391		24414	16.29%	16.29%	
2	39232100	SACKS AND BAGS (INCLUDING CONES) OF POLYMERS OF ETHYLEN	250			102	96	542	944	235	1076	556	229	210		720	2682	7641	5.10%	21.39%	
3	39231090	BOXES, CASES, CRATES AND SIMILAR ARTICLES FOR THE CONVEYA	276			26		506	871	481		724	310	777	202	446	1465	6086	4.06%	25.45%	
4	39181010	FLOOR COVERINGS OF VINYL TILE CONSISTING OF A RIGID EXPAN	160						347			249				270	4349	5375	3.59%	29.03%	
5	39239000	ARTICLES FOR THE CONVEYANCE OR PACKAGING OF GOODS, OF P	300				313	344	795	252	216	341	232	221	104	340	1755	5213	3.48%	32.51%	
6	39199080	PLATES, SHEETS, STRIPS, RIBBONS, FILMS AND OTHER FLAT FORM	441					615	940	576		457	530	383	284	492		4719	3.15%	35.66%	
7	39174000	FITTINGS, E.G. JOINTS, ELBOWS, FLANGES, OF PLASTICS, FOR TUB	212				281	352	864	239	92	252	244	196	97	255	549	3633	2.42%	38.08%	
8	39241040	TABLEWARE & KITCHENWARE, OF PLASTIC, NESOI															3493	3493	2.33%	40.42%	
9	39241000	TABLEWARE AND OTHER ARTICLES FOR TABLE SERVICE OR KITCH	189	88		83		481	683	336	301	429	170	284		403		3446	2.30%	42.71%	
10	39206200	OTHER PLATES, SHEETS, FILM, FOIL AND STRIP, NON-CELLULAR AN					1967				524						934	3425	2.28%	45.00%	
11	39249000	ARTICLES OF DOMESTIC USE AND ARTICLES OF HYGIENE OR TOCA	163	71	220	52		396	696	214	366	319	222	228	55	312		3313	2.21%	47.21%	
12	39233010	CARBOYS, BOTTLES, FLASKS AND SIMILAR ARTICLES FOR THE CON	339					589	720	415		382	245	275		340		3304	2.20%	49.41%	
13	39201000	OTHER PLATES, SHEETS, FILM, FOIL & STRIP, OF PLASTIC, NONCELL			576						423						2249	3249	2.17%	51.58%	
14	39235090	STOPPERS, LIDS, CAPS AND OTHER CLOSURES, OF PLASTICS (EXCL	176		303			576	613	270		259	281	297	104	271		3151	2.10%	53.68%	
15	39219090	PLATES, SHEETS, FILM, FOIL AND STRIP, OF PLASTICS, REINFORCED	113	66		37	591	412	634	226		310	271	175		295		3131	2.09%	55.77%	
16	39269090	PLASTIC ARTICLES AND MANUFACTURERS OF OTHER MATERIALS		707		244	2175											3126	2.09%	57.86%	
17	39199090	PLACAS, LAMINAS, HOJAS, CINTAS, STRIPS AND OTHER FLAT SHAP		159		24	2592											2775	1.85%	59.71%	
18	39202021	PLATES, SHEETS, FILM, FOIL AND STRIP, OF NON-CELLULAR POLYM	228					260	593	433		150	283	279	144	276		2647	1.77%	61.48%	
19	39269002	ARTICLES OF PLASTICS AND ARTICLES OF OTHER MATERIALS OF H									2580							2580	1.72%	63.20%	
20	39249056	HOUSEHOLD ARTICLES AND HYGENIC OR TOILET ARTICLES, OF PL															2456	2456	1.64%	64.84%	
21	39269099	ARTICLES OF PLASTICS, NES			1499												681	2181	1.45%	66.29%	
22	39181090	FLOOR COVERINGS, WHETHER OR NOT SELF-ADHESIVE, IN ROLLS	173		503			253	404	281		340				219		2173	1.45%	67.74%	
23	39173900	FLEXIBLE TUBES AND PIPES, MADE OF PLASTICS, REINFORCED WITH	119	136			145	293	518	161		239		158	111	137		2017	1.35%	69.09%	
24	39232990	SACKS AND BAGS, INCL. CONES, OF PLASTICS (EXCL. THOSE OF POL	152		111			301	322	172		226	143	238		317		1982	1.32%	70.41%	
25	39235000	STOPPERS, LIDS, CAPS AND OTHER CLOSURES, OF PLASTICS, FOR T		87			150				223						1518	1978	1.32%	71.73%	
26	39201025	PLATES, SHEETS, FILMS, STRIPS AND BLADES, IN NON-CELLULAR F	178					230	470	177		205	148	180	46	193		1826	1.22%	72.95%	
27	39209990	PLATES/SHEETS/FILM/FOIL/STRIP OF OTHER PLASTICS, NON-CELL		51			1694											1745	1.16%	74.11%	
28	39263000	FITTINGS FOR FURNITURE, COACHWORK AND THE LIKE, OF PLAST	120	85					869				227	230	56	137		1725	1.15%	75.26%	
Total			5998	2873	6991	1250	15077	11708	21910	8118	8148	9694	7603	6900	3086	9176	31348	149881	100.00%		

Domestic Raw material for exports: Presently exporters either import polymer against advance licences or buy from domestic producer's plant in SEZ at deemed export prices. Need to explore a mechanism to supply Polymer Raw Materials at deemed exports prices to exporters from other producers whose plants are not in SEZ. This can reduce unnecessary imports and increase sale of domestic producers in India and save foreign Exchange.

Finished goods exports in 25-26 were estimated at US\$ 4.7 Bn valued at Rs 41492 Crs which translates to app **Rs 31916 Crs of raw material** (assuming value addition of 30%) The Raw material required comes to **3191 KTs or 31,91,000 Mts** (assuming average polymer price of app Rs 1 Lac/MT in 25-26).

The raw material required for exports will keep on growing. Given below are four different scenarios of **CARG** (Compounded Annual Rate of Growth of exports). The converting industry wants to procure entire requirement from domestic suppliers, **therefore we need a have mechanism in place to get the material at deemed export prices from other domestic producers.**

Table below indicated the polymer raw material required for exports of finished goods.

Polymer raw material requirement for exports til 2047-48				
Under four different annual growth scenarios				
Scenario	Conservative	Likely		Optimistic
Year	4% CARG	6% CARG	8% CARG	10% CARG
25-26	31,91,000	31,91,000	31,91,000	31,91,000
30-31	38,83,000	42,71,000	46,89,000	51,40,000
35-36	47,24,000	57,15,000	68,90,000	82,78,000
40-41	57,48,000	76,49,000	1,01,24,000	1,33,32,000
45-46	69,93,000	1,02,36,000	1,48,76,000	2,14,72,000
47-48	75,64,000	1,15,01,000	1,73,51,000	2,59,81,000

AIPMA is optimistic about achieving 10% pa consistent growth in Plastics Finished Products exports till 2047-48. Finished products consumed app **3.1 million MTs raw material in 25-26**. This requirement will go up to **8.2 million Mts by 35-36** and **25.9 million MTs by 47-48**.

There is **enormous potential of increase in domestic sales of polymer producers and saving of foreign exchange for the country** if all raw material is procured from domestic sources for exports of plastics finished products. Therefore, a mechanism is to be worked out to make the polymer raw material available for end product exports **to the converters at 7.5% less price adjusted for import duty when taken from Non SEZ plants for exports**.

Similar or even higher will be requirement of raw material for **import substitution** That **requirement will be dependent on level of import substitution achieved**. Raw material requirement for import substitution in 25-26 comes to 4250 Kts as shown below. But this is notional number at present.

Import Substitution: India is importing Plastics finished products worth US\$ 6.26 Bn in 2025-26 valued at **Rs 55335 Crs** Substituting this import can lead to polymer consumption growth. And efforts should be made to use polymers from domestic sources for import substitution as well for plastics end products. US\$ 6.26 Bn translates to **4250 KTs** of raw material valued at Rs 42500 Crs. This much more polymer purchases from domestic sources can be increased by import substitution. But this is notional number at present because import substitution will be a gradual and slow process compared to growth in exports from India.

Gaps in Plastics Processing industry going forward:

The plastic converting industry is predominantly in MSME sector. Over **95% of Plastics converters are in MSME**. The sector has 50000 processing units. The employment in Plastic Converting sector is **estimated at 500000**.

As worked out in the preceding discussion that the endues wise consumption of polymers will increase as below

In 2024-25	28 million Mts
In 2035-36	55 million Mts
In 2047-48	114 million Mts

The biggest gap staring us is to increase the processing capacity from 28 million Mts to 55 million mts.

India created 28 MMT processing capacity in in last 40-50 years. And the same is to be created in next 10 years. And bigger challenge is from 2035 to 2047 when another 60 million Mts processing capacity is required to be created.

When processing capacity is doubled in next 10 years and becomes 4 time by 2047-48, the employment in Plastics processing Sector value chain is likely to go up from 5 Lac to 10 Lacs by 2035-36 and **20 lacs by 2047-48**

The future capacities of Plastics processing will come in MSME sector which will have to be

1. At a much larger scale

2. Modern processing plants
- 3, High level of automation
4. Integrated supply chain
- 5 Cluster approach for expansion of processing
6. Accelerated skilled manpower development to run these plants
7. Much more cluster approach for handling the plastic waste.

This indicates that the past cannot to repeated for future growth of creating processing capacities

Recently AIPMA submitted the wish list of processing industry to DCPC for Budget 27-28, the relevant portion related to growth are being reproduced here. These points are very much relevant to scale up and modernize the Plastic processing Sector and handle the increased volume of waste till 2047

SN0	Subject/ Concern Area	Recommendations
1..	Optimization of warehousing under Market Access Initiatives (MAI) to benefit small exporters	Warehouses play a crucial role in managing inventory, streamlining supply chain operations, and ensuring timely delivery of goods. This will help for boosting the plastics export. China's Government helps plastic sector by setting up warehouses. Similar model is following in countries like USA, Dubai and Europe. AIPMA proposes To allocate fund for establishing Warehouses in different locations for plastic sector to boost India's export and manage import substitution
2.	PLI scheme for import substitution and to enhance export.	India's share in total imports of Plastics finished products by top 15 importing countries is just 1%. There is a big scope for boosting India's export of finished plastics products. PLI incentives will help sector to aim for boosting export 4 times in next 3 years. AIPMA proposes: Include select Plastics finished products which have high value addition and high potential and India has edge over other countries in PLI scheme
3.	The GST on the Plastic waste and recycled plastic material to be brought down.	The face of Indian Plastic recycling sector changing very fast. It is encompassing new technology as well as scale. EPR mandate has given the industry a significant push. Presently the 18% GST burden starts with plastic waste seller (who is at the bottom of the value chain just after rag picker) and subsequent stake holders get set off. There is a need to shift GST burden up in the value chain from waste seller and recycled granule maker to plastic converter. AIPMA proposes: 1. Reduce GST to NIL or better 1% for plastic waste for recycling. (to retain then in GST net) 2. Reduce GST from 18% to 5 % on recycled plastic granules, Recyclers to be mandated to use GST paid waste only.
4.	Separate HSN Codes for recycled Granules	One weak link in the recycling industry is reliable date and tracking of virgin polymers to recycling and consumption of Recyclates. Major six commodity plastics have distinct HSN code and plastics lose their distinct identity post-consumer use and in Recyclates as Recyclates are considered raw material and have same HSN code as that of Virgin polymers. This necessitates the need to have separate HSN code for recycled granule for each polymer. AIPMA Proposes:

		A separate HSN code for each of the six major polymers Recyclates which identifies it with base polymer and also indicates it is recycled. One separate code for comingled recycled plastics which are not identifiable with base polymer.
5.	Incentive Plastics Recycling Machinery to boost recycling.	The recycling industry need to double in size in next 5 years to keep pace with growth in polymer consumption and increase in recycling rate and to meet the demand of Brand owners for Recyclates. Incentivise setting up of new units and expanding the present ones. AIPMA Proposes: 1. Reduce GST and import duty to NIL on recycling machinery to increase recycling companies in India. 2. 20 % subsidy across India for buying capital equipment for recycling.
6.	Technological Upgradation Fund (TUF)	Plastics consumption in India is at present 25 MMTA. It is likely to reach 50 MMTA in 10 years. This means addition plastics processing capacity is required to be set up in next 10 years. Also, Legacy processing plants are required to be modernised to keep pace with advances being made with plastics processing. Significant investments in cutting-edge technologies, research, development, and innovation will boost the export of value-added plastic items and increase its share in the total plastic exports also. This is essence of Technological Upgradation Fund for plastic processing sector. This would facilitate augmenting of investment, productivity, quality, employment, exports along with import substitution in the plastic processing sector. AIPMA proposes: Need for allocation of Technical Upgradation Fund (TUF) of Rs 2500 crores for 5 years for the plastic processing sector in line with the textile sector.
7.	Plug And Play Infrastructure for Plastic Sector	There is a pressing need for expansion of plastics processing sector by establishing ready facilities in terms of land and building, power-water-sewage connectivity, road connectivity, beside other basic things including clearances to start the operation for MSME's This would be the game changer for plastic processing sector. Such facility would help sector to create further employment opportunities, boosting export and country's Economic Growth. AIPMA proposes: Allocation of separate fund for establishing ready facilities. Long leasing (Initially 20 years and renewal for further 10 years) of ready facilities to MSME's
8.	Recycling Clusters for Plastic's	Many recycling clusters have come up in the country near the waste generating cities. These clusters need to be modernised and expanded looking at the plastic consumption growth and subsequent plastics waste generations. The plastics recycling to be treated as a separate industrial activity as this is line with the Swachh Bharat Vision of our Hon'ble Prime Minister.

		AIPMA proposes: A separate Recycling Cluster modernisation and expansion fund to be created and given a status of Manufacturing hub to boost recycling.
9.	Skill Development in Plastic Sector.	Plastics processing industry is facing acute shortage of skilled manpower. There a need to bridge skill gaps in the rapidly growing Plastics processing and also create employment opportunities for economically weaker students. AMTEC Centre of Excellence is a step in that direction. AMTEC is recognised by NSDC. It offers short term courses as a Trainee Product Designers. These courses are digital courses backed by 3D System, USA, Reverse Engineering by ZEISS Germany and Computer Aided Design by Siemens Germany. And Sustainable and Export oriented courses. AIPMA Proposes: 1. Allocation of fund to support such skill development initiatives. 2. Financial support from Govt India to expand Centre of Excellence (AMTEC) operations across the India
10.	Inhouse Quality Assurance/Quality Control facilities for MSME	The main objective is Promoting Zero defect and Zero effect initiatives. Aiming to make India as a global hub for manufacturing with world class quality. AIPMA proposes: To Introduce dedicated fund for MSME's for setting up in-house Quality Assurance/Quality Control facilities.
11.	Rationalisation of GST Rate of on household Plastic Products in line with other materials.	Items made of glass, wood, metal, or paper have already been shifted to the 5% GST bracket. Identical plastic products (tableware, kitchenware, stationery, storage items, etc.) remain taxed at 18%, despite being used more widely across low- and middle-income households. This violates the principle of tax neutrality under GST. AIPMA proposes: Reduce GST on household plastic products to 5% to ensure parity with non-plastic alternatives.
12.	Corporate tax rate for MSME's	Over 90% of Plastics processors are in MSME. A sizeable export of Plastics end product is from MSME sector. MSME and Plastics processing is a labour-intensive activity. We need to double the Plastics processing capacity in next 10 years to catch up with the growing consumption of plastics as well as to handle the increased volume of Plastics waste processing. The entrepreneurs need to be given some concession in corporate tax. AIPMA Proposes: Corporate tax rate for MSME up to a certain turnover be considered for 15 % concessional rate.