PROGRESS THROUGH PLASTICS

PLASTINDIA FOUNDATION ®

ISO 9001-2008 certified

Report on The Indian Plastics Industry

January 2018 | Edition 2

PLASTINDIA 2018

EMPOWERING GROWTH

10th International Plastics Exhibition, Conference & Convention

Feb. 7-12, 2018, Gandhinagar - Ahmedabad, Gujarat, India.

ufi Approved International Event

NEXT *is* HERE!

PRESIDENT'S MESSAGE

PLASTINDIA FOUNDATION
ISO 9001-2008 certified

I am happy to present this 2nd Edition of the "Report on The Indian Plastics Industry". Plastics Industry Status Report Committee, headed by Mr. Francis Pinto, has taken pains to compile from available dependable sources, statistics relating to Plastics and Polymer Industry.

A large number of Plastics Processing Units are in M.S.M.E. and in the unorganized sector.

Further, the Plastics industry is a very fast growing sector and various growth drivers are influencing its pace and direction significantly. In such circumstances, the compilation of Industry's statistics and future projections is a very challenging task. The Committee has done its best to provide a very informative report.

I am sure this will be useful to the Members of the Plastics Industry.

Best Wishes,

K. K. Seksaria
President
Plastindia Foundation

CHAIRMAN'S MESSAGE, NATIONAL EXECUTIVE COUNCIL

The Indian Plastics Industry report 2018 is one of the significant attempts by PLASTINDIA FOUNDATION to provide every practising PLASTICS professional an insight into the rapid progress that the industry has taken over the last few years. This report compiled by some of the best minds from the Indian Plastics Industry, headed by Mr. Francis Pinto is truly a valuable document that brings together statistical data from across the board, encapsulating all aspects of the plastics processing, manufacturing and finished goods segment.

On behalf of the entire team of the National Executive Council of PLASTINDIA 2018, I express my gratitude to the Report Committee for working tirelessly to bring this document out in time and coinciding it with PLASTINDIA 2018. This report will be of great relevance and use to all exhibitors and visitors from both India and Overseas, and will give them first hand information on the Indian Plastics Industry.

I would encourage all to study the report in detail, as this could possibly be the blue print that will help shape the growth of the Indian Plastics Industry and also empower our industry with the facts and figures that will boost the progress of Indian Plastics

Best Wishes,

Rajeev Chitalia

Chairman, N.E.C.
PLASTINDIA 2018

PLASTINDIA MANAGING COMMITTEE

PLASTINDIA FOUNDATION
ISO 9001-2008 certified

Name	Chair
Mr. K. K. Seksaria	President
Mr. Rajiv Raval	Vice President
Mr. Raju D. Desai	Hon. Treasurer
Mr. Subhash K. Kadakia	Imm. Past President
Mr. Ashok Jajodia	Member
Mr. Nitin Shah	Member
Mr. Jayesh K. Rambhia	Member
Mr. Atul H. Kanuga	Member
Dr. E. Sundaresan	Member
Mr. Rajeev Chitalia	Member
Mr. Pradip Thakkar	Member
Mr. V. K. Taparia	Member
Mr. Gautam H. Gandhi	Member
Prof. (Dr.) S. K. Nayak	Member
Mr. M. K. Mandal	Member
Mr. Kamal P. Nanavaty	Member
Mr. Mahendra N. Patel	Member

INDUSTRY STATUS REPORT COMMITTEE

Name	Company	Chair
Mr. Rajeev Chitalia	Electrofocus Electricals Pvt. Ltd.	Convenor
Mr. Francis Pinto	Consultant	Chairman
Mr. Prem G. Manghani	Consultant	Co-Chairman
Dr. E Sundaresan	Consultant	Member
Mr. Achal N. Thakkar	Tipco Industries Ltd.	Member
Mr. Hemant Minocha	Rajiv Plastics Ltd.	Member
Mr. N. K. Balgi	Milacron India Pvt. Ltd.	Member
Mr. Chanchal Dasgupta	Borouge (India) Pvt Ltd.	Member
Ms. Malini Hariharan	ICIS	Member
Mr. Rajendra Sharma	Milacron India Pvt. Ltd.	Member
Mr. Sachin Unde	SABIC	Member
Mr. T. K. Bandopadhyay	Indian Centre for Plastics in the Environment	Member
Mr. Rajiv Trivedi	Prasad Koch Technik Pvt. Ltd.	Member
Mr. Paresh Panchal	TAGMA	Member

Index

India Overview

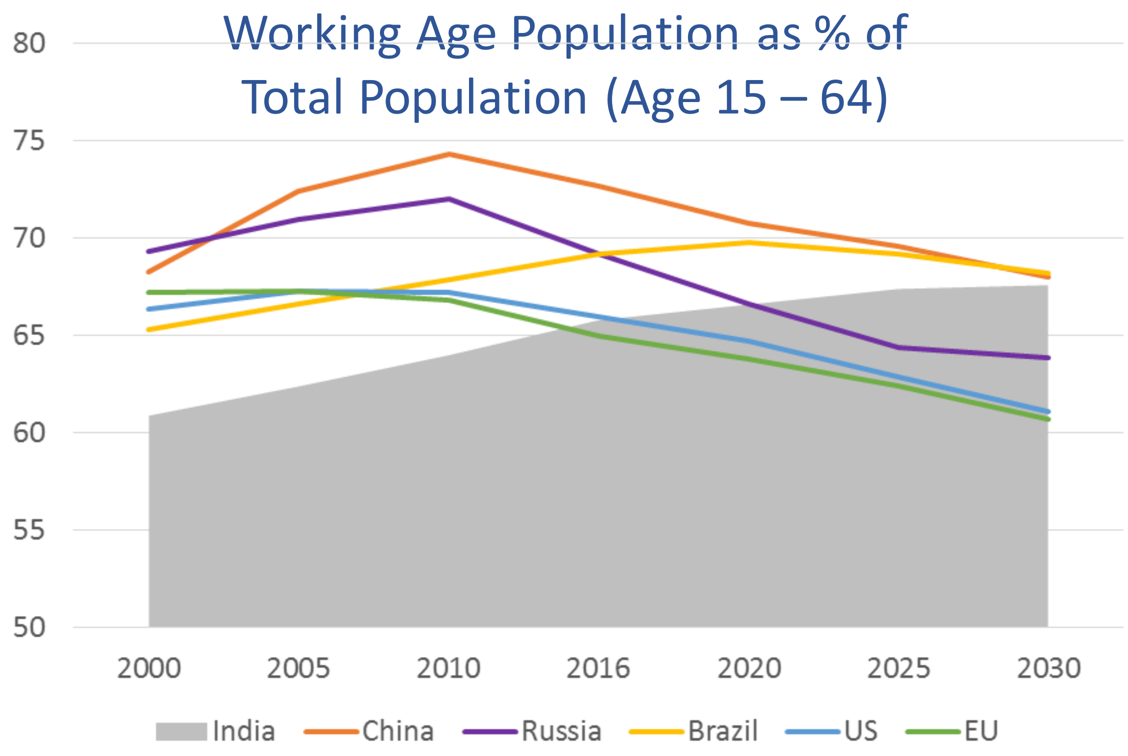
India Snapshot

- **Population 1.3 Billion**
- **Largest parliamentary democracy**
- **Secular state – Unity in Diversity**
- **Independent judiciary**
- **23 official languages, business language predominantly English**
- **Excellent social infrastructure - education, healthcare, travel & recreation**
- **Third largest economy on PPP basis (~USD 8.7 Trillion)**

.....land of billion opportunities

Source: World Bank

Demographic Profile



- 65.8% of India in the working age group
- Median age – 27.6 years

Large potentially productive workforce

Source: World Bank / CIA World Factbook

India among Peers

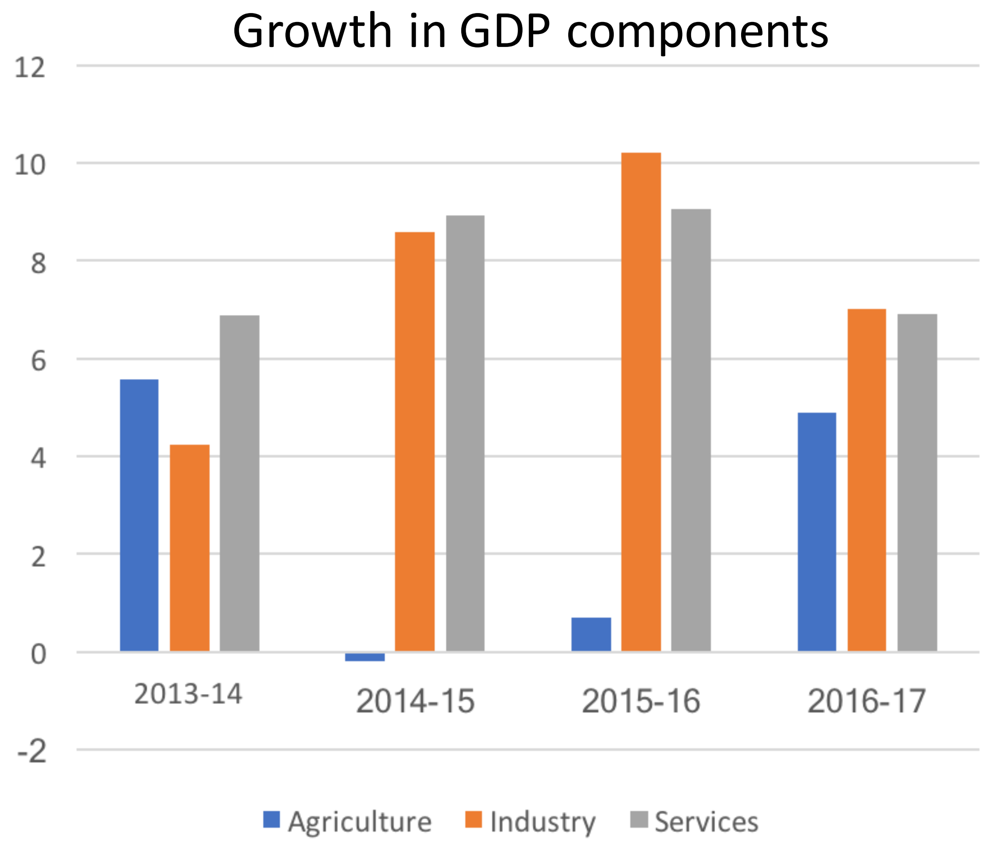
Country	Area (Million Sq. KM)	Population (Million)	GDP (PPP) Billion USD	GDP Growth % (2016)
China	9.59	1379	21290	+ 6.7
Russia	17.09	142	3862	- 0.2
Brazil	8.52	207	3141	- 3.6
South Africa	1.22	56	687	+ 0.3
India	3.29	1281	8701	+ 7.1

India has second highest GDP and highest GDP growth rate among BRICS

Source: CIA

Indian Economy

(Figs in %)		2013-14	2014-15	2015-16	2016-17
GDP Growth		4.9	7.2	7.6	7.1
Growth (Constant Prices)	Agriculture	4.6	-0.1	0.6	4.8
	Industry	0.7	8.5	10.2	7.0
	Service	6.9	8.9	9.0	6.9
Inflation	WPI - Average	5.9	6.3	5.6	3.5
Interest Rate	Lending Rate	8.4	10.0–10.2	9.3–9.7	8.9–9.1
Exchange Rate	Re / USD (Annual Avg.)	60.6	62.5	66.3	63.7
Fiscal Deficit	As a % of GDP	4.5	2.4	3.3	3.5



Source: Reserve Bank of India / Ministry of Finance

Outlook – Indian Plastics Industry

PLASTINDIA FOUNDATION
ISO 9001-2008 certified

Year	GDP Growth	Polymer Consumption Growth	Import Duty
1990-1995	5.0%	12.9%	50%+
1995-2000	6.5%	14.6%	40%
2000-2004	5.9%	5.8%	45%-15%
2005-2012	8.7%	10.9%	12.5%-5%
2012-2017 12th plan	7.2%	10.6%	7.5%-5%
2017-2022 13th plan	8%	10.4%	5%-0%

GDP Growth → Strong Relation to Petrochemical Growth

Source: PLASTINDIA FOUNDATION

Growth Drivers for India - Key Indicators

- **Economic Advantage**
  - 10th largest economy globally; 3rd largest by PPP
  - Indian equity market is 4th biggest in Asia
- **Demographic Advantage**
  - Emergence of middle class : rising household income
  - Growing consumer market : booming retail sector
  - Large workforce : highly skilled and educated
  - Large English speaking population
- **Urbanisation**
  - 31% -2010 to 35% -2020

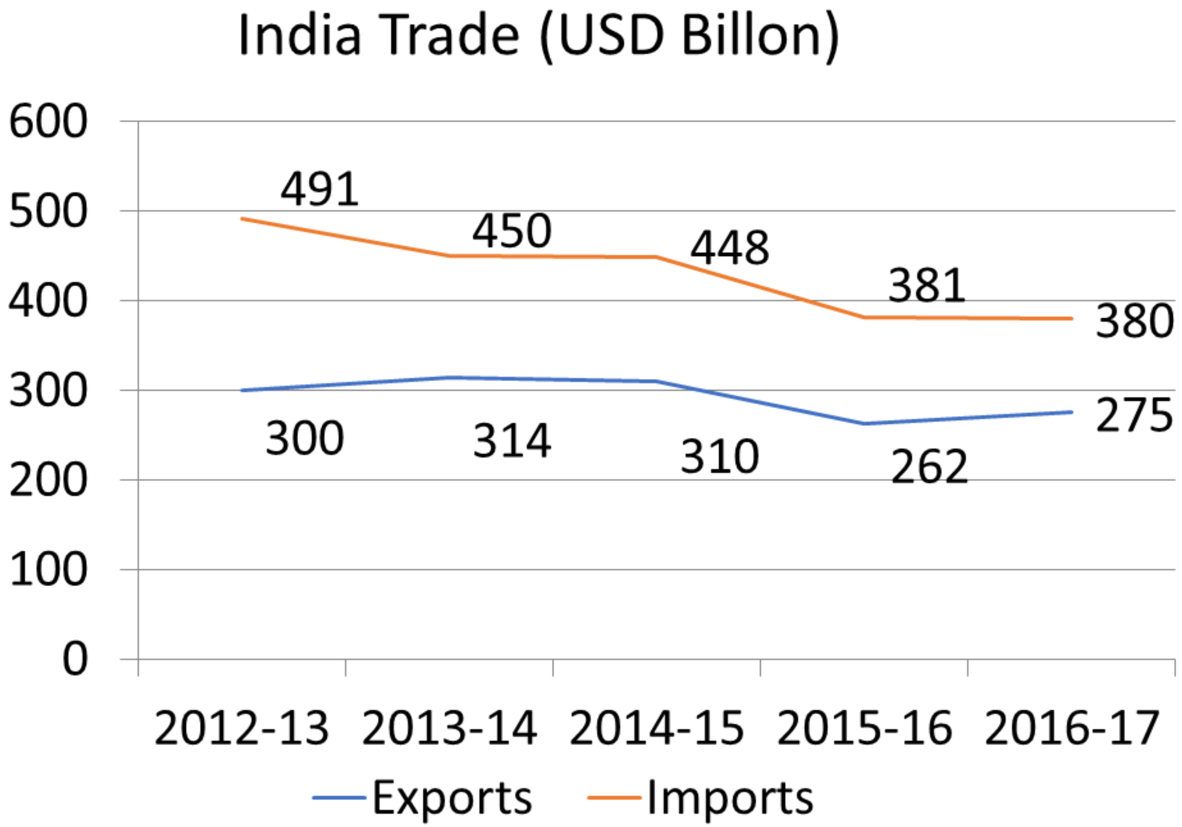
Source: PLASTINDIA FOUNDATION

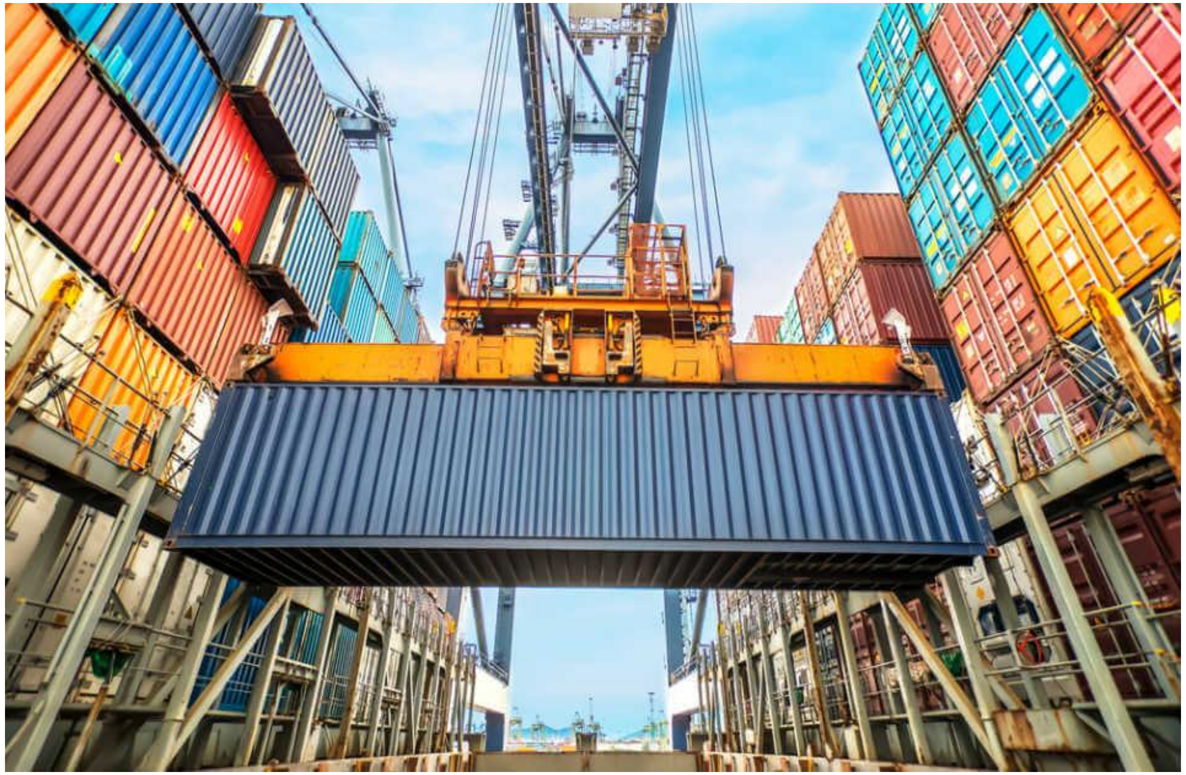
Growth Drivers for India - Key Indicators

- Higher productivity to help India sustain over 8% GDP growth
- Growth sectors: Agriculture, Healthcare, Solar Energy, Consumer Durables, Packaging Sector and Defence
- Automobile production to increase due to domestic and export market
- New joint ventures and increased R&D spending
- "Make in India" initiative to attract investments
- Infrastructure (Rail, Road & Ports) investment – government aim to attain global standards

Source: PLASTINDIA FOUNDATION

India’s International Trade

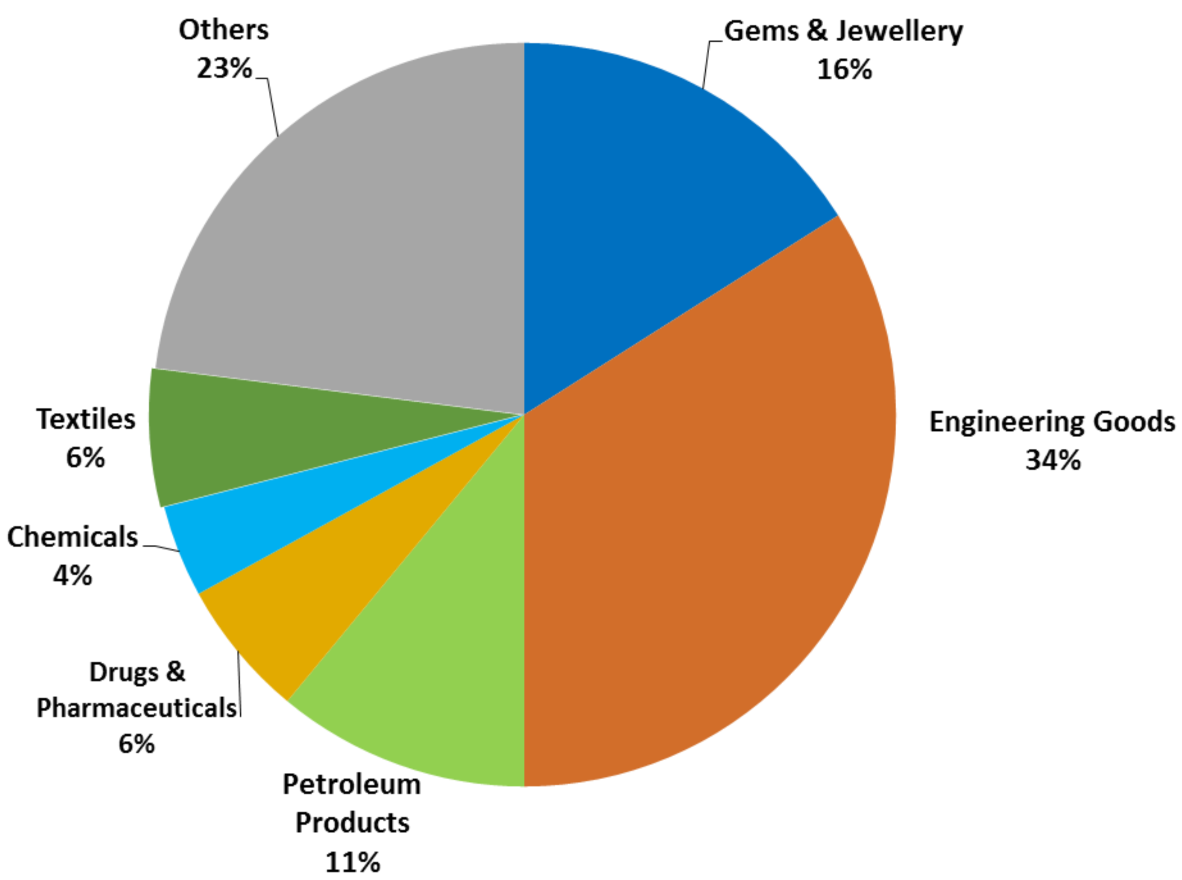




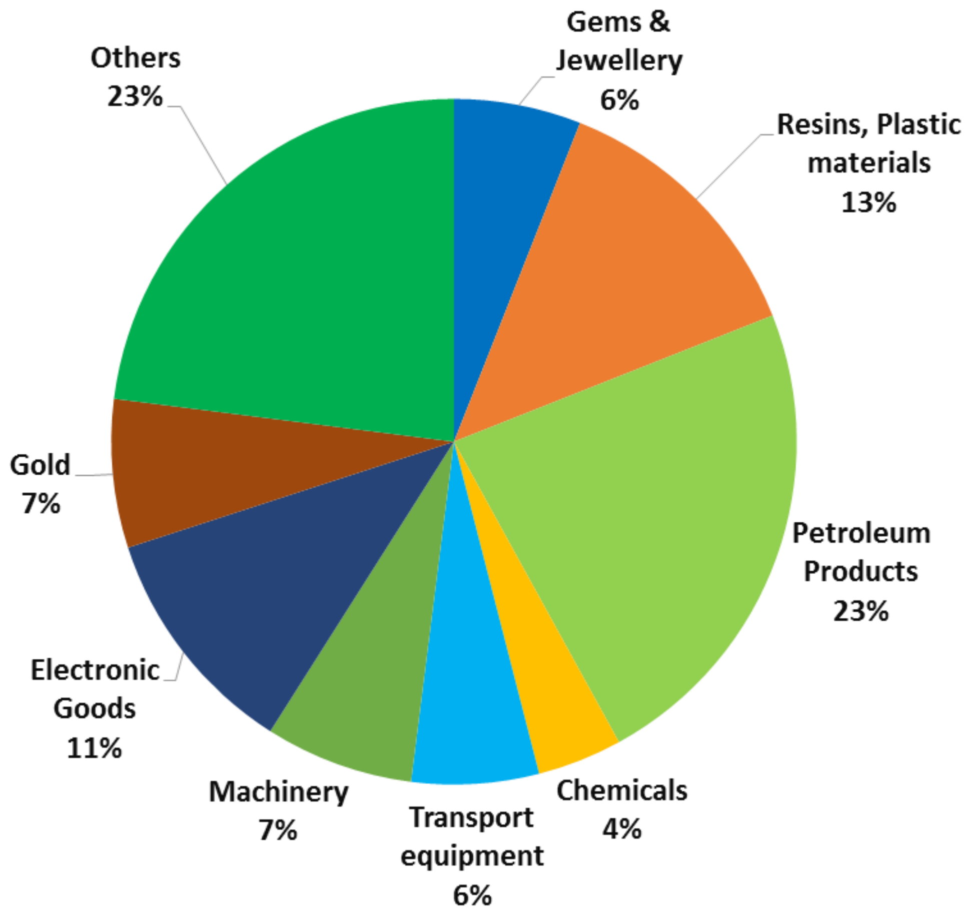
India – The Vibrant Economy

Source: Ministry of Commerce & Industry, Government of India

India’s Trade Basket



Total Exports (2016-17, USD 275 bn)



Total Imports (2016-17, USD 380 bn)

Source: Reserve Bank of India

Polymer Manufacturing Capacity

Existing/Future – Manufacturing Capacity - Major players (Thermoplastics)

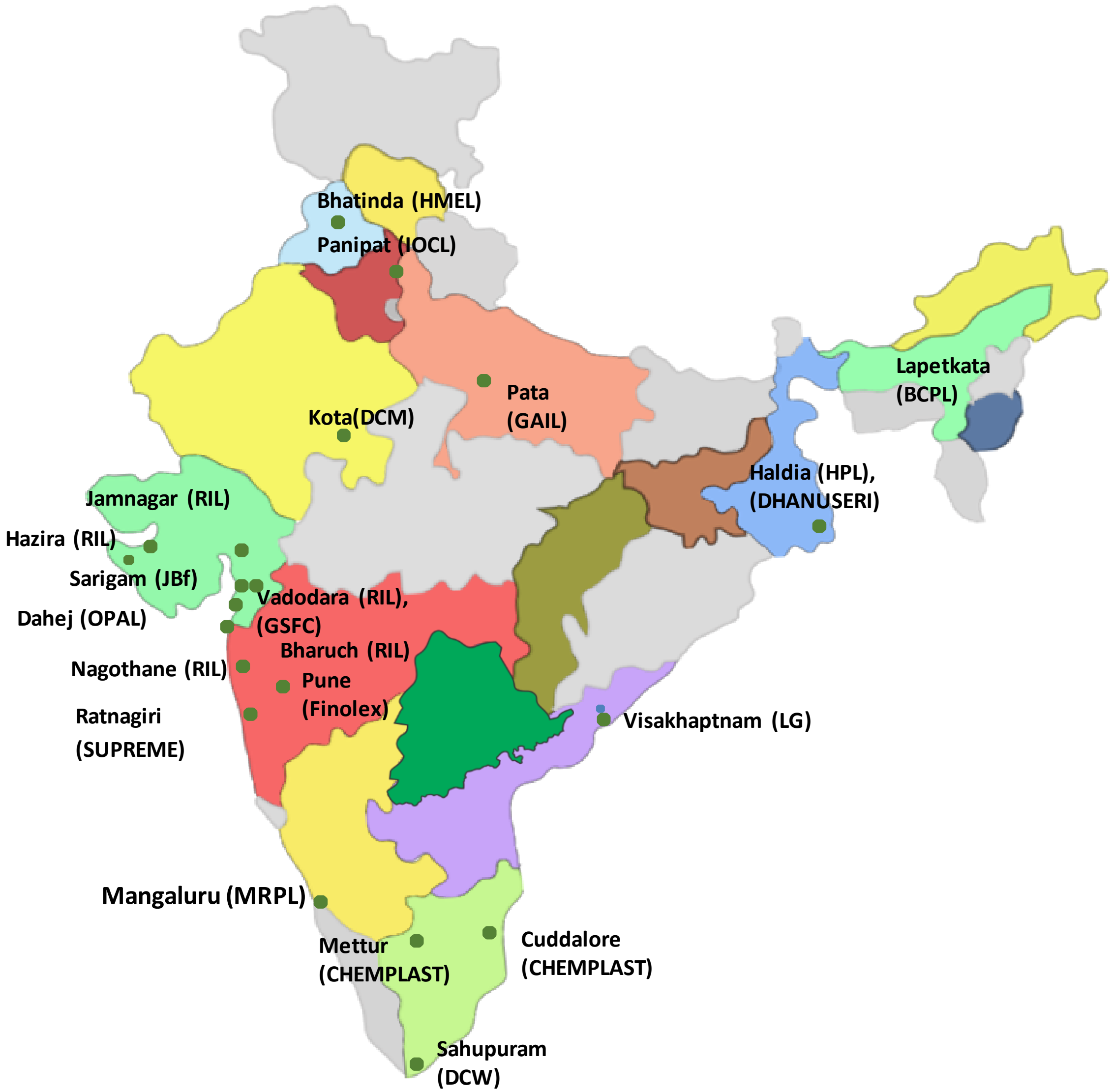
(Figs in KTA)

COMPANY	LDPE	LLDPE	HDPE	PP	PVC	PS/EPS	PET	Others	2016-17	% SHARE	2019-20	% SHARE
Reliance Industries	205	445	500	2700	725		970		5545	39.36	6545	41.46
Indian Oil Corp		225	475	600					1300	9.23	2000	12.67
Haldia Petrochemicals		210	500	390					1100	7.81	1100	6.97
GAIL (India)		350	570						920	6.53	920	5.83
HPCL Mittal Energy				440					440	3.12	440	2.79
IVL Dhunseri Petrochem							480		480	3.41	480	3.04
Supreme Petrochem						340			340	2.41	340	2.15
Finolex Industries					270				270	1.92	270	1.71
Chemplast Sanmar					290				290	2.06	290	1.84
LG Polymers India						130			130	0.92	130	0.82
Ineos Styrolution						105		80	185	1.31	185	1.17
ONGC PetroAdditions Ltd		360	700	340					1400	9.94	1400	8.87
Mangalore Refinery & Petrochemicals Ltd				440					440	3.12	440	2.79
Bhramaputra Cracker & Polymer Ltd		110	110	60					280	1.99	280	1.77
DCW					90				90	0.64	90	0.57
DCM Shriram					60				60	0.43	60	0.38
Gujarat State Fertilizers Ltd								12	12	0.09	12	0.08
Bhansali Engineering Polymers								60	60	0.43	60	0.38
Others						24	622	100	746	5.30	746	4.73
TOTAL	205	1700	2855	4970	1435	599	2072	252	14088		15788	

New capacity addition by 2019/20 : 1700 KTA

Source : PLASTINDIA FOUNDATION

Plant locations of major players

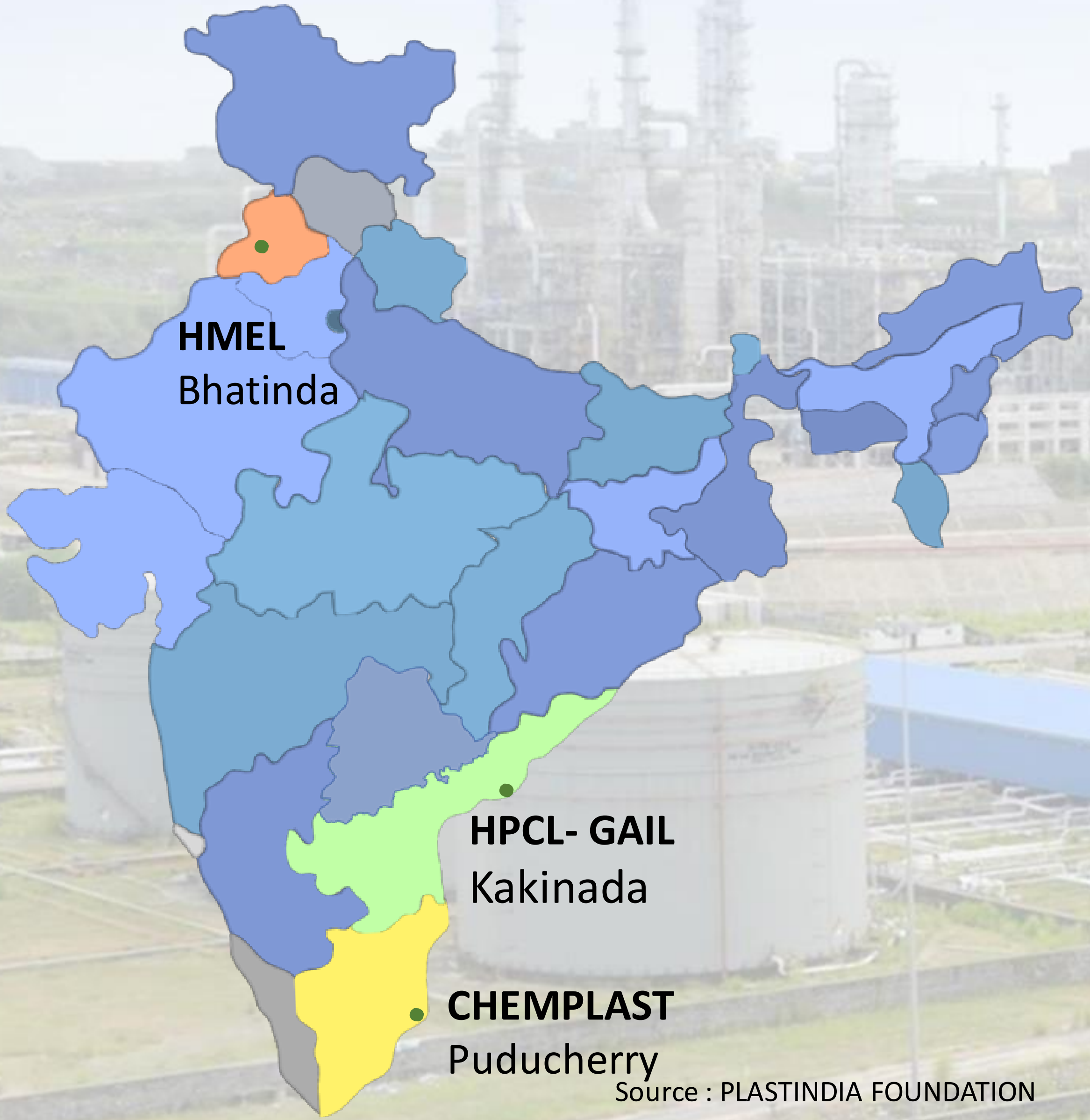


Polymer	2016-17	2019-20
PS/EPS	599	599
LDPE	205	605
LLDPE	1700	2300
HDPE	2855	2855
PP	4970	5670
PET	2072	2072
PVC	1435	1435
Others	252	252
Total	14088	15788

(Figs in KTA)

Source : PLASTINDIA FOUNDATION

Projects beyond 2019-20 (Thermoplastics)



Source : PLASTINDIA FOUNDATION

India – Polymer Consumption

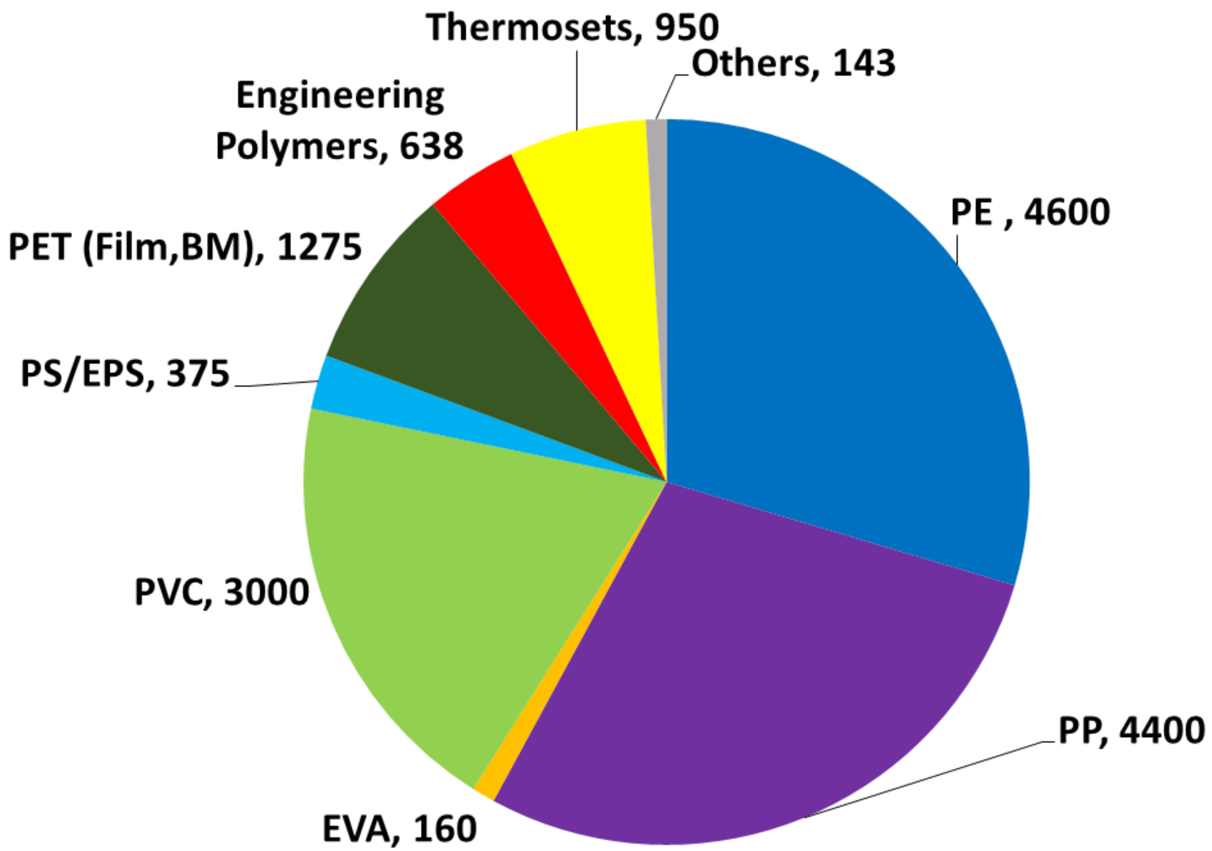
Polymer Processing Industry Overview

Virgin Polymer consumption in 16-17	15500 KT
India Per Capita Consumption (Virgin Polymer)	12 kg
No of Processing units	~40,000
No of processing Machines	~141,000
Processing Capacity	41200 KT
Processing Capacity CARG	11% last 5 years
No. of plastics machinery manufacturing units	~500
Investment in Machinery	~USD 5 Bn
Investment required for next 5 years	~USD 4.37 Bn (Projected)

Source : Industry

Total Polymer Consumption : 2016-17

(Thermoplastic + Thermoset)



Others*
CPVC – 110
TPE – 18
TPU – 15

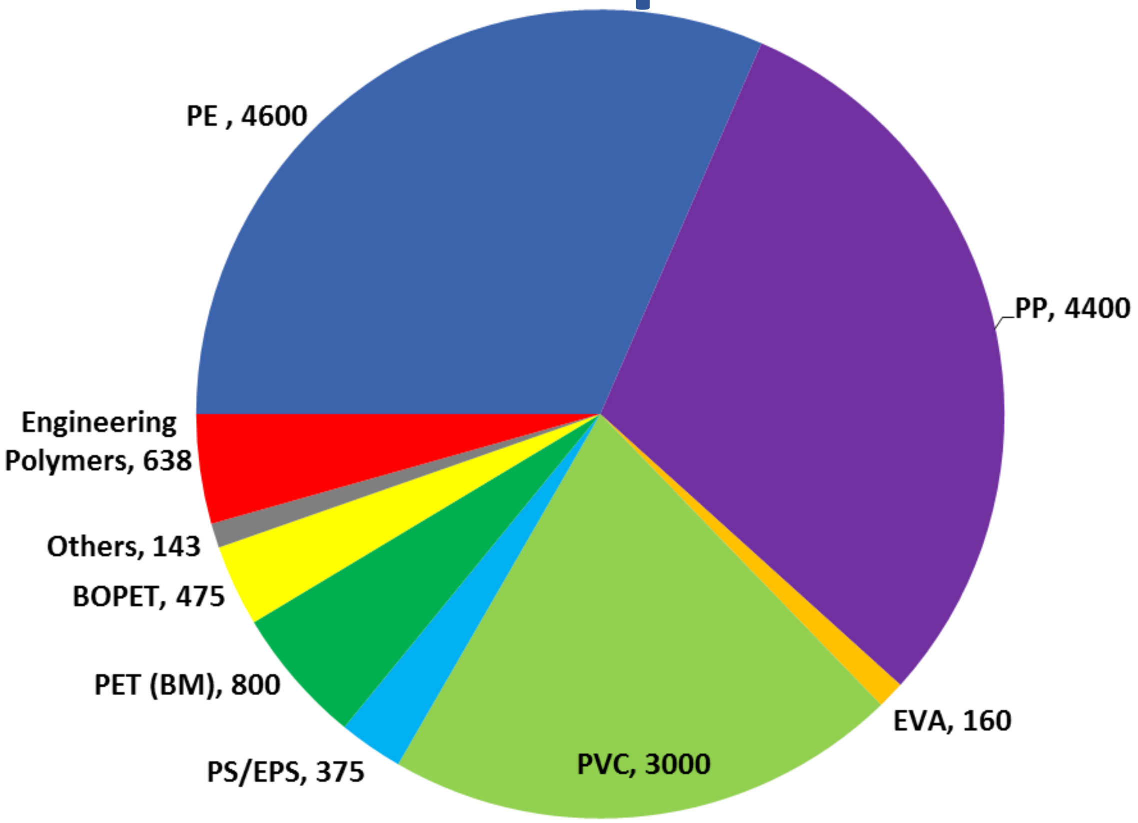
(Figs in KTA)

Consumption 15500KT (2016/17) 20000KT (2019/20):- 9% CARG

Source : PLASTINDIA FOUNDATION

Polymer Consumption : 2016-17

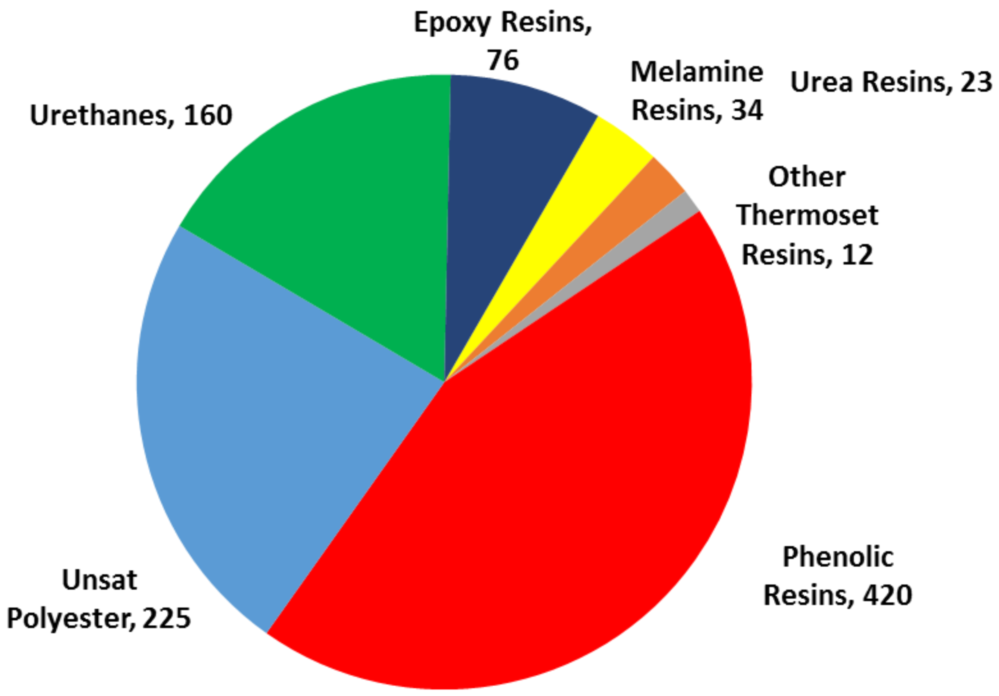
Thermoplastics



Consumption : 14550 KT (2016/17)

➔ 18910 KT (2019/20):- 9% CARG

Thermosets

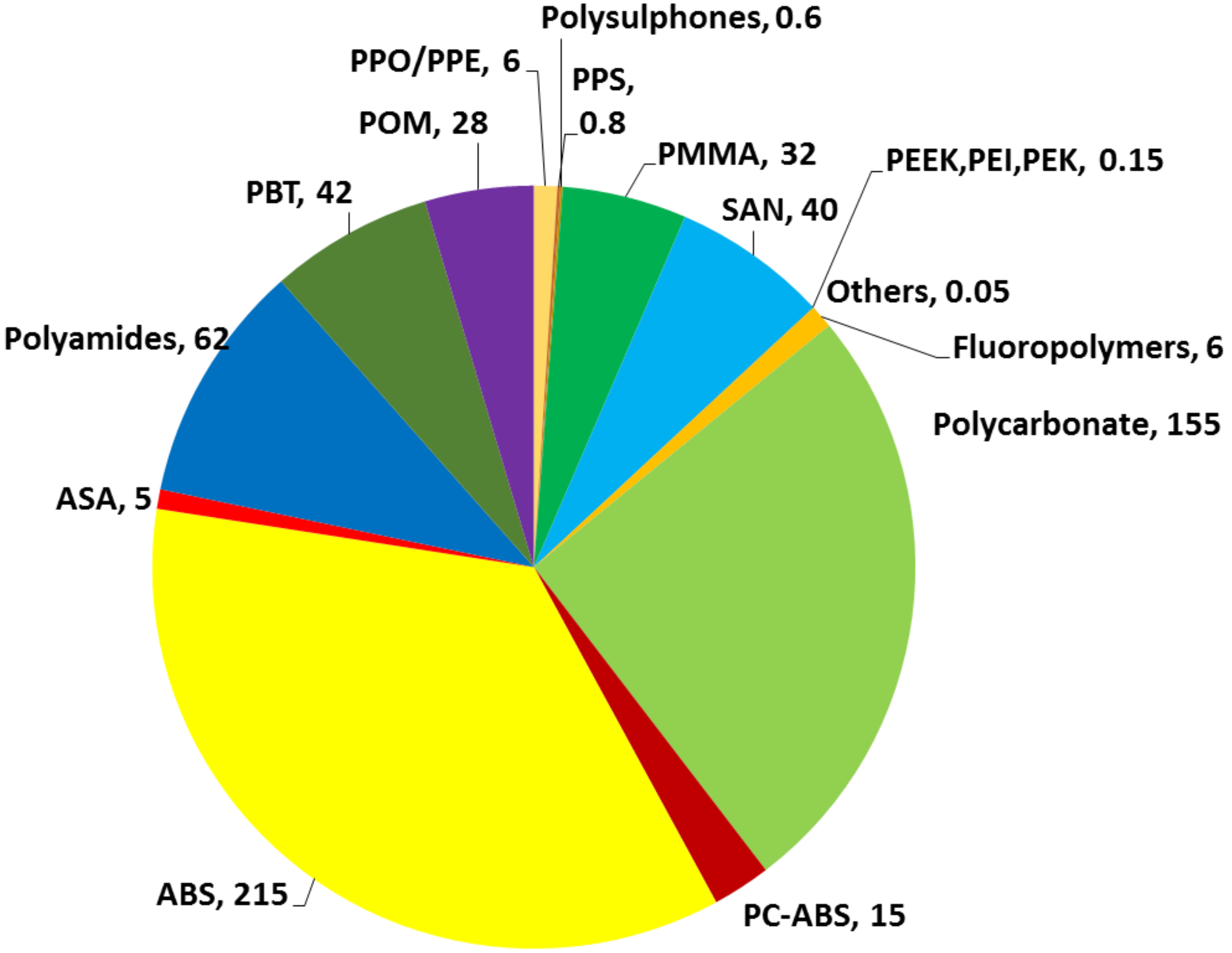


Consumption : 950 KT (2016/17)

➔ 1090 KT (2019/20):- 4.5% CARG

Source : PLASTINDIA FOUNDATION

Engineering Plastics Consumption 2016-17



(Figs in KTA)

Consumption:- 638KT - (2016-17), 819KT - (2019-20):- ~9% CARG

Source : PLASTINDIA FOUNDATION

PLASTINDIA 2018
EMPOWERING GROWTH
10th International Plastics Exhibition, Conference & Convention
Feb. 7-12, 2018, Gandhinagar - Ahmedabad, Gujarat, India.

High End Engg. Polymers Production

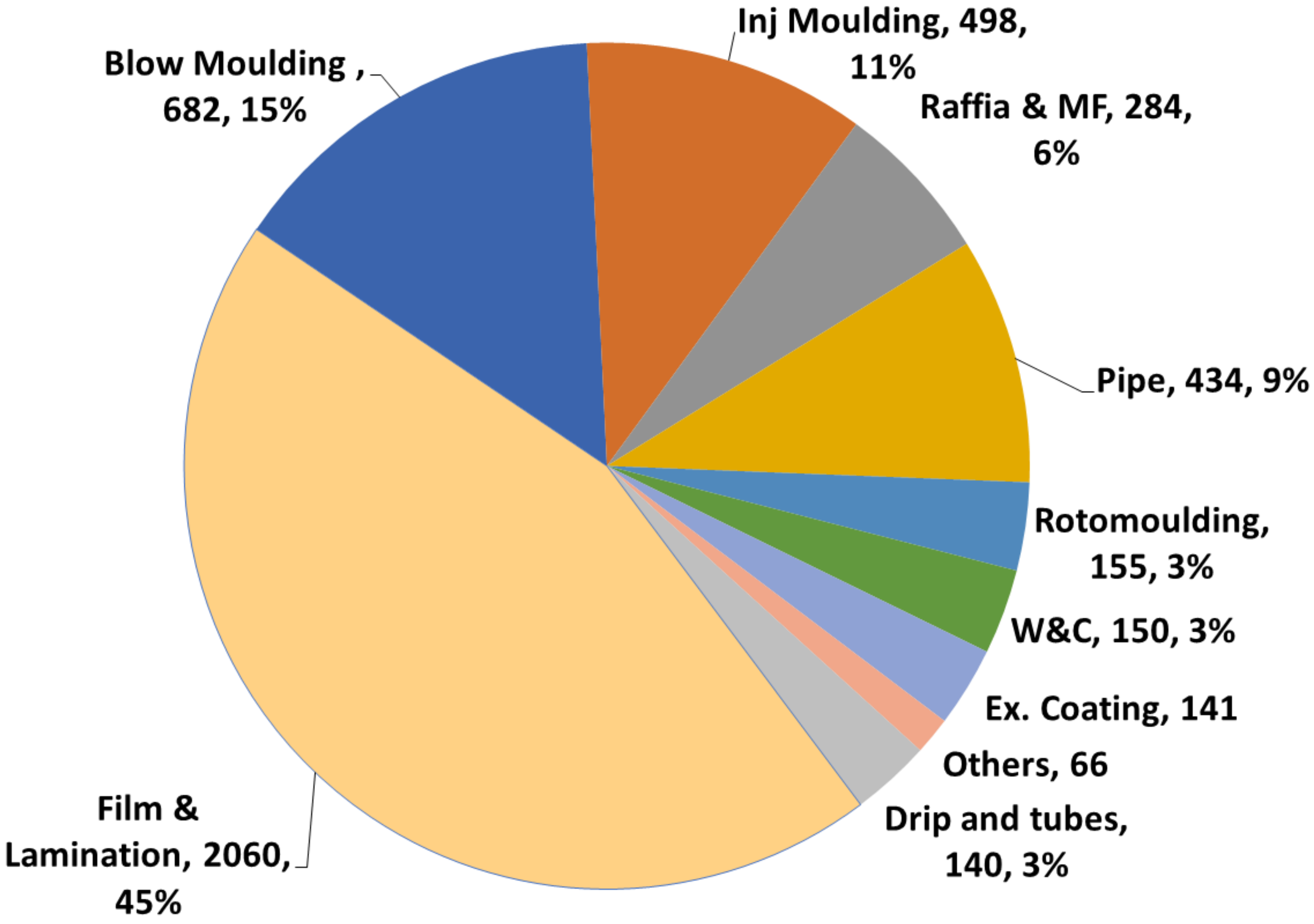
MANUFACTURER	PLASTICS	CAPACITY (TPA)	MAJOR APPLICATIONS
Solvay Specialties (Panoli)	Polyether Sulfone (PES)	2000	Chip Trays, Electricals, Membranes
	Polyether Ether Ketone (PEEK)	1000	Stock Shapes, E&E, Cables, Gen. Engineering, Oil & Gas
Solvay/Rallis (Ankleshwar)	Polyether Ketone Ketone (PEKK)	110	CF Composites for Aerospace
Gharda Chemicals (Ankleshwar)	Polyether Ketone (PEK)	100	Stock shape, Cable, Gen. Engineering
	Polyether Ketone Ketone (PEKK)	50	Electronics, Oil Fields, Gen. Engineering, 3D Printing
	PolyBenzimidazole (ABPBI)	25	Blends with PEK, Fire Resistant Fiber, Membranes for High Temp Fuel Cells

Note: Mainly for export; local consumption only 10-15% of capacity

Source : PLASTINDIA FOUNDATION

Sector wise Polymer Consumption

PE Sector wise Consumption – 2016-17

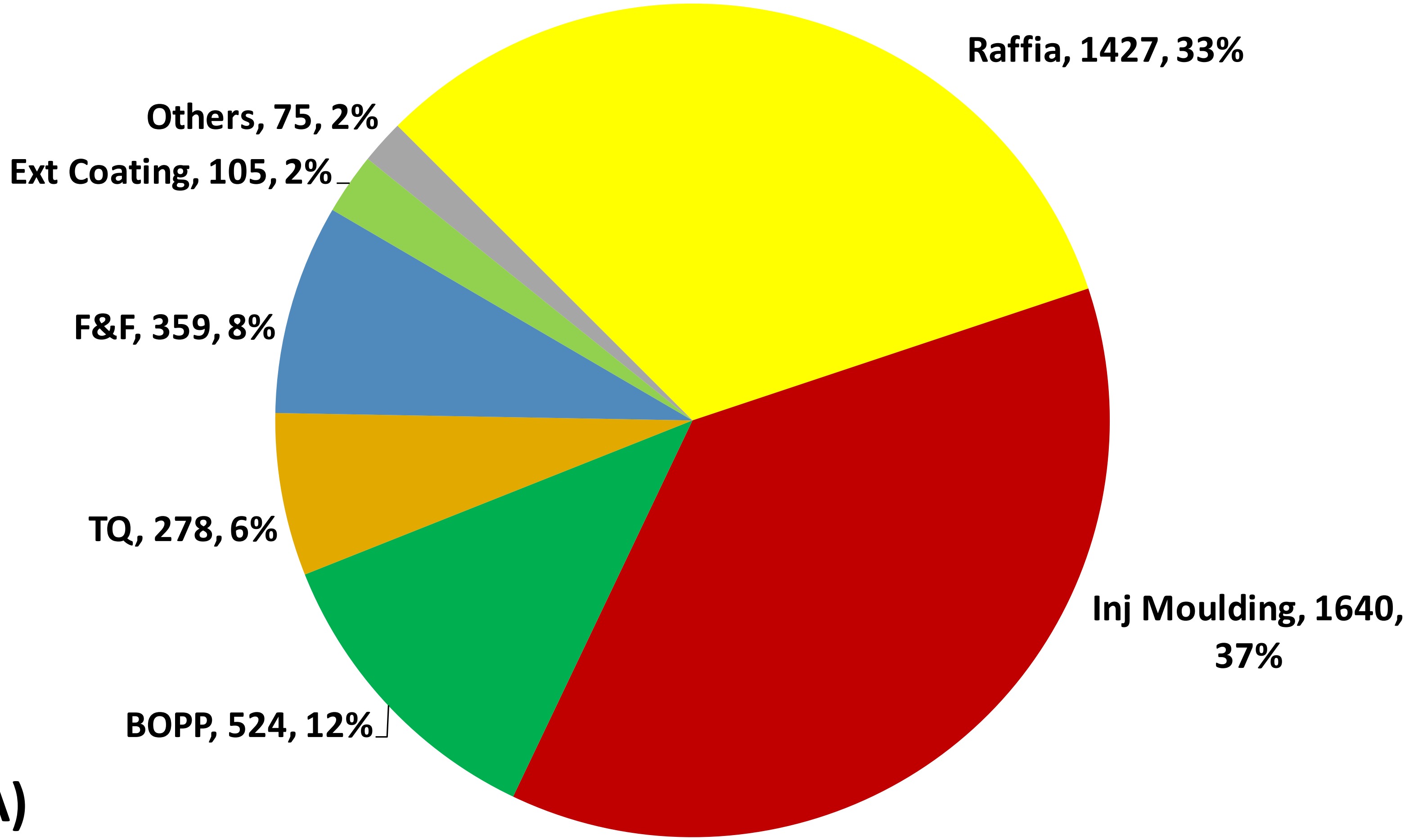


(Figs in KTA)

PE : Demand – 4600KT (2016/17) – 5900KT (2019/20) : ~9% CARG

Source : PLASTINDIA FOUNDATION

PP Sector wise Consumption – 2016-17

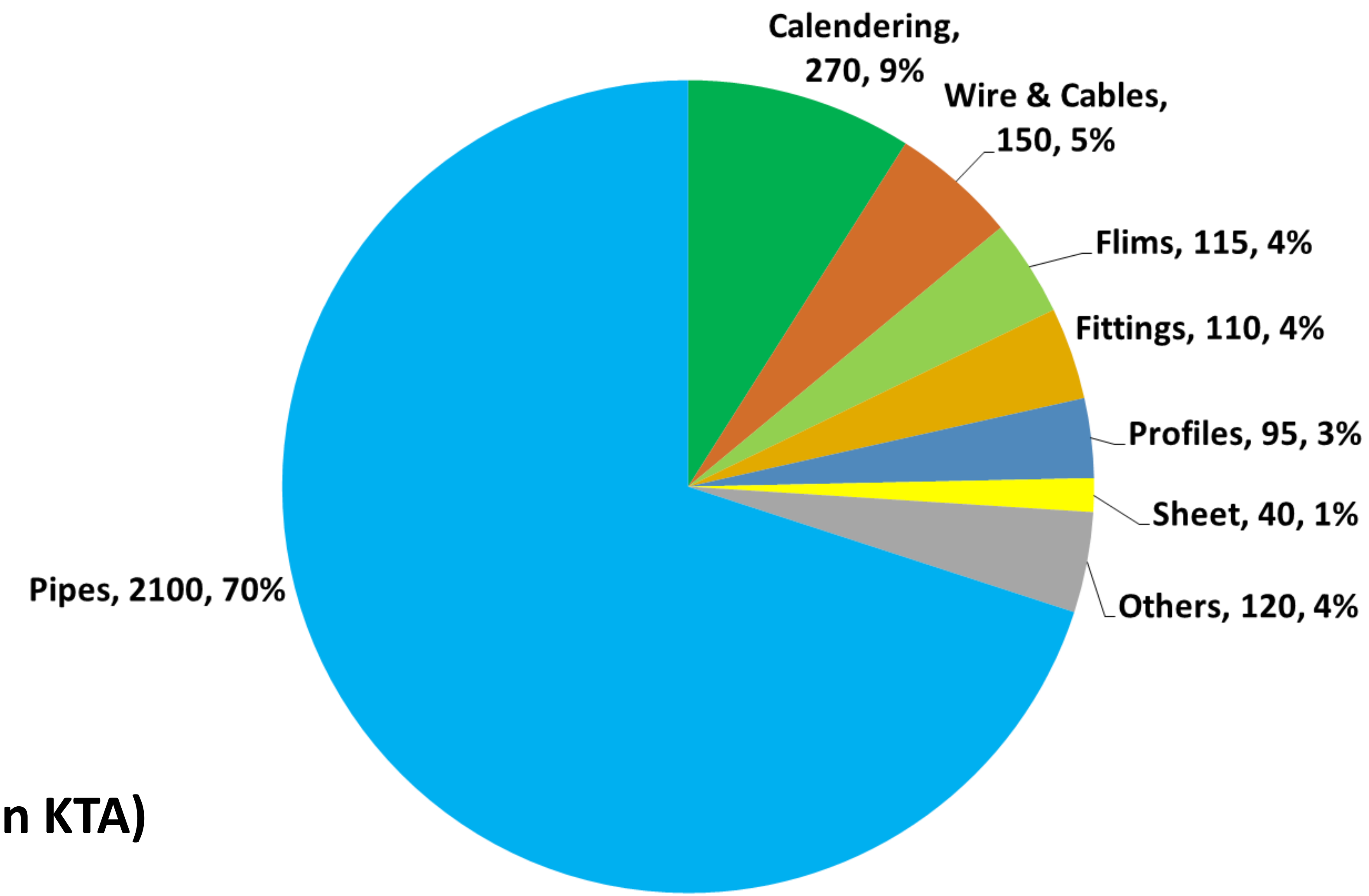


(Figs in KTA)

PP : Demand – 4400KT (2016/17) – 6380KT (2019/20) : ~13% CARG

Source : PLASTINDIA FOUNDATION

PVC Sector wise Consumption – 2016-17

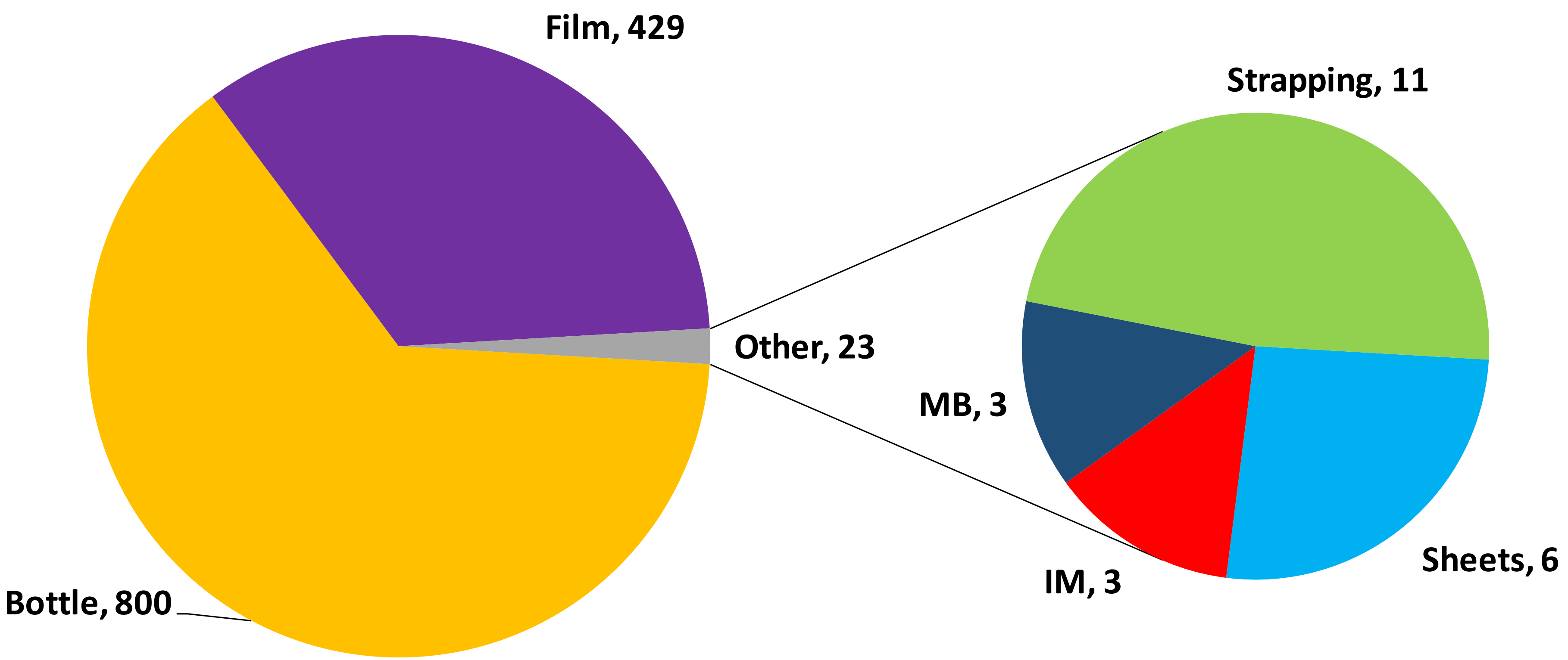


(Figs in KTA)

PVC : Demand – 3000KT (2016/17) – 3900KT (2019/20) : ~9% CARG

Source : PLASTINDIA FOUNDATION

PET Sector wise Consumption – 2016-17



(Figs in KTA)

PET : Demand – 1275KT (2016/17) – 1650KT (2019/20) : ~9% CARG

Source : PLASTINDIA FOUNDATION

Masterbatch

Masterbatch – Current Scenario

Masterbatch	Demand (KT)	
	2016-17	2019-20
White/Black/Colour/Additive	360	605
Filler Masterbatch	762	1035
Total	1122	1640

Masterbatch manufacturing units in India – about 250nos

Source : PLASTINDIA FOUNDATION

Masterbatch – Growth drivers

- Performance masterbatches; cling, anti-bacterial, anti-static, anti-fog, foaming agents, etc.
- Packaging sector
- Infrastructure
- Raffia
- Plasticulture
- Automotive and Appliance

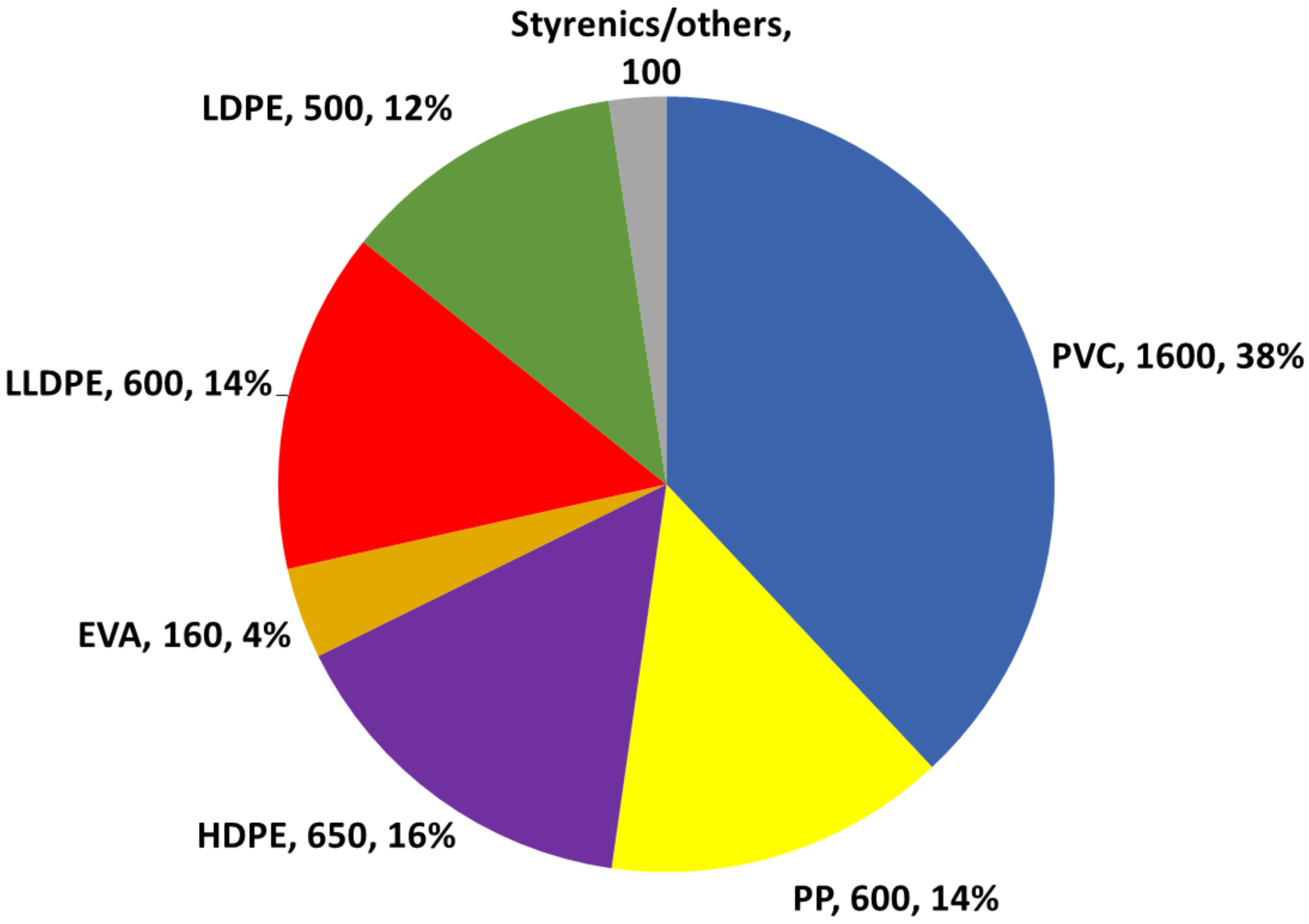



Source : PLASTINDIA FOUNDATION

PLASTINDIA FOUNDATION®
ISO 9001-2008 certified

Imports / Exports

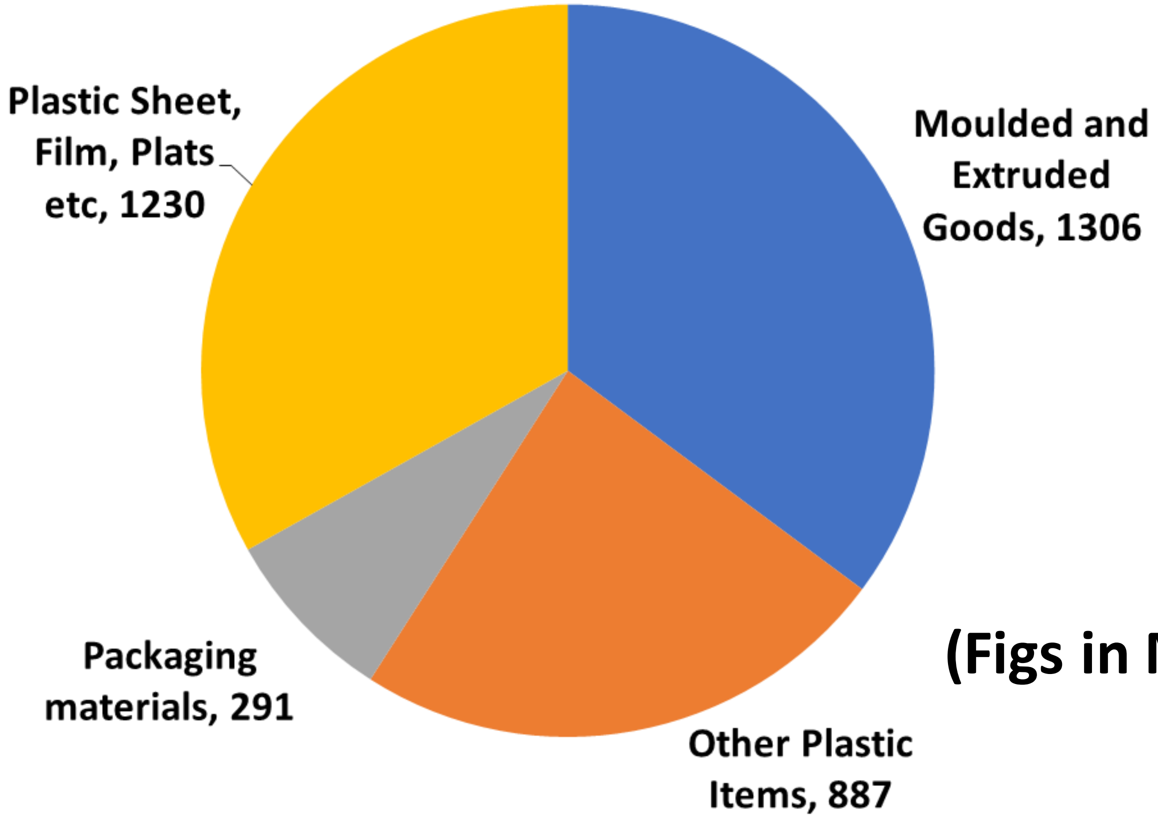
Polymer Imports



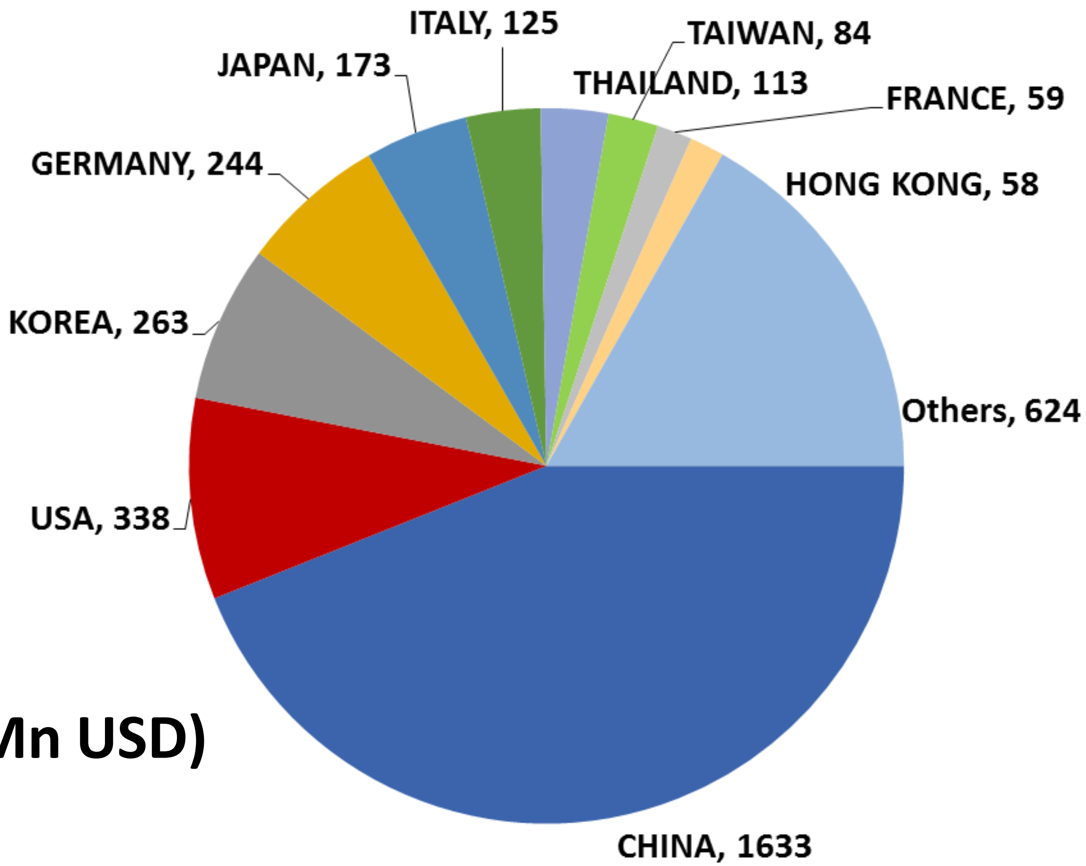
Polymer Imports 2016 – 2017 : 4200KTA

Source : PLASTINDIA FOUNDATION

Import of Finished Goods 2016-2017



(Figs in Mn USD)



Product wise

Country wise

Total imports USD 3.7 Bn

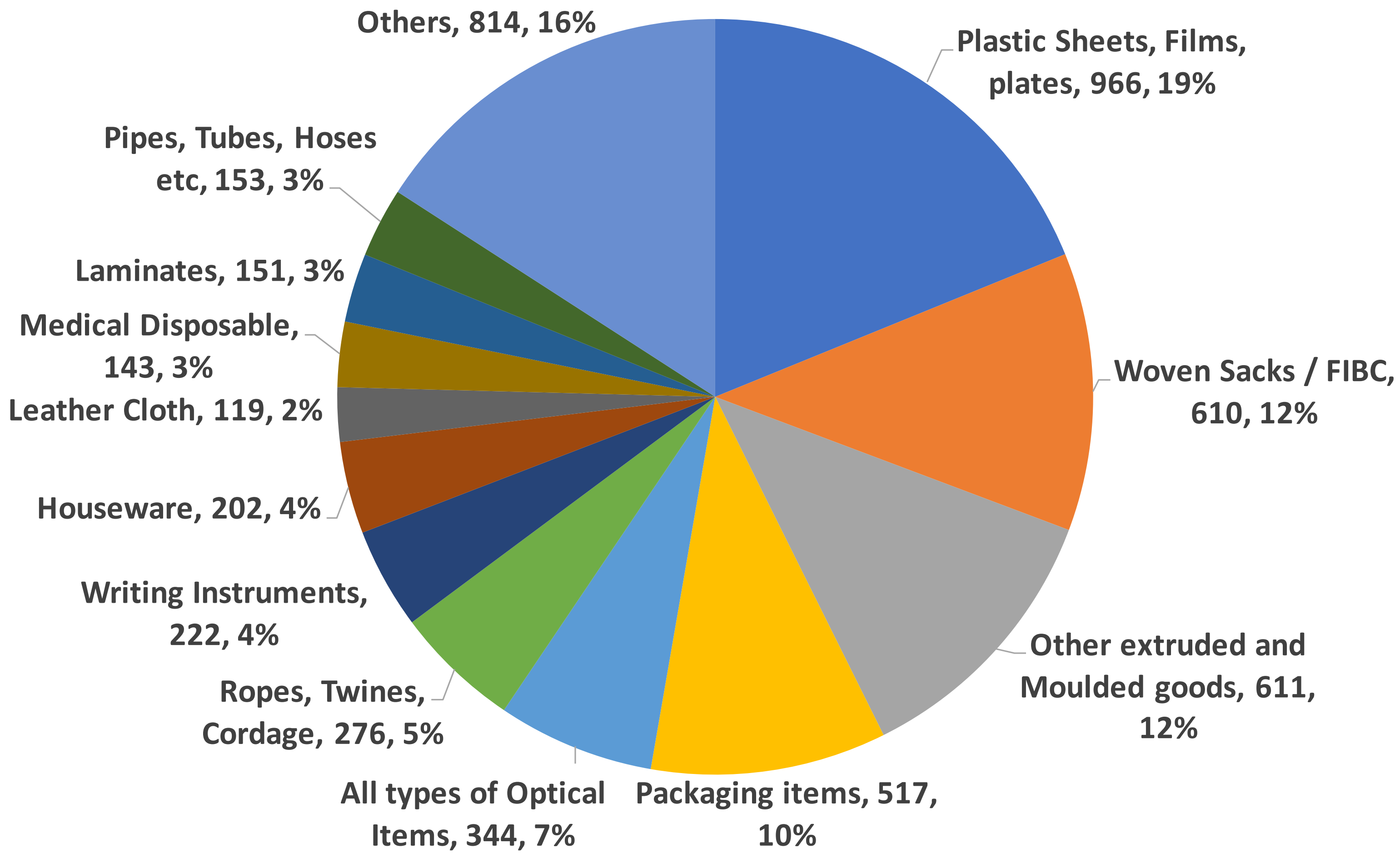
Source : PLASTINDIA FOUNDATION

Finished Plastics Goods Imports

- Moulded & Extruded goods
- LED Luminaires
- Shapes & Profiles
- Writing instruments
- Floor coverings
- PVC fabricated goods
- PVC leather cloth
- Ropes/Twines/Yarn/Bristles
- Fish nets/Fishing line
- Pipes/Fittings
- Sheets & film
- Laminates
- Poly-lined jute goods
- Moulded & Soft luggage items
- Lenses
- GRP/FRP products
- Electrical Accessories
- Bangles/Imitation jewelry
- Optical goods
- Solar PV Modules
- Cine X-Ray films
- Toys/Dolls/Games

Source : PLASTINDIA FOUNDATION

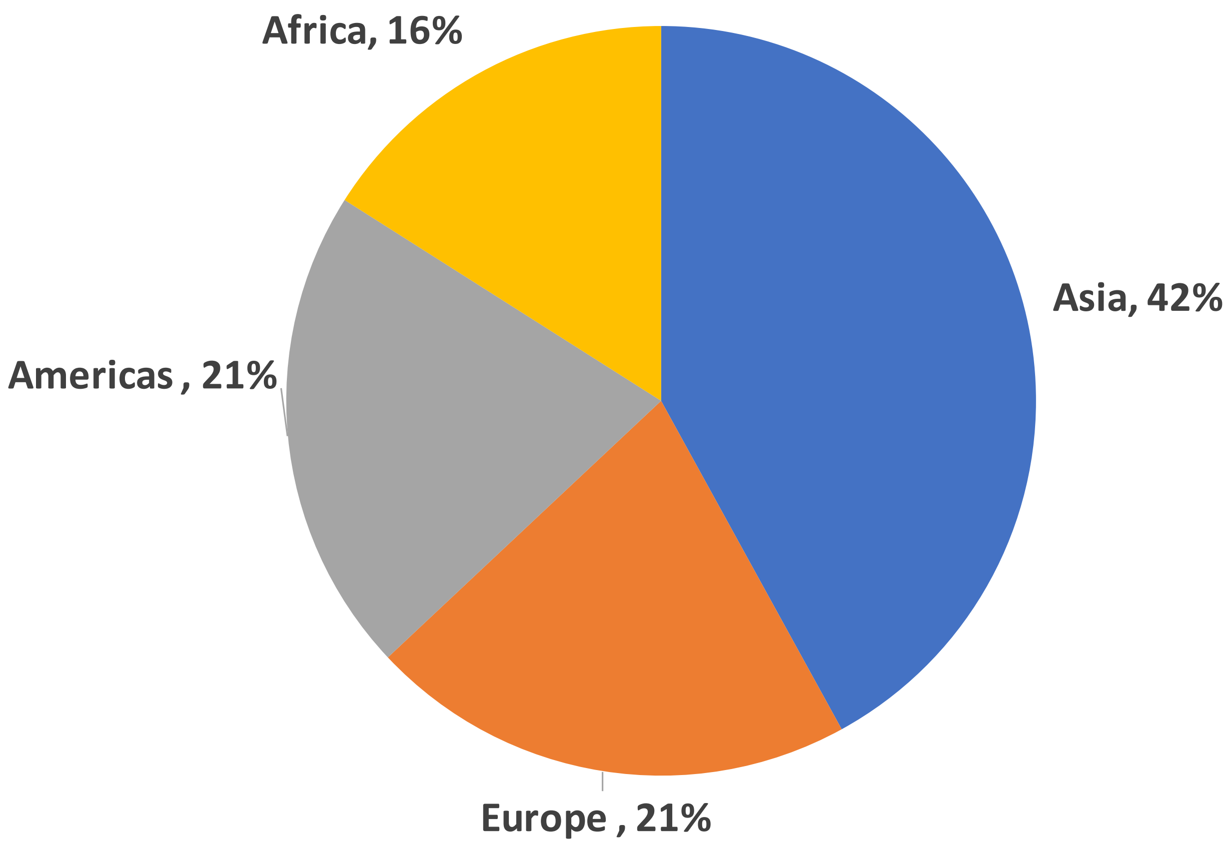
Exports – Product wise 2016-2017



Total Exports From India 2016-2017 : USD 7.6Bn

Source : PLASTINDIA FOUNDATION

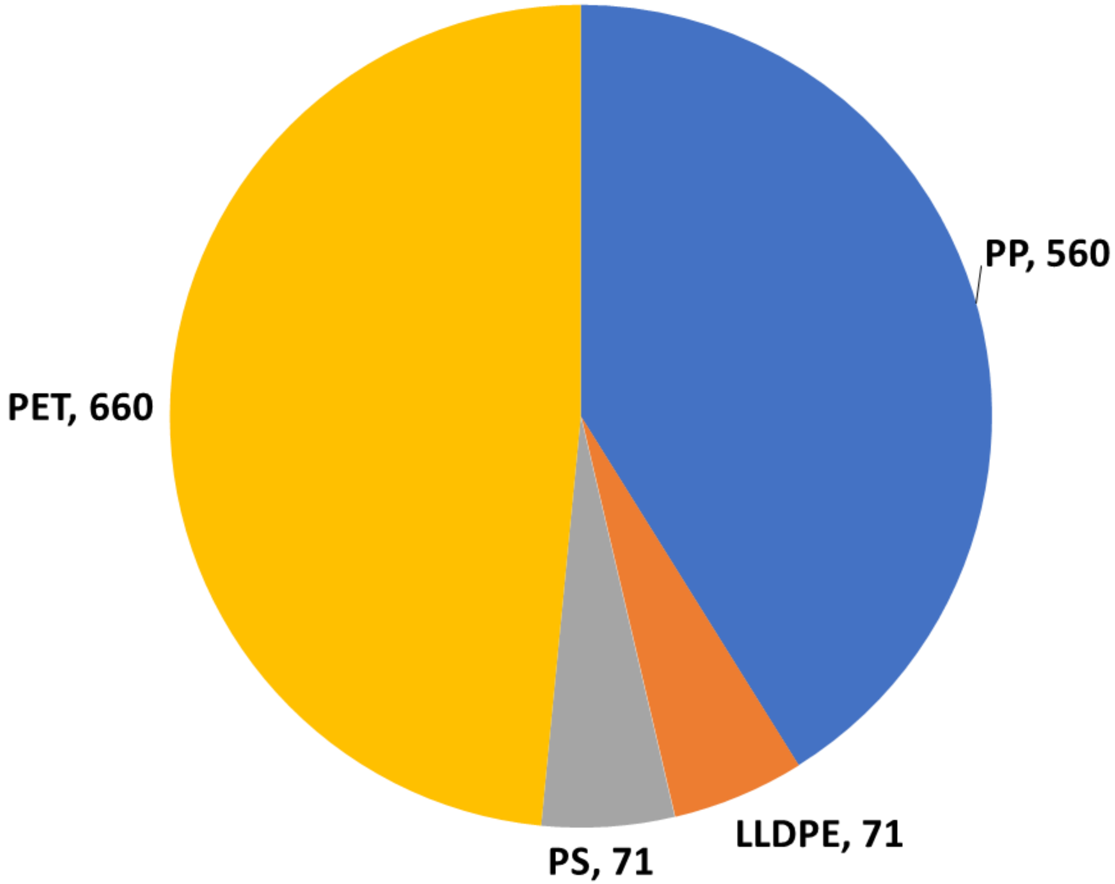
Region wise Exports – 2016-2017



Exports of plastic raw materials and processed goods : USD 7.6Bn

Source : PLASTINDIA FOUNDATION

Plastics Raw Material Exports - 2016-17



(Figs in KTA)

Total Exports of Polymers during 2016-17 : 1362 KT

Source : PLASTINDIA FOUNDATION

Plastics Recycling

Plastics Recycling / Recovery

- **Number of Organised Recycling Units : 3500+**
- **Number of Unorganised Recycling Units : 4000+**
- **Manpower – Direct : 600,000+**
- **Manpower – Indirect (includes waste pickers) : 10,00,000+**
- **Quantum of Plastics Recycled : 5.5MMT**

Source : PLASTINDIA FOUNDATION

Plastics Recycling / Recovery

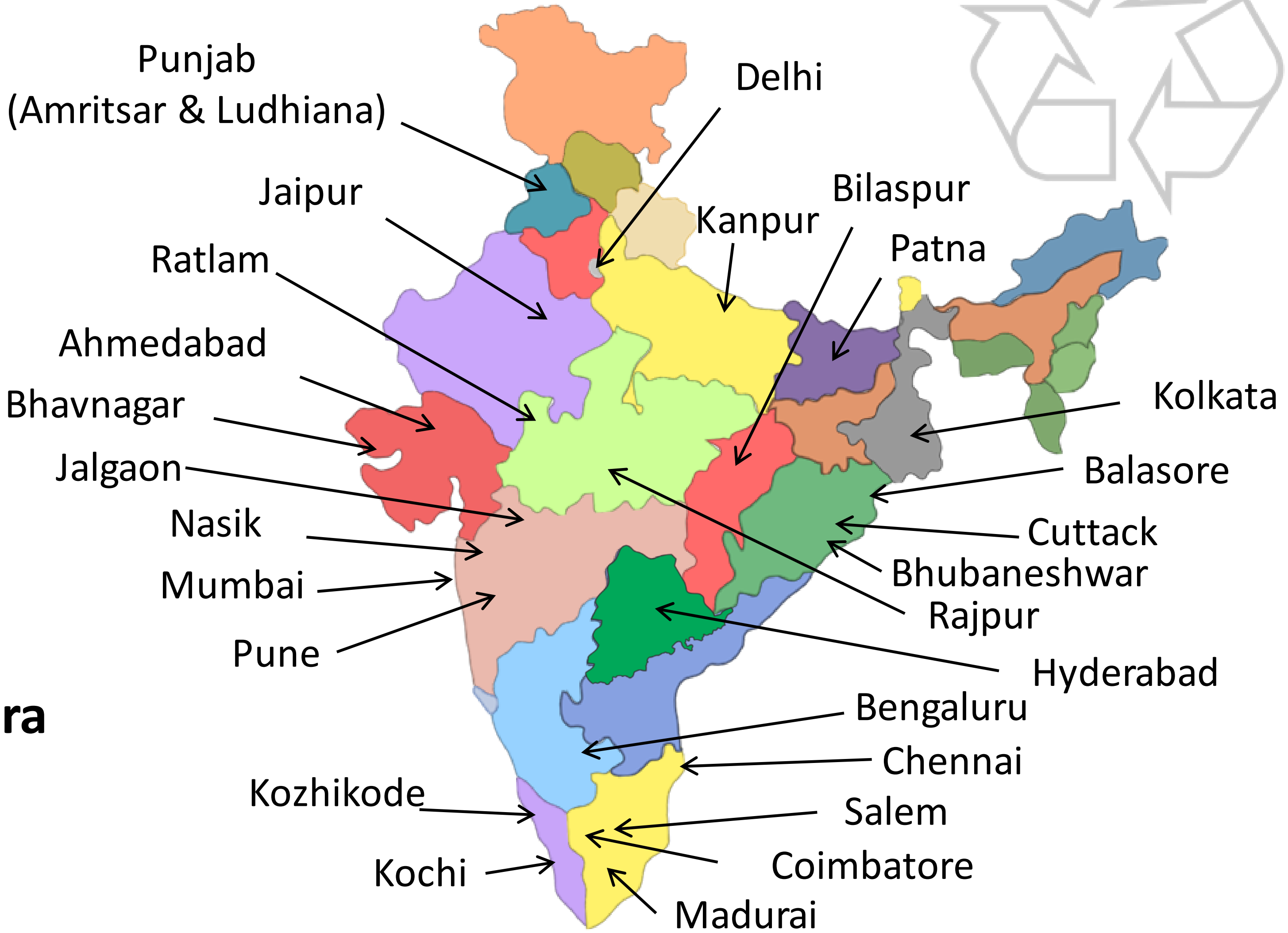
Basis:

- **Almost 100% rigid plastics waste are recycled**
- **~95% PET bottle waste is recycled**
- **Recycling of imported plastics scrap continued**
- **In-house plastics scrap utilized in production process not included**
- **Feedstock recycling (Pyrolysis) and energy recovery through co-processing in cement kiln gained acceptance. ~100 KT in 2016-17 which is projected to go up to 1500 KT 2019-20**
- **Use of plastics waste in bitumen road construction made mandatory**

Source : PLASTINDIA FOUNDATION

Plastics Recycling Clusters

- Dhoraji, Gujarat
- Daman
- Vapi, Gujarat
- Dharavi & Bhandup, Mumbai
- Indore, Madhya Pradesh
- Delhi, NCR
- Malegaon & Solapur, Maharashtra



Estimated quantity of Recycled Plastics : 5.5MMT in 2017-18 ; 7MMT in 2019-20

Source : ICPE

PLASTINDIA FOUNDATION ISO 9001-2008 certified
PLASTINDIA 2018 EMPOWERING GROWTH
10th International Plastics Exhibition, Conference & Convention
Feb. 7-12, 2018, Gandhinagar - Ahmedabad, Gujarat, India.

Plastics Recycling / Recovery Option

Pictorial Representation of
ISO 15270: 2008 / IS 14534:2016

PLASTICS WASTE

MATERIAL RECOVERY

MECHANICAL RECYCLING

Remoulded Into Common Products for Non Critical Usage

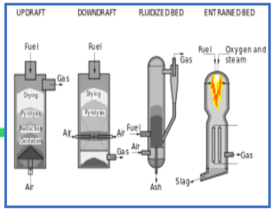
FEEDSTOCK RECYCLING

Conversion by Changing Chemical Structure

Monomeric Constituents of Polymers

Reconversion into Polymers

light diesel oil

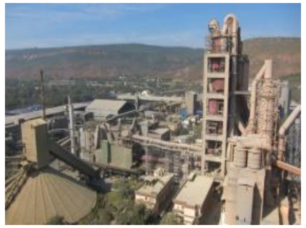


Gasification

$$2Cr(OH)_3 + 3OCl^- + 4OH^- \rightarrow 2CrO_4^{-2} + 3Cl^- + 5H_2O$$

Reducing Agent

ENERGY RECOVERY



CO-PROCESSING IN CEMENT KILNS

HEAT & POWER GENERATION

Source : ICPE

Rotomoulding – Market Snapshot

- Installed Capacity : 250KTA
- Market size : 235KTA
- Organised Sector Players : 250,Plus many more in unorganised sector
- Percentage growth in 2016-17 around 5%
- Polymers used - PE, EVA, PP, PVC, XLPE
- Share of PE - 80%
- Overhead tank : Loft tank ratio : 85:15
- ~80% of tanks demand is for < 2000liters

World's largest rotomoulded water tank market

Source : PLASTINDIA FOUNDATION

Machinery Manufacturing Industry

Plastics Machinery Manufacturing Industry – Present Scenario

- **No. of plastic machinery manufacturing units : ~200**
- **Domestic market : ~USD 508Million in 2016-17**
- **Machines installed till Mar 2017 : 141,000**
- **Installed processing capacity : 41.2MMT**
- **Employment : 1.2Million (direct + indirect)**
- **Growth in machinery CARG 2017-18 onwards : 11.1%**

Source : PLASTINDIA FOUNDATION

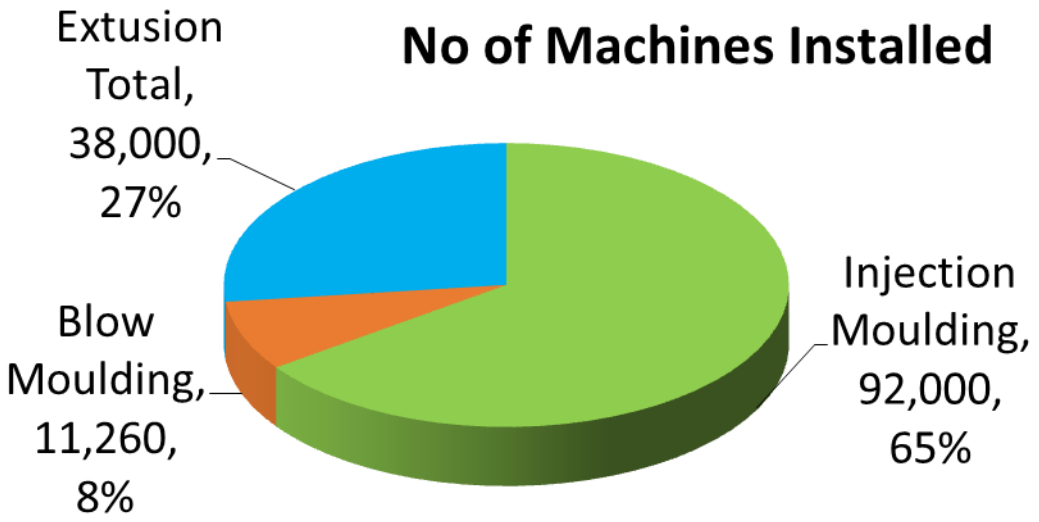
Machinery Additions – Up to March 2017

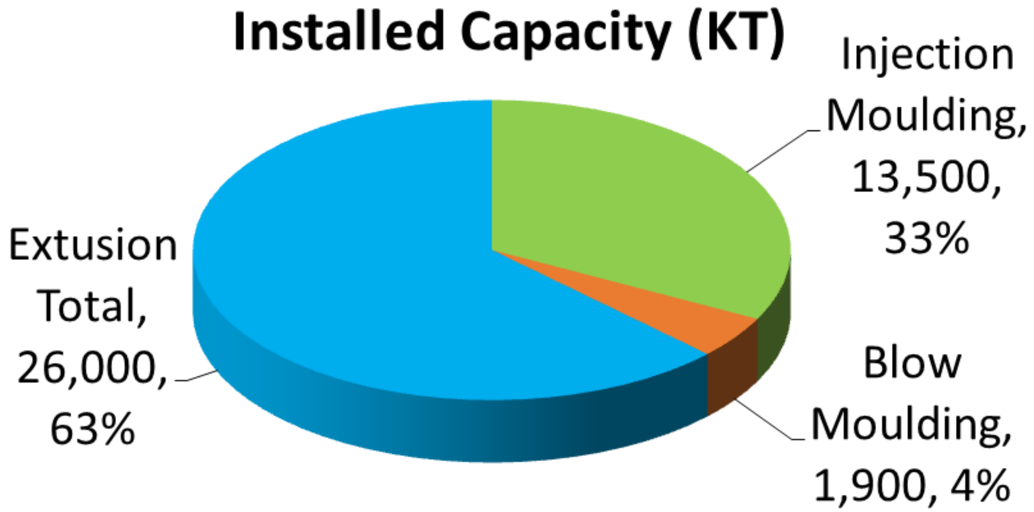
PLASTINDIA FOUNDATION
ISO 9001-2008 certified

Process	Nos./KTA	13-14	14-15	15-16	16-17	Upto 2016-17
Extrusion	Machines Added (Nos.)	1,490	1,535	1,580	1,625	38,000
	Installed Capacity (KTA)	1,415	1,510	1,610	1,710	26,000
Injection Moulding	Machines Added (Nos.)	4,560	4,800	5,050	5,300	92,000
	Installed Capacity (KTA)	900	960	1,035	1,105	13,500
Blow Moluding	Machines Added (Nos.)	450	470	490	770	11,260
	Installed Capacity (KTA)	110	120	135	145	1,900
Total	Machines Added (Nos.)	6,500	6,805	7,120	7,695	1,41,260
	Installed Capacity (KTA)	2,425	2,590	2,780	2,960	41,400

Source : PLASTINDIA FOUNDATION

Machinery Additions – Up to March 2017





	No. of Machines Installed	Installed Capacity (KT)
Injection Moulding	92,000	13,500
Blow Moulding	11,260	1,900
Extrusion Total	38,000	26,000
Monolayer Film	11,217	2,130
Multilayer	1,544	1,395
BOPP	38	825
PPTQ Film	3,532	900
Raffia	2,107	3,545
PO Pipes	1,670	2,065
RPVC Pipe	6,225	7,065
Others	11,495	8,020
Total	141,288	41,400

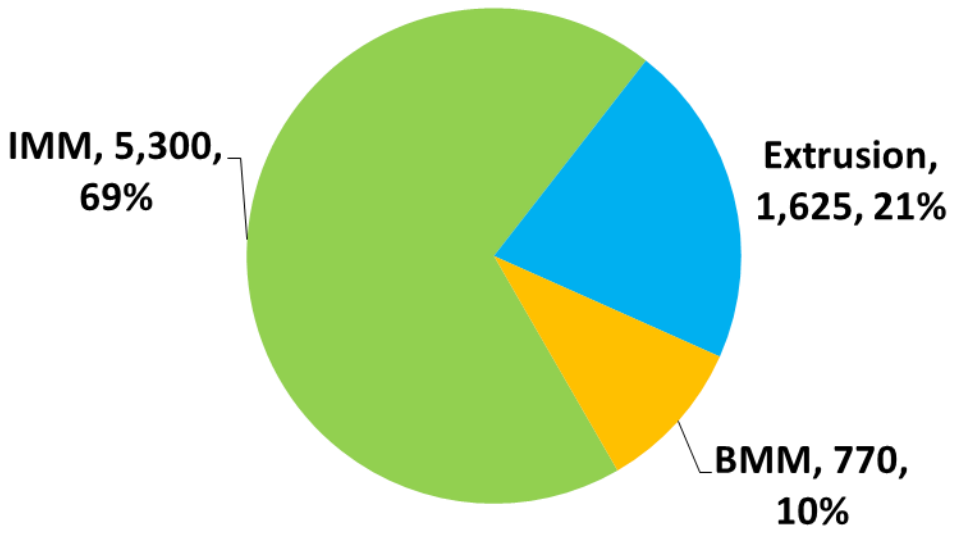
(Excludes mortality)

Installed capacity being ~ double the quantity processed!

Source : PLASTINDIA FOUNDATION

Plastics Machinery Demand & Growth Projections

Description	2016-17	2017-18	2018-19	2019-20
IMM	5,300	5,725	6,200	6,675
Extrusion	1,625	1,700	1,775	1,875
BMM	770	970	1,180	1,425
Total	**7,695**	**8,395**	**9,155**	**9,975**



Projection for 2017-18 : 7.2%; IMM : 8.0%, Extrusion : 4.8%, BMM : 4.9%

Source : PLASTINDIA FOUNDATION

PLASTINDIA FOUNDATION
ISO 9001-2008 certified

Injection Moulding Machinery Capacity Addition

Tonnage Range	Sales 2016-17	Sales 2017-18 Est.	Sales 2018-19 Est.	Sales 2019-20 Est.
Upto 110 T	2,200	2,325	2,475	2,650
125-200 T	1,775	1,925	2,075	2,225
220-275 T	400	450	500	520
350-450 T	525	575	625	700
500-910 T	340	380	450	500
> 910 T	60	70	75	80
Total	5,300	5,725	6,200	6,675

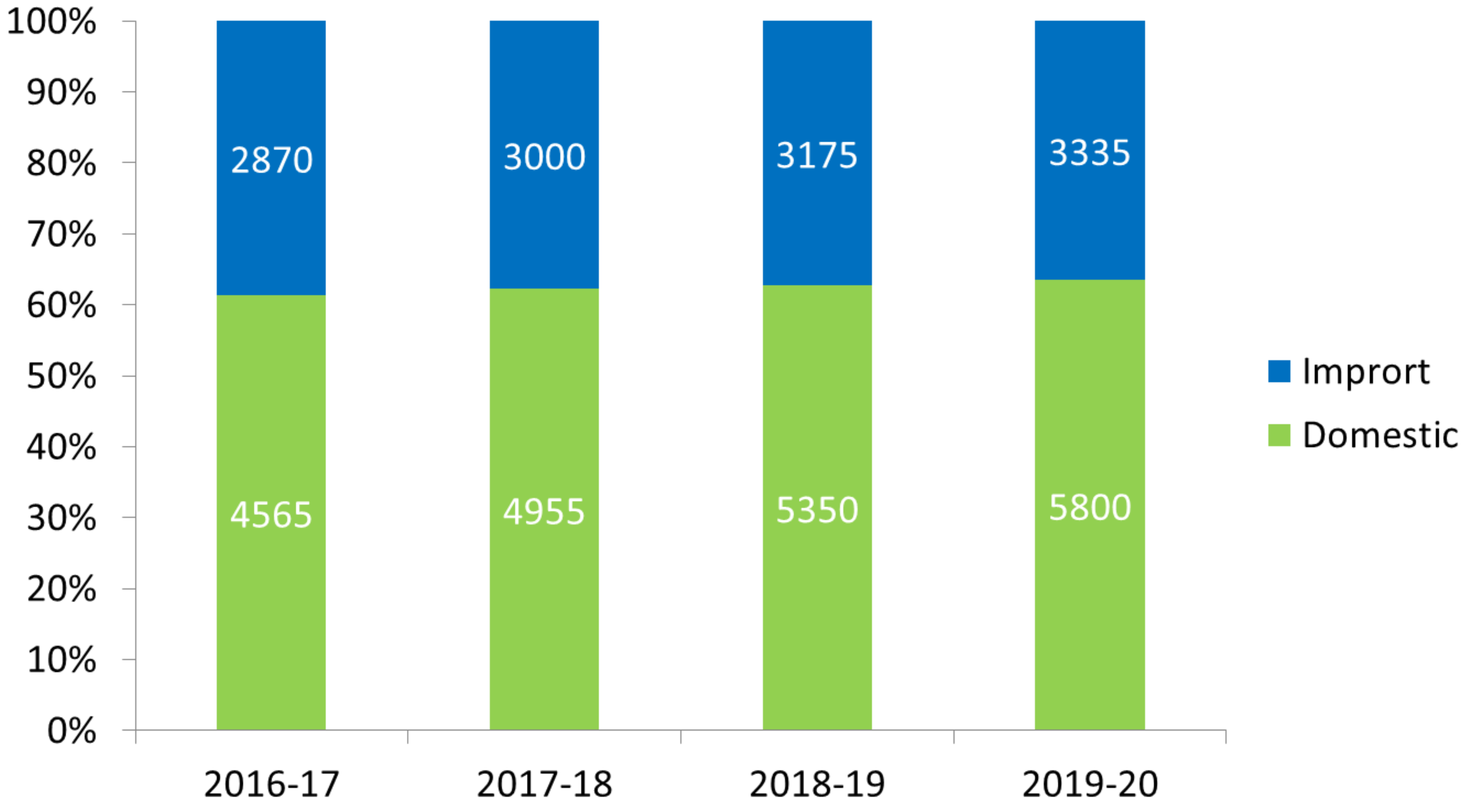
Projection for 2017-18 : 8%CAGR

Source : PLASTINDIA FOUNDATION

Plastics Machinery : Growing share of Imports

PLASTINDIA FOUNDATION
ISO 9001-2008 certified

Total Machines Added (2016-17 to 2019-20) : 7.1% CARG



Growth in domestic machine sale : 8.3%; imports : 5.1%

Source : PLASTINDIA FOUNDATION

Indian technology competes Globally

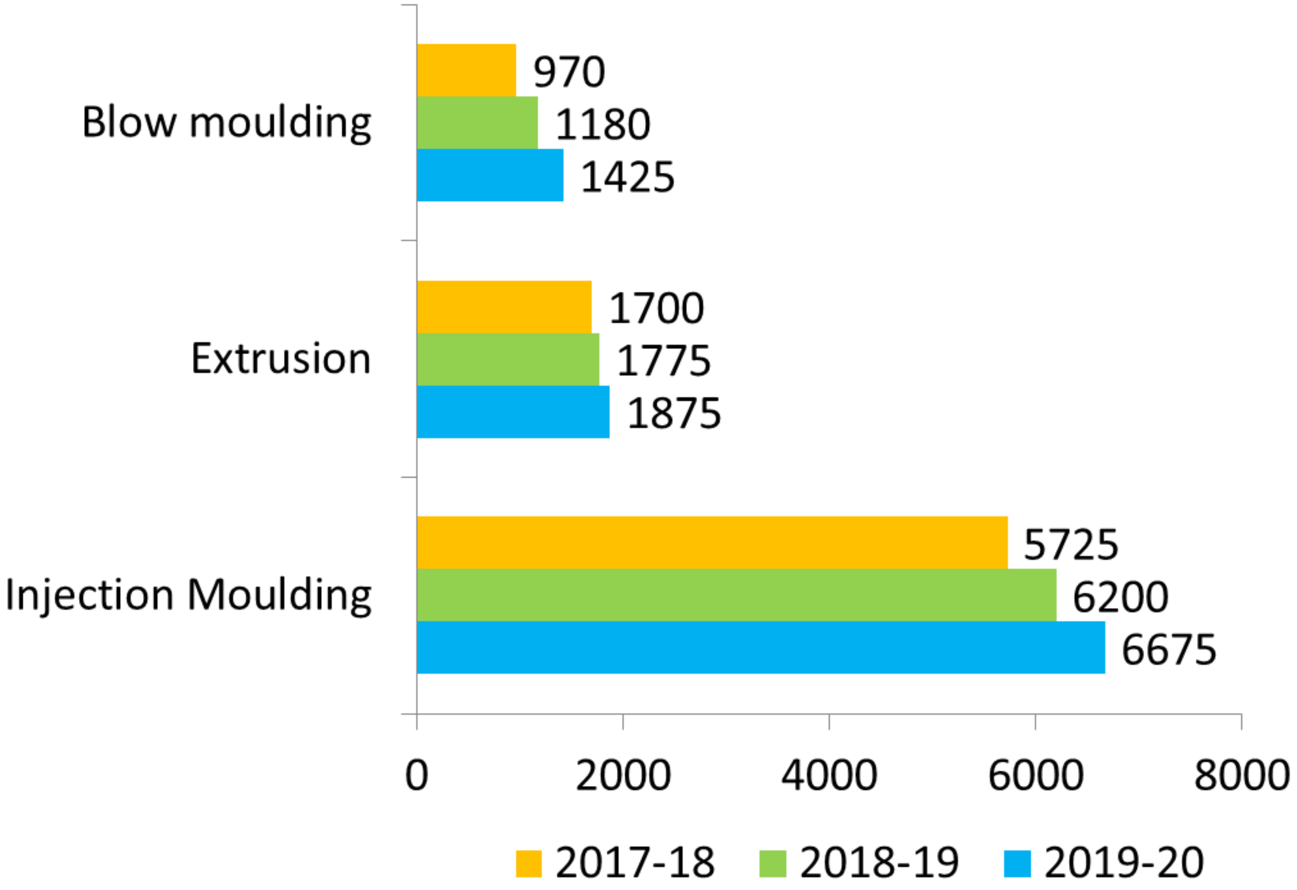
- Compounding Lines
- Tape Lines and looms
- Multilayer Film plants
- Lamination Plants
- Pipe / Drip extrusion lines
- Injection Moulding Machines
- Blow moulding Machines
- Rotomoulding Machines
- Thermoforming Machines
- Thermosetting Presses
- Compression Presses
- Sheet lines
- Auxiliary equipment

- Machinery is produced to current technologies of energy efficiency, high productivity and through-put.
- Leading Global brands from Europe, USA, Japan, China and Taiwan have manufacturing presence in India, through Joint ventures or fully owned subsidiaries
- Machineries are produced with automation adaptabilities and Industry 4.0 capability
- Indian manufacturers export to 50 countries across the globe, to developing and developed nations.
- Exports stand at USD 150 million and growing at 12%

Source : PLASTINDIA FOUNDATION

Opportunities by 2020…….

(No. of Machines)



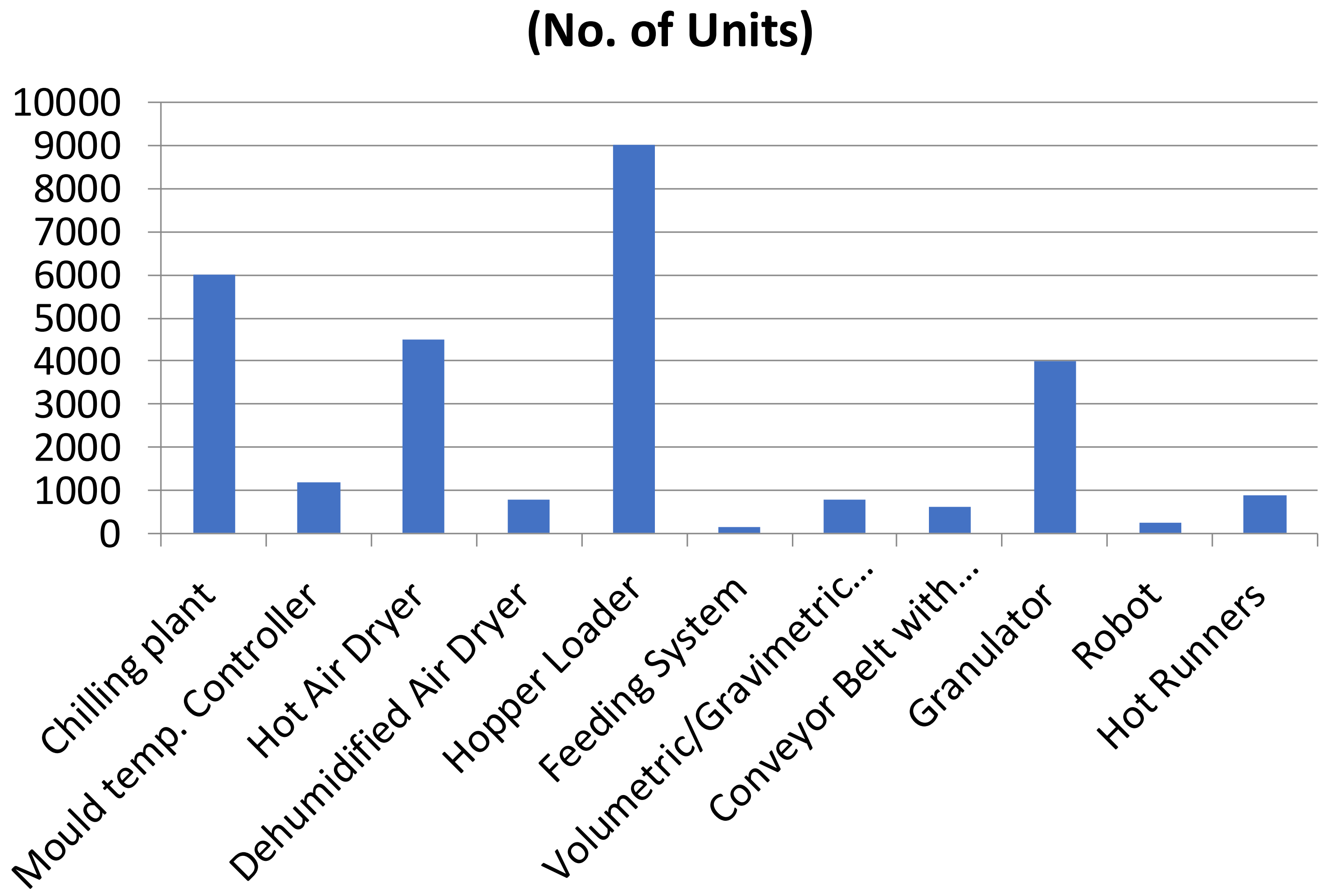
- Project investment to the tune of USD 12 Bn
- IM, Pipe, Raffia, Films are Growth Drivers

Source : PLASTINDIA FOUNDATION

Auxiliary Equipment

Auxiliary Equipment Industry 2016-2017

Auxiliary Equipment's in Plastics Industry	
Product	**Units**
Chilling plant	6000
Mould temp. Controller	1200
Drying System	
- Hot Air Dryer	4500
- Dehumidified Air Dryer	800
Raw Material Conveying System	
- Hopper Loader	9000
- Central Conveying System	150
Volumetric/Gravimetric Blending System	800
Conveyor Belt with Coumting System	600
Granulator	4000
Robot	250
Hot Runners	900



Auxiliary equipment share :10-15% of machinery business

Source : PLASTINDIA FOUNDATION

Indian Plastics Tooling Industry

Comprising :

In-house Tool Rooms (Captive) - Mostly with Automotive OEM’s & Tier 1 Suppliers.

Commercial Tool Rooms (Manufacturers of Plastics Moulds) - 480 nos.

They cater to Automotive, Consumer Durables, Plastics Products such as Houseware, Furniture, Packaging, Electrical & Electronics.

Total Market Size : USD 977 Mn

USD 223 Mn is Captive

USD 569 Mn is Commercial

USD 185 Mn is Imports

Source : PLASTINDIA FOUNDATION

Indian Plastics Tooling Industry

Industry Vertical	USD Mn
Automotive	318
Plastics Products for Market	315
Consumer Applications	142
Electricals	69
Packaging	63
Electronics	46
General Engineering	5
Others	19
Total	**977**

Source : PLASTINDIA FOUNDATION1

Industry Growth Drivers

Segment	Current Industry Size USD Billion	Last 5 Year CAGR	Next 5 Year CAGR
Auto OEMs	73	6%	9%
Automotive Components	40	7%	11%
Plastics Processing	20	9%	12%
Electrical Equipments	21	6%	8%
Consumer Durables & Electronics	15	10%	14%
Packaging	5	10%	11%

Key Drivers :

- Expected GDP Projection: 8%
- Indigenization of components by Major OEMs from sectors like Automobile & Consumer Electronics – Increasing trust on development capability of domestic CTRs
- Make in India Initiative
- Availability of competent Skilled people, though in lesser numbers
- Growing trend towards shorter production runs and customized products

Source : PLASTINDIA FOUNDATION

Polymer Growth Opportunities

Demand Growth Drivers – Packaging

Growth Drivers

- Food / Processed food
- FMCG items
- Packaged and fast food industry
- Single serve packs/Power packs
- Textiles and Toys

Applications

- Multilayer films
- BOPP Films
- Shrink and Stretch wraps
- Thin wall molding
- Thermoforming
- Blow molded containers

Retail revolution setting pace for growth in packaging

Source : PLASTINDIA FOUNDATION

Demand Growth Drivers – Infrastructure

Growth Drivers

- Building and construction
- Public utilities services
- Mega highway projects
- Rural electrification projects
- Mega irrigation projects
- Smart cities / AMRUTH Cities

Applications

- Pipes (gas, water supply, sewerage, OFD, plumbing)
- Storage tanks
- Profiles
- Geotextiles, Geomembrane
- Wire and Cable

The 12th plan envisages investment of ~USD 43 bn for water management;

USD 92 bn for irrigation sector; USD 220 bn for power generation

Source : PLASTINDIA FOUNDATION

Demand Growth Drivers – Agriculture

Growth Drivers

- Higher Yield thro' better water management
- Advanced agricultural technology
- Government spending
- Retailers:- farmers joint initiatives
- Distribution channel / Refrigerated storage

Applications

- Greenhouse films
- Low tunnels
- Micro irrigation:- Drip/Sprinkler
- Mulch films
- Crates, Pallets

Bringing about the 2nd green revolution

Source : PLASTINDIA FOUNDATION

Demand Growth Drivers-Consumer Durables

Growth Drivers

- Healthy economic growth
- Higher per capita income
- Greater disposable income

Applications

- Appliances:- Washing machines, Refrigerators, TV's, Mobile Phones, Computers
- Household:- furniture & toys
- Office, Restaurant & Stadia Furniture
- Luggage
- Houseware

Source : PLASTINDIA FOUNDATION

Demand Growth Drivers – Healthcare

Growth Drivers

- India as a medical tourism destination
- Growing health awareness

Applications

- Heart valves, hearing aids, spectacles, prosthetics, etc.
- Packaging of medicines, devices etc.
- Disposable products:- Syringes, IV sets, blood bags, diapers, bed covers, pillow covers, gowns, masks, gloves etc.

Source : PLASTINDIA FOUNDATION

Other Growth Areas

Rigid Packaging

Automotive

3D Printing

Industrial Components

Source : PLASTINDIA FOUNDATION

Digital India:- Outlook & initiatives under Make in India

Digital India Program

- A flagship program of Govt. of India with a vision to transform India into a digitally empowered society

- Target:- **NET ZERO** Imports by 2020 for notified products through

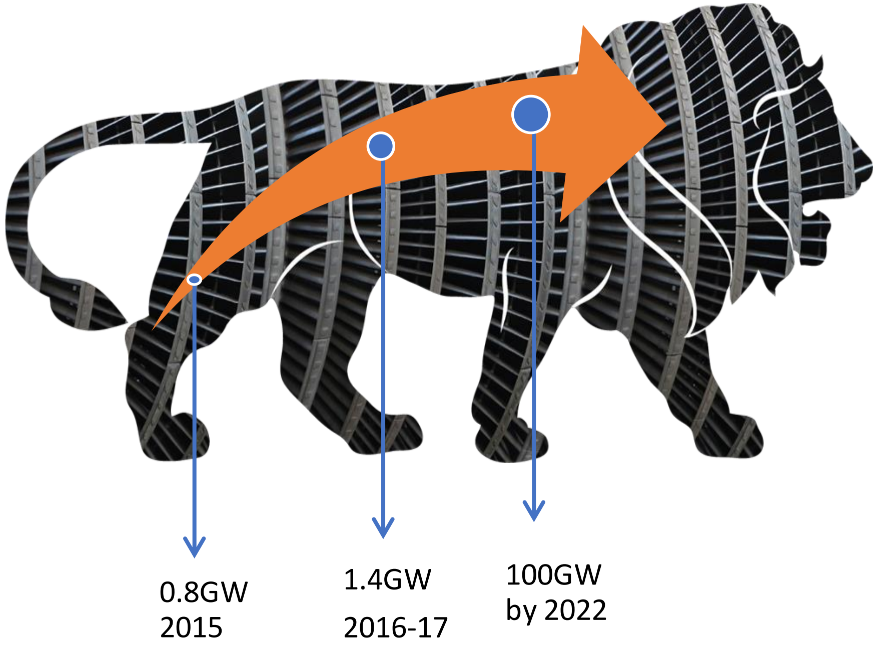
  - ✓ Investments:- USD 100 Bn
  - ✓ Production:- USD 400 Bn
  - ✓ Employment Generation:- 25 Mn
  - ✓ Exports:- USD 30 Bn

MAKE IN INDIA

	% of Total goods imported
Mobile Phones	38.65
Smart TV's	7.91
Notebooks	5.54
Digital Cameras	4.34
Invertors & UPS	2.65
USB	2.44
STB's	2.33
LCD Monitors	1.72
Top Product 10%	65.58

Source : PLASTINDIA FOUNDATION

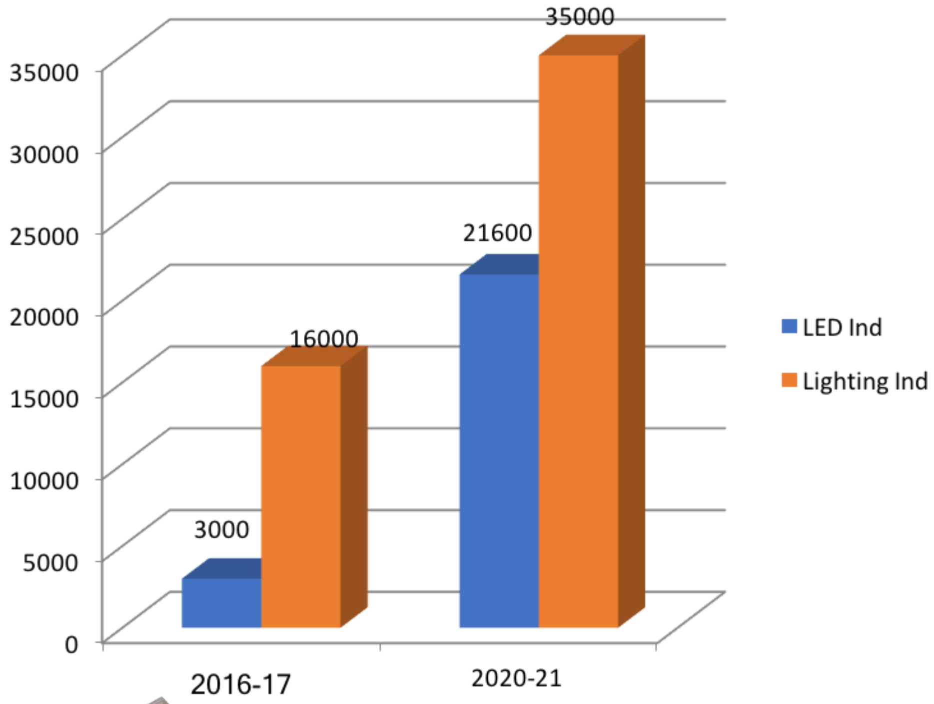
Solar PV – High growth opportunity



- National target of 100GW of installation by 2022 and also proactive policies from states like Gujarat are the key drivers for the growth of the solar sector.
- Rooftop Solar PV is also becoming increasingly popular. India expected to reach 40GW in Rooftop solar by 2022.
- Govt. strongly Implementing the Standards for Solar - Increasing awareness
- India has attracted foreign investments to develop solar energy plants

Source : PLASTINDIA FOUNDATION

LED : Outlook & initiatives under Make in India



- Market growing ~35% YoY
- Current Imports:- 60%
- Government aggressively driving projects/specifications & implementing standards.
- Under UJALA & ESSL schemes Govt. plans to replace by 2019
  - No. of LED bulbs:- 770Mn
  - No . Of street lights:- 9Mn
- Make not only for India but also for export:- Export incentive 2%
- Rationalised 'Duty Structure' for Domestic Manufacturers
- Bulk requirements for Railways, Airport authority, Highways & other large usage projects

Growth Drivers

- ✓ LED Bulbs (Retrofits)
- ✓ Tube lights
- ✓ Street Lamps

Source : PLASTINDIA FOUNDATION

Plastic Parks – Existing & Proposed

Plastic Parks	Area (Acres)
Sanand, Gujarat	140
Dahej, Gujarat	100
Narasapura, Karnataka	100
Auraiya, Uttar Pradesh	225
Tamot, Madhya Pradesh	150
Siju village, Odisha	120
Barjora, West Bengal	496
Ibrahimpatnam, Telangana	500
Kannur, Kerala	TBC
Tinsukia, Assam	600
Chennai, Tamil Nadu	300
Panipat, Harayana	TBC

Source : PLASTINDIA FOUNDATION

Conclusion

Achievements of India Plastic Processing Industry

- Growth of machinery industry – Installed capacity CARG of 11.1% (2016/17 to 2019/20)
- Polymer consumption projected to reach 20MMT by 2020
- Global companies investing in India
- Low import duty on polymer raw materials
- Proposed Government Policies to help growth of plastic industry
  - Technology Upgradation Fund Scheme
  - Plastic Parks
  - MSME & Skill Development

India……..Happening

- Established democracy & stable democratic government with favorable economic policies.
- Young population; median age of 24 years
- Setting up of SEZs to overcome bottlenecks of infrastructure and create business friendly policies
- Large pool of scientific and technically trained manpower
- India, the largest market in South Asia. Robust domestic demand
- Rising income levels and changing lifestyles driving demand for plastics

Together We Prosper!

Summary

- Indian economic fundamentals are robust and continuing amidst uncertainty in global economy
- Huge growth opportunities in India for plastics due to lower per capita consumption as compared to world average
- Flexible packaging industry poised for strong growth, insulated from the current economic scenario due to huge & diversified consumer base
- Planned Infrastructure projects are driving growth in India and these are ably supported by the current and upcoming domestic capacities

PLASTINDIA FOUNDATION®

ISO 9001-2008 certified

PLASTINDIA 2018

EMPOWERING GROWTH

10th International Plastics Exhibition, Conference & Convention

Feb. 7-12, 2018, Gandhinagar - Ahmedabad, Gujarat, India.

ufi Approved International Event

401, Landmark 'B', Suren Road, Off Andheri Kurla Road, Andheri (E), Mumbai - 400093, India.

Tel.: +91 22 2683 2911 – 14 • Fax: +91 22 2684 5861

E-mail: contact@plastindia.org • Website: www.plastindia.org

Disclaimer

This presentation contains forward-looking statements which may be identified by their use of words like "plans," "expects," "will," "anticipates," "believes," "intends," "projects," "estimates" or other words of similar meaning. Forward-looking statements are based on certain assumptions and expectations of future events. The Committee referred to in this presentation cannot guarantee that these assumptions and expectations are accurate or will be realized.

The actual results, performance or achievements, could thus differ materially from those projected in any such forward-looking statements. These companies assume no responsibility to publicly amend, modify or revise any forward looking statements, on the basis of any subsequent developments, information or events, or otherwise.

The information contained was obtained from various sources believed to be reliable and we do not guarantee its accuracy. Neither Plastindia Foundation or any of the members of the Committee accepts any liability whatsoever for any direct or consequential damages or losses arising from any use of this presentation or its contents.

Thank you