

# India: Global Chemicals & Petrochemicals Manufacturing Hub

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सत्यमेव जयते

रसायन एवं पेट्रो-रसायन विभाग

DEPARTMENT OF

**CHEMICALS & PETRO-CHEMICALS**

# Evolution of Indian Chemical Industry

1960- 1980

1990 - 2000

2000- 2010

2010 - 2020

- Before 1960: Few privately owned companies were participating in bulk chemicals, pharmaceuticals, & basic dyes
- GOI incorporated 5 PSUs to kick start the industry
- 1961: First Ethylene cracker was set-up by Union Carbide in Mumbai with alcohol as feedstock
- 1964: NOCIL collaborated with Royal Dutch Shell to setup Naphtha cracker in Navi Mumbai
- 1978: IPCL commissioned the first integrated cracker in Vadodara, Baroda which gave thrust to the growth of Indian petrochemical industry

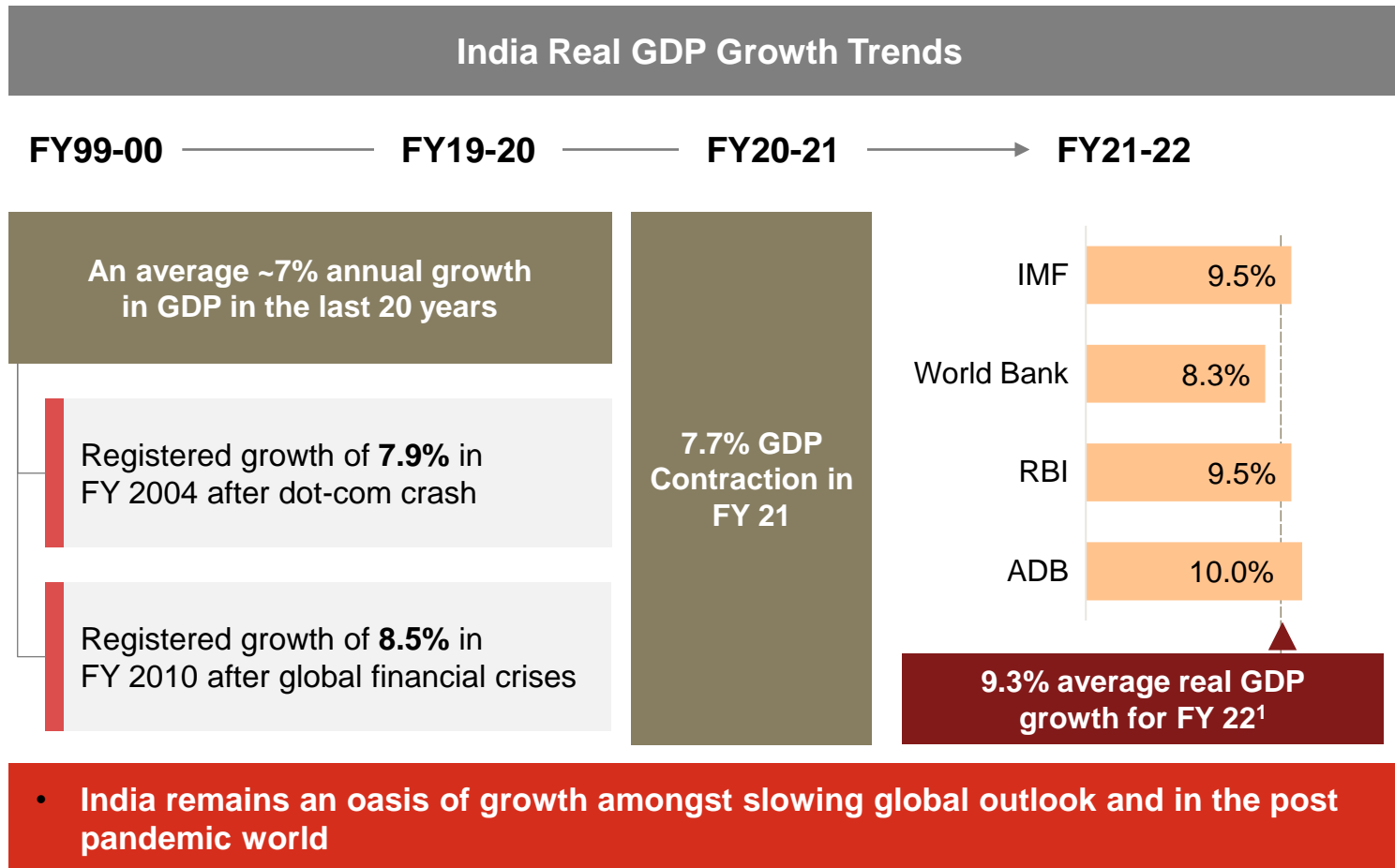
- 1991: Deregulation and liberalization of the trade policies to grow and align domestic industry with the global industry
- Introduced new reforms – industrial, fiscal, trade and foreign investment policies
- 1992-96: Commissioned gas-based crackers in Nagothane & Gandhar
- The industry recorded highest ever margins and continuous demand growth in end use segments
- Post 1997: Rapid growth of the domestic industry led by Indian players and MNCs

- Between 2000-2010, the industry experienced cyclical and fluctuations in the performance of the petrochemical business
- During the decade various investments turned operational
- Liberalization policies were implemented
- Import tariffs reduced from 45% to 5%
- Multiple free trade agreements were signed
- In 2007, PCPIR policy was launched to promote investment and establish as a manufacturing hub for domestic and international market

- Witnessed huge capacity expansions
  - Major Petrochemicals (MMTPA)- 20.9 (2010)- 48.9 (2020)<sup>1</sup>
  - Major Chemicals (MMTPA)- 10.3 (2010)- 15.2 (2020)<sup>1</sup>
- Witnessed capital spending of USD 6.1 Bn in 2019, increased at a CAGR of 10.6% since 2009<sup>2</sup>
- Witnessed R&D expenditure of USD 1.6 Bn. in 2019, increased at a CAGR of 7.9% since 2009<sup>2</sup>
- Per capita consumption of PE & PP together increased from 6.5 Kg in 2015 to 8.2 Kg in 2020<sup>3</sup>
- Realized significant growth due to the Government projects and policies

Source: NITI Aayog, 1- DCPC, 2- CEFIC facts and figures 2021, 3- PwC Analysis

# India is one of the fastest growing economies of the world



Source: International Monetary Fund (IMF), World Bank, Reserve Bank of India (RBI), Asian Development Bank (ADB)  
 Note: 1- Basis is INR for RBI and USD for others sources; 2- IMF estimates on calendar year basis, except for India (fiscal year)

### Real GDP Growth Forecast for Major Economies<sup>2</sup>

Country	2023	2025
India	7.6%	6.2%
China	5.3%	5.1%
France	1.8%	1.4%
United Kingdom	1.9%	1.5%
Germany	1.6%	1.1%
United States	2.2%	1.7%
Russia	2.0%	1.7%
Japan	1.4%	0.6%
World	3.6%	3.3%

# India is emerging as an attractive and durable investment destination

## Key Facilitators

### Corporate Income Tax

- Aggressive corporate tax cuts and removal of dividend distribution tax
- **22%** for existing companies and **15%<sup>#</sup>** for new manufacturing companies<sup>7</sup>

### Demand and Ease of Doing Business

- Ease of Doing Business ranking has improved by **79 places** since 2014, ranked **63<sup>rd</sup>** in 2019<sup>2</sup>
- **Second** most populated country in the world, **per capita consumption of chemical products** is **1/10<sup>th</sup>** of the global average<sup>3</sup>

### Innovation

- Most innovative economy in Central & Southern Asia
- Global Innovation Index improved by **11 places<sup>4</sup>** since 2018, ranked **46<sup>th</sup>** in 2021<sup>4</sup>



### Start-up Culture

- **2<sup>nd</sup>** largest startup nation, **20,000+ startups<sup>5</sup>**
- Large base of entrepreneurs- ranks **3<sup>rd</sup>** in the number of new firms created<sup>2</sup>

### Infrastructure & Logistics

- **USD 1.4 trillion** infrastructure project pipeline to be completed by 2025<sup>6</sup>
- World Bank's Logistics Performance Index has improved by **10** places since 2014, ranked **44<sup>th</sup>** in 2018

### FDIs

- **100%** FDI automatic route in manufacturing
- **USD 459 billion** FDI Equity Inflows since 2009-10, **65%** of which was since 2015-16<sup>1</sup>

Source: 1- DPIIT, 2- World Bank, 3- FICCI, 4- WIPO, 5- DPIIT, 6- Dept. of Economic Affairs, 7- Ministry of Finance

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Note: # Subject to commencement of production on or before 31<sup>st</sup> March 2023

25 Nov 2021

# Manufacturing is a major growth sector for Indian economy

## India as a manufacturing destination

Top 10 FDI destinations in the world<sup>1</sup>

6<sup>th</sup> among the top manufacturing countries<sup>2</sup>

2<sup>nd</sup> leading Greenfield FDI destinations in Asia Pacific<sup>3</sup>

Over 63 million registered MSMEs in India<sup>4</sup>

7<sup>th</sup> most valued national brand in the world<sup>5</sup>

One of the most competitive economy in South Asia<sup>6</sup>

## Strong consumer market with a large working population<sup>7</sup>

- **Urbanization: Urban market shall account for 2/3<sup>rd</sup> of consumption growth by 2025**
- **Working population:**
  - **India's working age population will increase to 1.03 billion (2030) from 0.86 billion (2015)**
  - **India's average median age shall be 37.3 years by 2050- amongst youngest nations**

## Manufacturing Sector Competency



2<sup>nd</sup>

Largest steel producer<sup>8</sup>



3<sup>rd</sup>

Largest producer of pharmaceuticals<sup>9</sup>



3<sup>rd</sup>

Largest exporter of textiles<sup>10</sup>



4<sup>th</sup>

Largest in Asia for chemical sales<sup>11</sup>



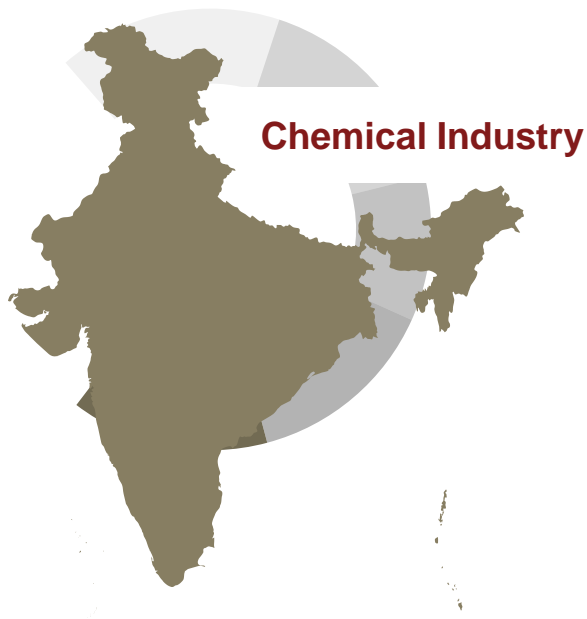
5<sup>th</sup>

Largest producer of cars<sup>12</sup>

Source: 1, 3- UNCTAD (2020), 2- UNIDO 2019, 4 Ministry of Micro, Small & Medium Enterprises, 5- Brand Finance (2020), 6- WEF Global Competitiveness Index (2018), 7- UNDP, 8- Ministry of Steel, 9- RBI Bulletin, 10- WTO 2021, 11- CEFIC, 12- International Organization of Motor Vehicle Manufacturers 2020

# Chemical industry is a significant contributor to the manufacturing sector and economic growth

## Indian Chemical Industry



Covers **> 80,000 products**, inevitable part of daily life<sup>1</sup>

Employs **~2 million people**<sup>1</sup>

India contributes to **~3% of the global chemical sales**<sup>2</sup>

Ranks **6<sup>th</sup>** in the World and **4<sup>th</sup>** in Asia for Chemicals sales<sup>2</sup>

**3<sup>rd</sup>** largest consumer of polymers globally<sup>1</sup>

**4<sup>th</sup>** largest producer of agrochemicals globally<sup>1</sup>

**2<sup>nd</sup>** largest manufacturer and exporter of **dyes**<sup>1</sup>

Weightage of **~8% - IIP**<sup>4</sup>

Contributes **1.3%** to the **National GVA**<sup>3</sup>

Contributes **~9%** to the **manufacturing GVA**<sup>3</sup>

Contributes **1.4%** to total **FDI Equity Inflows**<sup>4</sup>

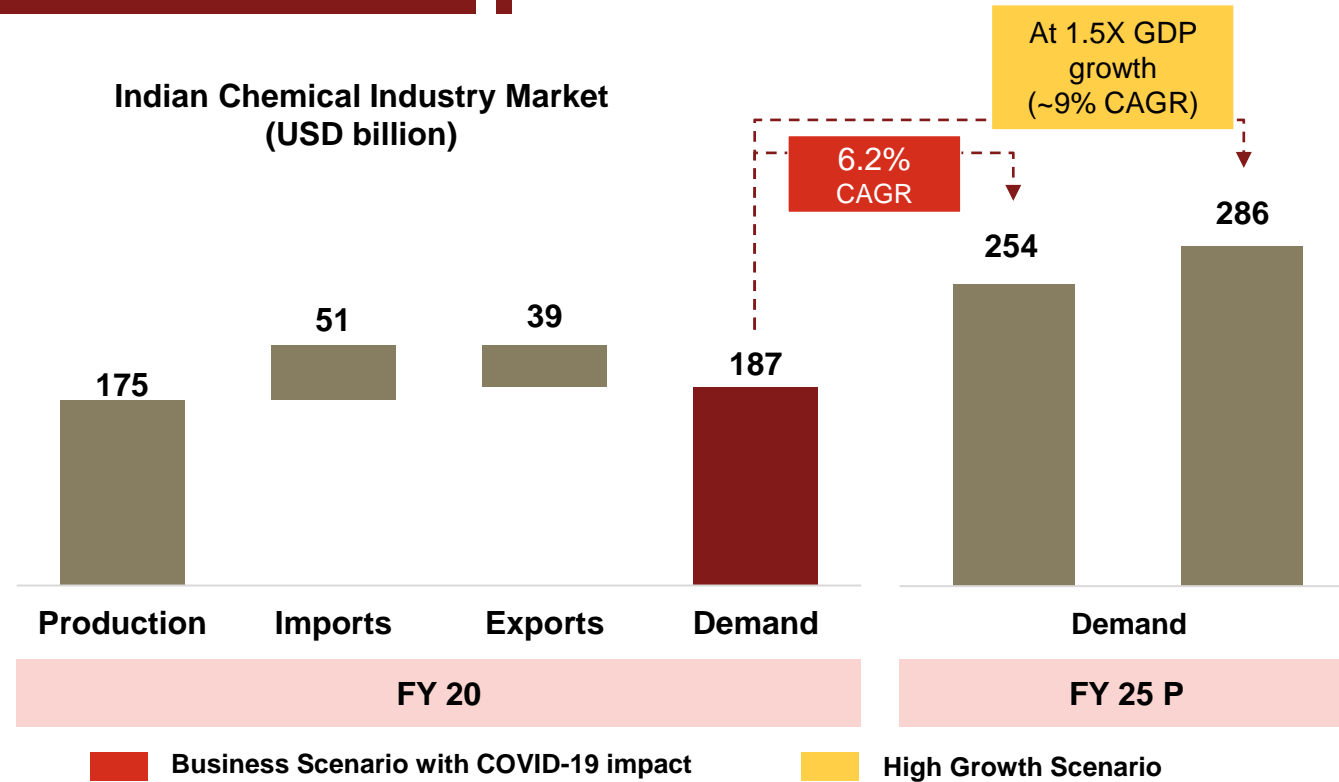
Contributes **~13%** in India's exports<sup>5</sup>

Source: 1-DCPC, 2-CEFIC 2020 Facts & Figures, 3- Ministry of Stats and Programme Implementation (At Current Prices, for FY 20 PE), 4- Department for Promotion of Industry and Internal Trade (FY 21) , 5- Ministry of Commerce & Industry (FY 21)

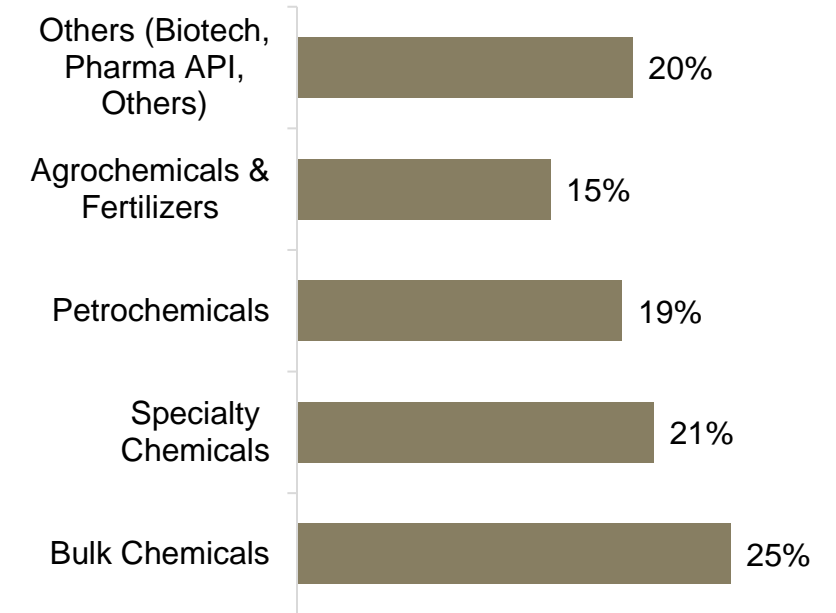
Note: 2- Excludes Pharmaceutical industry

# Indian Chemical Industry holds tremendous growth potential

## Indian Chemical Industry



## Chemical Industry Market by Sub Segments, FY 20 (USD billion)



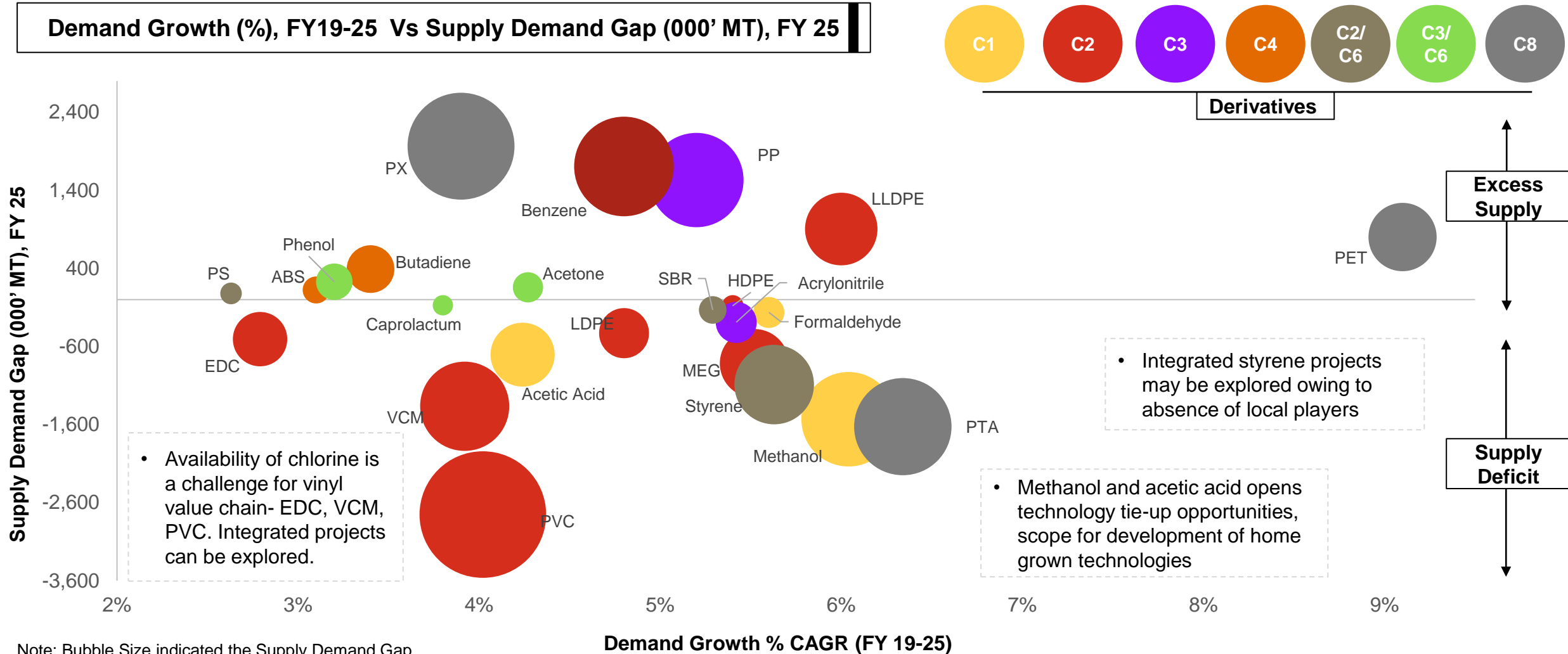
• Demographic Dividends, Low per capita consumption, increasing export demand and enabling government initiatives are the key growth drivers for the chemicals industry

Source: MOSPI, DCPC, IMF, Industry Sources, PwC Analysis

Note: Market size based on latest National Accounts Statistics Data

# Supply demand gap in petrochemicals and intermediate chemicals provides attractive business opportunities in 2025

**Demand Growth (%), FY19-25 Vs Supply Demand Gap (000' MT), FY 25**



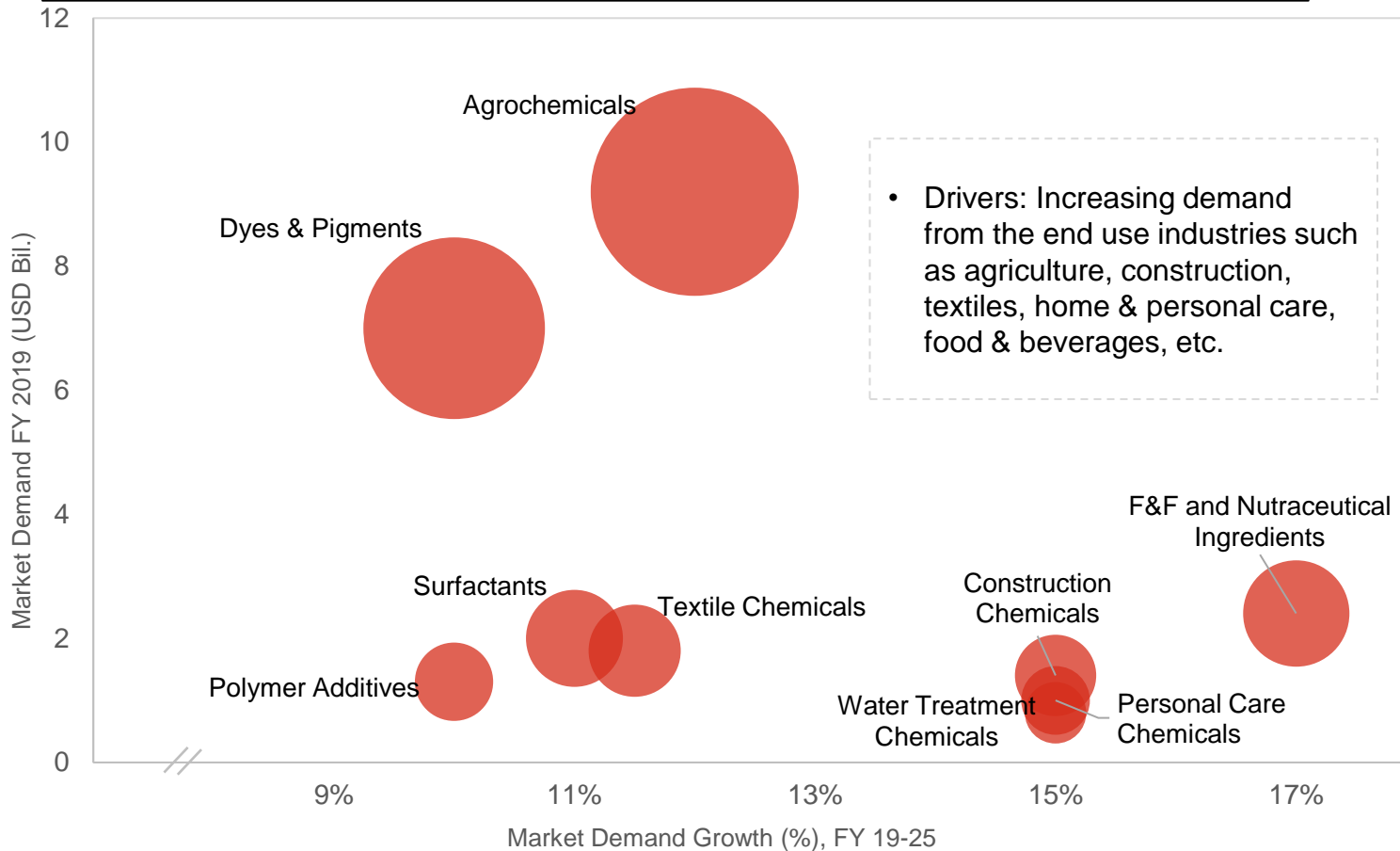
Note: Bubble Size indicated the Supply Demand Gap

Source: DCPC, Industry Sources, PwC Analysis & Research  
 Indian Chemical and Petrochemical Industry  
 GCPMH 2021



# Specialty chemicals segments are expected to witness the highest growth

**Market Growth (%), FY19 Vs Market Demand (USD Bil.), FY 25**



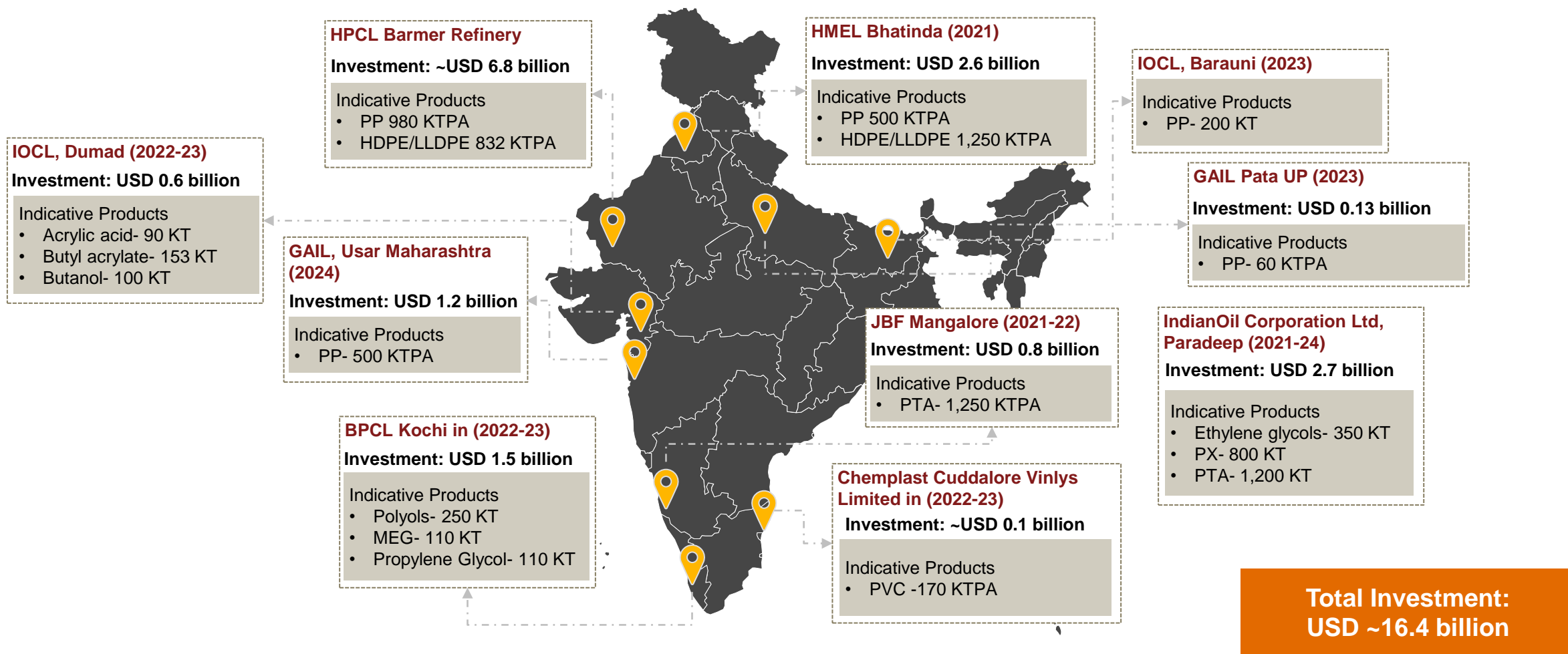
**Key Chemicals with Supply Demand Deficit<sup>1</sup>**

225 KT Polyamides	150 KT Isopropyl Alcohol	260 KT Linear Alkyl Benzene	Amino Phenol 25 KT
60 KT Bisphenol A	Methyl Amines 70 KT	180 KT Maleic Anhydride & Phthalic Anhydride	70 KT Aniline
140 KT Mono Ammonium Phosphate	120 KT Calcium Nitrate	90 KT Methyl methacrylate & its Polymer	Adipic Acid 42 KT
	Melamine 40 KT		Acrylic Acid 50 KT
			MEK 45 KT

Source: FICCI report on Indian Specialty Chemicals Industry

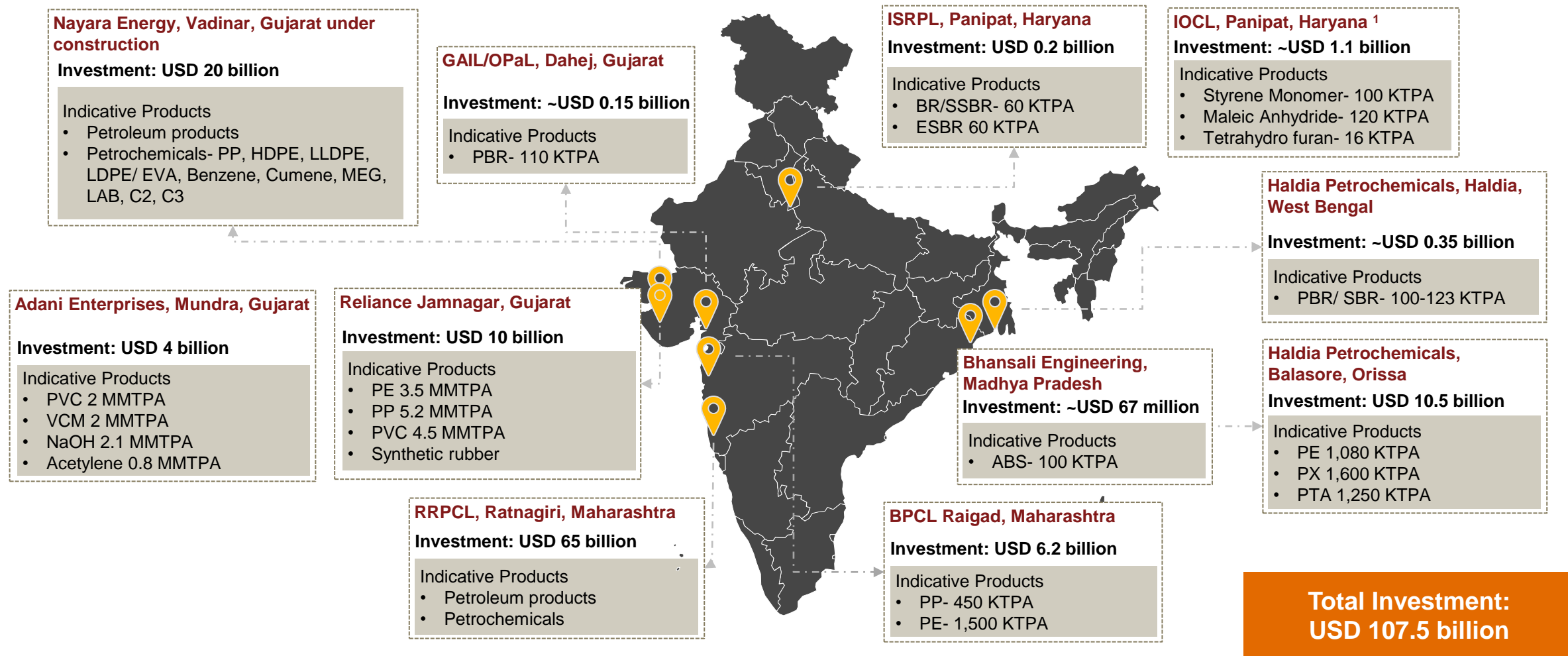
Note: Agrochemicals includes domestic and export market value; 1- Supply demand gap for 2019

# Major petrochemical projects under implementation



Source: CPMA, Industry Sources

# Major petrochemical projects under consideration

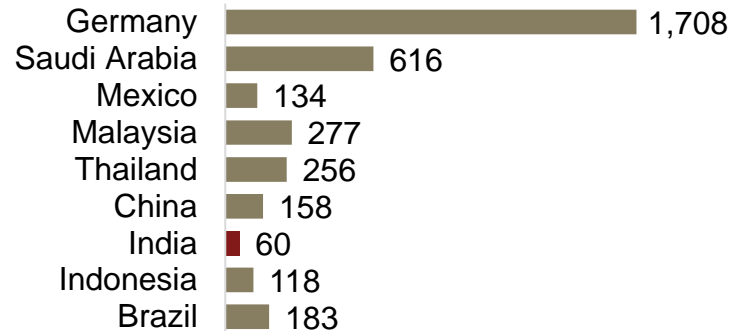


Source: CPMA, Industry Sources

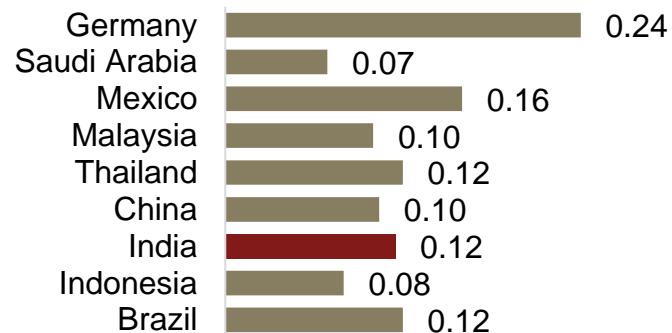
Note: Projects with published prefeasibility reports; 1- Board approval stage

# Competitiveness of India vis a vis global petrochemicals hub

## Minimum Labor Rates (USD/ month)<sup>A</sup>

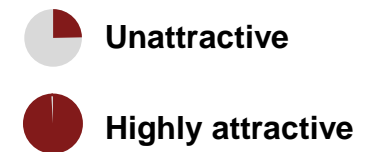


## Power Rates (USD/ kWh)<sup>B</sup>









	Feedstock Access <sup>1</sup>	Market Access <sup>2</sup>	Capital Cost <sup>3</sup>	Operating Cost <sup>4</sup>	Commissioning period <sup>5</sup>	Overall
Middle East						
US						
Europe						
<b>India</b>						
China						
Southeast Asia						

- (1) Based on the local availability of petrochemical feedstocks
- (2) Based on average demand growth rate of major petrochemicals for 2019-2030
- (3) Based on location factor, prefabrication and construction costs
- (4) Based on average monthly salary of employee, electricity costs, etc.
- (5) Commissioning period based on examples of large petrochemical projects



Source: A- Data on minimum monthly wages was collected from various sources including: India (Nagaland - Dept of Labour, Delhi - Govt of NCT of Delhi State Govt), Asean Briefing, Nov 2019 (Indonesia, Central Java, DKI Jakarta), Vietnam Briefing, Nov 2019 (Vietnam, Region IV, Region I), Reuters, Dec 2019 (Mexico, Non-border, Border Zone), MOHRSS, Jun 2018 (China, Liaoning, Shanghai), Bangkok Post, Dec 2019 (Thailand, Yala, Chon Buri and Phuket), Bloomberg, Jan 2020 (Brazil, National), Asean Briefing, Feb 2020 (Malaysia, National), US Dept. of Labor, Wage Indicator Foundation, World Bank, GlobalPetrolPrices  
 B- Data on electricity charges was sourced from GlobalPetrolPrices.com as accessed on 11 Nov 2021

# Factors promoting India's manufacturing competitiveness

Key Investor Expectations	Factors Promoting India's Manufacturing Competitiveness	
 <p><b>Good Governance</b></p>	<ul style="list-style-type: none"> <li>• <b>Politically stable</b> with <b>good political and trade relations</b> with leading markets</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Development Council and Advisory Forum-</b> Redressal of Public Grievances &amp; Challenges</li> </ul>
 <p><b>High Quality Infrastructure</b></p>	<ul style="list-style-type: none"> <li>• Development of <b>5 industrial corridors</b> for integrated industrial development</li> <li>• Commitment of <b>USD 1.4 trillion</b> as part of <b>NIP</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>3,382 industrial parks</b> spread across <b>0.475 million hectare land</b></li> <li>• Development of <b>PCPIRs</b></li> </ul>
 <p><b>Robust Investment Policy</b></p>	<ul style="list-style-type: none"> <li>• Make in India: <b>USD 357 billion</b> in <b>FDI</b> till FY 20 since launch in FY 14</li> <li>• <b>100% FDI</b> permitted through <b>Automatic Route</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>PLI scheme</b> for total 13 sectors – attractive incentives and cash back benefits</li> </ul>
 <p><b>Strong Regulatory &amp; Tax Framework</b></p>	<ul style="list-style-type: none"> <li>• <b>Industrial licensing</b> has been <b>abolished</b> for most sub-sectors except in hazardous chemicals</li> </ul>	<ul style="list-style-type: none"> <li>• Corporate tax rate: <b>22% for existing companies</b> and <b>15% for new manufacturing companies</b><sup>#</sup></li> </ul>
 <p><b>Quality Labor at Competitive Cost</b></p>	<ul style="list-style-type: none"> <li>• Sector-specific <b>Skills Development programme</b> supported by NSDC schemes</li> <li>• Competitive <b>labor wages 60-258 USD/ month</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Standardized wages, bonus, trainings, social security benefits</b> for workers</li> </ul>
 <p><b>Robust Domestic demand</b></p>	<ul style="list-style-type: none"> <li>• The <b>large</b> and <b>aspirational</b> Indian <b>middle class</b> provides a readily available market</li> <li>• India to be <b>3<sup>rd</sup> largest consumer market</b> by 2025: WEF</li> </ul>	<ul style="list-style-type: none"> <li>• <b>25 cities</b> in India are among the world's top <b>100 fastest growing cities</b></li> </ul>

Source: PwC Worldwide Tax Summaries Corporate Taxes 2018/19, MOSPI, Centre for Economics and Business Research, UK, Department of Economic Affairs, Invest India

Note: NIP- National Infrastructure Pipeline, FTA- Free Trade Agreement, PTA- Preferential Trade Agreement, FDI- Foreign Direct Investment, NSDC- National Skill Development Corporation, #- Subject to commencement of production on or before 31st March 2023

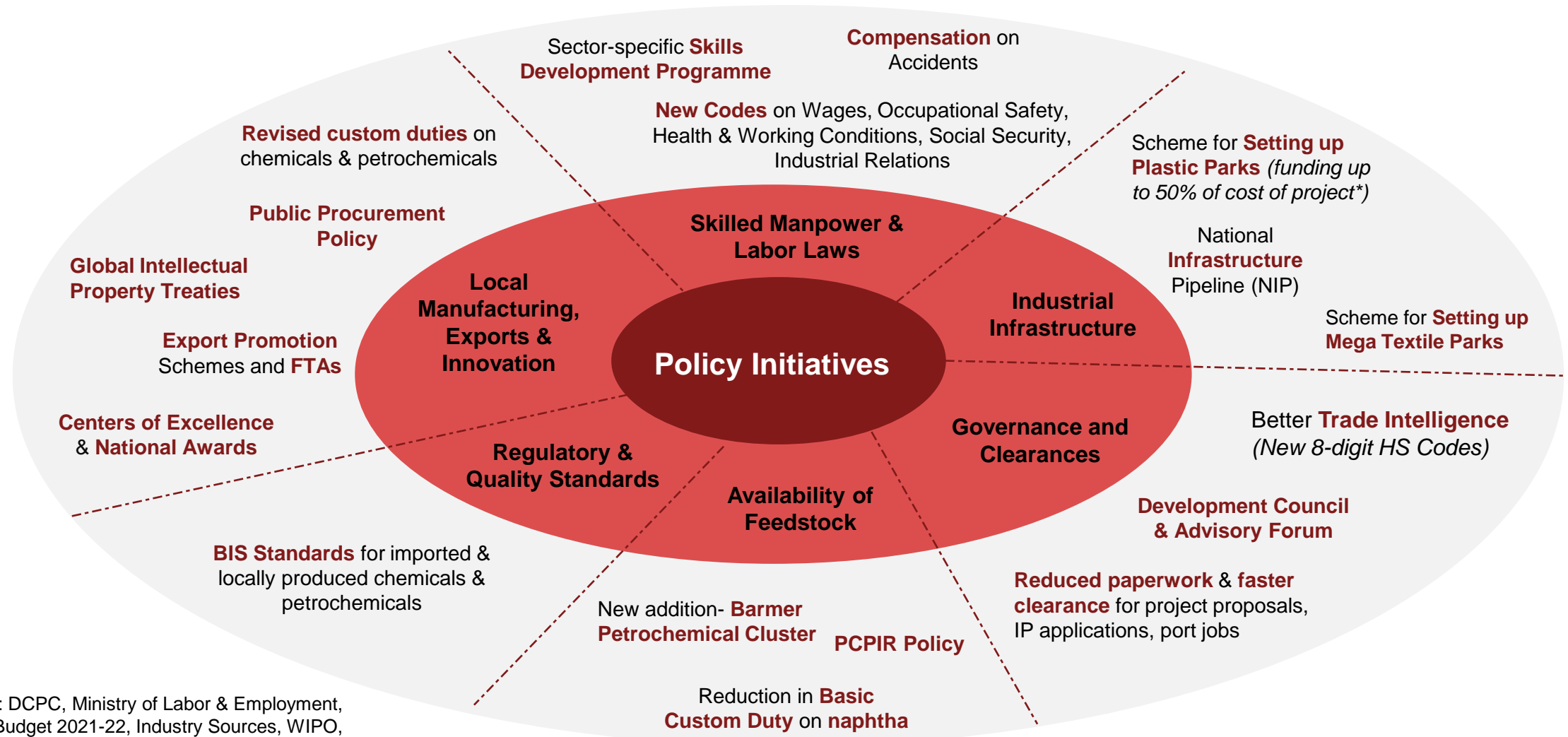
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13

# Policy initiatives acting as “Game Changers“ for Indian Chemical Industry



Source: DCPC, Ministry of Labor & Employment, Union Budget 2021-22, Industry Sources, WIPO, Chemexcil, PwC Analysis

# Production Linked Incentive Scheme for manufacturing sector

## Objective of the PLI scheme



## Impact and benefits of scheme

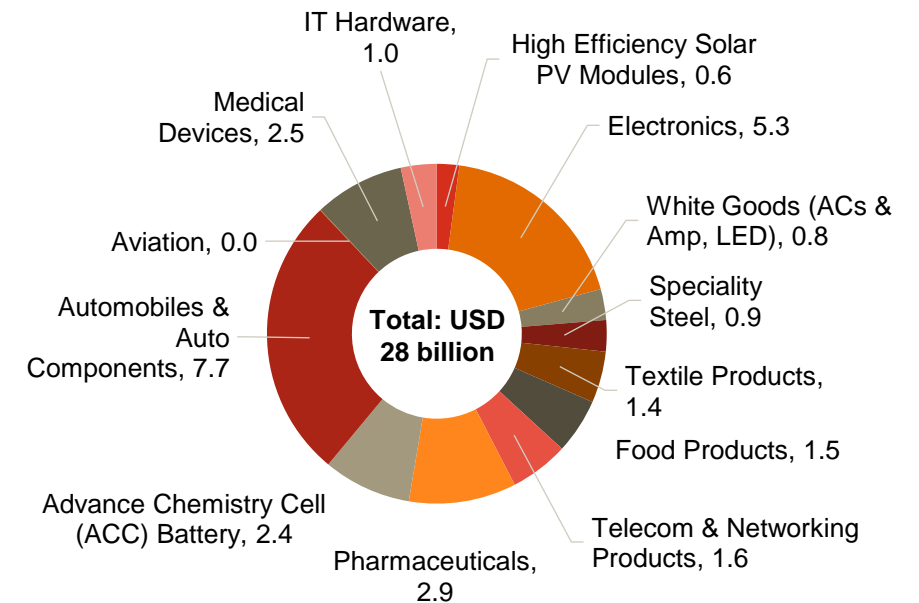


## Increase in demand for Chemicals & Petrochemicals



Source: Government of India, PwC Analysis

## PLI Scheme Outlay for 13 Sectors (USD billion)



**PLI Scheme previously announced for Domestic manufacturing of Key Starting Materials (KSMs), Drug Intermediates (DIs) and Active Pharmaceutical Ingredients (APIs) and Medical Devices**

# India's Ease of Doing Business ranking

## Key initiatives which helped achieve 63 rank:



### Process

Single form for company formation



### Time

Fast track approval for construction permits



### Trade

Indian Customs Single Window Project implemented



### Legal

Commercial Courts and Appellate Division of High Courts established



### Exit

Insolvency and Bankruptcy Code 2016 for resolving insolvency

## Ease of Doing Business: Top parameter-wise rankings\*

For India #, 2019; (#), 2014

	Overall rank	Getting credit	Trading across borders	Resolving insolvency	Getting electricity
<b>India</b>	<b>63 (142)</b>	<b>25 (36)</b>	<b>68 (126)</b>	<b>52 (137)</b>	<b>22 (186)</b>
Vietnam	70	25	104	122	27
Brazil	124	104	108	77	98
Mexico	60	11	69	33	106
Indonesia	73	48	116	38	33

\* Lower rank in each parameter represents better positioning of the respective country

Source: World Bank, Industry Sources, PwC Analysis





# It is the right time to invest in INDIA

## Vision of Department of Chemicals and Petrochemicals

**To seize the opportunity to establish India as a leading chemicals & petrochemicals manufacturing hub,**

- with a thrust on reduction in import dependency
- by attracting investments for manufacturing quality products
- using cutting-edge technologies
- in specified clusters
- with focus on sustainability

...contribute to manufacturing sector of USD 5 Trillion Indian Economy