

March 2021

India: A global manufacturing hub for chemicals and petrochemicals

Knowledge report on the Indian chemical and petrochemical industry



17th - 19th March 2021



MESSAGE

**Shri D.V. Sadananda Gowda
Hon'ble Minister of Chemicals & Fertilizers
Government of India**

**India Chem 2021
The 11th Biennial International Exhibition and Conference**

Theme "India: Global Manufacturing Hub for Chemicals and Petrochemicals"

17th -19th March 2021, New Delhi



The chemical industry, which provides several building blocks and raw materials for wide range of end-use industries, is the mainstay of industrial and agricultural development of the Indian economy. The focus of the Government is to become self-reliant in chemical industry and by means of "Make in India" and "Atmanirbhar Bharat" initiatives, Government intends to reduce the dependency on imported chemicals.

The growth in end-use industry is expected to boost demand of the chemical products, leading to a demand driven growth in domestic chemical sector. The Government of India is keen to attract large investments so as to enhance production capacity and technological advancement making India a global manufacturing hub.

I am delighted, to be part of India Chem 2021, organised by Department of Chemicals and Petrochemicals in association with FICCI. The production possibility frontier of the Indian chemical industry is expanding and driven by its tremendous potential and positive outlook is set to achieve the market size of USD 300 billion by FY25.

I welcome all the delegates and wish the event a great success in achieving its objectives.


(D.V.Sadananda Gowda)

राज्य मंत्री
पत्तन, पोत परिवहन और जलमार्ग मंत्रालय
(स्वतंत्र प्रभार)
रसायन एवं उर्वरक
भारत सरकार



सत्यमेव जयते

मनसुख मांडविया
MANSUKH MANDAVIYA

Minister of State
For Ports, Shipping and Waterways
(Independent Charge) and
Chemicals & Fertilizers
Government of India



MESSAGE

Chemical manufacturing, which provides input for the large segment of the manufacturing sector, is a crucial driving engine with roots spread across a wide range of end-use industries. Increased demands for chemicals and petrochemicals will set in motion a virtuous cycle leading to rapid growth in the volumes in domestic production making India a global manufacturing hub. This will be a building block towards the realization of the goal of making India a USD 5 trillion-dollar economy. The enterprising initiatives and schemes such as “Make in India”, “Aatmanirbhar Bharat” Abhiyan provide the roadmap for the competitiveness of domestic manufacturing. The Production-Linked Incentive (PLI) Scheme is a notable step in this direction.

I am sure, “**India Chem 2021**” putting a spotlight on “India: Global Manufacturing Hub for Chemicals and Petrochemicals”, organized by the Department of Chemicals and Petrochemicals (DCPC), Government of India in association with the Federation of Indian Chambers of Commerce and Industry (FICCI), will prove to be the largest composite event of the Chemicals & Petrochemicals industry in Asia. It will provide the platform for all the stakeholders of the industry across the globe to interact, share their best practices, innovative ideas to the Industry to the next higher sustainable level and showcase their potential.

I wish this timely event a great success in making India an investment destination for the global players in this Sector.

(Mansukh Mandaviya)

योगेन्द्र त्रिपाठी, भा.प्र.से.
Yogendra Tripathi, IAS



सचिव
भारत सरकार
रसायन और उर्वरक मंत्रालय
रसायन और पेट्रोसायन विभाग
Secretary
Government of India
Ministry of Chemicals & Fertilizers
Department of Chemicals & Petrochemicals
15th March, 2021

MESSAGE

It is a proud moment for me to be part of India Chem 2021 and it provides me an opportunity to interact with national and international industry representatives under one roof. The Indian Chemical Industry is an integral component of the Indian economy. The industry is a vital part of the agriculture and industrial development in India and has key linkages with several other downstream industries such as automotive, consumer durables, engineering, food processing, etc. India's vibrant Chemicals & Petrochemicals industry is a focus destination for investment and it has witnessed robust growth in the past decade. The chemical sector ranks 6th in the world and 4th in Asia for chemicals sales.

The Indian Chemicals and Petrochemical industry have huge potential which needs to be harnessed. In this regard, Government of India is extending support to give impetus to this Industry.

I am happy that Department of Chemicals and Petrochemicals, Government of India in association with Federation of Indian Chambers of Commerce and Industry (FICCI) is organizing the India Chem 2021 with a theme "India: Global Manufacturing Hub for Chemicals and Petrochemicals", to discuss the issues faced by the industry and to strategize in making it more vibrant, competitive and sustainable. PwC is the Knowledge Partner of this prestigious industry event and highlighted the opportunities and advantages of investing in Indian Chemical Industry in its insightful knowledge paper.

India Chem is an ideal platform to deliberate upon the strategic interventions required to make the sector 'Atamnirbhar' and convert challenges into opportunities. I wish event all the success and look forward to useful insights by the stakeholders.


(Yogendra Tripathi)

Message from FICCI



Dilip Chenoy
Secretary General, FICCI

The chemical industry is a critical and integral part of the growing Indian economy. It occupies a vital position in meeting our basic needs and improving the quality of our daily lives. It is also a crucial component of agricultural and industrial development in India, and provides the building block of various other downstream industries. There are several opportunities to be explored within the Indian chemical industry, and its high potential is well-recognised globally. Indeed, India has emerged as one of the most preferred destinations for investment in this area.

The Indian chemical industry is one of the fastest-growing sectors in the world and is projected to be worth USD 304 billion by 2025. Foreign investors are keen to invest as they seek to diversify their sourcing countries and supply chains. India's growing per capita consumption and demand for agriculture-related chemicals offer huge scope for the sector's growth. The Government of India recognises the chemical industry as a key growth driver and is extending several incentives and policy support to boost sectoral growth.

The Department of Chemicals and Petrochemicals, Government of India, and FICCI have jointly organised the eleventh edition of **India Chem 2021**, which will be held from 17–19 March 2021. With 'India: A global manufacturing hub for chemicals and petrochemicals' as its theme, this mega event is expected to attract over 100 exhibitors and more than 7,000 business visitors from India and abroad.

I wish India Chem 2021 a grand success.

A handwritten signature in black ink, appearing to read 'Dilip Chenoy'.

Message from FICCI



Deepak C Mehta

Chairman, FICCI National Chemical Committee, and
Chairman and Managing Director, Deepak Nitrite Ltd

The theme 'India: A global manufacturing hub for chemicals and petrochemicals' is appropriate for India Chem 2021, as on the one hand, the initiatives to improve infrastructure through petroleum, chemicals and petrochemicals investment regions (PCPIRs) and chemical clusters are gaining momentum and on the other hand, global players are looking at India to reduce their dependency on China.

Over the last five years, India has grown to become the sixth-largest player in the chemical business. The Indian chemical sector continues to grow at a rate of 1.2–1.5 times the gross domestic product (GDP).¹ As demand surpasses supply, imports continue to grow substantially. At present, 30% of India's chemical requirements are met by imports. Going forward, as the chemical market in India grows to become worth USD 300 billion from the current valuation of USD 178 billion, the gap between demand and supply will only increase.² This gap often creates sizeable opportunities to support the development of large-scale capacities

and infrastructure for manufacturing various products. Also, it has been observed that demand grows much faster with easy local availability. Thus, even for products that are not yet in high demand, establishing world-class plants and exporting the surplus output for a short period will increase demand growth rates as local availability increases. Overall, significant investment opportunities are opening up in the chemical sector.

A large local marketplace and superior manufacturing skills across the value chain make India the most attractive global chemical and petrochemical manufacturing hub after China.

A handwritten signature in blue ink, appearing to read 'D. Mehta', with a horizontal line underneath.

1 FICCI

2 PwC analysis

Message from FICCI



Prabh Das

Chairman, FICCI National Petrochemical Committee, and
Managing Director and CEO, HPCL-Mittal Energy Limited

India's sustained and strong economic growth, supported by robust macro fundamentals, are major enablers for the growth of the chemical and petrochemical sector.

India is poised to emerge as a global chemical and petrochemical manufacturing hub. The Government of India has launched flagship programmes such as Make in India and the Aatmanirbhar Bharat Abhiyan to provide much-needed support to this sector and create a facilitative environment to attract further investments.

The Indian chemical and petrochemical industry is expected to continue its high-growth trajectory with the current low-consumption levels and a huge potential consumption base. The Indian petroleum industry's downward integration into petrochemicals, driven by the developments around alternative fuels such as biofuels and hydrogen, is a potential game changer. This shall expand the availability of feedstock and intermediate products for downstream industries.

COVID-19 has led to previously unseen large-scale disruptions. Polymers proved their resiliency, worth and value during the pandemic. Polymer products helped address several challenges. It is unimaginable how the global pandemic could have been tackled this effectively without the use of polymers.

Pandemic-induced shifts in consumer behaviour could also have a huge and permanent impact on the way we live and do business. The pandemic has led to high growth in the consumption of healthcare products and flexible packaging for food and e-commerce goods, leading to rising demand for certain petrochemical products. In the hygiene and healthcare sectors, the global need for items such as personal protective equipment (PPE), syringes, vials, wipes, medical cartridges, surgical masks and gowns has led to a surge in the demand for products like

polypropylene (PP) spunbond non-woven fabric. There are strong indications of high demand for polymers from other sectors, fuelled by the fast-expanding middle class with higher disposable income, urbanisation, focus on food and water security, development of smart cities and increased preference for personal hygiene and healthcare.

Furthermore, the petrochemical industry has enormous opportunities to aid the circular economy by implementing effective designs, reuse, recovery, recycling and upcycling. India is taking responsible and strong steps towards achieving sustainable environmental and climate goals. The Indian chemical sector has a large network of 200 national laboratories and 1,300 research and development (R&D) centres, and has a strong potential to drive further innovation. The sector has an opportunity to leverage its human talent pool and attain a dominant global position.

I am happy that FICCI and the Department of Chemicals and Petrochemicals, Government of India, are jointly organising the India Chem 2021 and publishing a relevant and pertinent knowledge paper on the theme of 'India: A global manufacturing hub for chemicals and petrochemicals.'

I wish the organisers the very best for the event and hope that the knowledge paper will address some of the key interventions necessary for the Indian chemical and petrochemical sector.

Message from FICCI



RG Agarwal

Chairman, FICCI Crop Protection Committee, and Group Chairman, Dhanuka Agritech Ltd.

The Government of India has identified the crop-protection chemical sector as a champion sector and is providing a lot of support for its growth. The GoI aims to transform India into a manufacturing hub for crop-protection chemicals to cater to both domestic and international demand.

Today, the Indian market for crop-protection chemicals is estimated to be worth INR 43,000 crore. The value of the domestic market is estimated to be approximately worth INR 20,000 crore and the export market is worth around INR 23,000 crore.³ Unfortunately, a parallel grey market in the form of an unorganised sector exists, and the extent of its market share is unknown.

Crop-protection chemicals save foodgrains from various diseases, insects, weeds, mites, etc. Climate change has caused insects and pests to evolve and develop the ability to resist existing pesticides. Newer pesticides are rapidly required to address this crisis, but the slow process of registration and adherence to the Insecticides Act, 1968, are posing problems for adoption. Laws related to crop-protection chemicals should be similar to international laws to attract international investments. There has been no significant research on the development of new pesticides as we spend 0.5% of our GDP on R&D, compared to 4-5% spent by developed countries.⁴

The allocation of INR 50,000 crore by the GoI towards the National Research Foundation will spur innovation and strengthen the overall research ecosystem of the country.⁵ Providing nutritious food is prioritised by all countries and hi-tech agricultural inputs such as the latest fertilisers, bio stimulants, hybrid seeds, genetically modified (GM) seeds, drip-irrigation technology, new-technology pesticides, new plant protection machinery and drones with spray technology will play pivotal roles.

Our Hon'ble Prime Minister has shared his vision of ease of doing business (EODB), **Sabka Saath Sabka Vikas Sabka Vishwas** and less government and more governance. However, the implementation of these ideas will take some time. Agriculture and crop-protection chemicals will play crucial roles in India's journey towards becoming a USD 5 trillion economy by 2025. The contributions of the Government and the scientific and industrial sectors will also be crucial.

3 <https://www.mordorintelligence.com/industry-reports/india-crop-protection-pesticides-market>

4 <https://www.psa.gov.in/psa-prod/publication/RD-book-for-WEB.pdf>

5 <https://www.thehindu.com/business/budget/union-budget-2021-50000-crore-for-national-research-foundation/article33720164.ece>

Message from FICCI



Janardhanan Ramanujalu

Co-Chairman, FICCI Petrochemicals Committee, and
Vice President, South Asia and ANZ

Government reforms in direct tax reductions, production-linked incentives, dividend distribution tax with receivers/treaty based, EODB reforms coupled with India's digital capabilities, complex manufacturing skills and abundant talent are set to make India a global chemical manufacturing hub across industry sectors and value chains.

A handwritten signature in blue ink, appearing to read 'Janardhanan Ramanujalu', on a white background.



Foreword



Deepak Mahurkar
Partner and Leader, Oil and Gas
Industry Practice
PwC India

The global chemical industry has witnessed a change over the last decade owing to dependency on fossil fuels. Climate change goals are expected to alter the way the industry develops and also present chemical companies with the opportunity to explore new growth areas.

This report highlights the importance of chemicals in the manufacturing sector and the Indian economy. The Government's progressive efforts to promote investments in the chemical industry and improve the EODB have also been highlighted in this report. These Government initiatives will catalyse the growth of the industry in the next five years, helping to transform India into a global manufacturing hub for chemicals and petrochemicals.

FICCI, the Government of India and industry participants have come together to organise India Chem 2021. PwC's purpose is to build trust in society and solve important problems. In this context, associating with FICCI as a knowledge partner and contributing to this industry initiative is a privilege for us and an opportunity to live our purpose. In an increasingly complex world, PwC helps intricate systems function, adapt and evolve so that they can benefit communities, society and the complex world of the chemical industry.

I take this opportunity to wish India Chem 2021 a grand success.



Foreword



Manoj Mehta

Director and Head – Chemicals,
Agrochemicals, Petrochemicals and
Civil Aviation, FICCI

The chemical industry has played a pivotal role in shaping up the Indian economy and providing livelihood opportunities to more than two million individuals. Chemicals and petrochemicals are playing an increasingly important role in improving the quality of life of people as well as supporting the manufacturing sector as their application extends across various segments.

The Indian chemical industry has been driven by increasing domestic demand and strong growth in exports. It is set to witness positive changes and become a key investment destination soon as the flagship initiatives of the Government aim to improve EODB and transform India into a global manufacturing hub for chemicals and petrochemicals.

The Government and the private sector can collectively address the challenges faced by the industry and pave the way towards the sector's long-term growth.

A handwritten signature in black ink that reads "Manoj Mehta".





Executive summary

India has emerged as a leading economy in the world and its GDP has grown at an average rate of about 7% in the last one decade.⁶ Similar to the global economy, the impact of the COVID-19 pandemic on the Indian economy has been severe. The Government of India has taken proactive measures such as announcing economic stimulus packages, implementing a nationwide lockdown and launching the vaccination drive, resulting in the country progressing towards a V-shaped recovery. Moreover, India's growth is estimated to surpass the major economies of the world in the near term. The presence of a strong domestic market coupled with a large working population, a stable political environment, positive outlook towards reducing emissions and focus on innovation make India a promising manufacturing destination.

The manufacturing sector plays a significant role in the output of the Indian economy, and chemical manufacturing is a crucial segment with roots spread across a wide range of end-use industries. With the index of industrial production (IIP) for chemical manufacturing returning to pre-COVID levels, the industry is expected to grow at a CAGR of about 9.2% by FY25.⁷ Demographic dividends, low per capita consumption, an increasing export demand and enabling Government initiatives are the key growth drivers for the Indian chemical industry. Attractive business opportunities are present in different segments, including petrochemical intermediates, downstream petrochemicals and specialty chemicals. The coming decade is expected to bring in investments worth more than USD 87 billion (solely on the basis of the major petrochemical products under consideration).

India's strategic location advantage, skilled and competent manpower, good governance, high-quality infrastructure, robust

investment policies, strong regulatory framework, promising labour reforms and trade agreements, and lucrative tax incentives have further propelled it into the league of preferred manufacturing destinations. The Department of Chemicals and Petrochemicals (DCPC), Ministry of Chemicals and Fertilizers, Government of India (GoI), has implemented a number of flagship initiatives to improve the overall competitiveness, quality and output of the chemical industry. Mandatory standards set by the Bureau of Indian Standards (BIS), public procurement policies for chemicals and petrochemicals, better trade intelligence, schemes for setting up plastic parks and adequate support for research and innovation are some of the notable initiatives that are catalysing the industry's growth. The Government is also addressing challenges related to the availability of feedstock, access to industrial infrastructure and common user facilities, complex approval procedures, skill development and product-quality standards.

Moreover, the Government has implemented enterprising initiatives and schemes such as Make in India, Aatmanirbhar Bharat Abhiyan and the Production-Linked Incentive (PLI) Scheme with the objective of improving the competitiveness of domestic manufacturing, attracting investments and enabling exports. These initiatives are expected to boost domestic production and also increase the demand for chemicals and petrochemicals. Such significant measures are expected to transform India into a global manufacturing hub for chemicals and petrochemicals, and help realise the vision of the country becoming a USD 5 trillion dollar economy.

6 RBI, IMF and industry sources

7 PwC analysis

Table of contents

16

India at a glance

20

An overview of the
Indian manufacturing
sector

22

An overview of the
Indian chemical
industry

26

Opportunities in
the Indian chemical
industry

32

India's competitiveness
in the global
petrochemical industry

33

Advantage India

39

Recent Government
initiatives

44

Ease of doing
business in India





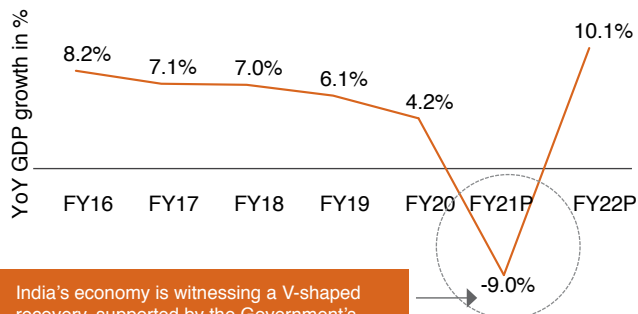
India at a glance

India is the largest democracy in the world with a 910 million strong electorate and home to the largest English-speaking population. It is the sixth-largest economy in the world and the third largest in Asia.⁸ India is expected to surpass the UK in FY25 to become the fifth-largest economy and rise to the third spot, overtaking Japan in FY30.⁹ A total of 25 cities in India are among the world's top 100 fastest-growing cities. The consumer spending in India is expected to grow to nearly USD 6,000 billion by 2030.¹⁰

The Indian economy

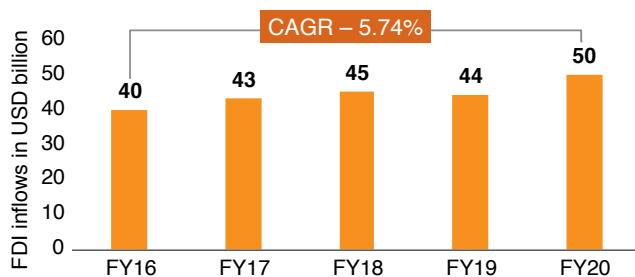
India has exhibited an average 7% gross domestic product (GDP) growth rate in the last 20 years despite major recessions and economic slowdowns. The GDP is expected to contract by 9% in FY21 owing to the COVID-19 pandemic, followed by a bounceback with over 10% in FY22, surpassing the major economies in the world.¹¹

YoY GDP growth rate of India (FY 16–20)



India's economy is witnessing a V-shaped recovery, supported by the Government's stimulus packages, strong market demand and the vaccination drive.

FDI equity inflows between FY16–20 (in USD billion)



Source: Department for Promotion of Industry and Internal Trade

India's foreign direct investment (FDI) stood at USD 50 billion in FY20, having witnessed a compound annual growth rate (CAGR) of 5.74% since FY16. Cumulative FDI inflows since FY10 amount to USD 473 billion and 60% of this has been realised in the past five years. Radical reforms such as Make in India, approval of 100% FDI through the automatic route and industrial delicensing have propelled the growth in FDI inflows, which recorded an increase of over 12.62% in FY20 over FY19.¹²

Social conditions

Population

India, with its 1.36 billion population, is the second most populous country in the world after China.¹³ The country is home to the largest working population with a median age of 28 years, compared to 38 years in China and the US, 42 years in Europe and 49 years in Japan. The working population has grown at a CAGR of 20% since 2015 and is expected to reach 1.03 billion by 2030 and 1.14 billion by 2040 when India will have the largest work force compared to other countries.¹⁴

- The current median age of 28 years is expected to rise to 31 years by 2025 and 37 years by 2040. Therefore, India will continue to have an advantage over developed nations during this period.
- The income levels of Indians are projected to rise three times by 2025, resulting in improved GDP per capita and increased spending.
- India's urban market is expected to account for two-third of its growth in consumption in the next ten years.

Therefore, it is envisaged that increasing income levels and its young population will drive India's economic growth, and the country will continue to have a consumption-driven economy with a strong consumer market in combination with a large working population.

Technological progress

The Government of India (GoI) is focused on innovation and technology development in various sectors of the economy. India was ranked 48 among 131 countries in the Global Innovation Index (GII) and made it into the list of top 50 innovative countries in the world for the first time in 2020. On the sub-index level of the GI, India was ranked 45th on its innovation output and 57th on its innovation input.

8 <https://eci.gov.in/>

9 <https://cebr.com/>

10 http://www3.weforum.org/docs/WEF_Future_of_Consumption_Fast-Growth_Consumers_markets_India_report_2019.pdf; The Economic Times

11 Reserve Bank of India, World Bank, International Monetary Fund and Goldman Sachs

12 <http://mospi.nic.in/>

13 <https://cebr.com/>

14 <http://hdr.undp.org/en/content/asia-pacific-human-development-report-2016>; Economic Survey of India

Although the Gross Expenditure on Research & Development (GERD) in India has nearly tripled between FY08 and FY18 in terms of value, the country's gross expenditure amounts to a mere 0.6-0.7% of its GDP. This is relatively low compared to the US (2.8), China (2.1), Israel (4.3) and Korea (4.2). From its current spend of 0.6–0.7% of its GDP on R&D, India aims to increase its expenditure on the segment to over 2% of its GDP.¹⁵

Several schemes have been implemented to develop the country's R&D and digital infrastructure. Additionally, the Government is providing financial incentives and funds to various businesses and research institutes.¹⁶

- A USD 700 million fund has been announced for the National Research Foundation to strengthen research ecosystems of India over the next five years.
- USD 200 million has been earmarked to boost digital transactions in the country.
- Tax incentives are to be provided to businesses on capital expenditure on research and development (R&D) related activities for their own enterprises or contributions made to other institutions for research.
- The Government had introduced a 'patent box', similar to those of countries in Europe, under which royalty income from patents developed and registered in India will be taxed at a concessional rate of 10%.

Political environment

- The political stability of India's macroeconomic environment has played a crucial role in its development. The current Indian Government, in its tenure of seven years, has enacted various structural reforms to streamline regulations and increase ease of doing business in the country, as well as improve the manufacturing competitiveness and infrastructure of Indian companies to realise its dream of India becoming a USD 5 trillion economy by FY24. Simplification of tax provisions, digitally enabled online permits and license-related processes have significantly improved the processing time earlier taken to complete administrative tasks and have also reduced red-tapism, corruption and tax evasion.
- Past and the present measures taken by the Government clearly indicate its positive outlook on India's development in the future. The Hon'ble Prime Minister elaborated on this initiative during the BRICS meet and the US-India Strategic Partnership Forum.

¹⁵ <https://www.psa.gov.in/psa-prod/publication/RD-book-for-WEB.pdf>

¹⁶ Ministry of Science and Technology, GoI, Economic Survey



“ India is the world's most open and investment-friendly economy due to political stability, predictable policy and business-friendly reforms.

”
Narendra Modi, Prime Minister of India, at the BRICS Business Forum (November 2019)

Environmental initiatives

The GoI is dedicated to mitigating concerns arising due to depletion of natural resources and increasing environmental pollution. It has undertaken several noteworthy environment-related initiatives to curb pollution, preserve valuable resources and provide a safe environment to enable improvement in the health and well-being of Indian citizens.

Recent Government initiatives on pollution control and waste management¹⁷



Formation of a High-Level Task Force (HLTF) and development of a Comprehensive Air Plan (CAP) to manage air pollution in Delhi and NCR



Draft guidelines on 'Extended Producers Responsibility' for the management of plastic waste in the country



Enforcement of Bharat Stage VI from 1 April 2020 throughout the country for both fuels and vehicles to control vehicular emissions



Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue Scheme to prevent stubble burning by providing subsidy for machines for in-situ crop residue management



Launch of Faster Adoption and Manufacturing of Electric Vehicles (FAME) 2 scheme worth USD 1.4 billion for the next three years to promote the adoption of electrical vehicles (EV)



Announcement of the National Hydrogen Mission in Budget 2021–22 to promote the consumption of hydrogen-enabling reduced carbon emissions and sustainability



¹⁷ Ministry of Environment, Forest and Climate Change; <https://www.indiabudget.gov.in/doc/bh1.pdf>

Quote Source: BRICS Meeting

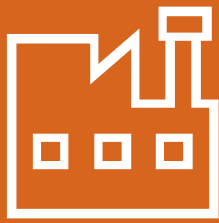
“

Globally recognised 'Brand India' must be known both for zero defect (free from defect) & zero effect (no adverse environmental impact).

”

Narendra Modi, Prime Minister of India, on Twitter (December 2014)





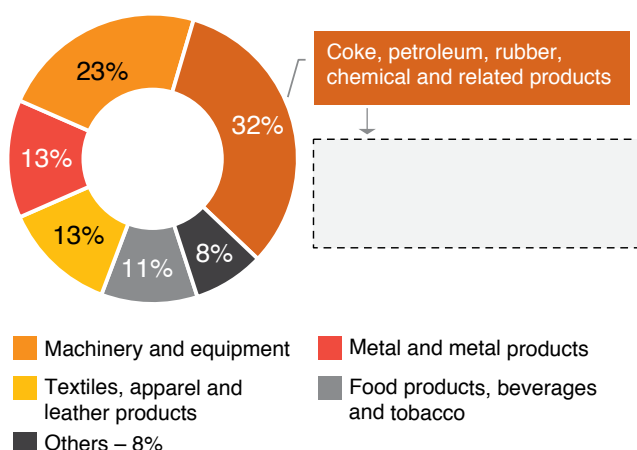
An overview of the Indian manufacturing sector

The manufacturing sector employed over 160 million people, contributing to nearly 16% of the India's gross value added (GVA) in FY19. The sector has witnessed a CAGR of approximately 5% in its GVA in the last five years¹⁸ and is among the priority sectors for the Government. It has seen major reforms and policy interventions over the last decade. The sector has tremendous potential and is expected to increase its contribution to around 25% of India's GDP by FY25.¹⁹

India is emerging as the next global manufacturing hub. This is recognised by leading government and private agencies worldwide:

- The Global Investment Trend Monitor Report ranked India as the most preferred greenfield FDI destination in the world.
- India was ranked sixth among the top manufacturing countries by the United Nations Industrial Development Organization (UNIDO).
- India was ranked among the top 10 FDI destinations in the world by the United Nations Conference on Trade and Development (UNCTAD).
- According to the World Economic Forum's (WEF) Global Competitiveness Index, India is the most competitive economy in South Asia.

Value added from manufacturing by National Industrial Classification for FY19 (percentage of share)



Source: Ministry of Statistics and Programme Implementation

India's manufacturing competence



2nd
Largest steel producer



3rd
Largest producer of pharmaceuticals



6th
Largest for chemicals sales by value



4th
Largest automotive market by volume



5th
Largest exporter of textiles

Source: National Statistical Office and the Ministry of Statistics and Programme Implementation

¹⁸ <http://mospi.nic.in/>

¹⁹ <https://www.businesstoday.in/union-budget-2021/columns/budget-2021-why-manufacturing-industry-expects-more-incentives-this-time/story/429678.html>

India is perceived as a competitive and high-quality manufacturing country in the international market. The rising competitiveness of its Manufacturing industry is reflected in the Global Manufacturing Competitiveness Index (GMCI) rankings, with India being projected to secure the fifth ranking on the index position by 2020, climbing up from the eleventh position in 2016.

Manufacturing of chemicals and chemical products contributed to over 8.8% of the overall GVA of the manufacturing sector in FY19. This has a significant importance in the overall manufacturing sector, since chemicals and chemical products find application in most industrial classification segments ranging from food and beverages, textiles, leather, metal extraction and processing, petroleum refining, pharmaceuticals, rubber, etc. Consequently, the manufacturing sector's Index of Industrial Production (IIP) is closely related to the manufacturing of chemicals in the country.

The IIP of the overall manufacturing and chemicals manufacturing segment has seen continuous increment in the last five years.²⁰

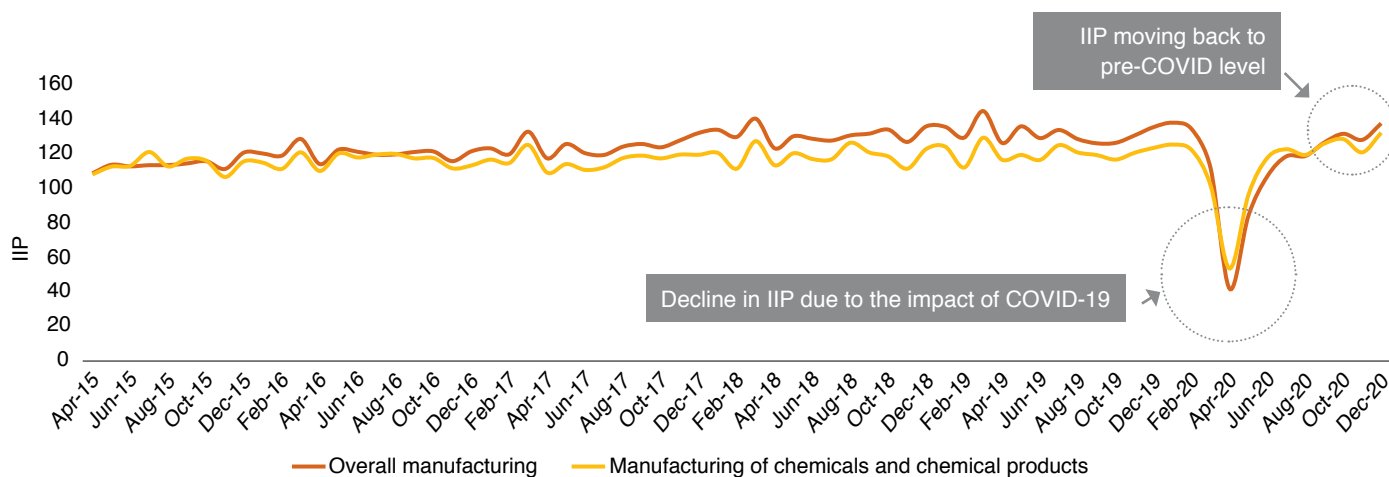
However, the sudden emergence of COVID-19 resulted in a steep decrease in the value in April 2020 due to the nationwide lockdown resulting in manufacturing companies shutting down or not functioning at their full capacity.

Petrochemical prices, particularly polymer prices, came down significantly. However, the spread between naphtha and polyolefins has remained at around USD 500/MT, resulting in decent margins/returns for polymer manufacturing companies. However, due to the closure of polymer processing units and decreased uptake of end products, the demand for polymers had perished. This resulted in inventory build-up and working-capital erosion for polymer manufacturers, leading to lower capacity utilisation.

On the other hand, export options also turned out to be attractive for polymer manufacturers based on the broad spreads. For example, Reliance Industries strategised this through resorting to exports of almost 200 KT of polymers in one month, thus sustaining robust capacity utilisation.

IIP comparison between overall manufacturing and manufacturing of chemicals

IIP trends in the manufacturing sector, April 2015–Dec 2020



Source: Ministry of Statistics and Programme Implementation

The IIP recovered after May 2020 with the Gol's progressive initiatives, such as the Aatmanirbhar Bharat (self-reliant India) economic stimulus package to kick-start the economy and various sectors, including manufacturing. Since then, the manufacturing sector's IIP is on the path to recovery to pre-COVID levels.



An overview of the Indian chemical industry

India has one of the largest global chemical markets, and is ranked sixth in the world and fourth in Asia in terms of global sale of chemicals. India accounts for 2.5% of the world's global chemical sales.²¹ More than 80,000 chemicals are manufactured in the country and are consumed in diverse end-use sectors including textiles, automotive, agriculture, packaging, pharmaceuticals, healthcare, construction, and electrical and electronics.²² The chemical industry touches every nook and cranny of the country's

economy and therefore plays an important role in shaping the lives of individuals and India's overall chemical output.

The Indian chemical industry is fragmented with large, medium and small companies manufacturing major petrochemicals, alkali chemicals, inorganic chemicals, organic chemicals, pesticides, dyes and pigments and other chemicals. The chemical industry contributed around 8.8% of India's manufacturing GVA and 1.4% of its national GVA in FY19.

Contribution of the Indian chemical industry²³

Covers **> 80,000 products**, an inevitable part of daily life

Employs **two million people**

Contributes **~2.5%** of global chemical sales

Ranked **sixth** in the world and **fourth** in Asia for chemical sales

Ranked **third-largest** consumer of polymers globally

Ranked **fourth-largest** producer of agrochemicals globally.

Ranked **second-largest** manufacturer and exporter of dyes

Weightage of **7.87%** – IIP

Contributes **~1.4%** of the national GVA

Contributes **8.8%** of India's manufacturing GVA

Contributes 2.1% of total **FDI equity inflows**

Contributes **11.3%** of India's exports



21 <https://cefic.org/our-industry/a-pillar-of-the-european-economy/facts-and-figures-of-the-european-chemical-industry/> (excludes pharmaceuticals)

22 <http://chemicals.nic.in/>

23 Ministry of Statistics and Programme Implementation (analysis at current prices for FY19), Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, and PwC analysis

Market size and growth prospects

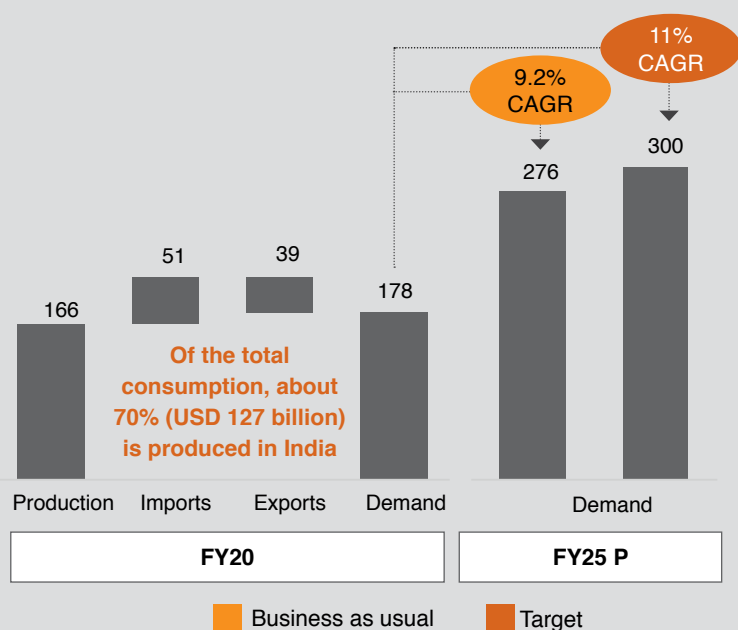
India's chemical industry was estimated to be worth USD 178 billion in FY20 and has a significant potential to reach USD 300 billion by FY25. In terms of demand, the industry has grown at approximately 1.3 times the country's average GDP growth in the last five years and shows a strong linkage with its GDP.

COVID-19 has severely affected the Indian chemical industry and disrupted supply chains and the demand for chemicals. Consequently, it is expected to show a downturn in FY21 while still adapting to the shock expected in India's GDP. With the IIP of

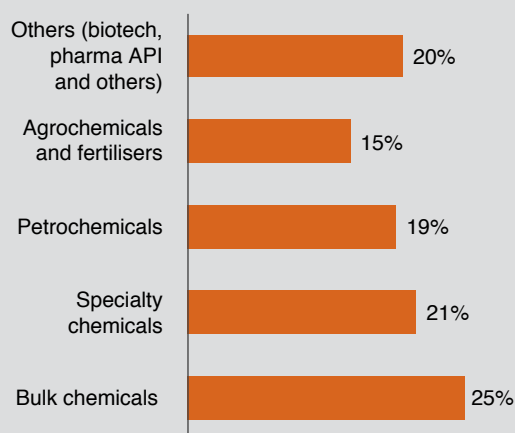
chemical and chemical products manufacturing being on the verge of attaining the pre-COVID index, the chemical industry is expected to witness a V-shaped recovery by FY22 by adapting to India's GDP growth trend. The industry is expected to grow at a CAGR of 9.2% by FY25, reaching up to USD 276 billion in the next five years.

In order to achieve its target of USD 300 billion by FY25, the chemical industry needs to grow at a CAGR of 11% in the next five years, which is possible considering Government initiatives and the growth in the consumer base, changes in lifestyle, increase in disposable incomes and focus on healthcare and hygiene.

The Indian chemical industry market (in USD billion)²⁴



The chemical industry market by sub segments in FY20 (in USD billion)



Source: DCPC and PwC analysis

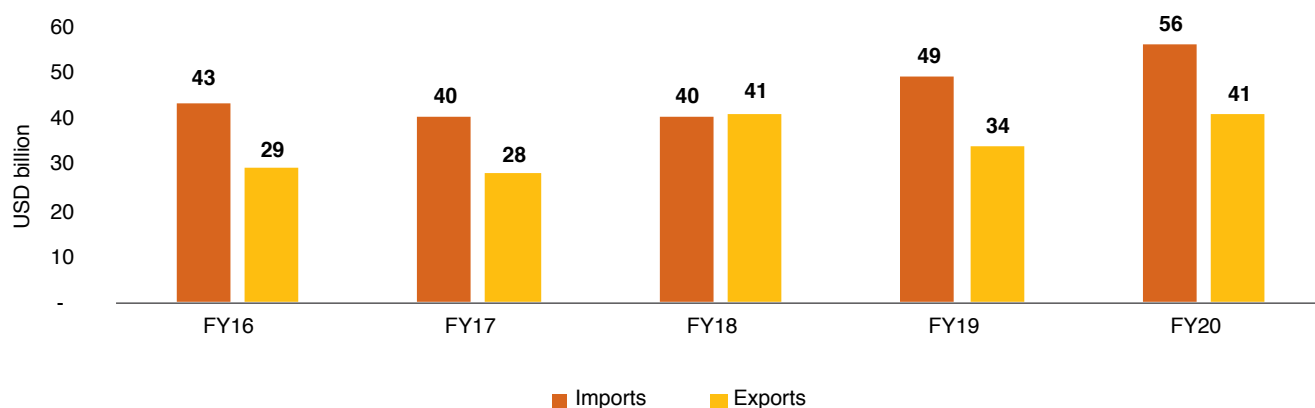
India ranks sixth in imports and ninth in exports of global chemicals and chemical products (excluding pharmaceutical products). Its imports increased at a CAGR of 5.4% between FY16 and FY20²⁵ with petrochemical intermediates accounting for a major share of over 30% in total imports. On the other hand, export of chemicals

and chemical products grew at a CAGR of 7.2% between FY16 and FY20. Specialty chemicals account for a major share of more than 50% of chemical exports, dominated by agrochemicals, dyes and pigments, etc.

²⁴ PwC analysis

²⁵ <https://tradedat.commerce.gov.in/eidb/default.asp>

Import and export of chemicals and petrochemicals for FY16–20 (in USD billion)



Source: Ministry of Commerce

The specialty chemicals segment has grown at an impressive rate of approximately 11.7% in terms of value in the last five years.²⁶ The COVID-19 pandemic had a positive impact on the demand for flavours and fragrances, personal care chemicals, nutraceutical ingredients and surfactants as a result of increased consumption of hygiene products, packaged foods, energy drinks and nutraceuticals. The pandemic had a neutral or negative impact on the demand for other products such as polymer additives, paints and coatings, dyes and pigments, water treatment chemicals, and textile and construction chemicals due to the lockdown.

The segment has immense growth potential due to the increasing demand from construction, automotive, packaging, water treatment, home and personal care, food processing, nutraceuticals and other demand-driven sectors.

In addition to the industry's historic growth trajectory, the Government has taken progressive steps, such as the economic stimulus package, Production Linked Incentive (PLI) Scheme, tax and labour reforms, setting up of the National Infrastructure Pipeline (NIP) and various chemical industry specific policies and schemes, including its public procurement policy, mandatory BIS standards, skill development programmes and renewal of the PCPIR policy. The Indian chemical industry has tremendous potential and a positive outlook, and is set to achieve the USD 300 billion mark by FY25 and emerge as a global manufacturing hub.²⁷

“ The Chemicals and Petrochemicals sector could emerge as a leading sector in achieving Prime Minister Narendra Modi’s vision of reaching USD 5 trillion economy at the earliest ”

Sadananda Gowda, Union Minister of Chemicals and Fertilisers at the 10th National Awards for Technology Innovation in Petrochemicals and Downstream Plastics Processing Industry (Feb 2021)



26 FICCI

27 Quote and data source: <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1700280>

Key trends shaping the Indian chemical industry



Shift in customers' preferences: Customers are increasingly getting interested in environmentally friendly and socially responsible products and services. Moreover, they are becoming conscious of health and hygiene and are demanding milder and safer products with pure ingredients.



Increasing per capita consumption: The current per capita consumption of chemical products in India is about one-tenth of the global average and is expected to double by 2025.



Digitalisation and Industry 4.0: Digitalisation offers competitive advantages through improved horizontal and vertical integration, a new definition of operations management, and innovation and new digital business models. Chemical companies are implementing digitalisation initiatives and tools in their supply chains, demand planning and pricing strategies.



Increasing M&A and investment-related activity: Downstream value-added opportunities, the continued strength of specialty chemicals and realignment of portfolios are the key drivers of strong M&A and investment activities. Global oil and gas majors and leading chemical companies are looking for downstream opportunities in India and other high-growth economies. The trend has already begun with Saudi Aramco, Total and BASF showing their interest in the Indian chemical industry.



China shift: Consolidation in the industry, environmental reforms and tightened financing is changing the structure of China's chemical industry, resulting in uncertainty for companies dependent on the country for their supply of raw material. In addition, the COVID-19 outbreak has compelled companies to move their supplier base and look for alternative locations such as India that offer the advantage on low-cost labour and favourable investment policies.



Innovation and sustainability: Adding value by balancing the economic, social and environmental impact of the pandemic is becoming an overarching management principle in the chemical industry value chain. Chemical companies are incorporating sustainability and green-chemistry initiatives by constantly improving products, technology and processes, and working closely with customers and suppliers across their value chains. Expenditure on R&D in the chemical industry in India increased at a CAGR of 7.91% between 2009 and 2019.²⁸





Opportunities in the Indian chemical industry

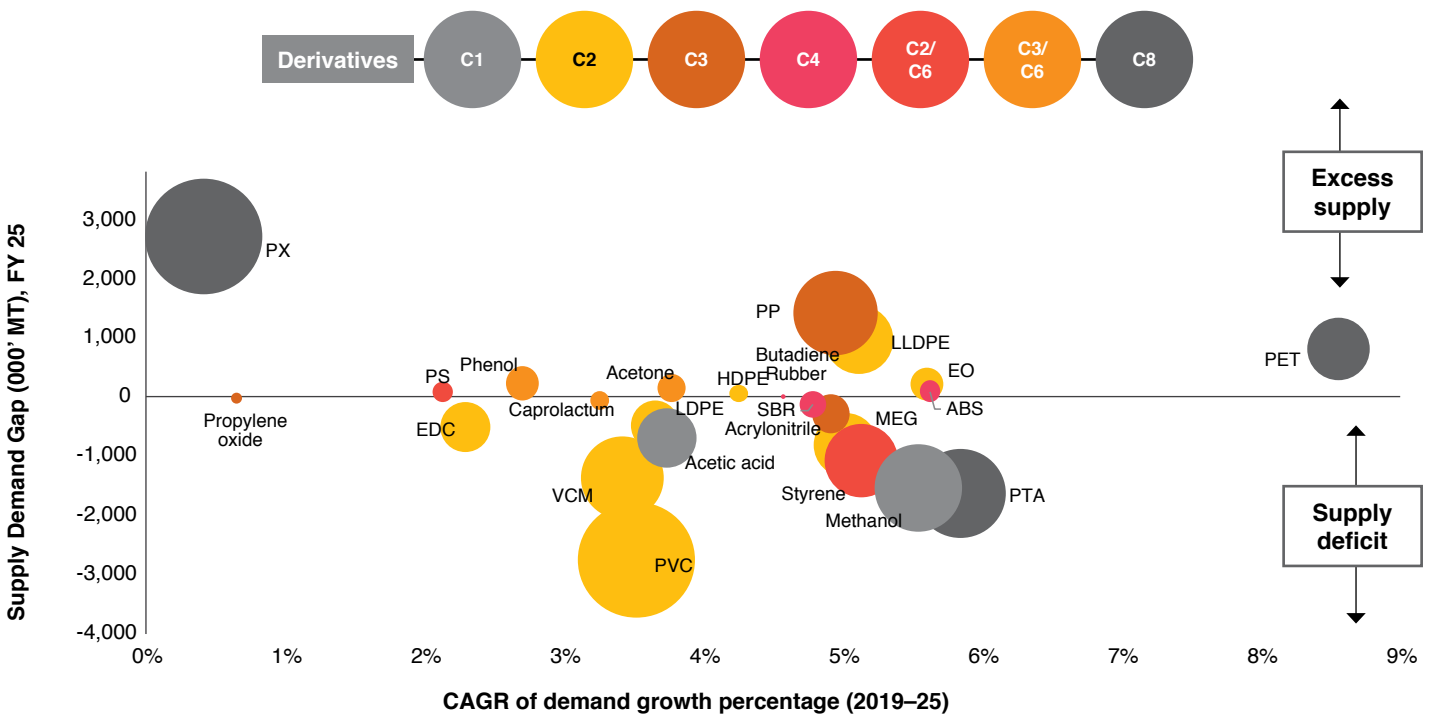
Petrochemicals

The majority of Indian petrochemical companies has evolved from petroleum refineries with the intention of achieving higher net realisation. Therefore, the chemical industry is dominated by basic commodity chemicals in terms of volume (with one-two step downstream derivatisation).

India has faced a deficit in supply of olefins in the recent past due to the focus of manufacturers being on high margin polyolefins, but

the scenario is expected to change by FY25 with the launch of new petrochemical capacities. The per capita consumption of chemicals in India is one-tenth of the global average. This leaves headroom for further penetration, which is expected to be mainly driven by local consumption. The following detail the key opportunities expected in different chemical value chains:

Demand growth vs supply demand gap for 2019–25 (in '000 MT)²⁹



Source: DCPC and PwC analysis

Note: Bubble size indicates the supply-demand gap and estimations include impact of COVID-19

- **C1 derivatives:** Accessibility to the technology for manufacturing acetic acid from carbon monoxide is limited to four–five providers. Additionally, the availability of syngas as a raw material for standalone plants is limited. On the other hand, a major chunk of acetic acid is used in manufacturing purified terephthalic acid (PTA), which presently has limited capacities in India and is dependent on imports. Thus, manufacturing acetic acid is a lucrative business option to substitute imports. The presence of limited players in the acetic acid value chain also offers technology tie-up opportunities.
- **C2 derivatives:** The shortfall in the supply of mono-ethylene glycol (MEG) is expected to be substantial by 2025. Consumers and distributors of MEG depend on imports due to India's limited domestic production capacities. However, investors shall also consider the recent announcement on reduced custom duty on caprolactam and nylon while evaluating MEG projects as polyesters are expected to face competition from nylon.

The demand for polyvinyl chloride (PVC) is rising owing to its increased usage in construction, furniture and household applications. At present, the capacity of PVC production is limited and expected to face a deficit in the near future, given the challenge of chlorine availability. PVC production based on ethylene dichloride (EDC) imports can also be evaluated alternatively.

From a long-term perspective, the demand for linear low-density polyethylene (LLDPE) is likely to be contained due to its major application in plastic films, the usage of which is increasingly being regulated due to waste-management initiatives. As the demand for high-thickness films increases, investors should be selective about technologies that are capable of manufacturing metallocene-grade LLDPE along with other grades.

Low-density polyethylene (LDPE) is also expected to face a shortage in supply as the demand for the product is increasing and there is no scope for new capacity additions in the near future.

- **C3 derivatives:** Polypropylene (PP) is a versatile polymer that has replaced multiple applications of its peers owing to its excellent strength and durability. India is expected to become a net exporter of PP by 2025 and explore long-term manufacturing and export opportunities.

There is a significant opportunity in manufacturing acrylonitrile due to its high demand and the absence of local manufacturers. Access to the technology, handling the manufacturing process that involves usage of hydrogen cyanide and disposal of the effluent are the key challenges in manufacturing acrylonitrile. However, integrated projects based on hydrogen-cyanide derivatives may be explored.

Consumption of propylene makes its availability limited for the merchant market. The availability of propylene may trigger new capacities in the C3 value chains and result in manufacturing capacities of propylene oxide, propylene glycol, polyols, acrylic acid, oxo alcohols, cumene, bisphenol, etc., being explored.

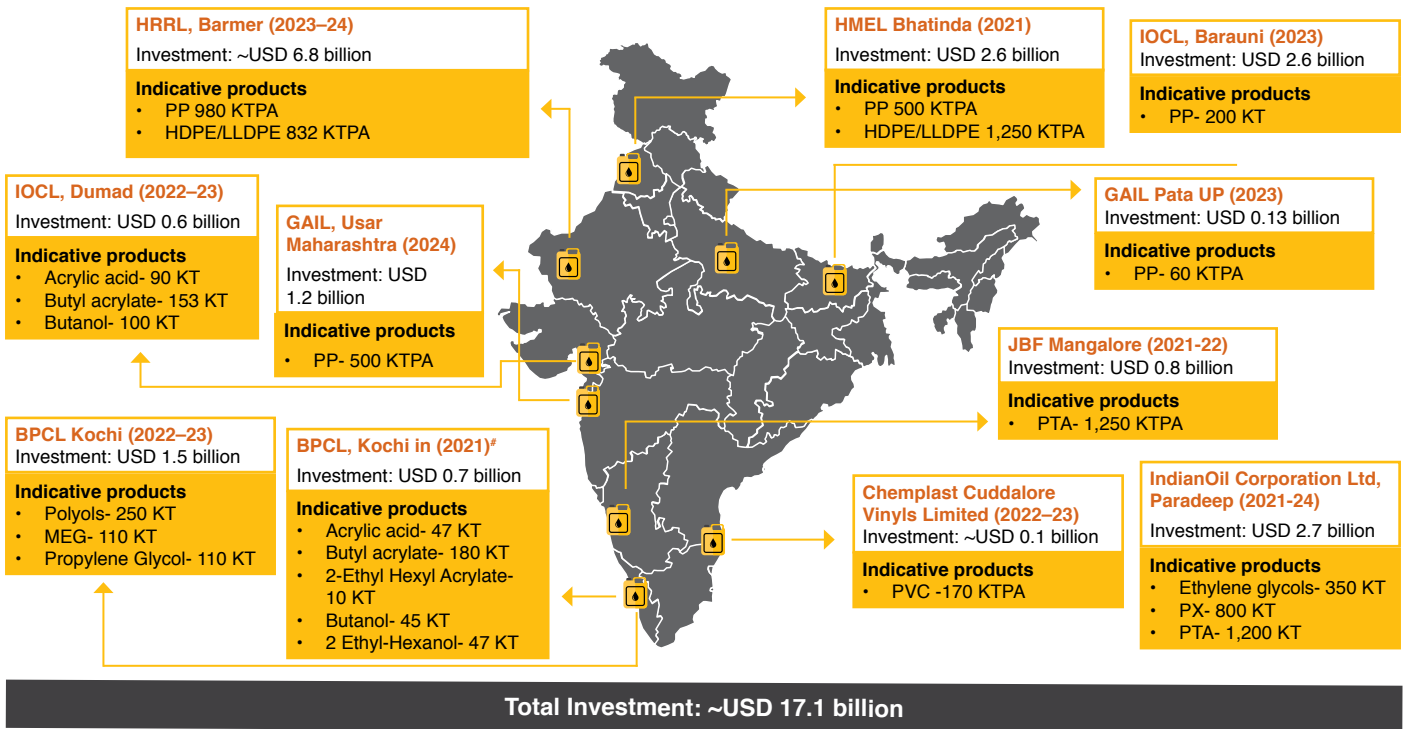
- **C4 derivatives:** India has surplus butadiene capacity. The availability of styrene and acrylonitrile is a challenge for C4 derivatives. Integrated acrylonitrile-butadiene-styrene co polymer (ABS), styrene butadiene rubber (SBR) and butadiene derivative projects may be explored in the long term.
- **C2 /C6 derivatives:** General-purpose polystyrene grade is the major grade of styrene which is consumed in the production of single-use disposable articles. On the other hand, high-impact polystyrene grade and expanded polystyrene grade have limited demand. The demand for general-purpose polystyrene grade is likely to be contained in the near term as the regulations on single-use plastics increase. Commercial-scale plants need to be built at minimum 600 kilo tonnes (KT) capacity for profitable operations as large capacities in the Middle East are integrated with gas crackers and hold cost advantage. This has resulted in styrene projects failing in India, though they can still be explored considering optimised techno-economics.
- **C3 /C6 derivatives:** Integrated phenol projects can be explored given the increasing demand for phenol resins and the presence of limited players in the phenol and derivatives value chain. The recent imposition of customs duty on bisphenol A holds a positive outlook for forward integration. However, access to propylene may pose a challenge.
- **C8 derivatives:** Purified terephthalic acid (PTA) is majorly used as a raw material in the manufacturing of polyesters and the demand for polyesters is increasing at an annual growth rate of over 8–9%, majorly driven by the polyester yarn. Limited availability of PTA and the promising demand for polyesters make PTA a lucrative investment opportunity.

Projects under implementation and in consideration

Given the strong underlying demand trends, India's petrochemical sector is expected to witness a significant investment boom, with a number of multibillion-dollar capital investments either already being implemented or expected within the next few years.

Both refiners and domestic petrochemical players are expanding their petrochemical capacities. For example, Reliance and IOCL have already expanded their petrochemical production in the past couple of years. Domestic players such as Deepak Phenolics and ONGC Petro additions Limited (OPaL) have also entered the petrochemical space recently.

Petrochemical projects under implementation



#: The complex is mechanically completed and is under commissioning.

Source: Chemical and Petrochemicals Manufacturers Association (CPMA) and industry sources



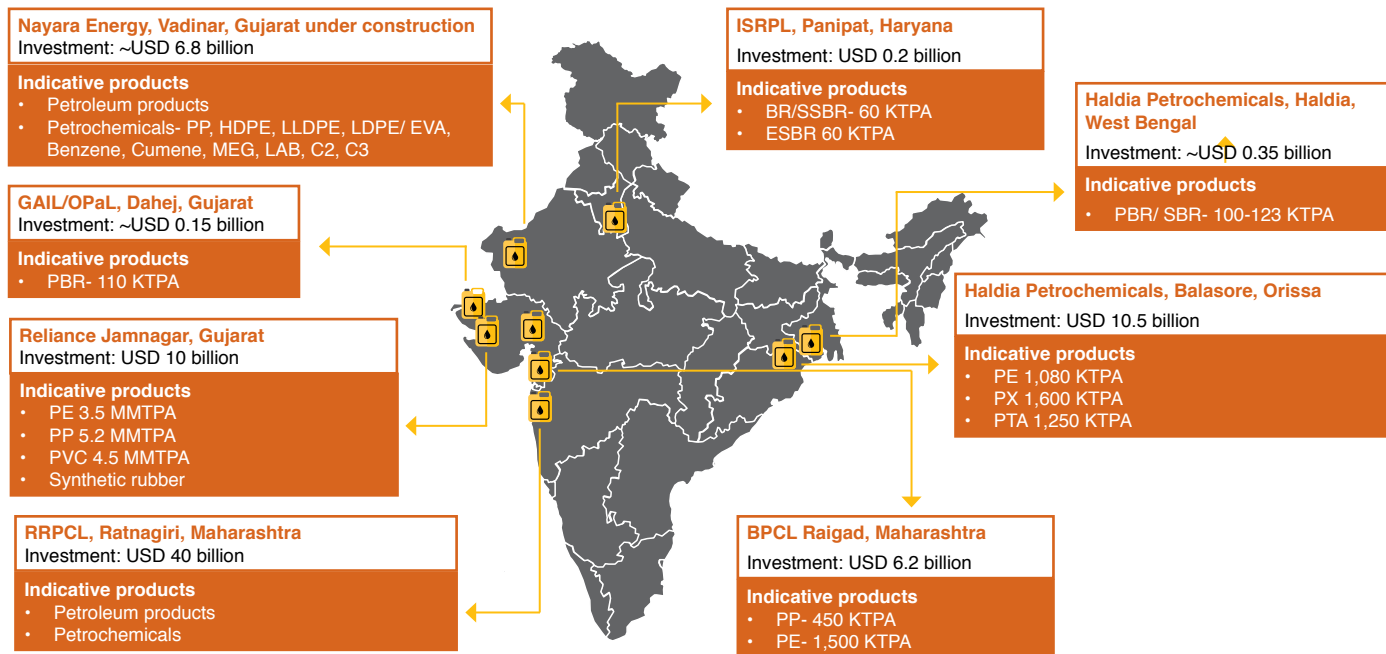
In the next three to five years, HPCL-Mittal Energy Limited (HMEL) is expected to quadruple its petrochemical capacity, whereas HPCL Rajasthan Refinery Limited (HRRL) and Bharat Petroleum Corporation Limited (BPCL) will join the list with their refinery-integrated petrochemical assets.

International players have also announced partnerships to enter the Indian market. Over the past three years, global firms such as

Saudi Aramco, Rosneft (Nayara) and others have announced plans to invest in Indian petrochemical manufacturing. The West Coast refinery is being planned as a joint venture between the Abu Dhabi National Oil Company, Saudi Aramco, IOCL, BPCL, and HPCL.

Furthermore, with recent revisions in the basic customs duties of naphtha, petrochemical and chemical intermediates, further traction in investments is expected in the coming years.

Petrochemical projects under consideration



Total investment: USD 87.4 billion

Source: CPMA and industry sources



Specialty chemicals³⁰



Agrochemicals

- The average per-hectare consumption of agrochemicals in India is about one-tenth of the US and the UK, and one-twentieth of Japan and China.
- India imports over 50% of its agrochemical raw materials and intermediates. The increasing environmental reforms in China have reduced the supply, resulting in supply shortage and price increase.
- Contract manufacturing and export opportunities for off-patent molecules are areas of concern as about 26 technicals are about to go off patent in 2022.
- Shifting preferences towards biopesticides, biological control agents and bio stimulants have resulted in an annual growth of more than 10% in recent years.



Active pharmaceutical ingredients (APIs) and key starting materials (KSMs)

- India imported APIs and KSMs worth approximately USD 3 billion, as per the trade statistics of 2019. These APIs and KSMs account for over 60% of the total imports by pharmaceutical companies.
- Attractive investment opportunities exist in the domestic manufacturing of APIs and KSMs, fuelled by lucrative incentives from the PLI Scheme.



Surfactants

- The LAB market in India is expected to undergo a supply deficit in the coming years due to the increasing demand of home care products and reluctance of manufacturers to invest in high-capex technologies.
- Opportunities in manufacturing alpha olefin sulfonates and fatty alcohol ethoxylates exist with the increasing demand for premium detergents and liquids.
- The global biosurfactants market is picking up and suitable export opportunities exist.



Water treatment chemicals

- Imports account for over 90% of the total demand for water treatment membranes (ultrafiltration, reverse osmosis and nano filtration) in India. Polymer-manufacturing companies may explore this business that has options for product diversification.
- Stringency in effluent discharge norms and policies related to chemical regulations (in the making) offer opportunities for the development of advanced membranes and specialty chemicals for industrial effluent treatment and zero liquid discharge.



30 Industry Sources, FICCI, news articles, Chemical Weekly, Chemical News and PwC analysis



Pigments

- The per capita consumption of paints in India is about one-fourth of the global average, thereby leaving significant space for increase in consumption.
- The domestic manufacturing capacity of titanium dioxide, an inorganic white pigment widely used in paints, plastics and paper industries, can be expanded with sustainable technology developments. India has sizeable reserves of the ore required for manufacturing titanium dioxide.



Specialty packaging and additives

- Consumers are emphasising more on food safety and hygiene, and willing to pay a premium price for more sustainable food packaging. This in turn is opening up opportunities for green packaging materials and polymers.
- Opportunities exist in the plastic-recycling industry, especially for thermoplastics which account for over 80% of the total post-consumer plastic waste generated in India.
- Sustainable packaging would lead to the requirement of innovative resins and additives to improve the performance of recycle/recycling conditions.



Personal and home care ingredients

- Shifting consumer preferences towards milder, safer and natural ingredients offer opportunities for new developments in bio-based and bio-sourced ingredients.
- Increasing penetration of home and personal care products, especially in rural areas, product premiumisation and increasing per capita income shall open up investment opportunities.



Battery materials and chemicals

- The shift to electrical vehicles (EVs) has already begun, with lithium-ion batteries (LIBs) at the forefront of their development. Potential opportunities will arise for manufacturing chemicals and materials such as electrolytes, anode and cathode separators such as ultra-high molecular weight polyethylene and PVDF resin.
- At the same time, opportunities exist in recycling of LIBs, photovoltaic cells, etc., to recover nickel, cobalt and lithium.



India's competitiveness in the global petrochemical industry

Easy access to feedstock, presence of a strong domestic demand, lower capital and operating costs, and timely project implementation are in general, important factors for determining the competitiveness of petrochemical plants. Some of the aspects describing India's competitiveness in the petrochemical industry are defined below:

Feedstock access: The Indian petrochemicals industry is highly dependent on imports, with over 65% of the installed refining capacity dependent on crude oil. About 80% of India's petrochemicals capacity is integrated with petroleum refineries. This gives India an edge in terms of petrochemical feedstock certainty.

Market access: The current per capita consumption of chemicals in India is low compared to the global average. A large population base, increasing per capita income and rising demand from the end-use industries makes India an attractive market.

Capital cost: India offers a competitive cost of fabrication compared to other countries because of the presence of a large fabrication market, low cost of labour and a favourable location.

Operating cost: The availability of competent and low-cost labour along with cheaper electricity rates keeps the operating cost of petrochemical plants competitive.

Competitiveness in the Indian petrochemical industry

	Feedstock access ¹	Market access ²	Capital cost ³	Operating cost ⁴	Commissioning period ⁵	Overall
Middle East						
US						
Europe						
India						
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, pre fabrication and construction costs
- (4) Based on average monthly salary of employee, low-cost electricity
- (5) Commissioning period based on large petrochemical projects



Source: 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 – November 2019 (Indonesia, Central Java, DKI Jakarta), Vietnam Briefing – November 2019 (Vietnam, Region IV, Region I), Reuters – December 2019 (Mexico, Non-border, Border Zone), MOHRSS – June 2018 (China, Liaoning, Shanghai), Bangkok Post – December 2019 (Thailand, Yala, Chon Buri and Phuket), Bloomberg – January 2020 (Brazil, National), ASEAN Briefing – February 2020 (Malaysia, National), US Dept. of Labor, Wage Indicator Foundation, World Bank and global petrol prices. Data on electricity charges was sourced from GlobalPetrolPrices.com as accessed on 20 February 2021.



Advantage India

Strategic location

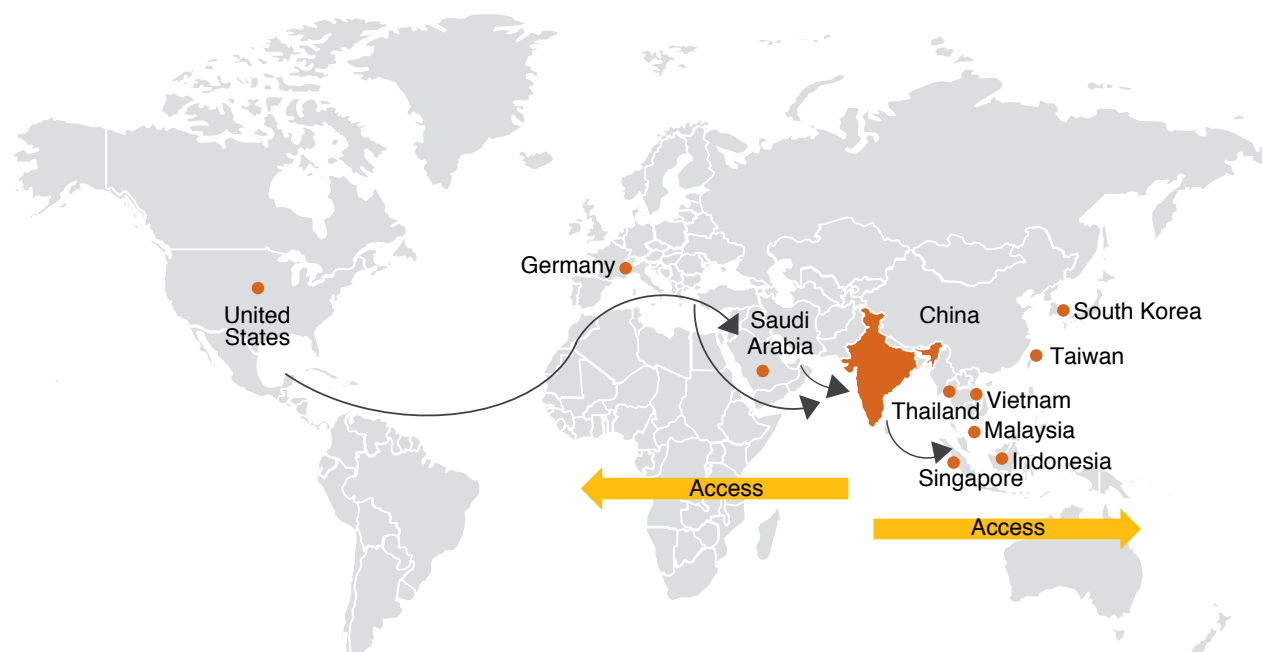
Surrounded by water on three sides, India's geographic coordinates are distinctly advantageous for trade, and its large internal market, maritime exports and a thriving private sector play crucial parts in strengthening the country's economy.

India is located at the centre of the trans Indian Ocean route connecting the western continents and East Asia, and these strategic coordinates have enabled the country to establish close contact with West Asia, Africa and Europe from the Western coast, and Southeast and East Asia from the Eastern coast.

India's western and southwestern coasts have been the transit landfall for Middle-East crude oil. India is dependent on crude oil for over 65% of its feedstock mix and maritime trade enables the country to fulfil its feedstock needs.³¹

With major refineries and petrochemical plants located over India's coastline, the country's position in the global chemical industry is unique as it has easy access to petrochemical feedstock and major demand centres, both catered through ports.

Strategic location of India



Skilled and competent manpower

The GoI has taken proactive steps to develop a skilled workforce for the manufacturing and services industry. The Ministry of Skill Development and Entrepreneurship (MSDE) was incorporated in

2014 and launched the Skill India programme in 2015 to achieve the vision of removing the disconnect between demand and supply of skilled manpower, develop vocational and technical training frameworks for existing jobs and create new employment opportunities.³²

31 PwC analysis

32 <https://www.skillindia.gov.in/>

Key skill development initiatives

	Skill India Programme	The Skill India programme aims to train 400 million people to make India the skill capital of the world by the year 2022.
	Skill Development Mission	The Skill Development Mission aims to build a strong institutional framework at both the Central and state levels for implementing activities for the enhancement of skill level in the country.
	Pradhan Mantri Kaushal Vikas Yojana	Pradhan Mantri Kaushal Vikas Yojana is a flagship scheme launched to impart training for the youth focusing on improved curricula, trained instructors and better method of teachings.
	Skill Loan	Skill Loan is a unique initiative aimed at providing financial support of up to USD 2,100 (INR 150,000) to aspiring individuals for skill development.

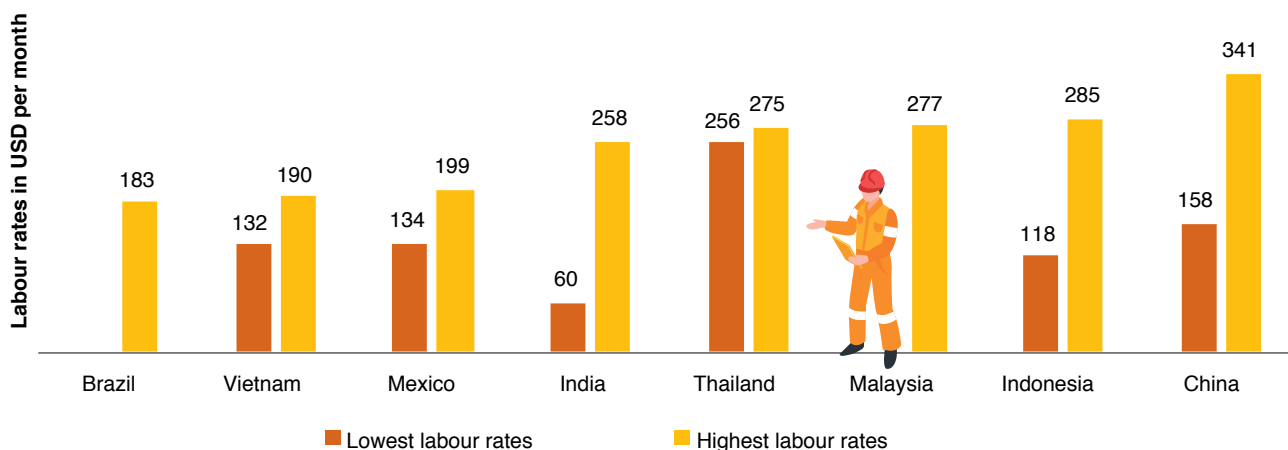
Source: Skill India website

Various training programmes specific to the chemical and petrochemicals sector have been launched by the MSDE. These programmes provide training to individuals for roles such as process operator, plastic processing machine operator, advanced plastic mould manufacturer, mill operator, analytical instrument operator, aroma chemical assistant, fitting and measurement operator, boiler attendant, effluent treatment plant operator, laboratory assistant, chemical storage management operator, distillation unit operator, electroplater, fertiliser marketing executive and many others.

The cost of labour in India is competitive compared to other developing and developed countries. Since, labour cost accounts for a significant share in the fixed-cost component of chemical manufacturing, overall production cost has a positive impact on profit margins.

The availability of a competent workforce at a competitive cost contributes to the reduction in overall capex by lowering fabrication cost and increasing profit margins.

Range of labour wages in 2019 (in USD per month)



Source: 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 – November 2019 (Indonesia, Central Java, DKI Jakarta), Vietnam Briefing – November 2019 (Vietnam, Region IV, Region I), Reuters – December 2019 (Mexico, Non-border, Border Zone), MOHRSS – June 2018 (China, Liaoning, Shanghai), Bangkok Post – December 2019 (Thailand, Yala, Chon Buri and Phuket), Bloomberg – January 2020 (Brazil, National), ASEAN Briefing – February 2020 (Malaysia, National), US Dept. of Labor, Wage Indicator Foundation, World Bank and global petrol prices



Logistics and infrastructure

National Infrastructure Pipeline

Launched in 2019, the National Infrastructure Pipeline (NIP) is a group of social and economic infrastructure projects to be implemented over a period of five years. NIP aims to invest in a total 7,604 identified infrastructure projects worth USD 1,826.46 billion spanning across transportation, logistics, energy, communication, water and sanitisation, and social and commercial infrastructure.³³

The GoI aims to reduce the cost of logistics incurred from 14% of the GDP at present to less than 10% by 2022. As of 2021, 3,697 projects worth USD 754.12 billion have been identified for the transportation sector, focusing on the development of roads and bridges, railway tracks, urban public transport, airports and aviation infrastructure, ports, railway rolling stock, railway terminal infrastructure, inland waterways, shipyards, etc.³⁴

Around 160 projects worth USD 38.62 billion have been identified for the development of bulk material transportation pipelines and logistics transportation to strengthen the logistics network in India.

Additionally, 631 projects worth USD 75.03 billion have been specifically identified for the development of common infrastructure for industrial parks. This will further aid in the expansion of the manufacturing sector, including the chemical and petrochemicals sector.

Petroleum, Chemicals and Petrochemicals Investment Region (PCPIR) infrastructure projects are also being prioritised in the

NIP. 14 projects worth USD 2.65 billion and focusing on the development of road, airport, water supply, electricity distribution have been proposed by the Paradeep PCPIR. Similarly, the Dahej PCPIR has proposed five projects worth USD 0.52 billion, focusing on the development of roads, bridges, water supply and effluent treatment/ disposal.³⁵

Industrial corridor projects

The GoI is developing various industrial corridor projects as a part of the National Industrial Corridor Programme which aims to develop futuristic industrial cities in India that will compete with the best manufacturing and investment destinations in the world.

The industrial corridors comprising multimodal transport services will pass along the National Investment and Manufacturing Zones (NIMZs) and freight cargo will be brought to the industrial corridor via rail and road feeder links that provide last-mile connectivity.

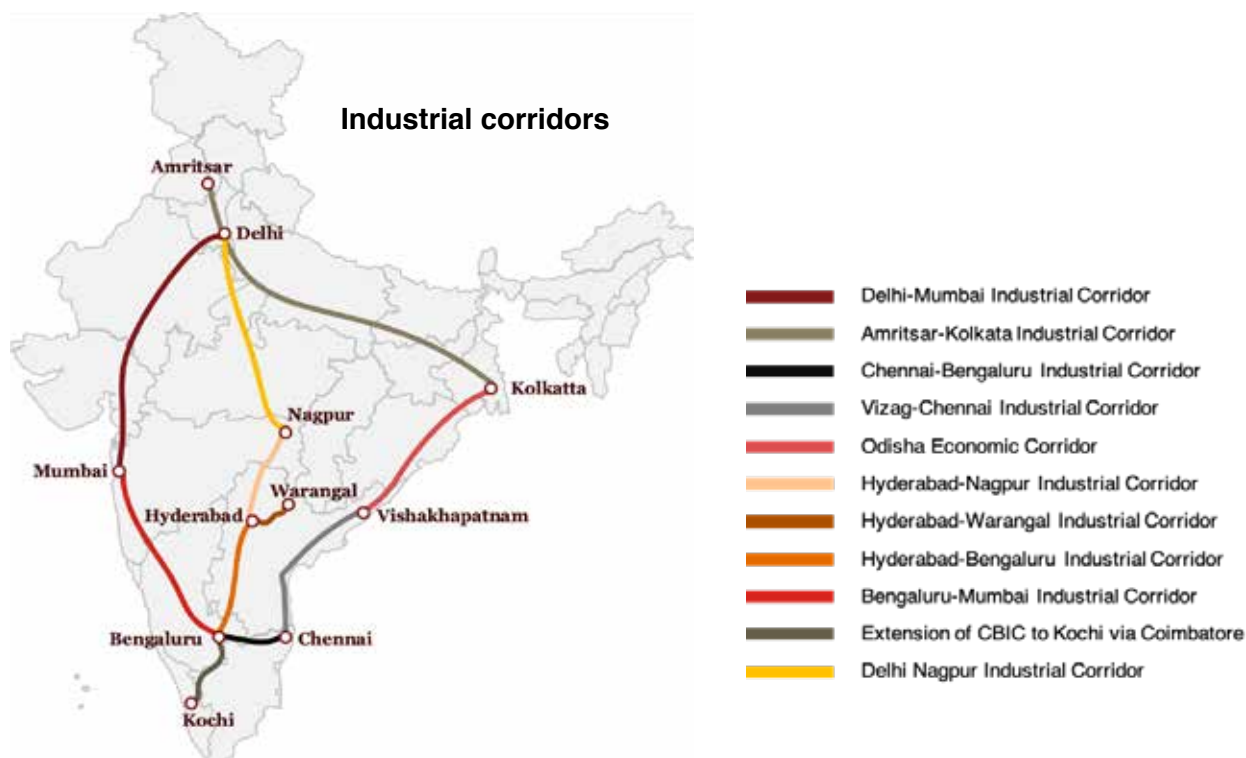
Industrial corridors offer effective integration between industry and infrastructure. World-class infrastructure comprising high-speed transportation network, (rail and road), ports with state-of-the-art cargo handling equipment, modern airports, special economic zones (SEZs)/industrial clusters, logistic parks, urban infrastructure, etc., will lower logistics costs and enable firms to focus on their areas of core competence.

Newly built industrial corridors are likely to lower logistics cost as well as improve delivery time. Doing so will improve the efficiency of industrial production structure. 11 industrial corridors are being built and 32 projects are expected to be developed in four phases by FY25.

33 <https://www.investindia.gov.in/>

34 Ibid.

35 <https://economictimes.indiatimes.com/news/economy/infrastructure/new-pcpir-policy-moots-central-funding-for-infrastructure/articleshow/79601634.cms?from=mdr>



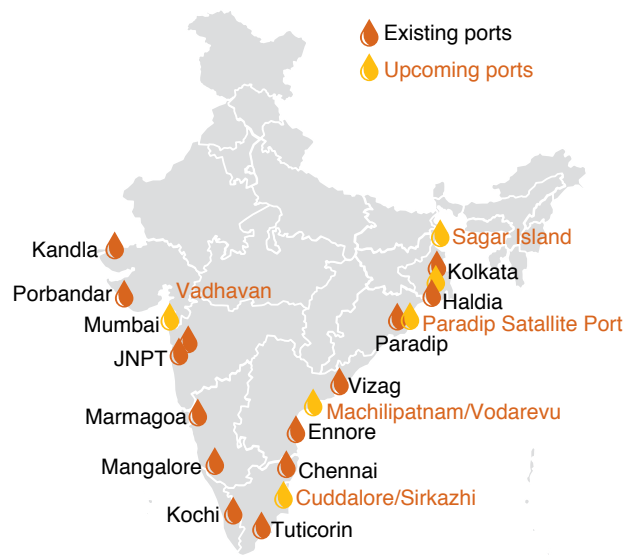
Source: Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, GoI

Sagarmala Programme

It is expected that cargo traffic at Indian ports will be approximately 2,500 million metric tonne per annum (MMTPA) by 2025, while the current cargo handling capacity of Indian ports is only 1,500 MMTPA. The Union Cabinet approved the Sagarmala Programme on 25 March 2015 to cater to the increased port traffic. The programme envisages to develop India's 7,517 km coastline and 14,500 km of potentially navigable waterways and maritime sector. As a part of the Sagarmala Programme, around 577 projects worth USD 130 billion have been identified for development between 2015–2035 to reduce logistics cost for export-import (EXIM) and domestic trade with minimal infrastructure investment. The projects under the Sagarmala Programme are channelised towards **port modernisation and new port development, port connectivity enhancement, port-led industrialisation and coastal community development.**³⁶

- Under the Sagarmala Programme, Project Unnati has been launched by the Government to improve the efficiency and productivity key performance indicators (KPIs) for the 12 major ports in India. Around 116 initiatives were identified across 12 major ports to unlock more than 100 MMTPA capacity just through efficiency improvement. 93 initiatives have already been implemented to unlock more than 80 MTPA capacity.³⁷
- Greenfield ports are also proposed to be developed at VadHAVAN (Maharashtra), Sagar Island (West Bengal), Paradip Satellite Port (Odisha), Cuddalore/Sirkazhi (Tamil Nadu) and Machilipatnam/Vodarevu to fulfil the cargo handling capacity gap.

Existing and upcoming ports in India



Source: Ministry of Ports, Shipping and Waterways

- Radio frequency identification system has been installed in 11 major ports to enhance security and remove bottlenecks for seamless movement of traffic across port gates.
- E-delivery orders, e-invoice and e-payments are being issued across all major ports, reducing paperwork and improving processing time.

36 <http://sagarmala.gov.in/>

37 <http://sagarmala.gov.in/projects/projects-under-sagarmala>



“ Our coastal area can be a channel for global trade. ”

Narendra Modi, Prime Minister of India, during his maiden speech in the Parliament (June 2014)

“

Maritime infrastructure and shipping will play a pivotal role in India's economic engagement with the rest of the world. India is blessed with one of the longest coastlines located in the most strategic global trade routes. Harnessing it will generate rich economic dividend to the country.

”

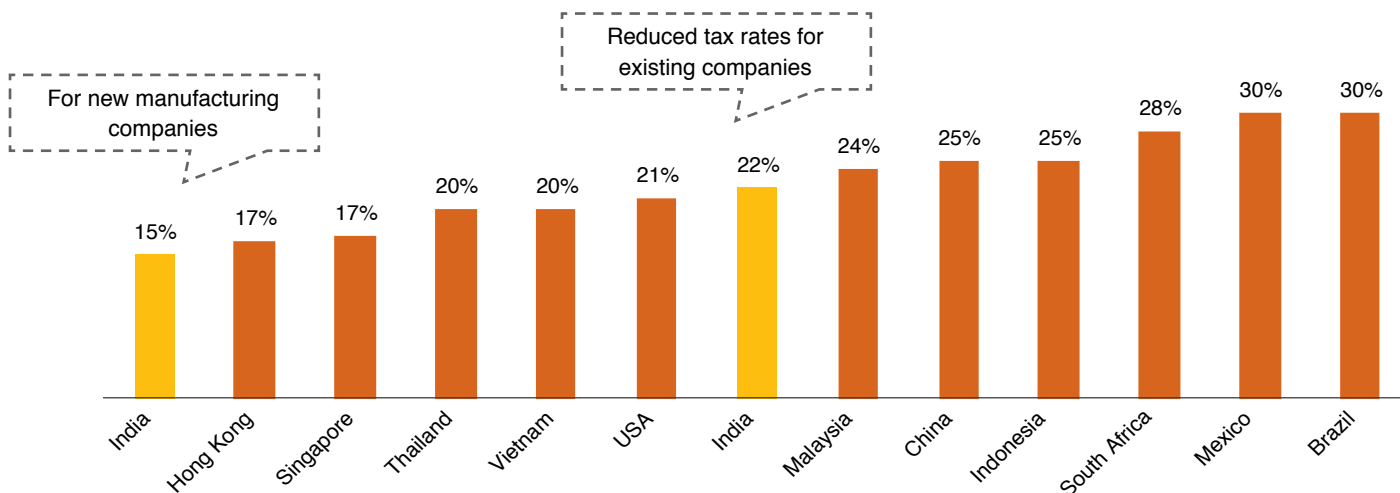
Nitin Gadkari, Minister of Shipping, Road Transport and Highways

Tax structure and incentives

In September 2019, Finance Minister Nirmala Sitharaman announced the largest reduction in corporate income tax (CIT) rates in the last three decades through the Taxation Laws (Amendment) Ordinance, 2019. India's CIT rate is now closer to the worldwide average statutory CIT rate of 23.03%.³⁸

The reduced CIT rate makes return on investments made in India more attractive. The reduced rate and other favourable factors also pave the way for cementing India's status as a favourable manufacturing destination against the backdrop of existing global trade dynamics. With the headline CIT rate for newly incorporated domestic manufacturing companies being reduced to 15%, the manufacturing sector is one of the largest beneficiaries.

Percentage of comparative corporate tax rates in 2019



Source: PwC's Worldwide Tax Summaries

Effective tax rates in India, including surcharge and cess, are 17.16% for new manufacturing companies and 25.17% for existing companies not claiming prescribed deductions/exemptions.

Some of the implications of the new CIT rate reduction are:³⁹

- Effective CIT rates have been slashed for existing domestic companies from 34.94% to 22% from FY20 onwards.
- For new domestic companies set up on or after 1 October 2019 and commencing manufacturing before 31 March 2023, the applicable effective CIT rate is 17.16%.

- For domestic companies opting for concessional rates, certain exemptions, deductions and allowances (including additional depreciation) will not be available. Minimum Alternative Tax (MAT) will not apply in this case and accumulated MAT credit cannot be utilised.
- The effective MAT rate for domestic companies not opting for the concessional tax rates has been reduced from 21.55% to 17.47%. They will continue to enjoy the benefit of specified deductions/incentives, where applicable.

38 <https://finmin.nic.in/>
Quotes: Ministry of External Affairs

39 <https://taxsummaries.pwc.com/>

Labour reforms

The Govt is trying to reform the archaic labour laws that were limiting the investment interest by foreign companies. In order to simplify and consolidate the existing labour laws of India, the Government has recently introduced four labour codes, namely The Code on Wages, 2019, The Code on Social Security, 2020, The Occupational Safety, Health and Working Conditions Code, 2020 and The Industrial Relations Code, 2020.

The new codes have extended the benefits to workers of the unorganised sector and platform and gig workers. On the other hand, employers have benefitted from the streamlined laws of regulating industrial disputes and trade unions in India.

Labour reforms in 2020

1	The Code on Wages, 2019	Aims to standardise wages, remuneration and bonus provisions for employees with unified definition of 'wages' and increases the wage threshold to INR 18,000 for exclusion from the definition of worker, etc.
2	The Code on Social Security, 2020	3 The Occupational Safety, Health and Working Conditions Code, 2020
Aims to provide better social security benefits such as provident fund, insurance and gratuity	Aims to regulate the occupational safety, health and working conditions, and promote gender equality	4 The Code on Social Security, 2020
<ul style="list-style-type: none"> The code extends the reach of the Employees' State Insurance Corporation and Employees' Provident Fund Organisation to workers in the unorganised sector and platform and gig workers. It plans to provide gratuity benefit to fixed-term employees without any condition for a minimum service period. Aggregators employing gig workers will have to contribute 1–2% of their annual turnover for social security, with the total contribution not exceeding 5% of the amount payable by the aggregator to gig and platform workers. 	<ul style="list-style-type: none"> To circumvent the prolonged delays in administrative processes, establishments registered under any concerned law shall be deemed to be registered under OSH code. The OSH Code has dropped the earlier provision for temporary accommodation of workers near worksites and has proposed a journey allowance or a lump sum amount of fare to be paid by the employer for to-and-fro journey of the worker to their native place from the place of their employment. 	<ul style="list-style-type: none"> For the benefit of employers, the IR Code has increased the threshold of workers to three hundred (300) for obtaining the consent of the concerned government in case of lay off, retrenchment or closure of the establishment. It has also proposed to set up a reskilling fund for training retrenched workers, with the employer contributing an amount equal to 15 days of last-drawn wages of workers.

Source: Ministry of Labour and Employment

Trade and economic cooperation agreements

India is negotiating with the US, the European Union (EU), Australia and Africa to sign new trade agreements.⁴⁰

Existing trade and economic cooperation agreements

Economic cooperation

- Croatia
- Finland
- Slovak Republic
- Bulgaria
- Czech Republic
- Romania

Preferential trade agreement

- Chile
- Afghanistan
- MERCOSUR – Argentina, Brazil, Paraguay and Uruguay



Free trade agreements

- South Asia
- ASEAN countries
- Sri Lanka
- Japan
- Korea

Comprehensive economic cooperation agreement

- Singapore
- Malaysia

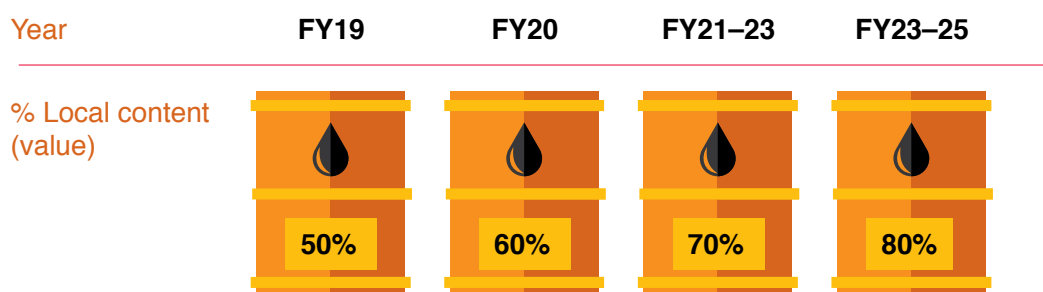


Recent Government initiatives

Public procurement policy for chemicals and petrochemicals

As a part of the Make in India initiative, the Department of Chemicals and Petrochemicals (DCPC) has notified all procuring entities to comply with the local content criteria for a set of chemicals, petrochemicals and pesticides irrespective of the purchase value.

At present, the policy is applicable to over 28 chemicals, petrochemicals, pesticides and dyestuff. The minimum local content will progressively increase till FY25.⁴¹



Mandatory BIS grades

The DCPC, Government of India, has passed mandates on the import of certain chemicals and petrochemicals to comply with specified levels/grades set by the Bureau of Indian Standards (BIS). The Government intends to use this initiative to improve the quality of chemicals/petrochemicals produced in the country, as well as control the quality of imported chemicals.

So far, phthalic anhydride, acetic acid, methanol, poly aluminium chloride, high-density polyethylene (HDPE)/polypropylene (PP) woven sacks for packaging, pyridine, gamma picoline, beta picoline, potassium carbonate, hydrogen peroxide, and sodium tripolyphosphate are considered for the BIS quality standard compliances which are proposed to come into effect starting March 2021.

As per the notified provisions, the manufacturers of the listed chemicals are required to comply with the mandatory BIS grades and bear the Standard Mark under licence from the BIS. This is also applicable to the import of the listed chemicals, for which the exporter has to apply for a BIS licence under the Foreign Manufacturers Certification Scheme.

Scheme for setting up plastic parks

The 64-year-old plastic industry in India contributes more than USD 4.2 billion to India's GDP. The industry has grown at a high CAGR of about 10% in the last decade. The per capita consumption of plastics stands at approximately 13.6 kg, which is much below the global average of 30 kg.⁴² This lower consumption, as compared to other developing and developed nations, indicates that there is a huge opportunity for the industry to grow over the coming years.

On the other hand, the export of plastic products has increased at a CAGR of 9.6% between FY15–20,⁴³ though India's share in global exports is relatively small. This is mainly because the plastic industry is highly fragmented with micro, small and medium units dominating the landscape. It lacks the capacity to significantly tap into the export opportunity. Owing to the increasing demand and targeted increase in the export of plastic products, the DCPC has formulated a scheme for setting up plastic parks. These aim at creating an ecosystem to consolidate and synergise the capacities of the domestic downstream plastic processing industry through a cluster-development approach.

41 <http://chemicals.nic.in/>

42 <http://ficci.in/>

43 Ministry of Commerce and Industry (HS Code 39)

The objective of the scheme is to increase the competitiveness of the polymer processing industry by attracting investments to improve polymer absorption capacity and facilitate the development of quality infrastructure and modern research and development (R&D) measures. The scheme also aims to increase the share of exports and achieve environmentally sustainable growth through new methods of waste management, recycling, etc.

Six plastic parks have been approved under the scheme so far and the Government is planning to build more.

Funding of up to 50% of the project cost, subject to a ceiling of USD 5.6 million per project, is being awarded to the eligible proposed plastic park.

Trade intelligence

In order to curtail tax evasion and enable a better trade intelligence of certain chemical products that currently fall under the other category of the Harmonized Commodity Description and Coding System, the Government has made it mandatory to mention the eight-digit HS code for 49 chemical-based products while issuing GST invoices. The mandate came into force on 1 December 2020 and the Government is proposing that separate eight-digit HS Codes be allotted to another group of 106 chemicals and petrochemicals.⁴⁴

Export promotion schemes

Various export promotion schemes have been implemented by the Government to improve India's share in global trade.⁴⁵ Some of the notable schemes recently announced are:

- Administrative assistance to SEZs
- Fiscal incentives to SEZs
- Market Access Initiative
- National Export Insurance Account
- Interest Equalisation Scheme
- Investment in Export Credit Guarantee Corporation.



Scheme for setting up centres of excellence

Back in June 2018, the DCPC proposed a scheme for setting up centres of excellence in the field of petrochemicals as a part of the National Policy of Petrochemicals.⁴⁶ Under the scheme, the DCPC will provide funding to eligible Government institutes/organisations to develop R&D projects in petrochemicals and polymers through support in setting up centres of excellence.

The established centres will play a pivotal role in the development of existing polymer products, new polymer applications, plastic recycling technologies, bio and biobased polymer, biodegradable polymers, engineering polymers, polymer composites and nano composites, specialised coatings and adhesives, polymer membranes, polymers-based systems for healthcare and biomedical device, polymer blends and alloys, energy-efficient processes and various specialty applications of polymers.

The DCPC also felicitates/incentivises meritorious innovations and inventions in the field of polymeric materials, products processes and other areas of national and social importance in the form of national awards.

Intellectual property treaties

In June 2019, India accepted the three important classification treaties of the World Intellectual Property Organization that are designed to ease the search for trademarks and industrial designs, thereby helping brand owners and designers in their efforts to obtain protection for their own work.⁴⁷ The treaties accepted by India are:

- Vienna Agreement to establish an International Classification of the Figurative Elements of Marks
- Nice Agreement for International Classification of Goods and Services for the Purposes of the Registration of Marks
- Locarno Agreement for establishing an International Classification for Industrial Designs

Additionally, the Indian Patent Office has worked towards reducing the processing time for filing IP application and appointing specialist judges in commercial courts to ensure the effectiveness of IP rights enforcement.

Chemicals Promotion and Development Scheme

The DCPC has implemented the Chemicals Promotion and Development Scheme (CPDS) scheme to facilitate growth and development of the chemical and petrochemicals industry by creation of knowledge products through studies, surveys, data banks and promotional material, and dissemination of knowledge through seminars, conferences and exhibitions to facilitate the development of the sector.⁴⁸

The scheme also aims to incentivise research and innovation by awarding outstanding efforts in the field of chemicals and petrochemicals.

44 <https://www.businesstoday.in/current/economy-politics/govt-makes-it-compulsory-to-mention-8-digit-hsn-code-in-gst-tax-invoice-for-49-chemical-based-products/story/423694.html>

45 <https://commerce.gov.in/about-us/export-promotion-councils/basic-chemicalscosmetics-and-dyes-export-promotion-council-chemexcil/>; https://afleo.com/learn/export-incentive-schemes-india/#Market_Access_Initiative_MAI_Scheme

46 <http://chemicals.nic.in/>

47 https://www.wipo.int/portal/en/news/2019/article_0021.html

48 <https://chemexcil.in/>

Development Council and Advisory Forum

The DCPC has set up a Development Council and Advisory Forum to address the issues and challenges faced by chemical and petrochemicals companies in India. Issues such as delays in getting green clearances and in restoring tax incentive for R&D are being resolved by the forum to enable increased R&D expenditure and focus towards sustainability and green chemistry.

Draft Chemical (Management and Safety) Rules

In December 2020, the Government released the fifth draft amendment to the Chemical (Management & Safety) Rules (CMSR), which will supersede the two existing rules – Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.⁴⁹

With the proposed draft rules, the Government intends to;

- promote greener and safer chemistry within chemical manufacturing, transport, use and disposal
- enhance competitiveness in the domestic chemical industry
- pre-use registration and inventory management.

The draft CMSR provides for notification, registration and restrictions, or prohibitions, as well as requirements related to labelling and packaging of substances, substances in mixtures, substances in articles and intermediates, and introduce Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) like registration requirements for certain priority substances having a quantity of \geq one tonne per year. The CMSR will apply to all substances, substances in mixture, substances in articles and intermediates that are manufactured, imported or placed in the Indian territory.

The draft rules require manufacturers, importers or authorised representatives to notify new and existing substances, and register substances that need registration.

Proposed New PCPIR Policy 2020–35

In order to promote investment in the chemical and petrochemicals sector, and make India an important hub for both domestic and international markets, the Government had launched the Petroleum, Chemicals and Petrochemical Investment Regions (PCPIRs) policy in April 2007. At present, PCPIRs are being developed in the states of Andhra Pradesh (Vishakhapatnam), Gujarat (Dahej) and Odisha (Paradeep) with little success in their overall progress. The previously proposed PCPIR in Tamil Nadu (Cuddalore and Nagapattinam) has been scrapped majorly due to protests from the local residents and authorities. A new PCPIR is being developed in the vicinity of the Hindustan Petroleum Corporation Limited (HPCL) Rajasthan Refinery Limited and the Petrochemical Complex in Barmer district of Rajasthan.

The Government has overhauled the previous PCPIR policy and is taking active steps to make necessary amendments and speed up the completion of ongoing projects. With the Central Government taking over the lead role of a developer, the concept of PCPIR is being redrawn to attract a combined investment of over USD 420 billion through the proposed new PCPIR policy that is set to be implemented between 2020–35. As per the updated policy, the size requirement of a PCPIR is being reduced from 250 sq. km to 50 sq. km, with specific cluster-integration strategy.

The Government is also planning to provide a viability gap funding for infrastructure projects and smart utilities for a value of up to 20% each. The smart utilities would cover common effluent treatment plants, integrated solid waste management projects, environmental monitoring systems, etc. Additionally, funding for project design and management consultancy is also being planned for PCPIRs.⁵⁰

Production Linked Incentive (PLI) Scheme

India imports APIs and KSMs worth more than USD 3 billion, which also account for 63% of all the imports by the Indian pharmaceutical industry.⁵¹ In order to reduce the dependency on imports and catalyse investments in greenfield projects for manufacturing APIs, KSMs and drug intermediates, the Department of Pharmaceuticals, Ministry of Chemicals and Fertilisers, outlined the details of the PLI Scheme in July 2020.

With a project outlay of over worth USD 1 billion, financial incentives shall be provided for six consecutive years on the sales of 14 fermentation-based APIs, 23 chemically synthesised APIs, and four KSMs at the following rates starting from FY22–23:⁵²

- incentives for the fermentation-based products – 20% for FY23–24 to FY26–27, 15% for FY27–28 and 5% for FY28–29
- incentives for chemical synthesis-based products – 10% for FY22–23 to FY27–28.

The scheme has received a positive response and the Government has approved 19 applications with committed investments worth USD 660 million so far.

The scheme has a direct impact on the chemical industry as APIs are an integrated part of downstream chemicals.

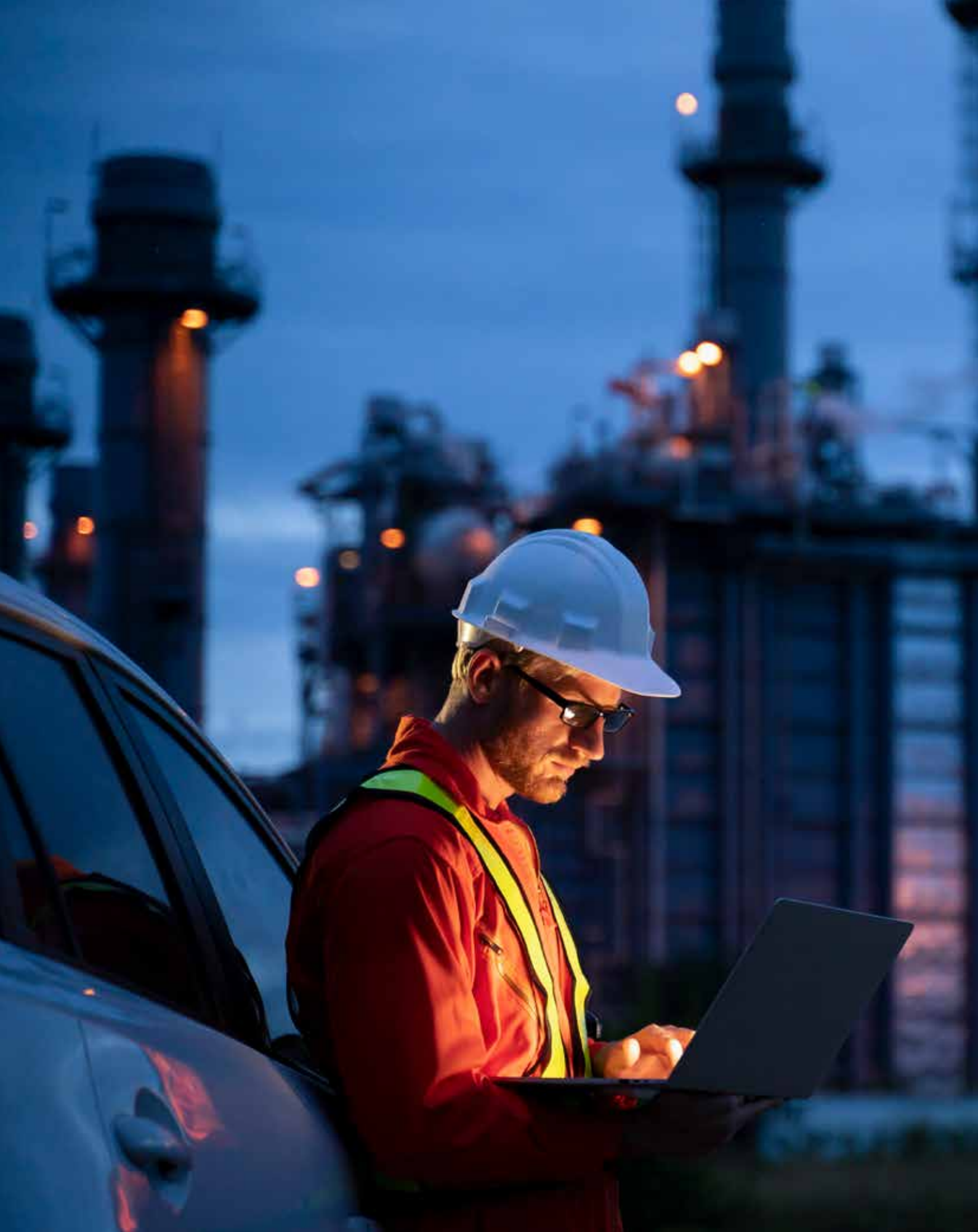
In addition to being approved for medical devices, the scheme has recently been extended to ten new sectors with a total outlay of USD 19.6 billion. The chemical industry's applications are spread across all these sectors and they are expected to indirectly impact the increased consumption of polymers, resins, fibers, bulk chemicals, paints, pigments, battery chemicals, food additives, etc.

49 http://files.chemicalwatch.com/191213_Draft_Chemical_Safety_Rules_Final_%281%29.pdf

50 <https://www.constructiontechnology.in/news/details/4120>

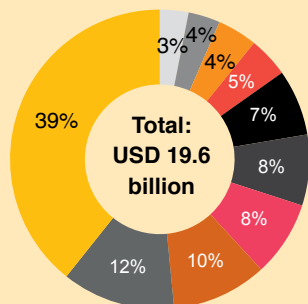
51 Department of Pharmaceuticals

52 Business Today, Department of Pharmaceuticals and Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. of India, and industry sources







Financial outlay

- High-efficiency solar PV modules
- White goods (ACs and Amp, LED)
- Textile products
- Telecom and networking products
- Advance Chemistry Cell (ACC) battery
- Electronic/technology products
- Automobiles and auto components
- Speciality steel
- Food products
- Pharmaceuticals



Objectives of the PLI Scheme

-  Competitive and efficient domestic manufacturing
-  Attract investment in core sectors and cutting-edge technologies
-  Enable economies of scale and exports
-  Make India a part of the global supply chain

Impact of the PLI Scheme

- 1** The minimum production value in the country – as an outcome of the PLI Scheme – stands to be around worth **USD 56 billion** in the next **five years**.
- 2** Cashback and incentives between **2–20%** of the incremental sales revenue (over the base year) and incremental exports revenue are expected to be generated, depending on the sector.
- 3** Potential to create **~14 million man-months'** worth of jobs directly from 2021–22

Source: Ministry of Chemicals and Fertilizers, and industry sources

Indirect impact on the chemical industry

Polymers, resins, fibres, APIs, bulk chemicals, paints, pigments, food additives, etc.

Revision in basic customs duty levied on naphtha, petrochemicals and chemicals

After the global economic slowdown due to the COVID-19 pandemic, the Indian chemical industry expected the Government to develop a framework in the Union Budget 2021 for bringing back the high growth trajectory. At a broader level, the Government outlined a strategy in line with its vision of building an Aatmanirbhar Bharat (self-reliant India). The budget has made some provisions to improve the competitiveness of the chemical industry.

A specific policy provision pertaining to the chemical sector was not expected as it is not administered or regulated directly by the Government. However, the changes proposed by the Government on the customs duty levied on raw materials used by domestic manufacturers result in reduced cost of inputs and correction of the inverted duty structure.

Local availability of petrochemical feedstocks, especially naphtha, has always been a challenge for the downstream chemical sector as over 80% of the refineries have forward integration in the production of petrochemicals. Competitiveness in the industry is likely to improve with the basic customs duty reduced from 4% to 2.5%.⁵³ Low-cost naphtha will make a way into the higher availability of olefins for petrochemical intermediates in C2, C3, C4/C6 value chains and may trigger new investments in naphtha-based crackers.

The focus of the Government is to continue removing anomalies and challenges in the indirect tax regime – especially the inverted duty structure – which impedes the Make in India policy. For this purpose, the customs duty rates on key raw materials and inputs/components has been rationalised.



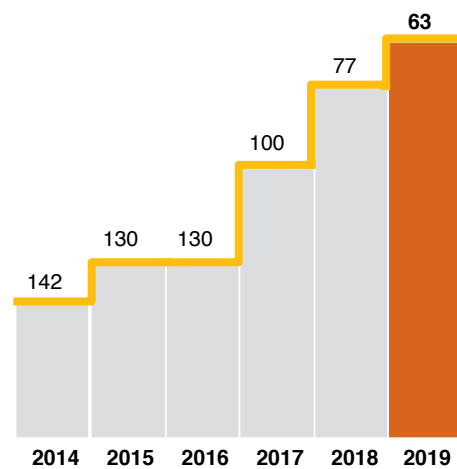
Ease of doing business in India

India has improved its Ease of Doing Business (EODB) ranking from 142 in 2014 to 63 in 2019. One of the objectives of the Make in India initiative is to create a more business-friendly environment in India. The efforts have yielded substantial results, with India jumping 79 places in the last five years.⁵⁴

EODB ranking

Key initiatives which helped improve India's rank:

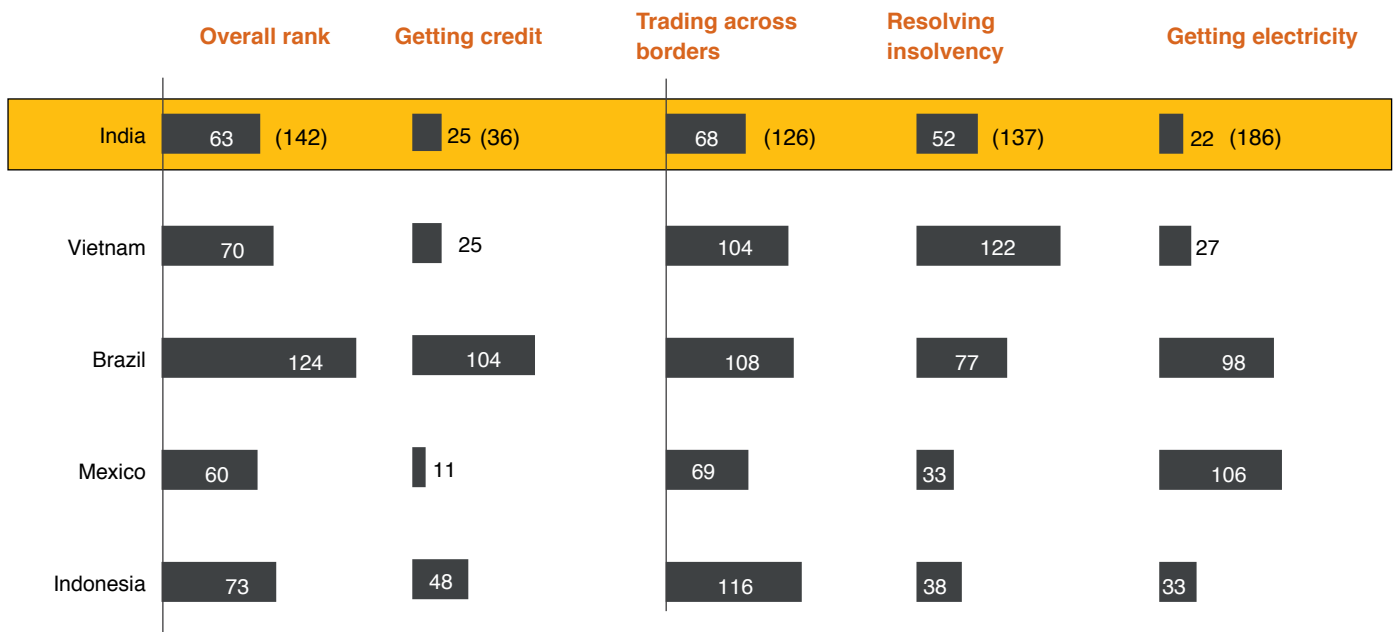
Process	Single form for company formation
Time	Fast-track approval for construction permits
Trade	Indian Customs Single Window project implemented
Legal	Commercial courts and appellate division of high courts established
Exit	Insolvency and Bankruptcy Code, 2016, for resolving insolvency



54 <https://www.doingbusiness.org/en/rankings>

EODB: Top parameter-wise rankings

For India, the 2014 rankings are given in brackets



*Lower rank in a given parameter represents better positioning of the respective country

Source: World Bank

India will continue to remain one of the world's fastest-growing economies. Recent policy interventions and economic measures have strengthened the positive outlook towards the Indian economy. Firms are looking to diversify their production bases and the markets they serve in the new normal. Their primary objective in a post-pandemic world is to bring in resilience in supply

chains. Several global oil and gas and chemical companies are considering setting up large manufacturing operations in India and the country is emerging as a suitable destination for its **good governance practices, high-quality infrastructure, robust trade and investment policy, strong regulatory framework and availability of quality labour at competitive prices.**



About FICCI

Established in 1927, FICCI is the largest and oldest apex business organisation in India. Its history is closely interwoven with India's struggle for independence, its industrialization, and its emergence as one of the most rapidly growing global economies.

A non-government, not-for-profit organisation, FICCI is the voice of India's business and industry. From influencing policy to encouraging debate and engaging with policymakers and civil society, FICCI articulates the views and concerns of industry. It serves its members from the Indian private and public corporate sectors and multinational companies, drawing its strength from diverse regional chambers of commerce and industry across states, and reaching out to over 2,50,000 companies.

FICCI provides a platform for networking and consensus building within and across sectors and is the first port of call for Indian industry, policymakers and the international business community.

Contacts



Rinky Sharma

Senior Assistant Director

Phone: +91-11-23487473

rinky.sharma@ficci.com



Samidha Hasija

Research Associate

Phone: +91-11-23487473

samidha.hasija@ficci.com

About PwC

At PwC, our purpose is to build trust in society and solve important problems. We're a network of firms in 155 countries with over 284,000 people who are committed to delivering quality in assurance, advisory and tax services. PwC refers to the PwC network and/or one or more of its member firms, each of which is a separate legal entity. Please see www.pwc.com/structure for further details.

Find out more about PwC India and tell us what matters to you by visiting us at www.pwc.in.

© 2021 PwC. All rights reserved.

Authors



Deepak Mahurkar

Partner and Leader, Oil and Gas Industry Practice
PwC India

Mobile: +91 98186 70797
deepak.mahurkar@pwc.com



Gaurav Gupta

Associate Director, Chemicals Practice
PwC India

Mobile: +91 98999 72220
gaurav.g.gupta@pwc.com



Nikhil Kalane

Consultant, Chemicals Practice
PwC India

Mobile: +91 97668 46822
nikhil.kalane@pwc.com



Moin Bhutto

Consultant, Chemicals Practice
PwC India

Mobile: +91 78019 79859
moin.bhutto@pwc.com

Contact us

Deepak Mahurkar

Partner and Leader, Oil and Gas Industry Practice
PwC India
deepak.mahurkar@pwc.com

Gaurav Gupta

Associate Director, Chemicals Practice
PwC India
gaurav.g.gupta@pwc.com



Data Classification: DC0 (Public)

This document does not constitute professional advice. The information in this document has been obtained or derived from sources believed by PricewaterhouseCoopers Private Limited (PwCPL) to be reliable but PwCPL does not represent that this information is accurate or complete. Any opinions or estimates contained in this document represent the judgment of PwCPL at this time and are subject to change without notice. Readers of this publication are advised to seek their own professional advice before taking any course of action or decision, for which they are entirely responsible, based on the contents of this publication. PwCPL neither accepts or assumes any responsibility or liability to any reader of this publication in respect of the information contained within it or for any decisions readers may take or decide not to or fail to take.

© 2021 PricewaterhouseCoopers Private Limited. All rights reserved. In this document, "PwC" refers to PricewaterhouseCoopers Private Limited (a limited liability company in India having Corporate Identity Number or CIN : U74140WB1983PTC036093), which is a member firm of PricewaterhouseCoopers International Limited (PwCIL), each member firm of which is a separate legal entity.

PD/March 2021-M&C 11318