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Government of India
Ministry of Chemicals & Fertilizers
Department of Chemicals and Petrochemicals



INVEST INDIA
NATIONAL INVESTMENT PROMOTION
& FACILITATION AGENCY

Chemicals in India: The Right Chemistry for Growth

March 2021





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सत्यमेव जयते

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Secretary
Government of India
Ministry of Chemicals & Fertilizers
Department of Chemicals & Petrochemicals

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MESSAGE

Chemical industry in India is witnessing exponential growth. Over the last five years, under the leadership of Hon'ble Prime Minister Shri Narendra Modi, the Government of India has taken significant initiatives under the "Make in India" umbrella to facilitate the development of this sector. Leading players, domestic and MNCs, have also committed to significant investments and capability building in this sector during this period. The government recognises the Chemical industry as a critical growth element of the Indian economy, where 100% FDI is permissible. The Indian government recognises the chemical industry as a key growth element and forecasts indicate likely increase of the chemical sector share to ~25 percent of the GDP in the manufacturing sector by 2025.

In the shifting post-Covid-19 global value chains, India has steadfastly and proactively cemented its position as a resilient economy with swift action-oriented decision-making. Unparalleled legislative and procedural reforms have been implemented in the last five years. In recent times, there has been a global shift towards Asia as the world's chemical manufacturing hub where India could lead the way forward. Over the coming decade, India offers significant opportunities: as a global export manufacturing hub for Specialty Chemicals and Agrochemicals, a large domestic demand hub for Petrochemicals, Specialty Chemicals, and Agrochemicals. India's large population, sizeable domestic market, low penetration of several consumer categories, large supply of talented workforce, and pro active efforts by the Government of India provide a compelling value proposition for Global and Indian companies in the Chemical sector.

In this context, I appreciate the hard work and effort from Invest India and Kearney in bringing out this report, "Chemicals in India: The Right Chemistry for Growth". This document highlights key triggers and drivers that will reshape the chemical industry in future and drive potential scenarios. I am confident that this report will serve as a valuable guide to the India opportunity for both investors and companies looking to invest in the Chemical sector.


(Yogendra Tripathi)

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FOREWORD

Under the leadership of Hon'ble Prime Minister Shri Narendra Modi, India has spearheaded a range of efforts to introduce fundamental and modernizing changes to the economy such as increasing digital transactions, cutting red tape, increasing efficiency, introducing the Goods and Services Tax, among others. This rethinking and restructuring of the economy created room for growth and improvement in areas such as Petrochemicals, Specialty Chemicals and Agrochemicals.

India's chemicals sector is one of the largest in the world and its output is expected to reach USD 300 Bn by 2024-25. India is successfully running multiple central/state level incentive and cluster schemes which gathered a tremendous response from the global ecosystem. To promote investments in the sector, the government is implementing four Petroleum, Chemical and Petrochemical Investment Regions (PCPIR) in the country which will be providing investors with a transparent and investment-friendly policy and facility regime to attract investment of around INR 7.63 lakh cr.

The value additions in the petrochemicals and specialty chemical chain offer immense possibilities and cater to the needs of textiles and clothing, agriculture, packaging, infrastructure, healthcare, furniture, automobiles, information technology, power, electronics and telecommunication, irrigation, drinking water, construction, and a variety of other articles of daily and specialized usage amidst other emerging areas. In recent times, the efforts are leading to a global shift towards Asia as the world's chemical manufacturing hub. This report covers the key topics of why to invest in Indian chemical industry, where to invest and how to win in India's chemicals sector, further covering national and state level policy enabling environment. I hope you find it informative and useful!



Deepak Bagla

MD & CEO

Invest India

PREFACE

This report on the Indian Chemicals Industry is a part of Invest India and Kearney's endeavor to highlight the opportunities and advantages of investing in the Indian chemicals industry.

India is at the cusp of a manufacturing revolution, and the Indian Chemicals sector holds the potential to emerge as one of the leading global destinations for Chemicals manufacturing. The Covid-19 pandemic has accelerated several shifts in global trade and supply chains and has created the opportunity for India to rapidly build scale and capabilities in all segments of the Chemicals industry.

India's key advantages include its demographic dividend and the associated availability of skilled workforce, its rapidly growing middle class, a healthy long-term GDP growth outlook, and several initiatives from the Government of India to help develop the Chemicals sector's global competitiveness.

Both Invest India and Kearney are mutually grateful for the opportunity to have partnered for this report. We thank the Department of Chemicals and Petrochemicals for their support in this endeavor. It has been an insightful experience for both our teams to conduct the research to develop this report. We are hopeful that this report will be a useful reference for Indian and Global investors and companies looking to invest in India's chemicals sector. We look forward to engaging and working with all stakeholders across the Indian Chemicals industry in enabling the next wave of growth in this sector.



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EXECUTIVE SUMMARY

SHIFTING GLOBAL VALUE CHAINS IN CHEMICALS

Global chemicals corporations have historically consolidated supply chains to a significant extent, with several products now getting sourced from only one or two countries. This concentration of supply chains was driven by the pressure to achieve lower costs, the need to produce larger volumes, and stricter environmental regulations in developed countries. However, over the last few years, Global Value Chains (GVCs) have evolved rapidly. The next wave of value migration in Chemicals, from China to markets like India, is being driven by global trade tensions, tightening environmental regulations and rising labor costs in China, a potential overall diversification in global manufacturing ('China+1'), and the impact of the Covid-19 pandemic.

THE INDIA CHEMICALS OPPORTUNITY

India's Chemicals sector is on strong growth trajectory for the coming decade. Drivers for this trajectory include a strong growth in domestic consumption, the emergence of a potential China + 1 strategy in global supply chains, the availability of cost-effective and skilled manpower, and India's rapidly improving policy and regulatory environment. The COVID-19 pandemic did result in a short-term demand shock, but the long-term growth story continues to remain intact. In our assessment, India is a highly attractive destination for the Global Chemicals Industry on multiple key parameters when compared to other locations such as the Middle East, Latin America, and South East Asia

WHERE TO INVEST IN INDIA

India offers attractive investment opportunities across all segments of the Chemicals industry. In Petrochemicals, India's opportunity will be led by its large domestic demand, the need to build local capacity for key building blocks and intermediates, and a continued focus on import substitution. We anticipate that India's domestic demand can support the addition of one world scale cracker every year. In Specialty and Agrochemicals, we see a substantial opportunity for both exports as well as domestic sales. In exports, India is fast emerging as a destination of choice for the sourcing/contract manufacturing of specialty and agrochemical ingredients and intermediates. In the domestic market, the low levels of Chemicals penetration across agriculture as well other end markets, combined with the accelerated growth and shifting demand patterns in these markets, help create a favorable demand outlook for manufacturers

HOW TO WIN IN INDIA

We identify five key imperatives for Indian and Global Chemicals companies to win in India: place the right portfolio bets, embed sustainability into ways of working, adopt differentiated go-to-market models, undertake a digital-enabled P&L RESET, and strengthen M&A and partnership capabilities.

IN CONCLUSION

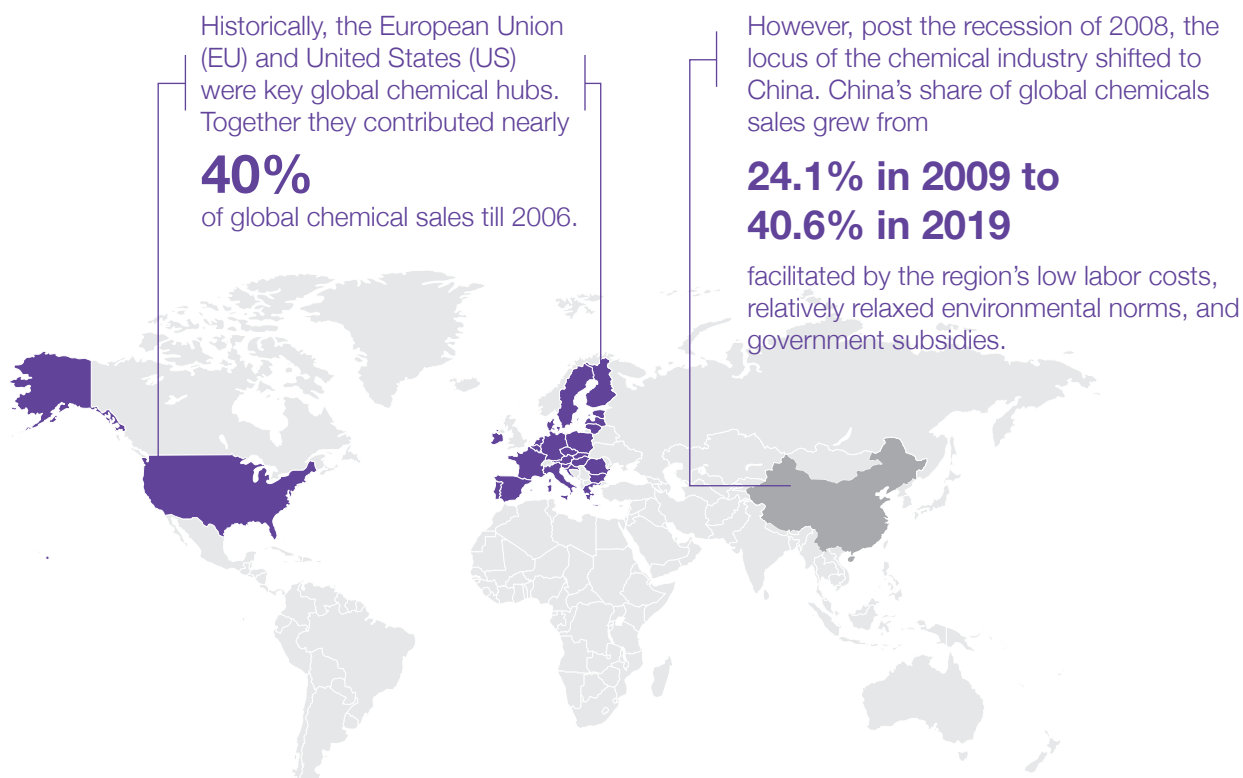
With the Indian economy projected to emerge as one of the Top 3 global economies, and with India projected to have largest working age population across the globe, the time is ripe for global Chemicals MNCs to look at the India opportunity with a fresh lens, and capitalize on the attractive opportunities presented by the nation.

SHIFTING GLOBAL VALUE CHAINS: THE OPPORTUNITY FOR INDIA

- Global chemicals corporations have historically consolidated supply chains to a significant extent, with several products now getting sourced from only one or two countries. This concentration of supply chains was driven by the pressure to achieve lower costs, the need to produce larger volumes, and stricter environmental regulations in developed countries
- However, over the last three years, Global Value Chains (GVCs) have evolved rapidly. Four factors have helped initiate the next wave of value migration in Chemicals, from China to markets like India: Global trade tensions and a potential diversification in global manufacturing from China; Tightening environmental regulations in China; Rising labor costs in China; and, the Impact of the Covid-19 pandemic

Shifting Global Value Chains in Chemicals: The Impact of Trade, Environment, Costs, and the Covid-19 Pandemic

Over the last 5 years, a host of factors have helped initiate the next big shift in Global Value Chains for Chemicals. The focus of Chemicals manufacturing is beginning to shift away from China as well as developed nations of the West to newer, attractive destinations like India.



By 2019, the shift had largely been complete – with China emerging as the sole or dominant source for several classes of chemicals (including pharmaceutical APIs and critical intermediates).

However, in the last few years, the following four factors have helped initiate the next wave of value migration in Chemicals, from China to markets like India:



FACTOR 01

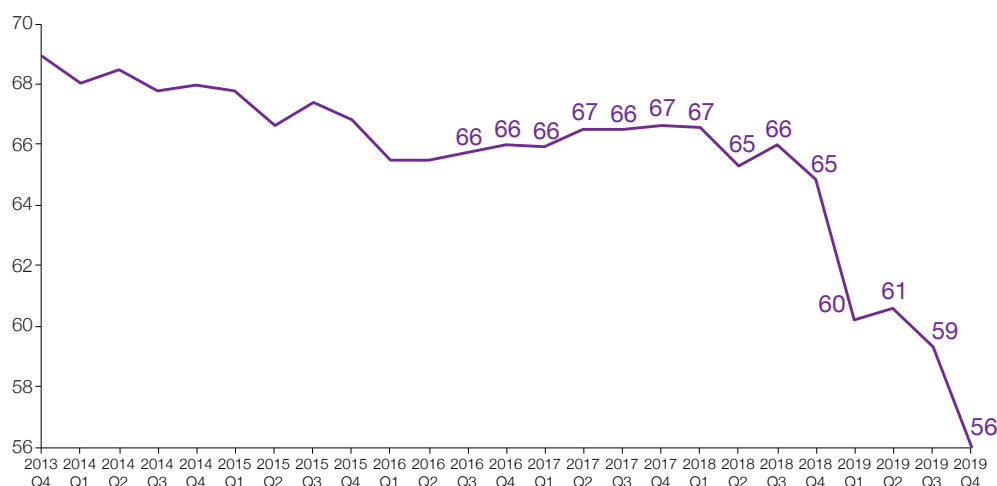
GLOBAL TRADE TENSIONS AND A POTENTIAL DIVERSIFICATION IN MANUFACTURING FROM CHINA

The US–China trade tensions of the past three years are a prominent example of how growing tensions in global trade policy have impacted Global Value Chains. US tariffs on manufactured goods imports from China reached an all-time high as the number of goods subject to tariff and the scale of tariffs rapidly increased from 2018 to 2020, with the value of duties collected by the United States on **Chinese imports growing from about 2% to about 13% of total import value.**

As a consequence of these trade barriers, from 2018 to 2019, **US manufacturing imports from China declined by 17 percent, a total drop of roughly USD 90 billion**, with companies actively adapting to the trade policy disruption by reducing imports of manufactured goods from China while increasing manufacturing imports from other Asian countries such as Vietnam and Mexico. The Kearney analysis below showcases the seasonally adjusted share of US imports from China as a percentage of total US imports from 14 low-cost Asian countries. In 2013, the year in which Kearney baselines its analysis, China held 69% of the share. As of Q4 2019, its share was down to 56%—a decrease of almost 900 bps between 2018 and 2019.

Exhibit 1:

Seasonally adjusted share of US imports from China, as a % of total US imports from 14 Low-Cost Asian Countries (%; 2013 Q4 – 2019 Q4, 100 bps = USD 8 Billion)

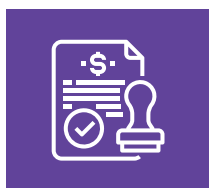


China Imports Share Decrease

Q4'13	Q4'19
Δ bps	Δ \$B
-1227	-\$93B

Source: United States International Trade Commission; Kearney

In the 2018–2019 shift of manufacturing out of China to other low-cost Asian countries, almost half (about 46%) was absorbed by Vietnam. A continuation of trade policy tensions, combined with the other factors described below, could create another window of opportunity for nations such as India to gain from the incremental shift in manufacturing from China.



FACTOR 02

TIGHTENING ENVIRONMENTAL REGULATIONS IN CHINA

The Chinese government started implementing stricter environmental protection norms from January 2015.



In 2017, an estimated **40%** of the chemical manufacturing capacity in China was temporarily shut down for safety inspections,



with over **80,000** manufacturing units charged and fined for breaching emission limits. China's Ministry of Environmental Protection enforced strict penalties on several polluting chemicals industries.

In 2016, the Government of Jiangsu, China, issued a development plan for the Yangtze River Delta Economic Belt. With several chemical manufacturers located near the river (owing to proximity to ports), pollution in the river had reached dangerous levels.

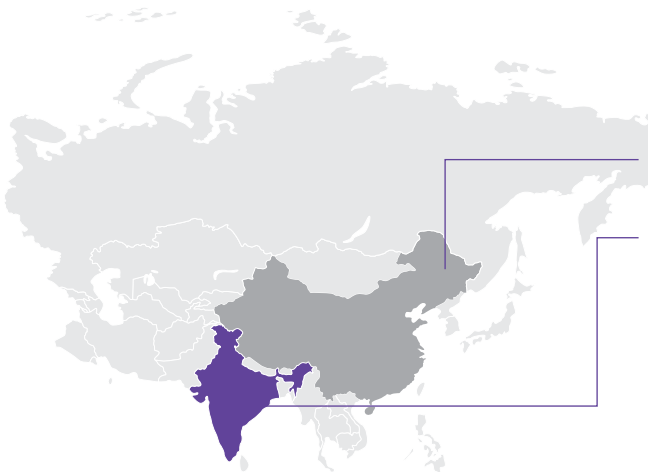
As per the plan, the government set a goal of **shutting down or relocating nearly 1,000 chemical plants that either used older technology or were located near the Yangtze River, within three years (2018-2020). By 2020, 134 chemical firms were to be shut down, relocated, or renovated.** No factories were allowed within 1 km of the river.

Also, the Chinese government mandated the construction of compulsory effluent treatment plants and imposed a green tax on the chemicals industry to combat pollution. These measures have resulted in an overall increase in the cost of production, due to capital expenses incurred towards effluent treatment as well as, a rise in cost of compliance. The relatively high cost impact on smaller non-integrated plants operated by medium- and small-scale players has already impacted production in the medium term and thereby overall chemical exports.



FACTOR 03

RISING LABOR COSTS IN CHINA



The labor cost (hourly cost of compensation) in China was lower than that of India till 2007.

However, over 2005-2015, the average labor cost in **China increased nearly 19-20% CAGR, against 4-5% CAGR in India.**

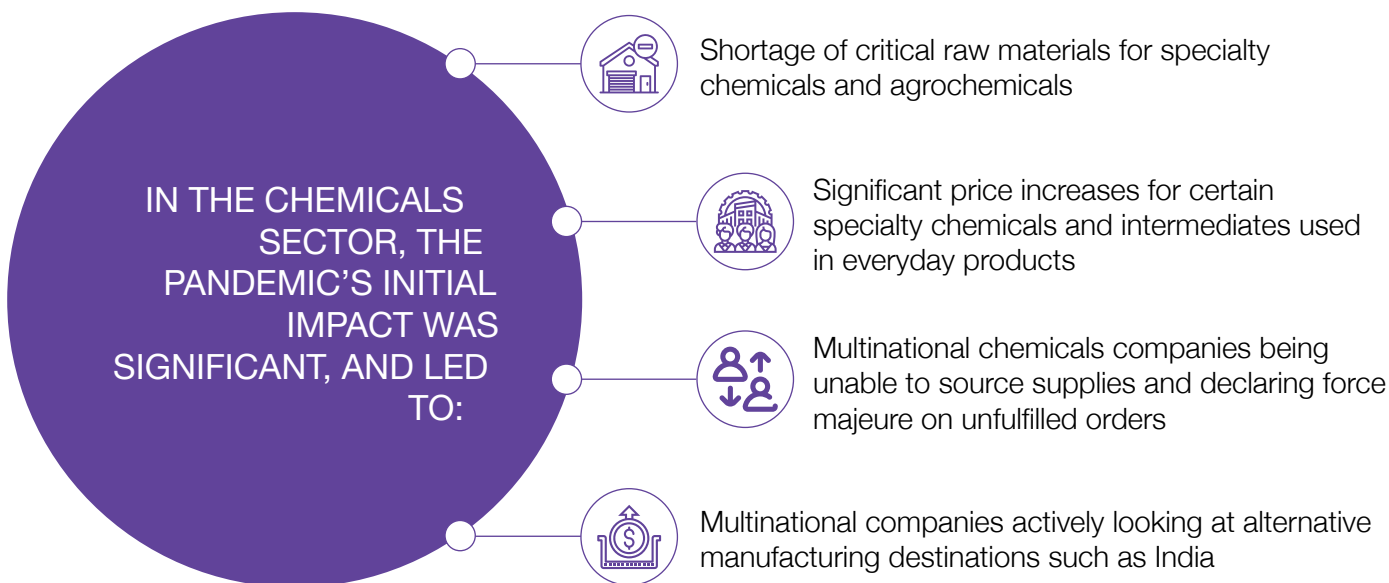
In fact, over the last five years, this cost has more than doubled compared with India, rendering Chinese manufacturers' uncompetitive vis-à-vis India in terms of labor cost.



FACTOR 04

THE IMPACT OF THE COVID-19 PANDEMIC

The COVID-19 global crisis continues to disrupt sectors with severe consequences for society, businesses, consumers, and the global economy. The pandemic has sensitized corporate and government leaders to the escalating frequency of global disruptions. Within the past year, in addition to COVID-19, Global Value Chains have been impacted by trade wars, natural disasters, geopolitical uncertainties, and massive cyberattacks.



In the post-pandemic world, more corporate leaders are reorienting to new approaches that balance the need for **cost competitiveness** with the need for **risk competitiveness**. With resilience emerging as the watchword for global supply chains, more companies are adopting strategies that focus on dual or diversified sourcing, reducing supply chain complexity, and localizing manufacturing where feasible.



THE INDIA CHEMICALS OPPORTUNITY: WHY INVEST?

- India's Chemicals sector offers a highly attractive growth opportunity in the coming decade. Four factors enable this rapid growth trajectory: Strong growth in domestic consumption, the emergence of a potential China + 1 strategy in global supply chains, the availability of skilled manpower and India's strong labor cost advantage, and India's rapidly improving policy and regulatory environment
- The COVID-19 pandemic resulted in a short-term demand shock, but the long-term growth trajectory continues to remain intact. In our assessment, India is a highly attractive destination for the Global Chemicals Industry on key parameters when compared to locations such as the Middle East, Latin America, and South East Asia

The Indian chemical industry is a rising star on the global chemical landscape, having seen strong growth at



7-8%

for petrochemicals



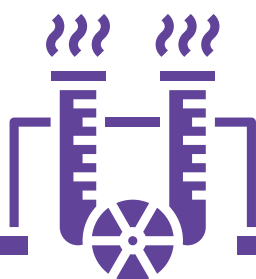
10-12%

for specialty chemicals

over the last 10 years

Market fundamentals remain strong to support sustained growth over the next decade, driven by significantly underpenetrated markets, robust GDP outlook, rising income levels, and a significant export opportunity driven by the China+1 strategy of global players.

While the COVID-19 pandemic temporarily slowed down the industry's growth trajectory, most chemical end use sectors have shown strong rebound in Q3 and Q4 of FY21. The long-term growth story of the Indian chemical sector remains intact with an **estimated USD 60 billion opportunity across specialty chemicals segments over the next 8-10 years**, and the need for 10 new world-scale crackers by 2030 to cater to the rising domestic demand and export opportunity.



The highly diversified Indian chemical industry, spanning
OVER 80,000 COMMERCIAL PRODUCTS,
is the
SIXTH LARGEST PRODUCER
of chemicals in the world.

The industry is expected to grow at a

CAGR OF 10%+ TO REACH USD 300 BILLION USD BY 2025, UP FROM THE CURRENT USD 178 BILLION USD AT THE END OF FY 20.

The sector provides significant opportunity for both existing as well as new players, driven by four key factors.

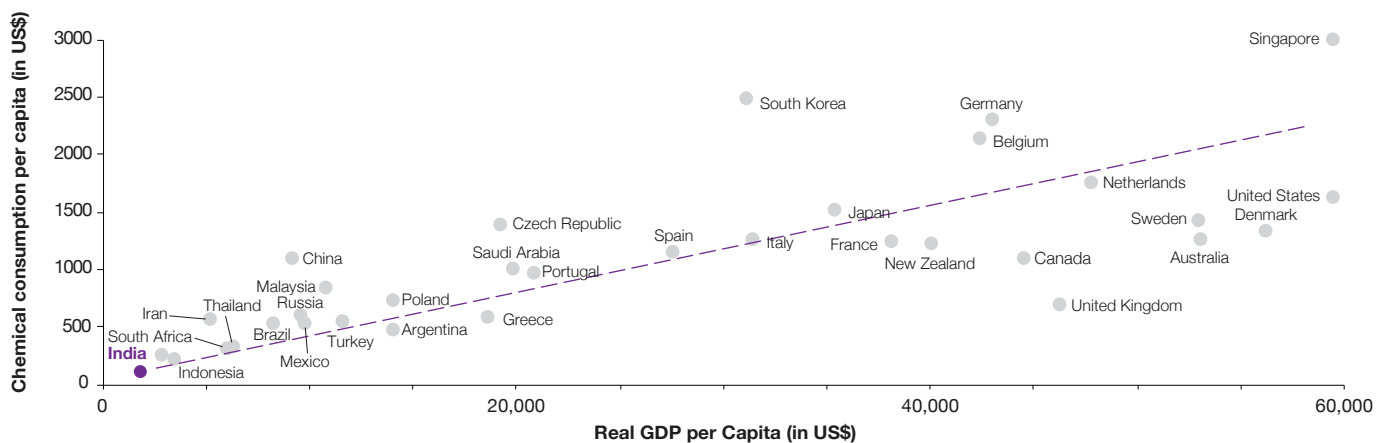
Four key drivers for future growth in Indian chemical sector

1. Strong growth in domestic consumption

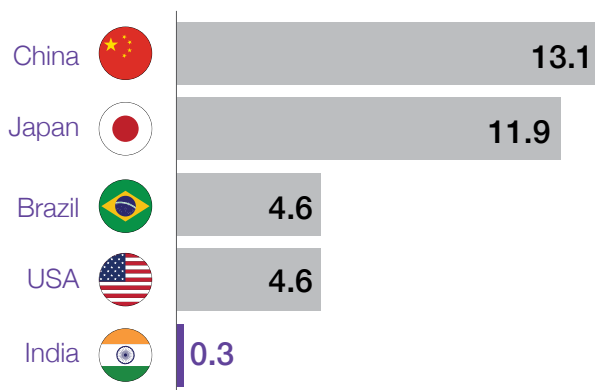
Chemical consumption is strongly correlated to GDP growth and India's current per-capita consumption (~\$110) trails significantly compared to other developed markets (Exhibit 2) – indicating significant headroom to grow. With a robust long term GDP outlook, growing middle class, and increasing urbanization, India's domestic chemical consumption is likely to grow at a rapid pace over the coming decade.

Exhibit 2:

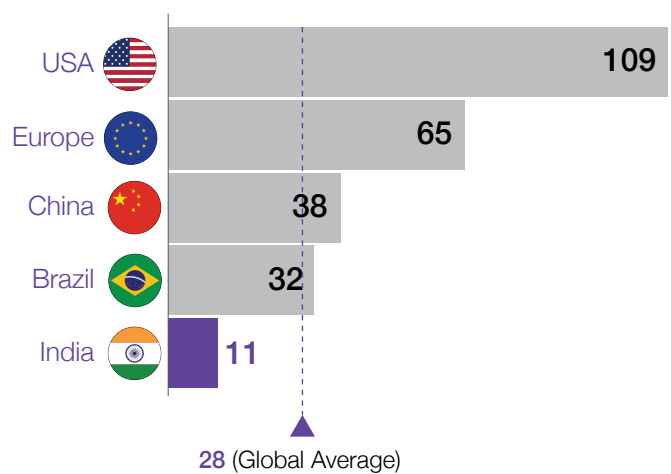
India remains underpenetrated in chemicals, with significant headroom for growth.



Pesticide usage per hectare (in Kg/ha)



Plastics consumption per capita (Kg)



Source: Secondary research, Kearney

2. China+1 strategy gaining momentum

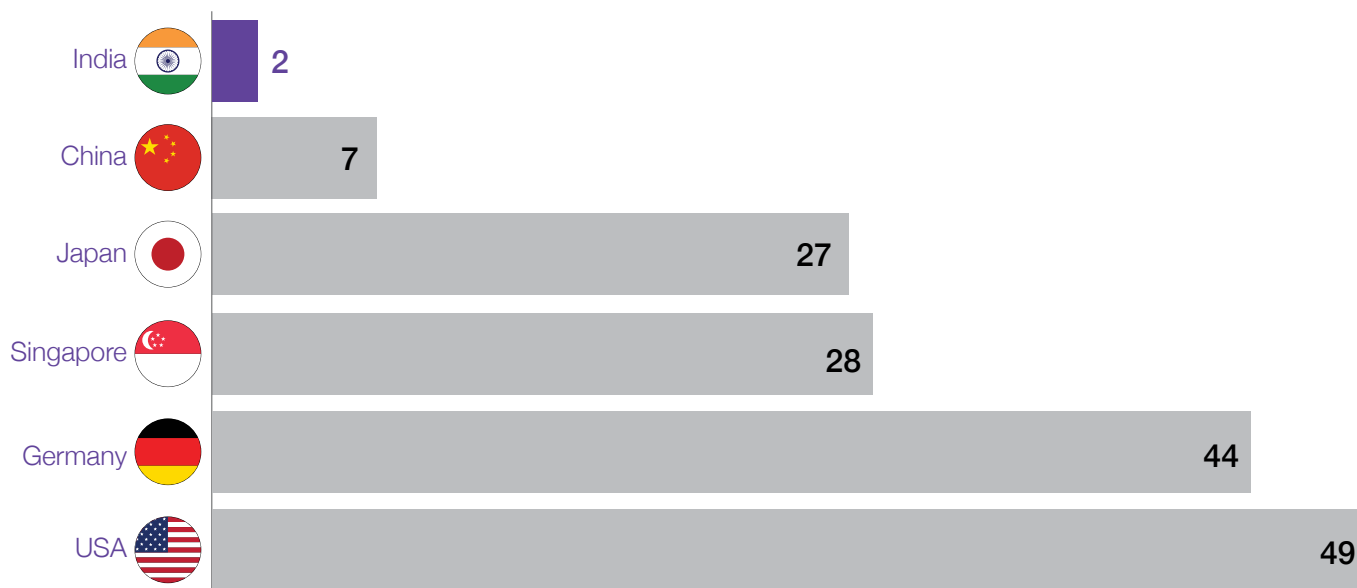
As we saw in the previous chapter, global Chemicals manufacturing had already begun to shift from China starting 2017. The US-China trade wars and the COVID-19 pandemic have potentially accelerated this shift. As global chemical companies look to de-risk their supply chains, there is an enhanced interest in markets like India that could offer a resilient yet complementary alternative to China. India has already benefitted from this trend, with select chemical sectors such as agrochemicals, dyes & pigments seeing increased export demand. This export opportunity is likely to grow further as domestic players further equip themselves to cater to this demand trend.

3. Availability of skilled manpower and strong labor cost advantage

India has abundant skilled manpower, with the country producing one of the largest numbers of STEM (Science, Technology, Engineering, Mathematics) graduates globally. Every year, more than 30% of India's 2.5+ million graduates receive a STEM degree. Additionally, India has the lowest cost of labor among the top six chemical producers. For e.g., labor costs in India are 1/3rd of China even after adjustments for productivity (Exhibit 3). These factors can help scale India's chemical production in a cost-effective manner.

Exhibit 3:

Manufacturing Labor Costs Comparison 2020 (\$/Hour)



Source: EIU, Invest India, Kearney

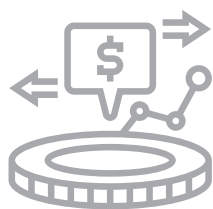
4. Improving policy and regulatory environment

The Chemicals sector has a strong strategic importance for the national economy, as chemical products find applications in a wide variety of industries ranging from agriculture to industrial colorants. In addition, the chemical sector has a strong GDP multiplier effect, with every dollar invested in chemicals resulting in \$4-5 in downstream and associated industries.

India currently imports around USD 45 bn/year of chemicals, and this is expected to grow significantly considering growing domestic demand. Given its strategic importance, the Government of India has prioritized the Chemicals sector in its push towards 'Atmanirbhar Bharat'. Several favorable policy measures have been announced to shore up domestic production of chemicals. For e.g., 100% FDI has been allowed under the automatic route in the Chemical industry for a vast majority of chemicals. Lower effective tax rates have been announced for companies incorporated after Oct 2019 and commencing production before March 2023. Four petrochemical and chemical investment zones (PCPIR) are under development, and policy is being formulated for six plastic parks. Skill development has been a major focus with the establishment of CIPET & CoEs for chemical industry. Production linked incentives (PLI) are being actively evaluated for the sector. Initiatives for improving ease of doing are being taken up – for e.g. launching of first-of-its kind GIS-enabled national land bank portal with details of logistics, land, rail & air connectivity, tax incentives, drainage system, power supply and raw material availability in industrial belts. In addition to these center-driven initiatives, individual state governments are taking additional measures to promote chemical production (as discussed later in this report).

Exhibit 4:

Government of India's Enabling Policies and Investments



\$800 M

Project Investment Pipeline for Chemical Industry as part of India Investment Grid



100%

FDI allowed under automatic route



79

Improvement in Ease of Doing Business ranking (142 → 63) in last 5 years



INR 7.63 Lakh Crore (~\$ 117 Bn)

Cumulative target investment in PCPIR's through 2035

Source: Secondary Research, Kearney

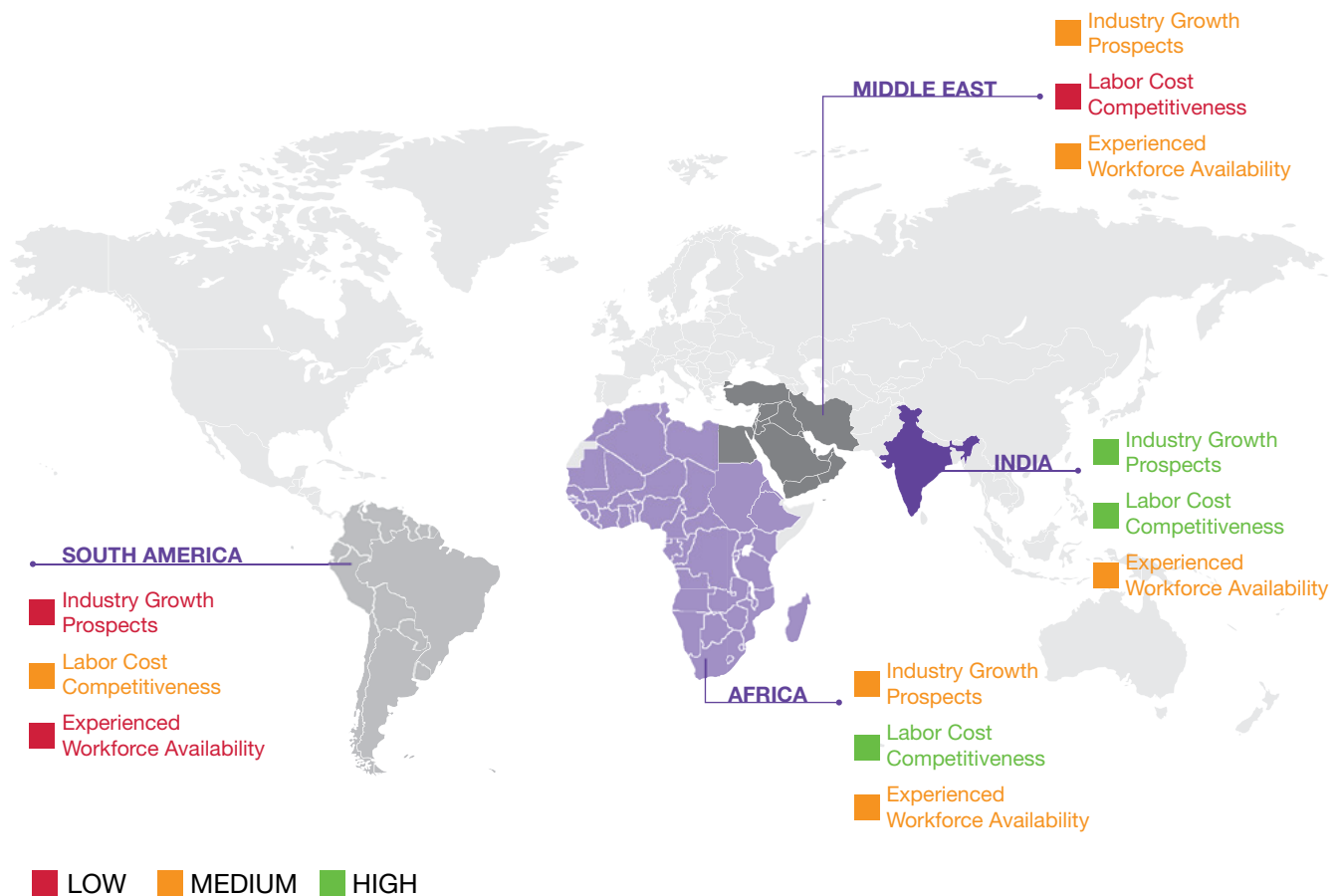
The COVID-19 pandemic resulted in a short-term demand shock, but the long-term growth story continues to remain intact

The COVID-19 pandemic has had varying levels of impact on demand across different end-segments. While segments such as Textile, construction & infrastructure, automotive and consumer durables saw a significant demand shrinkage (10%+), other segments such as FMCG, agriculture, pharma, hygiene, F&B remained resilient. Most segments recovered to pre-Covid levels by Q3 FY21 and the Chemicals sector is now back on a robust footing. Even on the supply front, major chemical production units have come back strongly post lockdown and are operating close to pre-COVID levels since October 2020. Overall, we believe that Indian Chemical sector has successfully moved past the COVID impact, and long-term growth trajectory continues to remain intact.

The exhibit below illustrates our assessment of India as one of the most attractive alternative destinations for the Global Chemicals Industry.

Exhibit 5:

Our assessment indicates India as the most promising alternative destination for the Global Chemicals Industry



Source: Kearney

India offers a strong value proposition for investment in chemicals

India is highly attractive for chemicals investment driven by robust domestic demand growth, availability of skilled and cost-efficient manpower, and improving regulatory & policy environment. The sector has been a strong outperformer compared to global chemical industry historically and investors continue to factor in strong optimism as seen by 2X multiple compared to global peers.

Opportunities exist across all key sub-segments



PETROCHEMICALS



SPECIALTY CHEMICALS



AGROCHEMICALS:



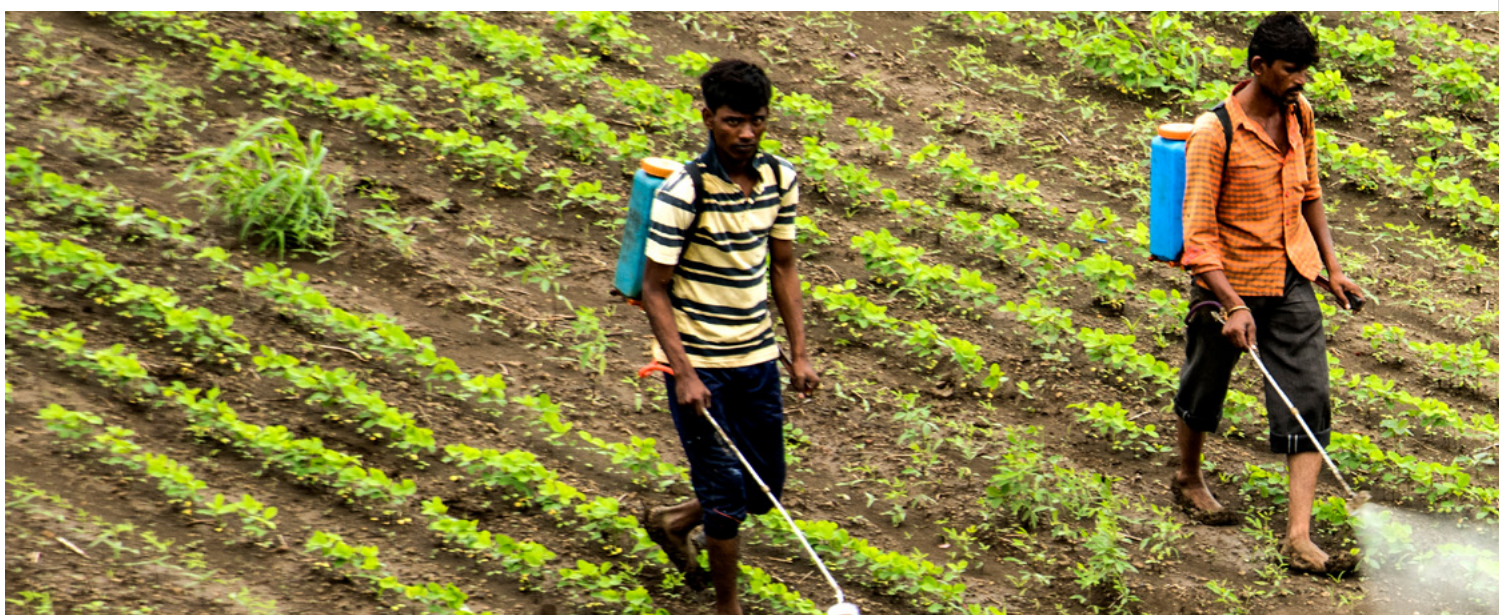
India needs to add one world scale cracker every year to cater to its growing demand.



The specialty chemicals subsegment is expected to create opportunities worth **USD 60 billion** in the coming decade and

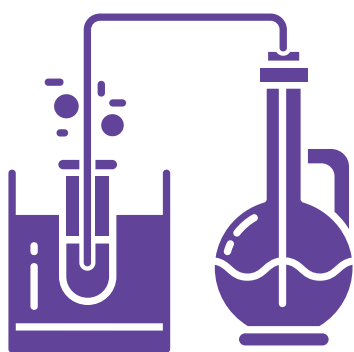


The proposed large-scale agricultural reforms combined with pressures to increase agriculture output to feed growing population will boost the consumption of agrochemicals



WHERE TO INVEST IN INDIA: OPPORTUNITY SPACES IN PETROCHEMICALS, SPECIALTY CHEMICALS, AND AGROCHEMICALS

- India offers attractive investment opportunities across all segments of the Chemicals industry: Petrochemicals, Specialty Chemicals, and Agrochemicals
- In Petrochemicals, India's opportunity will be led by the large domestic demand, the need to build local capacity for key building blocks, and a continued focus on import substitution. We anticipate that India's domestic demand can support the addition of one world scale cracker every year
- In Specialty and Agrochemicals, we see a substantial opportunity for both exports as well as domestic sales. In exports, India is fast emerging as a destination of choice for the sourcing as well as contract manufacturing of specialty and agrochemicals. In the domestic market, the low levels of Chemicals penetration across agriculture as well other end markets, combined with the accelerated growth and shifting demand patterns in these markets, help create a favorable demand outlook for manufacturers



The Indian chemical industry is set to grow at a

10%+ CAGR

over the next decade to become a

USD 300 BILLION SPACE,

driven by two major growth planks of rising domestic consumption and increasing export opportunity. Across the three major sub-segments (petrochemicals, specialty chemicals and agro-chemicals), different nuances define future growth potential and subsequent pathways.





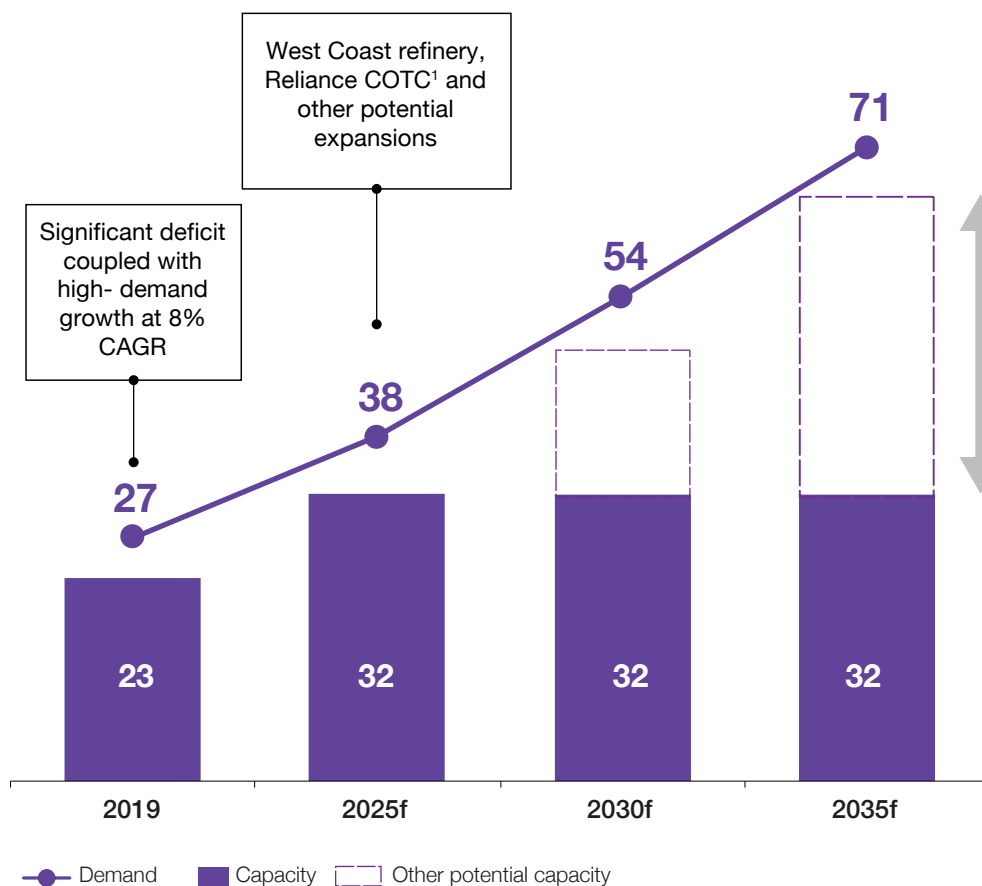
Petrochemicals: Investment opportunities in building blocks and intermediates to drive self sufficiency

With domestic demand projected to grow at around 8% CAGR over the next decade, India will need incremental capacities across a wide variety of petrochemicals. At present, petrochemicals account for a substantial share of India's chemicals imports, with the highest capacity shortfall in Petrochem intermediates (e.g. styrene, ethylene oxide, propylene oxide, etc.). (Exhibit 6, 7).

Exhibit 6:

India's strong market fundamentals will drive rapid growth in petchem demand

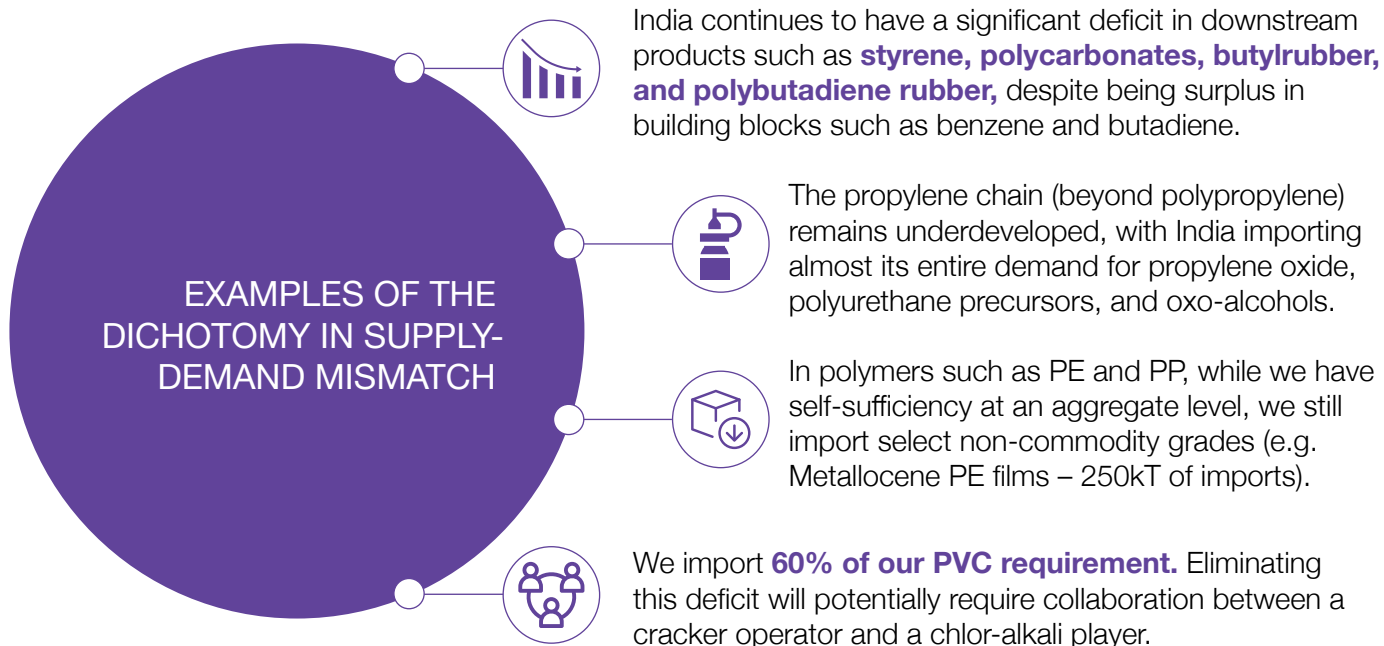
Petrochemical supply and demand in India(million metric tons)



1. Reliance crude oil to chemicals

Sources: Nexant; Kearney

Given this demand-supply mismatch, several new greenfield investments and expansions have been announced by domestic and international players (e.g. HRRL, HMEL, Nayara, IOCL). India's petrochemical capacity is projected to grow by more than 40 percent over the next five to seven years. Factoring in the substantial capacity addition already announced, we anticipate a dichotomy in India's petrochemical markets, with oversupply in select products, and a continuing deficit in several others. Exhibits 7(a) and 7(b) show the current and projected supply-demand situation for petrochemical products.



Overall, we see several key attractive, investible opportunities to drive self-sufficiency in India's petrochemicals sector.

Exhibit 7(a):

Petrochemicals Import vs. Demand (2019): India remains deficit in several key petchem derivatives

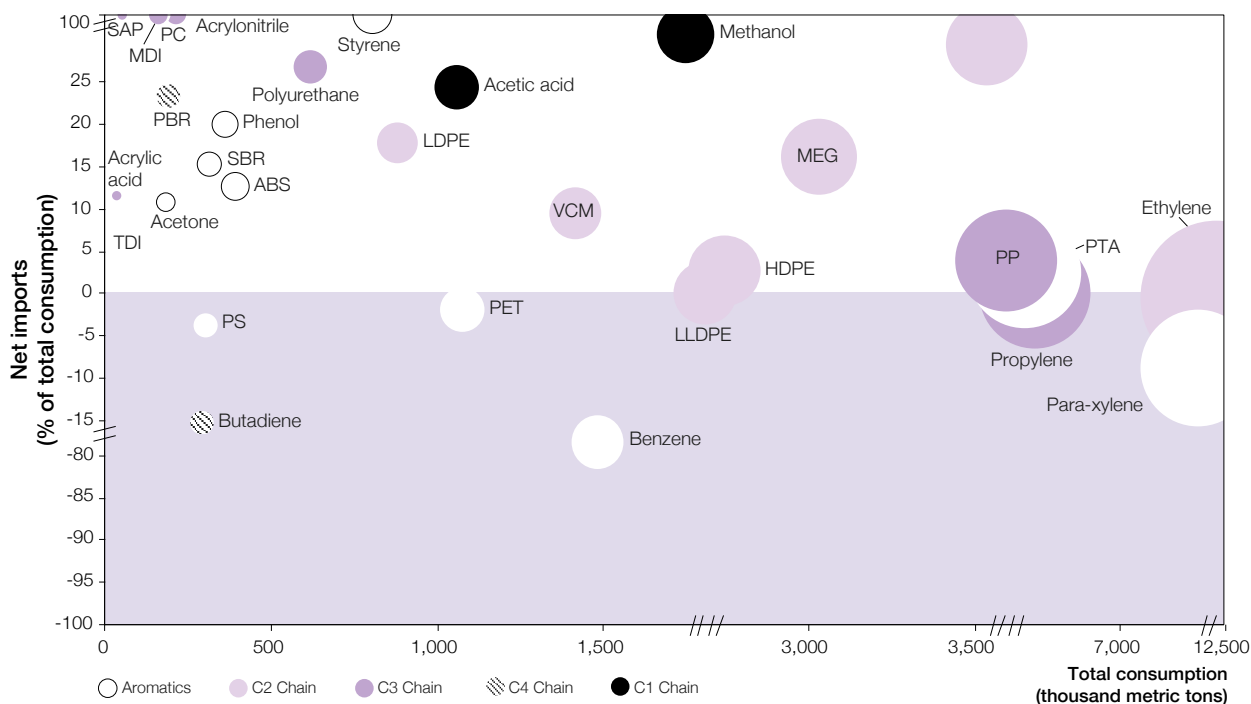
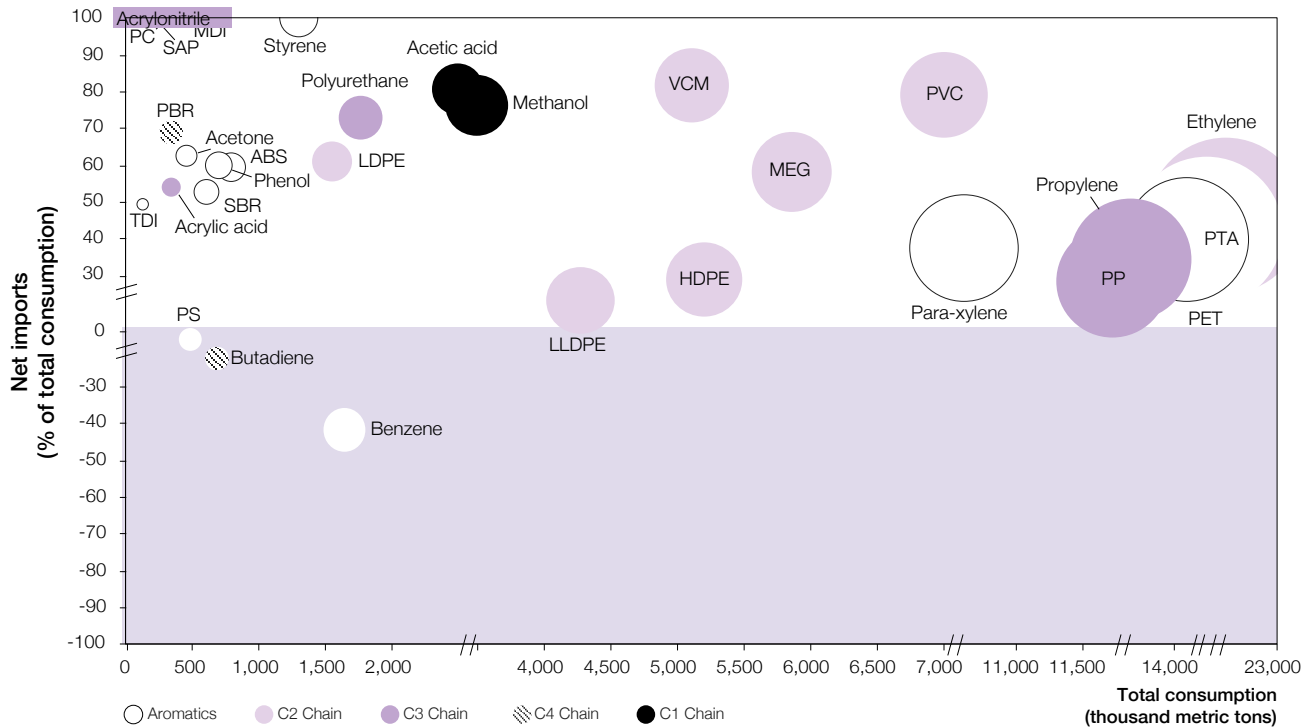


Exhibit 7(b):

Petrochemicals Import vs. Demand (2030): India's deficit is projected to continue into the future



1. Equivalent demand/imports of downstream products taken for building blocks (ethylene, propylene, butadiene, benzene, para-xylene)

2. C1 = methanol, C2 = ethylene, C3 = propylene, C4 = butadiene, aromatics = benzene, toluene and xylenes

PBR – polybutadiene rubber, SBR – styrene butadiene rubber, ABS – acrylonitrile butadiene styrene, MEG – monoethylene glycol, VCM – vinyl chloride monomer

PVC – polyvinyl chloride, PET – polyethylene terephthalate, PTA – purified terephthalic acid, PP – polypropylene, PS – polystyrene, LDPE – low-density polyethylene, LLDPE – linear low-density polyethylene, HDPE – high-density polyethylene, MDI – methylene diphenyl diisocyanate, TDI – toluene diisocyanate, PC – polycarbonate, SAP – super absorbent polymers

Notes: Bubble size represents Indian market size ('000 MT). Net imports = imports – exports

Sources: Nexant, Bloomberg, Independent Commodity Intelligence Services; Kearney



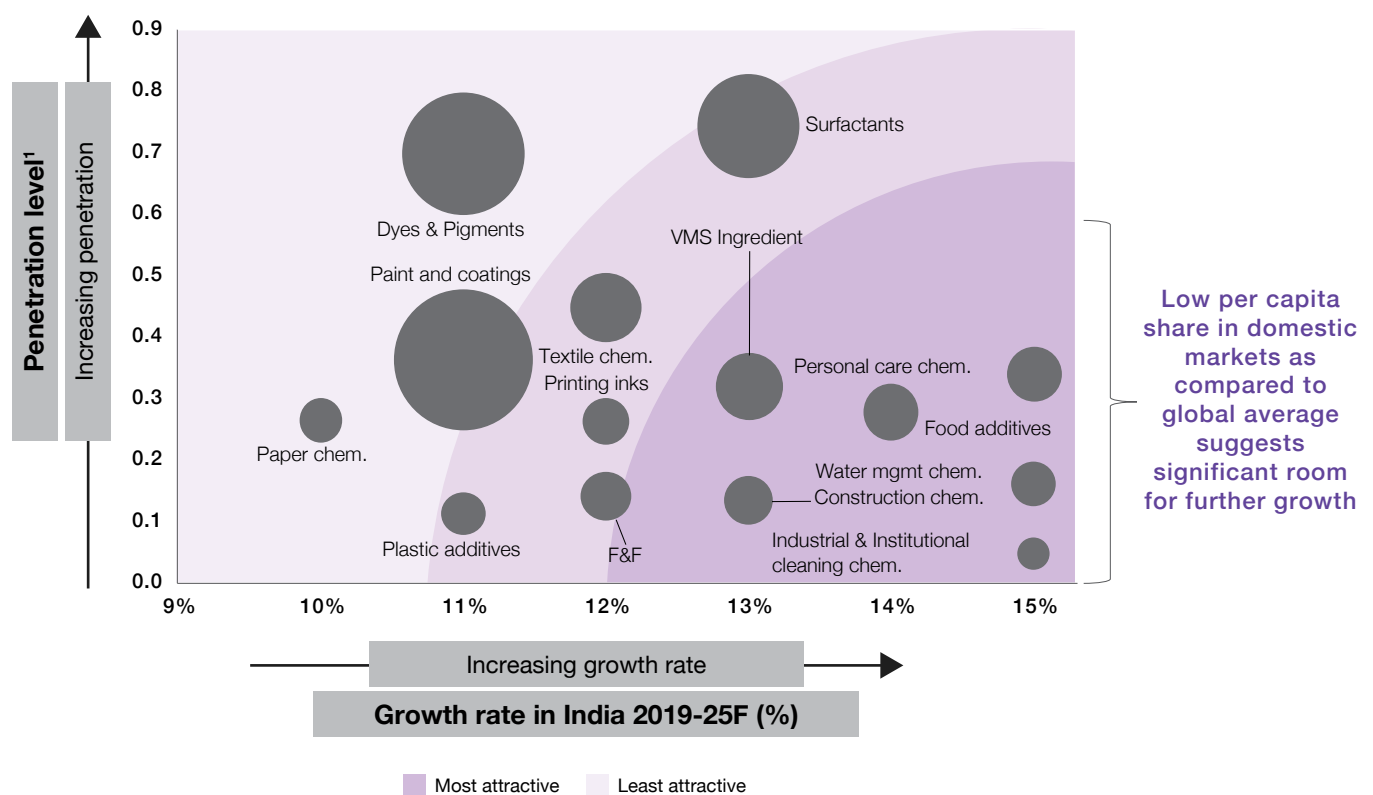


Specialty Chemicals: Robust growth in domestic end-markets and export potential provide tremendous investment opportunities

In the domestic market, India remains underpenetrated in most specialty chemical segments. However, increasing population, rising urbanization, and growing income levels are driving strong growth in all key end markets (Exhibit 8). This bodes well for domestic demand outlook for specialty chemicals.

Exhibit 8:

Penetration level vs. Growth rate across specialty chemicals end markets in India



1. (India per capita/Global per capita) based on share of market value

Source: Kearney

In the export markets, India has established a strong presence driven by its low-cost manufacturing, availability of skilled labor, reputation for IP protection and strong process optimization capabilities. **Specialty chemicals already account for more than 50% of total chemical exports from India. However, India's specialty chemical export still account for less than 5% of global specialty chemical trade.** With significant post-pandemic shifts in global Chemicals supply chains, and the potential adoption of a China+1 strategy by global Chemicals players, there is significant headroom for India to expand its global exports.

While opportunities exist across the board, select end markets stand out due to a combination of factors such as growth potential, changing consumer patterns, and the existence of a robust domestic as well as export potential. These include Food & Nutrition ingredients (Food ingredients, F&F and VMS), hygiene & personal care (incl. institutional cleaners), water treatment and construction chemicals as illustrated in Exhibit 9.

Exhibit 9:

Key specialty chemical end market opportunities for India

Key End Markets for Specialty Chemicals	Global		India		India Penetration Ratio ¹	Key Trends
	Market Size (\$ bn, 2019)	Growth Rate (2019-25)	Market Size (\$ bn, 2019)	Growth Rate (2019-25)		
Food & Nutrition²	77	5.2%	4	13%	0.3	<ul style="list-style-type: none"> Increasing focus on health & wellness Demographic changes - Aging population in developed nations & informed young populace in developing nations Increased demand for packaged & convenience goods Strong export potential for naturals Government push on food processing
Hygiene & Personal care	334 ³	4.7%	203	15%	0.4	<ul style="list-style-type: none"> Heightened hygiene awareness post Covid-19 Unmet consumer need for several new categories
Water treatment	32.7	5.1%	0.9	15%	0.2	<ul style="list-style-type: none"> Increased demand for recycling arising out of water scarcity Evolving industrial wastewater treatment standards due to environmental concerns and tightening regulations Increasing consumer awareness with rising living standards Low penetration in developing nations such as India
Construction	36.9	3.4%	0.8	13%	0.1	<ul style="list-style-type: none"> Strong growth in infrastructure, megacities and housing Growth of people living in cities and the suburbs

1. Defined as ratio of India and Global per capita consumption

2. Includes F&F, Food ingredients and VMS ingredients

3. Value at retail level

Specialty chemicals sector in India remains highly fragmented, and under indexed on R&D and product innovation. Significant opportunity exists for players to drive value creation via market consolidation, sharper end-market alignment, and a greater focus on quality, sustainability, collaboration, and innovation.



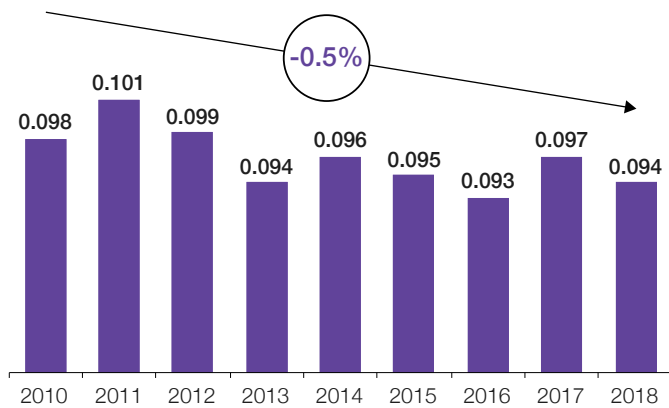
Agrochemicals: Rising farmer income and export-oriented manufacturing to drive robust growth

The Indian agrochemicals market is highly underpenetrated with very low levels of usage, offering sufficient headroom for growth.

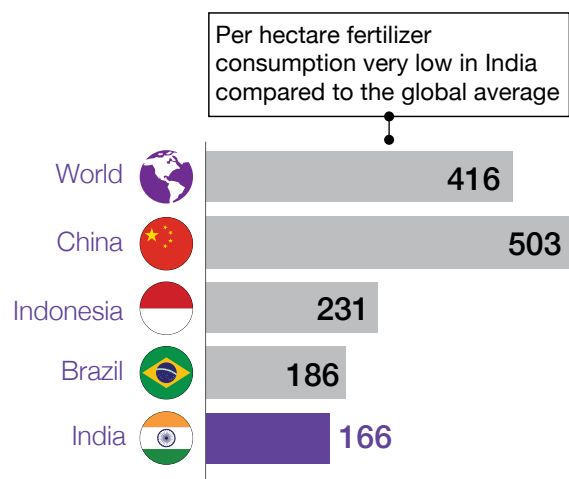
Exhibit 10:

Growing food demand, limited arable land and current low per hectare consumption will push agrochemicals demand to improve yield

Arable land for food grains per capita in India has slightly decreased b/w 2011–18 (Hectare/ person)

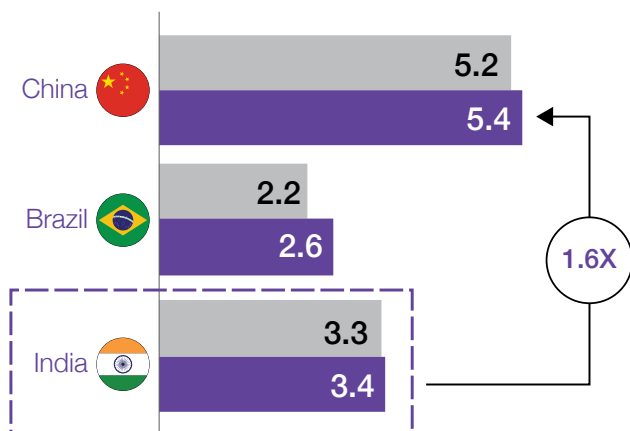


Average Fertilizer consumption (in kg/hectare, 2016)

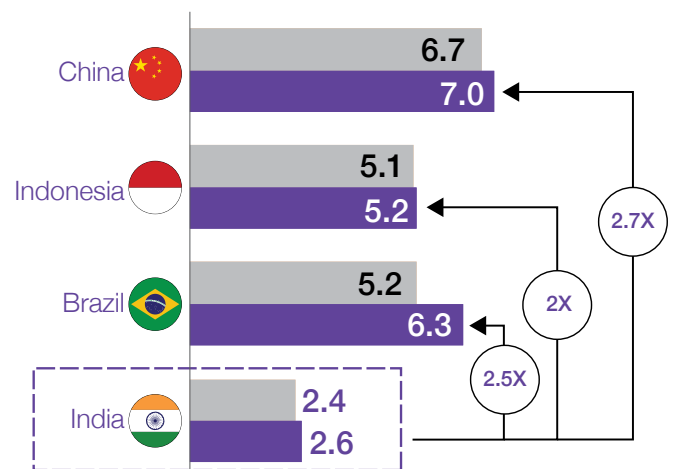


Wheat & Rice Yield (in tonnes/hectare)

WHEAT



RICE



■ FY14 ■ FY18

Food grains include rice, wheat, jowar, bajra, maize, cereals and pulses
Source: Department of Agriculture, World Bank, FAO, Kearney

Going forward, the following key factors will drive robust growth for agrochemicals in India.



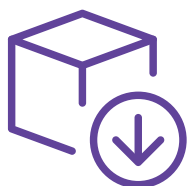
Rising farm income and awareness

The Government of India's plans for agricultural reforms such as the ECA amendment, mandi norms relaxation, contract farming, etc. hold the potential to help drive higher income for farmers in the coming years. In addition, farmer education initiatives and the growing penetration of the digital medium have led to increased awareness of agrochemical usage amongst farmers



Increased contract manufacturing by global players

Leading innovator organizations in the global agrochemicals landscape are orienting to a greater focus on core differentiating competencies such as R&D, Agritech, and developing new active ingredients. Increasingly, these organizations are looking to outsource a growing share of their production to low cost players and contract manufacturers in locations like India. With the potential shift in agrochemical manufacturing from China due to environmental, regulatory, and geopolitical reasons, India could emerge as a global hub for agrochemicals



Government push for import substitution

Indian agrochemical players are increasingly looking to reduce their high dependence on imports of intermediates and raw materials for agrochemical production. The Government of India's '**Make in India**' and '**Atmanirbhar Bharat**' initiatives could provide impetus to domestic manufacturing.



Continued momentum in export-oriented generics manufacturing

India has established itself as a strong exporter of generics, driven by its low-cost production and process innovation capabilities. With several billion dollars of agrochemicals projected to go off patent over the next five years, we anticipate a significant opportunity for exports from India.



Given the trends above, we see two key investible opportunities in Indian agrochemicals:



DOMESTIC MANUFACTURING

Agri-intermediates manufacturing to drive self-sufficiency, and expanded agrochemical manufacturing to meet growing farm demand

The Indian agrochemical industry relies heavily on imports of chemical raw material, technical intermediates, and formulated products. India imported close to USD 0.8 Billion in agri intermediates and USD 1.2 Billion of agrochemicals in FY20, with the largest share from China. India now has strong production capabilities to manufacture multiple synthetic chemistries in agrochemical groups including insecticides, fungicides and herbicides. Across these categories, we see an attractive investment opportunity drive import substitution as well as fresh capacity addition to meet growing farm demand.



EXPORT ORIENTED CAPACITIES

Contract manufacturing and generics production

Amidst rising material, labor and environmental compliance costs, global agrochemical producers are increasingly turning towards contract manufacturing partnerships to manage costs and drive efficiency in their portfolio. India has already established itself as a strong contract manufacturing and generics base, as seen by the success of several organization such as PI Industries, Atul, Deccan Chemicals, etc. With the ongoing shift in global chemical supply chains out of China, India has a strong opportunity to become the next contract manufacturing hub on the back of its low labor costs, availability of trained professionals, reputation for IP protection and strong process engineering capabilities. In our experience, global players evaluate their prospective contract manufacturing partners on four key parameters (Exhibit 11). Adopting a holistic capability building agenda focused on these parameters can help Indian players attain sustainable success in this space.



Exhibit 11:**Key parameters to be a contract manufacturing partner**

**BUSINESS MODEL AND STRATEGIC FIT**

- Perception as a 'Contract Manufacturer' – not a competitor
- Company's attitude and experience in partnerships with MNCs
- Engagement in continuous improvement efforts with partners

**CAPABILITIES**

- Custom synthesis capability – assorted operations, chemistries, kilo lab & pilot plants
- Technical staff and competency
- Project mgmt. & implementation
- Supply chain infrastructure and capabilities –handling, in-bound / out-bound transportation, inventory mgmt. (incl. VMI)
- QA / QC mgmt., waste handling

**COST LEADERSHIP**

- Current cost competitiveness – willingness to share cost structure, profit formula vs industry benchmarks
- Long-term improvement opportunities; such as economies of scale

**RISKS**

- IP protection incl. any country specific risks
- SHE performance
- Regulatory compliance and right to operate (registration etc.)
- Long-term financial viability
- Organization size, structure and stability

HOW TO WIN IN INDIA: KEY IMPERATIVES FOR COMPANIES

- We identify five key imperatives for Indian and Global Chemicals companies to win in India: place the right portfolio bets, embed sustainability into ways of working, adopt differentiated go-to-market models, undertake a digital-enabled P&L RESET, and strengthen M&A and partnership capabilities

India is home to both significant opportunities and substantial disruptions in the Chemicals market. Both existing players as well as new investors will need to carefully calibrate their investments to win in this market.

We see five key imperatives for companies in this sector:



01

PLACE THE RIGHT PORTFOLIO BETS

Investing in the right chemistries, competing in the right markets, and evolving a robust product portfolio will differentiate players in the long term. Incumbents and new entrants will need to carefully assess market dynamics, capability requirements, business model fit, competitive landscape, and potential disruptions before making strategic long-term bets. A robust portfolio strategy for the Indian chemicals sector needs to build in flexibility to account for product evolution over time, product switches for netback optimization, and synergistic offerings for high-value propositions.

In petrochemicals, incumbents focusing on commodity products will need to identify downstream derivatives for their next wave of growth, while ensuring healthy returns and synergies from their existing asset base. For example, incumbents can innovate on their existing PE and PP product portfolio by expanding into specialized grades or offering compounded resins customized for end applications. Players can also explore one of the white spaces in downstream petrochemicals products or expand into competitive segments with a better value proposition. For example, entry into C4 and aromatics chains, which have abundant feedstock supply but limited domestic downstream derivatives production such as polycarbonates, linear alkyl benzene, and butyl rubber.

Specialty players need to orient themselves towards end-markets to drive differentiation and maximize value. This will require a “Customer Wallet” lens to the portfolio – and will require a broad portfolio of products that aren’t always synergistic with the core. Choice of end market will depend on a combination of factors such as market attractiveness, strategic fit and/or right to win based on customer synergies.

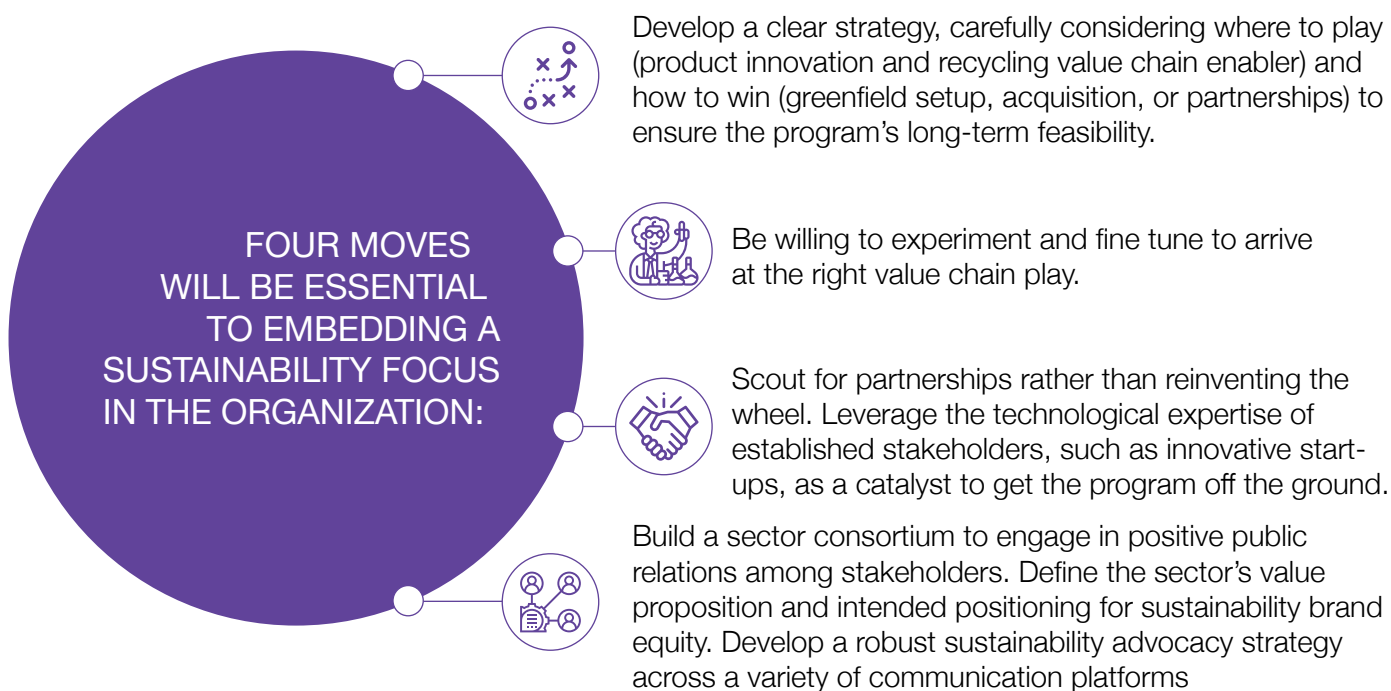
Agrochemical players need to choose the optimal platform for future growth – import substitution of intermediates, export-oriented capabilities, or agrochemical formulations for end users. While the former two require cost competitiveness and process excellence as the core capabilities, the latter require strong product development and go-to-market capabilities.



02

EMBED SUSTAINABILITY INTO WAYS OF WORKING

Sustainability is now a top priority for chemical manufacturers and other industry stakeholders. Forward-thinking companies will be stewards of sustainability, and can explore multiple routes, including recycling, renewable feedstock platforms or solutions to drive reduction in usage. A proactive approach will help avoid disruptions in the business, such as a sudden decline in demand because of a plastic ban. A focus on sustainability will also help Chemical companies develop strong equity with external stakeholders and end users.





03

ADOPT DIFFERENTIATED GO-TO-MARKET MODELS

India's Chemicals distribution and go-to-market (GTM) models have evolved in response to the highly fragmented, credit-starved base of downstream customers. Indian GTM models have seen limited innovation or differentiation, and most channel partners and other intermediaries often add limited value beyond expanding customer reach and extending credit to customers.

While today's GTM models have served the industry well so far, we expect a significant evolution in the market, driven by three fundamental shifts.

Commodity sales need to start moving towards low-overhead, no-frills, digital-first models to counter margin pressure.

With surging domestic capacities and competition from export-oriented global capacities, margins in commodity products will increasingly be under pressure. As a response to the growing margin pressure, Indian players will increasingly need to embrace and experiment with digital solutions to drive this change. For example, product/application-specific online portals can serve as a unified platform to provide detailed product information and usage, disseminate customized pricing, place and track orders, and address grievances. This will need to be supported by the digitalization of supply chains, and standardization of operating mechanisms and business rules (for example, minimum order quantities, lead times, and credit periods) to create a truly low overhead model. Dow Corning successfully demonstrated the success of this model with the launch of a digital-first brand, Xiameter, to cater to price-sensitive customers for commodity silicone products in the early 2000s. The web-enabled platform required low human interaction with customers, meaning far fewer staff were needed compared to a traditional Dow Corning business unit. With a differentiated value proposition, the company was able to increase its online sales to 30 percent of total sales (around triple the industry average) and maintain healthy margins. This can serve as a template for Indian players to move a significant portion of their established customer base for commodity products to direct sales without intermediaries.

To drive differentiation and customer stickiness in direct sales of specialty products, producers need to evolve from being product marketers to solution providers.

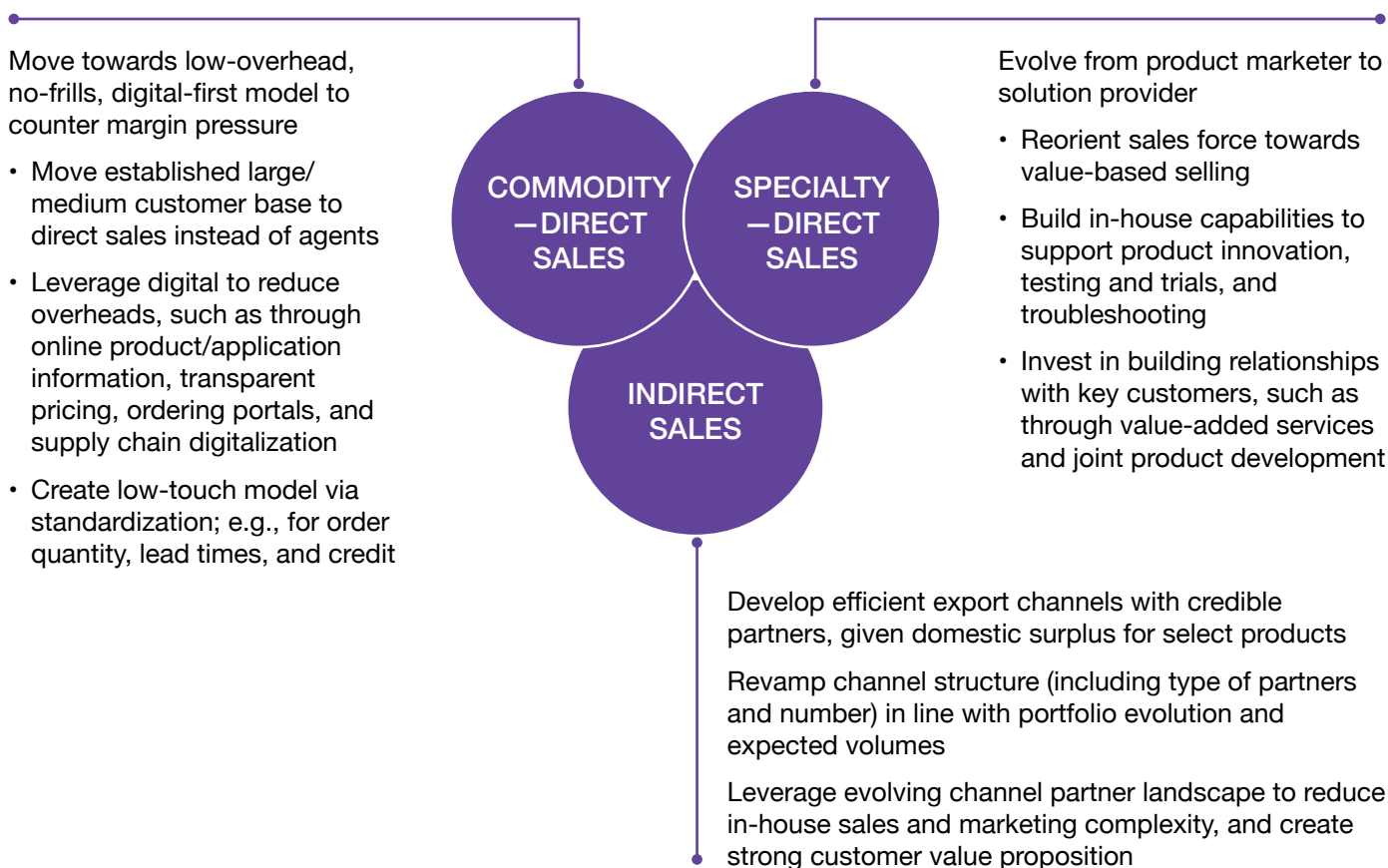
Widening product portfolios and large volumes will require a new set of sales and marketing capabilities and channel structures. As end applications become more sophisticated, customers will demand more from suppliers. Chemical producers will need to invest in developing strong customer relationships via tailored offerings, such as joint application development, product testing and troubleshooting, or other services that have a significant bearing on customer loyalty and buying decisions. This will require building strong in-house technical capabilities and reorienting the salesforce towards value-based selling. This model will focus on key large customers to justify the return on investment.

Channel partners will remain a critical part of the overall GTM strategy for producers; however, the channel mix will need to evolve with market changes and the evolution of the distribution landscape.

The role of channel partners will need to change as digital adoption, improved supply chain infrastructure, and increased availability of formal credit make the traditional business model of intermediaries redundant. For example, large multinational distribution companies such as IMCD and Brenntag have strengthened their position in India, including through in-house R&D labs and technical services teams, by acquiring indigenous distribution companies. In contrast to small and medium-size channel partners, these players can provide a wide portfolio of value-added services such as mixing/formulation, technical support, portfolio selling, vendor-managed inventory, bulk breaking, and repackaging. These can significantly reduce sales and marketing complexity for producers. Going forward, producers will need to rethink the channel structure and strike the right mix of small versus large channel partners as they diversify their product portfolio, grow volumes, and cater to evolving customer needs while managing channel complexity. Several current small and medium-size channel partners, given their low-cost and flexible model, will continue to be important for efficiently serving the tail end of the fragmented customer base that exists for petrochemical products. However, large distributors will become increasingly important as producers look to distribute their growing volumes in domestic and global markets and serve a diversified customer base that requires value-added services

Exhibit 12:

Petrochemical producers will need to rethink go-to-market models based on product, customer, and geography focus



Source: Kearney



04

UNDERTAKE DIGITAL-ENABLED P&L RESET

In an era of growing domestic and global capacity across chemistries, as well as significant trade and regulatory uncertainty, operational excellence and cost competitiveness are likely to emerge as significant drivers of success for Indian chemical players. Given the legacy cost structures associated with some incumbents' older assets, they might need to drive a focused enterprise-wide P&L RESET to achieve cost competitiveness.

A successful P&L RESET begins with a bold, non-negotiable target (for example, doubling EBIT within 18 to 24 months). Senior leadership needs to energize the program through their total commitment, and it needs to be supported by the right capabilities, processes, and enablers. As companies build their earnings agenda, they can leverage six levers to embark on a P&L transformation journey.

Exhibit 13:

Digital-led RESET solutions deliver comprehensive and rapid earnings expansion

Solutions	Topline	P&L cost areas ¹				Balance sheet	Improvement potential ² (percentage)
		SG&A1	Raw materials	Logistics & supply chain	Manufacturing		
Portfolio and pricing excellence Boost profitability through optimization of offering and analytics-led pricing	✓	✓	✓				2 – 5
Zero-based budgeting Drive leaner organization costs		✓					10 – 15
Strategic sourcing Use analytics-driven commodity price intelligence, spend transparency, and advanced strategic sourcing tools to optimize external spend and increase value from suppliers		✓	✓	✓	✓		3 – 6
Manufacturing efficiency and lean asset strategy Use analytics-led yield improvements, predictive maintenance, network optimization, and automation to increase return on assets				✓	✓		5 – 10
Working capital productivity Free cash from balance sheet via inventory and AP/AR management				✓		✓	5 – 10
Capex excellence Use value assurance and value generation, aided by digital tools, to ensure on-time, in-budget delivery of capex projects						✓	4 – 6

1. P&L—profit & loss; SG&A—selling, general and administrative

2. Improvement potential in individual category as percentage of spend in individual categories

Source: Kearney



05

STRENGTHEN M&A AND PARTNERSHIP CAPABILITIES

Strategic partnerships will be a key winning theme for chemical businesses in India. Domestic chemical players can partner with other domestic producers of downstream derivatives and/or global manufacturers to create a long-term strategic advantage. M&A activities among complementary domestic players can help create world-scale businesses that are greater than the sum of their parts. For example, an M&A between a specialty and commodity chemical player in the same molecular chain can help the new company benefit from being a vertically integrated player. It can create feedstock securitization for specialty products, provide flexibility to manage downstream production, and help drive overall profitability.

Given the Indian market's unique characteristics, it is inevitable that the market will witness more win-win partnerships between global and domestic players. Domestic players can access the financial, technological, and operational know-how of their global partners to accelerate their growth plans. Meanwhile, global players can benefit from their domestic partners' deep understanding of India's market, sales and distribution setup, and marketing capabilities.

As incumbents and new entrants prepare their India partnership road map, we believe there are three key imperatives for success. First, lay out a clear set of growth objectives and identify the internal and external capabilities required to achieve them. Second, on an ongoing basis, scout for potential partners that can support the growth ambition. Finally, set up a strong in-house team with robust M&A experience in deals of the projected size.



CONCLUSION

A new global trade balance is taking hold in the post-Covid world and may not be reversed even when pre-pandemic global trade tensions are resolved. In this new world, global corporations are reorienting to new approaches that balance the need for cost competitiveness with the need for risk competitiveness. With resilience emerging as the watchword for global supply chains, companies are adopting strategies that focus on dual or diversified sourcing, reducing supply chain complexity, and localizing manufacturing where feasible. Corporations are increasingly seeking resilient manufacturing destinations that complement the investments they have already committed into China.

In this new global order, India's chemicals market offers one of the most attractive investment opportunities for global and domestic chemicals players looking to setup new capacity. Across petrochemicals, specialty chemicals, and agrochemicals, India's strong domestic demand, attractive demographic profile, supply of labor and talent, and the Government of India's focused efforts to attract investments into India, have all helped India emerge as a destination of choice for global manufacturing investments in the Chemicals sector.

For global MNCs looking to invest in India, there are two broad pathways to follow:

- **Serving the world from India:** Build capacity and capability under the "Make in India" umbrella, to manufacture and export chemical products to the rest of the world
 - **Serving India's burgeoning domestic market from India:** Build capacity and capability to serve the Chemicals needs of one of the world's largest domestic markets, and help reduce India's import dependence, in alignment with the 'Atmanirbhar Bharat' mission
-

With the Indian economy projected to emerge as one of the Top 3 global economies, and with India projected to have largest working age population across the globe, the time is ripe for global Chemicals MNCs to look at the India opportunity with a fresh lens, and capitalize on the attractive opportunities presented by the nation.

APPENDIX 1: OVERVIEW OF NATIONAL AND STATE LEVEL INCENTIVES AND ENABLERS

The Indian government recognizes the chemicals industry as a key growth driver for the economy and is providing a strong push to increase the sector's share to ~25% of manufacturing GDP by 2025.

Government measures have significantly improved sector's attractiveness for investments

The government is committed to play a facilitator's role to support industry growth by improving domestic production, reducing imports and attract investments in the sector. Several actions have been taken by the government to address industry challenges such as establishment of critical infrastructure (roads, ports), easing of regulations and licensing requirements, ensuring availability of feedstock, simplification of tax system, skilled development, labor law reforms etc.

Both central and state governments are taking major steps in attracting investments for the chemical sector. Across different domains, select initiatives taken by the Central government are as follows:



REGULATORY

- 100% FDI is allowed under automatic route, except in the case of hazardous chemicals.
- Lower effective tax rates for companies incorporated after Oct 2019 and commencing production before March 2023
- Roll out of the PLI schemes for key end-use sectors will boost petrochemical consumption in the country.
- Sectors like mobile phone manufacturing, auto and components, medical devices, textile products etc., use significant quantity of petrochemicals; the estimated outlay of Rs 1.41 lakh crores augurs well for the petrochemical industry growth



ECOSYSTEM

- Four PCPIR (Petroleum, Chemicals and Petrochemicals investment region) under progress - expected to attract investment of around INR 7.63 lakh crore; INR 2.12 lakh crore worth of commitments have been made
- Scheme being formulated to set up 6 Plastics Parks in India in M.P, Odisha, Assam, Jharkhand, Tamil Nadu. Under the scheme, the Government of India provides grant funding up to 50% of the project cost, subject to a ceiling of Rs. 40 crore per project
- Launching of first-of-its kind GIS-enabled national land bank portal with details of logistics, land, rail & air connectivity, tax incentives, drainage system, power supply and raw material availability in industrial belts



LOGISTICS

- Industrial Corridors – Development of 5 projects have been launched to provide impetus to industrialization. E.g. Delhi – Mumbai industrial corridor
- Logistics Park – Construction of 35 multimodal logistics parks has been announced to facilitate freight movement.



R&D

- Tax Exemption - Weighted tax exemption for capital and revenue expenditure incurred on scientific R&D for both industry & private sponsored research and for manufacturers with an in-house R&D center
- Setting of “Centers of Excellence” for research in the field of Petrochemicals Sector

In addition to the above initiatives focused on the chemicals sector, the central government has undertaken several major initiatives which will provide significant boost to several chemical end markets (Refer to exhibit 14)

In addition to central initiatives, each state in India offers additional incentives for industrial projects. Incentives are in areas like subsidized land cost and relaxation in stamp duty exemption on sale/ lease of land, power tariff incentives, concessional rate of interest on loans, investment subsidies/tax incentives, backward areas subsidies and special incentive packages for mega projects. Examples of states offering incentives to attract industry with a focus on chemical sector are covered in exhibits below

Exhibit 14:

Government of India initiatives provide a significant boost to the Chemicals Sector



MAKE IN INDIA

Rollout of PLI scheme for key end use sectors such as electronics manufacturing, auto and components, medical devices, textile products will boost chemical demand



SWACHH BHARAT

Significant opportunity for chemicals related to cleaning, hygiene and personal care



DIGITAL INDIA

Electronics manufacturing in India will support use of associated chemicals



HOUSING FOR ALL

Direct demand push for construction chemicals, paints and coatings, household products, plastics etc.



GRAM JYOTI

Significant opportunity for plastics (incl. fluoropolymers) as direct raw materials for wires and cables.



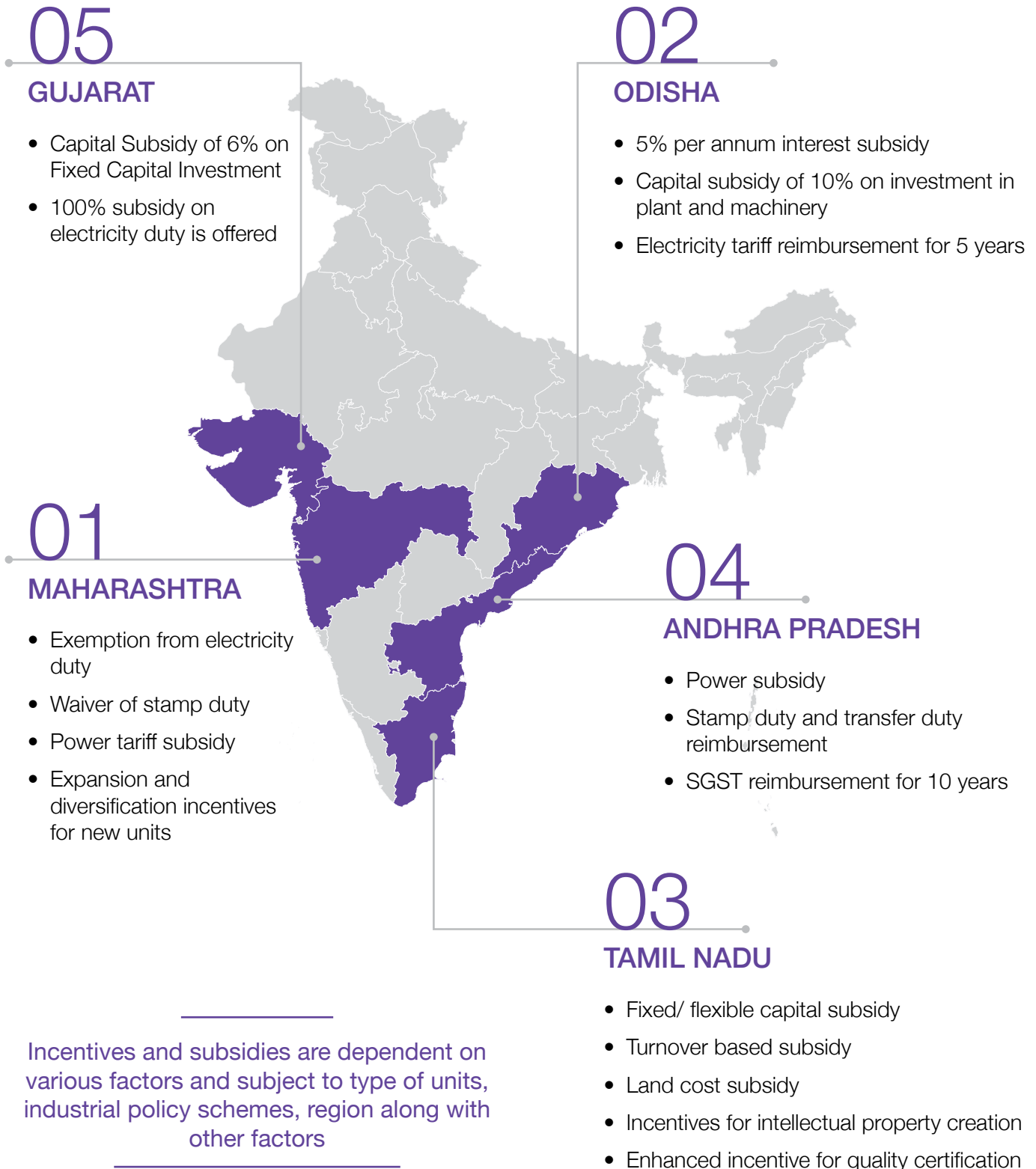
TRANSFORMING INDIA

Building infrastructure and rural development will push the demand for paints and coatings, plastics, and specialty chemicals.

Source: Kearney

Exhibit 15:

In addition, states offer additional incentives for industrial investments



Source: Invest India, Kearney

Overview of Infrastructure Available in Select States



MAHARASHTRA

	Parameter	
Land Authority and Location	-	<ul style="list-style-type: none"> • AITL - Auric (D Zone) • MIDC - Proposed bulk drug park, Raigad
Land Rates (Per Sq M.)	Average land rate	<ul style="list-style-type: none"> • AITL - INR 3200 per Sq.m (State will not increase the land lease rate beyond 5% per annum for the next 10 years) • MIDC - INR 110 per sq. m. per annum (State will not increase the land lease rate beyond 5% per annum for the next 10 years); INR 2,200 per Sq.m (Upfront payment for long-term lease for 95 years)
Annual Maintenance Charges(Per Sq. M)	Average	<ul style="list-style-type: none"> • AITL - INR 41 per year (Service, fire, drainage, environmental protection, ICT charges) • MIDC - INR 22 per sq. m. per year
Stamp Duty Rates (% terms)	-	<ul style="list-style-type: none"> • AITL - 100% Stamp Duty Exemption • MIDC - 100% exemption for MSMEs & LSIs for acquiring land and term loan; 100% exemption for Special LSI & Mega/ Ultra Mega projects
Freehold or Not. In case of Land Lease Policy (No. of years)	-	Leasehold Land for 95 years
Utility Rates	Average Rate of Electricity (Rs./KWH)	INR. 6.71 - Rs. 7.21 per unit
	Average Water Rates (Rs./1000 Liters)	INR. 18 – 25 per 1,000 liters
	Average Natural Gas Prices (available) Rs./ Standard Cubic Meters	Will be made available
Logistics Infrastructure	Total Railway Connectivity and Infrastructure	Aurangabad: 24 Kms / Roha (24 Kms)
	Airport Connectivity and Infrastructure	2 Airports offering access in proximity: Aurangabad, Navi Mumbai International Airport (Proposed)
	National or State Highways connectivity and Infrastructure	National Highway 52, National Highway 66, National Highway 166A offering access
	Ports Connectivity and Infrastructure.	Both locations having port access in under 50 Kms: Jalna Dry Port (37 Kms), Dighi Port (34 Kms). Further, JNPT ports could also be used.
Incentives offered by State Government as per the State Policy		<p>Various incentives and schemes available under 2019 Incentive policy for various categories of units including interest subsidy, exemption from electricity duty, waiver of stamp duty, power tariff subsidy, expansion and diversification incentive for new units, and/or others.</p> <p>Incentives/subsidies are dependent on category of units as MSME, Large scale industries, mega projects.</p>
Comments	USP of location for a chemical company	Availability of CETP



ODISHA

	Parameter	
Land Authority and Location	-	Odisha Industrial Infrastructure Development Corporation (IDCO)
Land Rates (Per Sq M.)	Average land rate	INR 1100 /Sq.m
Annual Maintenance Charges(Per Sq. M)	Average	INR 1.5 per sq.m per year
Stamp Duty Rates (% terms)	-	5% (Exempted for all Chemicals, Petrochemicals and Plastics Industries)
Freehold or Not. In case of Land Lease Policy (No. of years)	-	90 years on Lease
Utility Rates	Average Rate of Electricity (Rs./KWH)	4.25 to 5.35 per unit
	Average Water Rates (Rs./1000 Liters)	Rs. 19.2 per KL/day
	Average Natural Gas Prices (available) Rs./ Standard Cubic Meters	INR 28 - 31 (approx)/std. cubic meter
Logistics Infrastructure	Total Railway Connectivity and Infrastructure	Rail head present within the PCPIR Paradeep. Connected to the rest of India through the dedicated corridor
	Airport Connectivity and Infrastructure	Bhubaneswar Airport 120 Km (With international cargo handling facility)
	National or State Highways connectivity and Infrastructure	National Highway 53 connects Paradeep to National Highway 16 (Kolkata to Chennai), part of the Golden Quadrilateral
	Ports Connectivity and Infrastructure.	PCPIR Paradeep is situated adjacent to the Paradeep port, the 2nd busiest port in India with dedicated liquid jetties and container terminal



Incentives offered by State Government as per the State Policy		<p>Incentives applicable under Industrial Policy:</p> <ol style="list-style-type: none"> a. 100% net SGST reimbursement for a period of 7 years subject to a maximum of 200% of cost in plant & machinery b. 100% exemption from Stamp Duty c. @5% per annum interest subsidy subject to a total maximum limit of INR 10 lakh to 1 crore, depending on the investment d. Electricity duty exemption for 5 years upto a contract demand of 5 MVA e. Capital subsidy of 10% on investment in plant and machinery up to INR 10 to 50 crore for Plastics industries depending on investment and employment generated provided a minimum investment of INR 100 crore and a minimum employment of 100 people f. Electricity tariff reimbursement of INR 0.25 to INR 1.00 per unit for a period of 5 years depending on investment and employment generated provided a minimum investment of INR 100 crore and a minimum employment of 100 people g. Training subsidy of INR 1750 to INR 3000 per employee skill upgradation and INR 2500 to 4000 per employee newly trained for 3 years depending on investment and employment generated provided a minimum investment of INR 100 crore and a minimum employment of 100 people h. 100% reimbursement of contribution towards ESI and EPF for displaced workers for duration of 3 years and for differently-abled workers for a period of 5 years i. 100% assistance for patent and intellectual property right registration up to INR 10 lakh j. 100% assistance for obtaining quality certification for a period of 3 years up to INR 3 lakh k. 100% reimbursement of the cost of purchase of technical know-how up to INR 1 lakh for indigenous technology and up to INR 5 lakh in case of imported technology l. 1 to 3 acres of land at 50% of the prevailing market rates of IDCO, to be utilized only for setting up workers' hostel or dormitory, depending on investment and employment generated provided a minimum investment of INR 100 crore and a minimum employment of 100 people
Comments	USP of location for a chemical company	PCPIR situated adjacent to Paradeep port enabling imports for raw materials and exports of final products. Further the investment region also has a dedicated Plastics park with plug and play infrastructure for the development of the sector. Dedicated feedstock availability from IOCL's 15 MMTPA refinery: <ol style="list-style-type: none"> 1. MEG 2. PX/PTA 3. Polypropylene 4. Toluene 5. Ethylene 6. Propylene 7. Petcoke



TAMIL NADU

	Parameter	
Land Authority and Location	-	1. SIPCOT (State investment promotion council) 2. Cheyyar SIPCOT
Land Rates (Per Sq M.)	Average land rate	1. INR 20 Lakhs/acre - INR 3 Crore/Acre 2. INR 80 Lakhs/Acre
Annual Maintenance Charges(Per Sq. M)	Average	1. INR 3500/Acre 2. INR 3000/Acre
Stamp Duty Rates (% terms)	-	8%
Freehold or Not. In case of Land Lease Policy (No. of years)	-	30, 60, or 99 year lease
Utility Rates	Average Rate of Electricity (Rs./KWH)	Rs. 6.35 per unit
	Average Water Rates (Rs./1000 Liters)	Rs. 40 per liter
	Average Natural Gas Prices (available) Rs./ Standard Cubic Meters	Available
Logistics Infrastructure	Total Railway Connectivity and Infrastructure	All 4 ports connected via rail sidings. 65 dry ports, largest in the country.
	Airport Connectivity and Infrastructure	Access to 4 International airports
	National or State Highways connectivity and Infrastructure	National or State Highways connectivity and Infrastructure
	Ports Connectivity and Infrastructure.	4 major ports and 22 non major ports



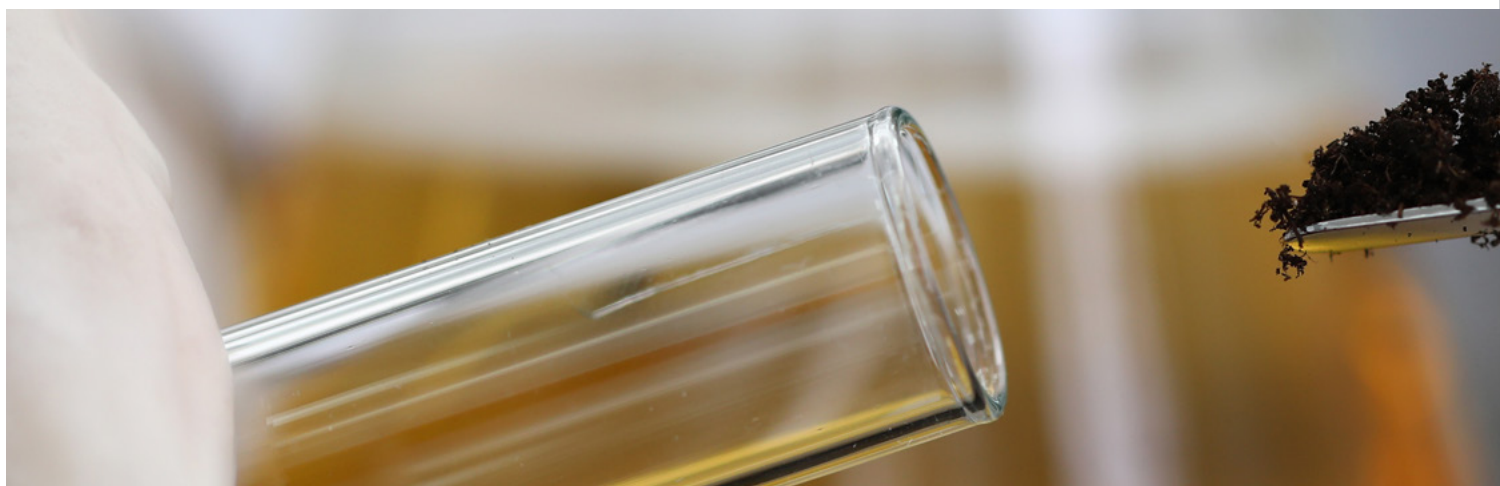
<p>Incentives offered by State Government as per the State Policy</p>		<p>TN offers various incentives/subsidies. Investors can choose from 4 possible options as per Tamil Nadu Industrial Policy 2021:</p> <ol style="list-style-type: none"> 1) SGST Reimbursement for final products 2) Flexible capital subsidy 3) Fixed capital subsidy 4) Turnover based subsidy <p>One of the aforementioned options will be clubbed with incentives for quality certification, intellectual property creation, stamp duty exemption, electricity duty exemption.</p> <p>Land cost subsidy will be applicable depending on the location (A,B or C district)</p> <p>Special Incentive for Sunrise Sector: Projects opting for flexible capital subsidy shall get a sunrise booster of which one implies an additional capital subsidy of up to 7.5% of EFA depending upon investment and employment.</p> <p>Land cost subsidy – 10% in A & B districts and 50% in C districts up to 20% EFA</p> <p>Stamp Duty Incentive – 100% in SIPCOT. For private land, 100% back ended subsidy for up to 50 acres</p> <p>Enhanced Incentive for Quality Certification – 50% of the total cost incurred for obtaining the certification, up to Rs. 1 cr for the period of investment</p> <p>Intellectual Property Creation - 50% of the total cost incurred, up to Rs. 1 cr for the period of investment</p> <p>Interest Subvention – 5% over 6 years as rebate in the rate of interest on the actual loan terms, with the below ceiling:</p> <p>Large – 20 lakhs/annum Mega – 100 lakhs/annum Ultra-mega – 400 lakhs/annum</p>
<p>Comments</p>	<p>USP of location for a chemical company</p>	<p>TN also has various other policies promoting investments in other sectors which also will lead to development of Petrochemicals/Chemicals sectors in these segments</p> <ol style="list-style-type: none"> 1. Tamil Nadu Industrial Policy 2021 2. Tamil Nadu EV Policy 2019 3. Tamil Nadu Electronics Manufacturing Policy





ANDHRA PRADESH

	Parameter	
Land Authority and Location	-	1. APIIC (Nakkapalli, Rambilli, Atchutapuram Industrial Parks and Vishakapatnam) (8531 Acres in Total) ; 2. Private (8500 Acres) - SEZ and DTA Areas (Kakinada SEZ, East Godavari) 3. KRIS City, Nellore (2,500 Acres Ph. 1 ; 10,298 Acres Phase 2/3) 4. APIIC Naidupeta, Nellore (980 Acres)
Land Rates (Per Sq M.)	Average land rate	<ul style="list-style-type: none"> • 2200 - 2500 Rs/ Sq.m (For (1,2,3)) / 1400-1800 Rs/ Sq.m (For (4))
Annual Maintenance Charges(Per Sq. M)	Average	<ul style="list-style-type: none"> • NA
Stamp Duty Rates (% terms)	-	<ul style="list-style-type: none"> • 6% (Units are reimbursed of Stamp Duty)
Freehold or Not. In case of Land Lease Policy (No. of years)	-	Options for 33 or 99 years on lease, with options to buy the land after 10 years of operations/outright sales/only lease - dependent on industrial location
Utility Rates	Average Rate of Electricity (Rs./KWH)	INR 6-7 per unit, factoring for fixed base charge as well
	Average Water Rates (Rs./1000 Liters)	INR 40-50 per KL A) Large water supply capacity available and large capacity under construction as well across all industrial land facilities B) Online waste management platform present as well to provide effective mechanism for waste handling
	Average Natural Gas Prices (available) Rs./ Standard Cubic Meters	Gas availability either through pipeline connectivity of distribution companies or spur line. Furthermore, various proposed pipeline project plans also in place. (Furthermore, KG basin natural gas discoveries also offer E&P based production for supply of gas to refineries)



Logistics Infrastructure	Total Railway Connectivity and Infrastructure	Key railway stations being Anakapalle, Kakinada, Nellore, Naidupeta Stations. South Central railway lines run parallel to A.P. 3 railway stations provide excellent north-south connectivity - Kakinada Junction, Kakinada Port & Samalkot Junction
	Airport Connectivity and Infrastructure	Key airports being Vishakapatnam, Bhogapuram, Rajahmudry, Tiruphati. Also, Krishnapatnam Port Owned Helipads inside the Port Area
	National or State Highways connectivity and Infrastructure	Connected to National highway and corridors in very close vicinity (~5-10 Kms). State Highways and Major district road act as arterial roads.
	Ports Connectivity and Infrastructure.	Multiple ports capable of handling all types of cargoes for petroleum products, coal, fertilizers, LPG, dry/liquid cargoes and containers such as Gangavaram port, Vishakapatnam Port, Abutting Kakinada SEZ port, Krishnapatnam Port, Kakinada Deep water seaport and other with the facility for handling liquid for petrochemicals, specialty chemicals, POL, LNG, LPG. (Dedicated berths provisioned for Petrochemical complex and Crude Oil refinery). (Liquid storage facilities also easily available at these ports).
Incentives offered by State Government as per the State Policy		Key incentives for Mega Projects are offered as tailor made requirements - Power Subsidy (1 Rs for 5 years), FCI of 15-20%, 100% Net SGST Reimbursement for 10 years, 100% stamp duty and transfer duty reimbursement.
Comments	USP of location for a chemical company	Availability of various feedstock through presence of current and proposed projects offering the flexibility of refinery products, feedstock for petrochemicals. Presence of various refineries such as HPCL Visakh Refinery (Capacity 8 MMTPA in process to increase to 15 MMTPA), Olefins Aromatic Complex's, Haldia Petrochemical refinery complex (Capacity of 12.9 MMTPA). Furthermore, new petroleum Oil terminal offers storage and distribution option for various fuels. Lastly, discovery of K.G. Basin serves as dedicated source of feed for petrochemical industry. Potential industries mix as Petrochemical, Chemicals, Metal and Engineering, Textiles, Petroleum Refinery, Metal and Non-Metallic, Food Processing, Mixed Industries etc. Also, immense opportunities exist offering port location proximity plant options.





GUJARAT

	Parameter	
Land Authority and Location	-	GIDC (Saykha)
Land Rates (Per Sq M.)	Average land rate	INR 2100 /Sq.m (for the FY 2020-21)
Annual Maintenance Charges(Per Sq. M)	Average	NA
Stamp Duty Rates (% terms)	-	4.9%
Freehold or Not. In case of Land Lease Policy (No. of years)	-	Leasehold for 99 years
Utility Rates	Average Rate of Electricity (Rs./KWH)	INR 7.5 / Kwh
	Average Water Rates (Rs./1000 Liters)	INR 39.5 (for the fy. 2020-21)/1000 Lts
	Average Natural Gas Prices (available) Rs./ Standard Cubic Meters	INR 30-36/Std. cubic meter
Logistics Infrastructure	Total Railway Connectivity and Infrastructure	Dahej - Bharuch Railway line pass through PCPIR which is connected to main Ahmedabad - Mumbai Railway line.
	Airport Connectivity and Infrastructure	Surat and Vadodara Airport are approx. 100 km.
	National or State Highways connectivity and Infrastructure	Near NH-8 and Delhi Mumbai Trunk Rail Line. SH linking the region with NH-8
	Ports Connectivity and Infrastructure.	The following ports are in the vicinity of PCPIR <ul style="list-style-type: none"> • Adani Petronet Dahej Port P. Ltd : 11 MMTPA • GCPTCL Liquid Chemical Terminal : 4.9 MMTPA • LNG Petronet (Gas Terminal) : 10 MMTPA • Reliance Liquid Fuel Jetty : 2 MMTPA • Birla Copper Bulk Cargo Jetty : 5 MMTP
Incentives offered by State Government as per the State Policy		Capital Subsidy of 6% on Fixed Capital Investment (excluding land cost) and 100% electricity duty is offered.
Comments	USP of location for a chemical company	Estate is in India's first operational PCPIR.



NOTES



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