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Kearney, Dubai

Riding India's petrochemicals wave

KEARNEY

India is fast emerging as a global hub for petrochemicals activity. With its high demand growth, India is projected to contribute to more than 10 percent of the incremental global growth in petrochemicals over the next decade. And given its significant import dependence, India could potentially need more than 15 world-scale petrochemicals assets by 2035 to meet domestic demand.

However, India's golden age of petrochemicals will be set in an uncertain global petrochemicals landscape marked by a growing wave of global trade uncertainty, increasing regulatory focus on sustainability and the circular economy, and a potential buildup of excess global supply of several vital chemistries.

In this paper, we examine the state of the Indian petrochemicals sector, the domestic and global trends shaping it, and the imperatives for stakeholders to successfully ride India's petrochemicals wave.

Setting the stage for growth

The petrochemicals sector is projected to emerge as the primary driver of growth for the global oil and gas sector, accounting for more than a third of incremental oil and gas demand by 2030 (see figure 1). This trend is being driven by the overall growth and profitability of petrochemical products (around 3 percent CAGR over the next decade) and stagnating global demand for fuel (around 1 percent CAGR).

This trend, along with the evolution of new crude-to-chemicals technologies, is accelerating the shift of oil and gas majors away from refining, with petrochemicals now accounting for 40 to 80 percent of new refining assets.¹

Within the petrochemicals space, the past decade has been marked by the rise of China as the world's largest market. The rapid growth in China, coupled with stagnant demand in developed regions such as the US and Western Europe, has helped Asia emerge as the global petrochemicals hub, accounting for more than half of global demand.

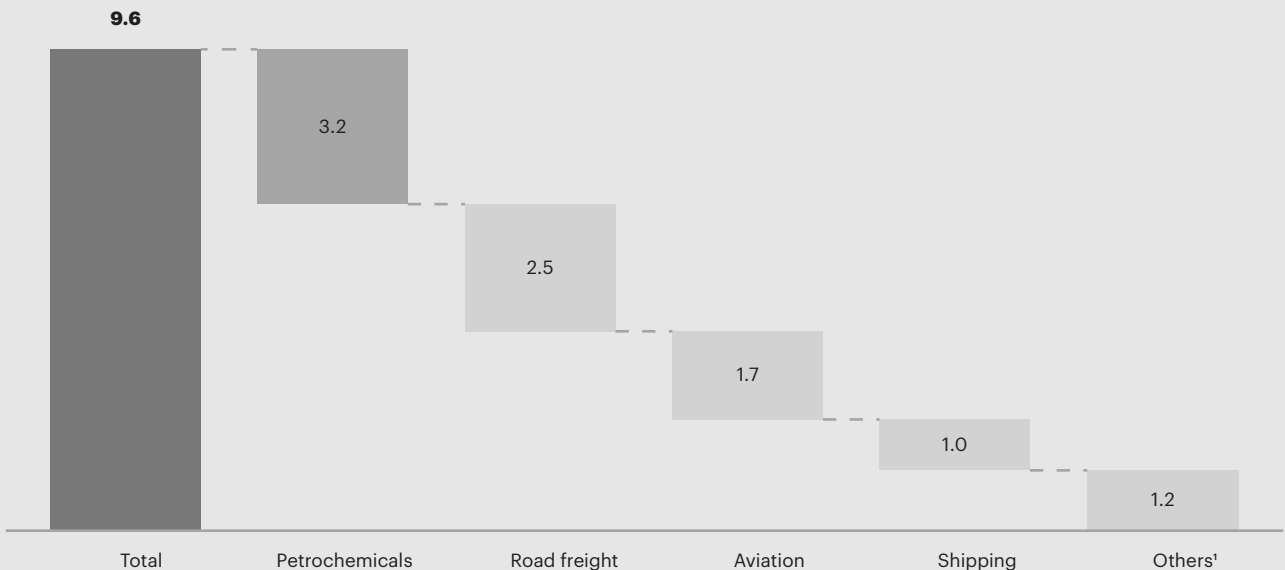
However, the global petrochemicals landscape continues to face uncertainties—including the recent wave of global trade restrictions, and growing environmental headwinds emerging from the circular economy mega trend and rising bans on single-use plastics.

Over the next decade, the majority of new capacity in the sector is projected to be in Asia (around 65 percent of new global capacity), which will help the region reduce its current levels of import dependence. This growing Asian capacity, coupled with the significant expansion plans of select players in the US and Middle East (driven by their feedstock advantage), is projected to create excess supply across different chemistries. This evolving supply-demand landscape could potentially disrupt traditional petrochemicals trade routes and market setups.

¹ Assets based on crude oil-to-chemicals technology (COTC)

Figure 1
Petrochemicals will fuel the global oil and gas demand over the next decade

Incremental global oil demand to 2030 (million barrels per day)



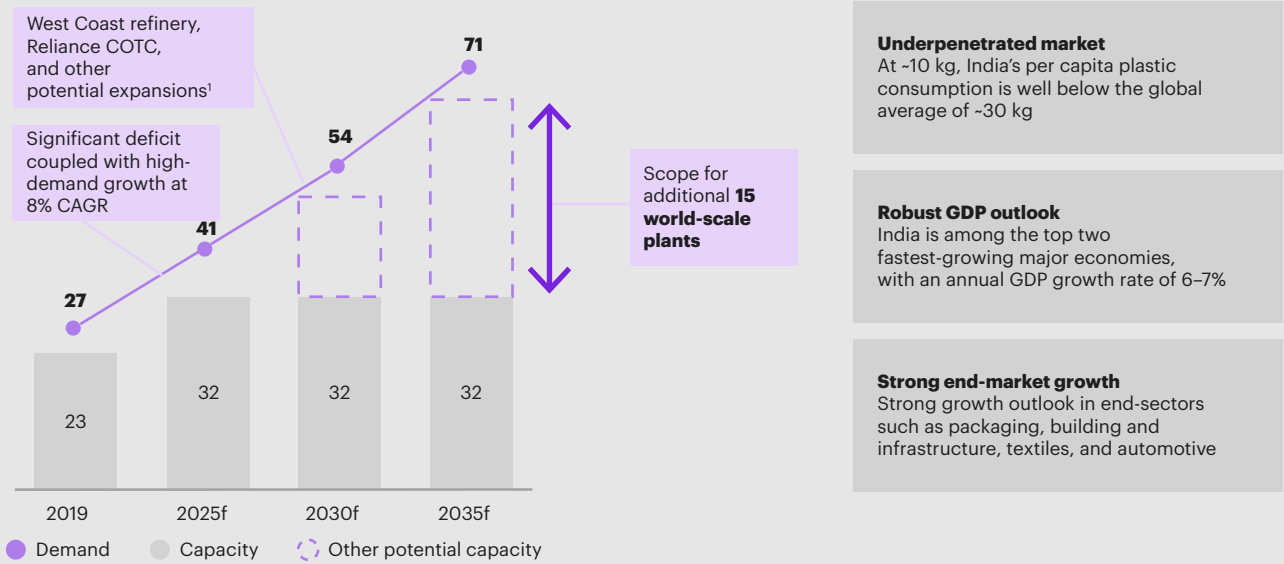
¹ Others include building and power, industry, and passenger vehicles.

Sources: International Energy Agency; Kearney analysis

Figure 2

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

Petrochemicals supply and demand in India (million metric tons)



¹ Reliance crude oil to chemicals
Sources: Nexant; Kearney analysis

Amid this growing global volatility, India's petrochemical sector has emerged as an island of hope. With its significant import dependence and high-demand growth, India has emerged as one of the world's most attractive markets for new petrochemical investments. With demand growth projected at around 8 percent CAGR over the next 15 years, India will contribute to more than 10 percent of incremental global petrochemicals growth in the next decade and will need more than 15 world-scale petrochemicals assets by 2035 to meet domestic demand (see figure 2).

Given the strong underlying demand trends, India's petrochemical sector is now witnessing a significant investment boom, with several multibillion-dollar assets either already on stream or expected within the next few years.

First, both refiners and domestic petrochemical players are significantly expanding petrochemical capacity. For example, while Reliance and Indian Oil Corporation Limited (IOCL) have expanded their petrochemicals production in the past couple of years, HPCL-Mittal Energy Limited (HMEL) is expected to quadruple its petrochemicals capacity over the next couple of years.

Second, new domestic players such as ONGC Petro additions Limited (OPaL) and Deepak Phenolics are recent entrants in the petrochemical space. In the next three to five years, HPCL Rajasthan Refinery Limited (HRRL) and Bharat Petroleum Corporation Limited (BPCL) will join the list with their refinery-integrated petrochemicals assets.

Finally, international players have also announced partnerships to enter the Indian market. Over the past three years, global firms such as Saudi Aramco, Rosneft (Nayara), BASF, and Borealis have announced plans to invest in Indian petrochemicals manufacturing. Importantly, the mammoth 18 million metric ton (MMT) West Coast refinery is being planned as a joint venture between the Abu Dhabi National Oil Company (ADNOC), Saudi Aramco, IOCL, BPCL, and HPCL. This venture could significantly alter the face of the Indian petrochemicals landscape.

Five characteristics of India's petrochemicals market

Traits defining the market

1 Oligopolistic, commodity-led market

A handful of domestic companies have traditionally dominated India's petrochemicals market, with Reliance and IOCL currently accounting for almost 70 percent of domestic production.

India's petrochemical players have mostly evolved their portfolios from legacy refinery setups to drive higher net realization. As a result, the focus has been on basic commodity chemicals where technology licenses have been readily available. This has limited domestic production to mainly BB+1/BB+2 derivatives—that is, one or two levels down the molecular chain from one of the basic building blocks (such as ethylene).² For example, Reliance has focused primarily on polyethylene (PE), polypropylene (PP), polyethylene terephthalate (PET), and polyvinyl chloride (PVC), evolving them as a one-step downstream expansion from its refinery operations. As a consequence of this industry-wide strategy, capacities have been limited for downstream derivatives, especially intermediates and specialties, which continue to be served primarily through imports.

2 Refinery-integrated capacities

A large proportion (around 80 percent) of India's petrochemicals capacity continues to be refinery integrated due to limited feedstock availability. Refinery integration has been a key source of cost competitiveness over the past decade and has also been a key driver of the oligopolistic structure discussed earlier. This contrasts with other regions such as the Middle East and US, where abundant gas supply has led to a significant contribution from stand-alone petrochemicals assets.

Given this level of refinery integration, India's petrochemical players have largely maintained similar value propositions in terms of product range, pricing, channel partners, supply chain, and marketing setup.

² Building blocks (BB) are starting points for the petrochemicals value chain, and can be further processed to manufacture a wide range of downstream derivatives. The six key building blocks are ethylene, propylene, butadiene, benzene, toluene, and xylene.

3 Complex sales and marketing setups

India's complex system of sales and marketing for petrochemicals can be best described by the following four attributes of the market.

Fragmented customer base. India has more than 30,000 plastic processing companies. Most are small and medium-size enterprises (SMEs) dispersed across the subcontinent. This has necessitated a complex multilayered setup that has been built for smaller volumes and widespread last-mile connectivity. This means it is a lot less efficient than other developed nations with at-scale downstream industries.

Credit-intensive market. A sizeable proportion of India's SME petrochemical customers have traditionally not had access to formal lending systems and have typically depended on informal systems of credit extension and short-term lending for their routine business operations. As a consequence, petrochemical customers in India often operate with cash cycles well in excess of 90 days. The Indian petrochemical sales and marketing channel has evolved to serve the credit needs of this market, and often has channel intermediaries whose primary value proposition is the credit disintermediation they offer to petrochemical manufacturers.

Unique channel setup. India's petrochemicals market is served by multiple types of channels, not only across various petrochemical categories, but sometimes within a category. For example, three modes of polymer distribution exist in India: del-credere agents (DCAs), traders and dealers, and direct-to-customer models.

Given the fragmented customer base and high credit requirements in the market, almost 80 percent of polymer volumes have traditionally flown through DCAs. Exclusive DCAs have also helped domestic polymer producers maintain tight control of the availability of their branded products, unlike in other developed markets where "white label brands" are significant.

For commodities such as phenol, manufacturers have relied on an appointed agent or dealer network. In this model, ownership of the product usually transfers to the agent or dealer before it reaches the end customer (unlike DCAs, where ownership is not usually transferred).

Tight control over pricing by producers. For some key petrochemical categories, such as polymers, Indian producers often transparently publish list prices at a grade or geography level. This is primarily intended to limit pricing distortions in the channel and to increase transparency in a highly fragmented market. In addition to the transparent list price, producers offer multiple layers of published and unpublished discounts and periodic schemes to reward high-value customers, facilitate inventory liquidation, or compete effectively against imports.

Pricing is usually less transparent for other lower-volume petrochemicals products, but producers try to maintain tight control across the board in an effort to reduce channel price distortions.

4 Price-sensitive market with low realization

Indian petrochemical prices are typically based on import parity and tend to move in tandem with other Asian markets. In the past few years, due to the addition of significant new capacity, domestic prices have switched from being "import parity premium" to "import parity discount" for select key products such as PE and PP. As a result, global players are now getting lower netbacks in India compared to other regional markets such as China and South East Asia.

5 Tariff and duty barriers

The Indian government has introduced several types of duties—such as import duties, anti-dumping duties, and other additional taxes—on imports of petrochemicals to protect the interests of domestic producers. These duty structures evolve constantly as a response to prevailing domestic and global market scenarios, and tend to significantly impact the competitiveness of domestic versus imported products. For example, customs duty on PVC (where 60 percent of the annual demand of 3.4 MMT is met through imports) increased from 7.5 to 10 percent in 2019, changing the margin dynamics for domestic players almost overnight.

Six trends in the Indian petrochemicals landscape

Trends shaping the landscape

1 A gold rush for petrochemicals

The Indian market is seeing a surge in petrochemical capacities from domestic refiners. With slowing growth (CAGR) and diminishing margins in the core oil and gas business, petrochemicals are a logical extension for these players.

India's petrochemicals capacity is projected to grow by more than 30 percent in the 2017–2025 period. The number of domestic refineries with linked petrochemical capacity is expected to grow from 12 (out of 22) in 2010 to 19 (out of 24) in 2030. In addition, new refinery expansion projects and greenfield refineries are being built with an integrated petrochemical configuration, with HRRL, HMEL, and the West Coast refinery being notable examples in this category. The availability of these petrochemical building blocks will create a snowball effect for downstream setups in India.

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2 The dichotomy of oversupply and deficit

At an overarching industry level, petrochemical demand is expected to outpace supply, leading to a continued net deficit across most molecular chains (see figure 3 on page 9). However, the demand–supply picture is more nuanced for several key products. For example, India has historically depended on imported PE, which accounted for 30 percent of demand in 2015. However, PE capacity now exceeds demand because of recent additions by Reliance, OPaL, and GAIL. With HMEL and HRRL announcing greater capacity, the market will continue to have excess capacity in the near to medium term. However, even for products that are in surplus, select grades continue to be imported in significant quantities—often due to a lack of adequate domestic production for these grades, and sometimes due to the superior quality of import grades. For example, India still imports more than 250 kilotons (KT) of metallocene film grades (PE product group) each year—a gap that will continue to widen (see figure 4 on page 10). This dichotomy can also be seen across other molecular chains. For example, India is a net exporter of benzene and butadiene. However, it continues to have a significant deficit in downstream products such as styrene, polycarbonates, butyl rubber, and polybutadiene rubber.

Existing players and new entrants are analyzing and responding to these product-level demand–supply scenarios. For example, BPCL is entering the propylene oxide (PO) chain with a petrochemicals expansion in its Kochi refinery. The joint venture between BASF, Adani, ADNOC, and Borealis is targeting the deficit in acrylics and oxo alcohols within the propylene chain.

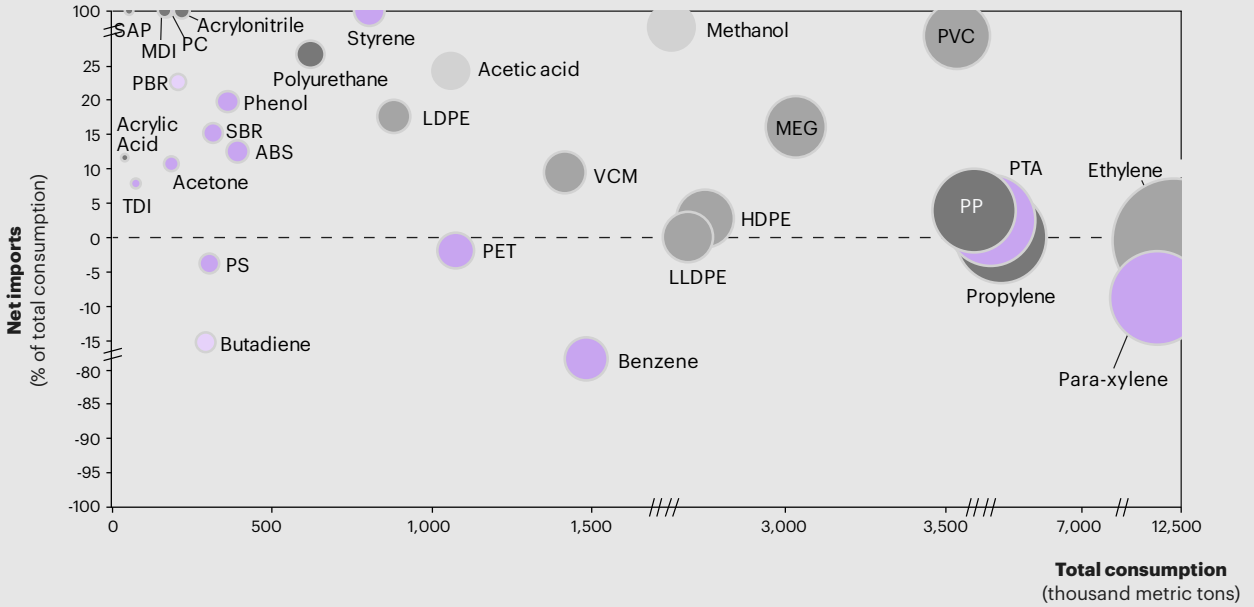
However, overall, there is still significant room for new or incumbent players to invest in other petrochemicals derivatives such as glycols, polyurethanes, and rubbers.

Figure 3

India still lags in several key petrochemical derivatives

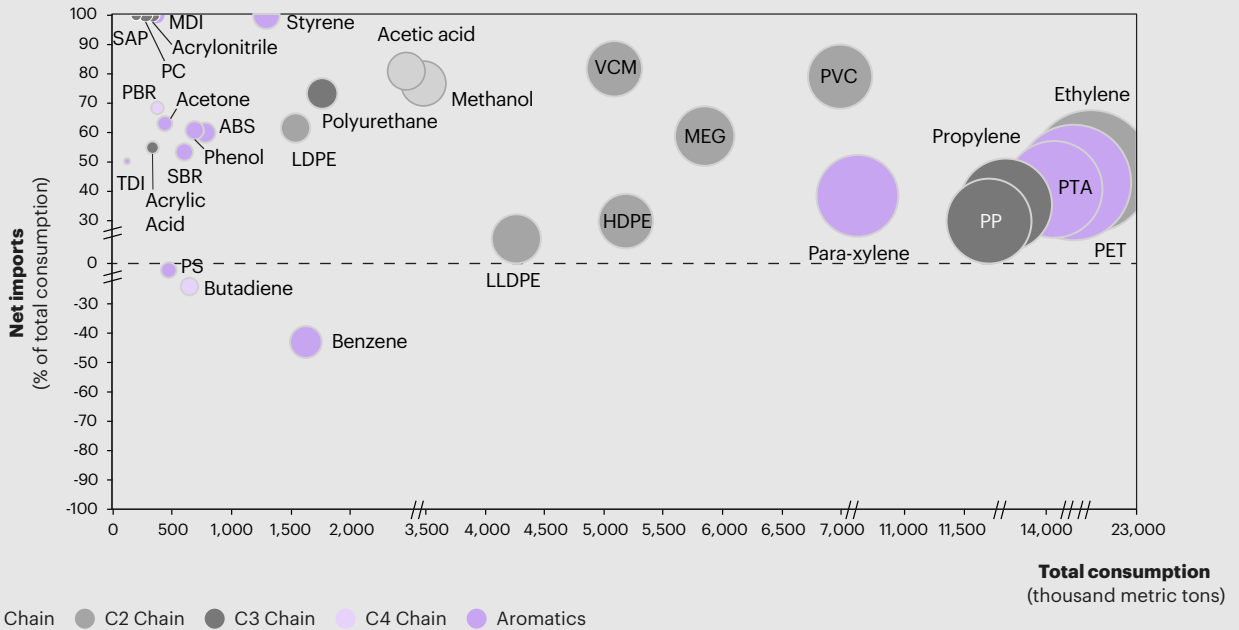
Part 1

Petrochemicals import vs. demand¹ (2019)



Part 2

Petrochemicals import vs. demand^{1,2} (2030)



● C1 Chain ● C2 Chain ● C3 Chain ● C4 Chain ● Aromatics

¹ Equivalent demand and 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

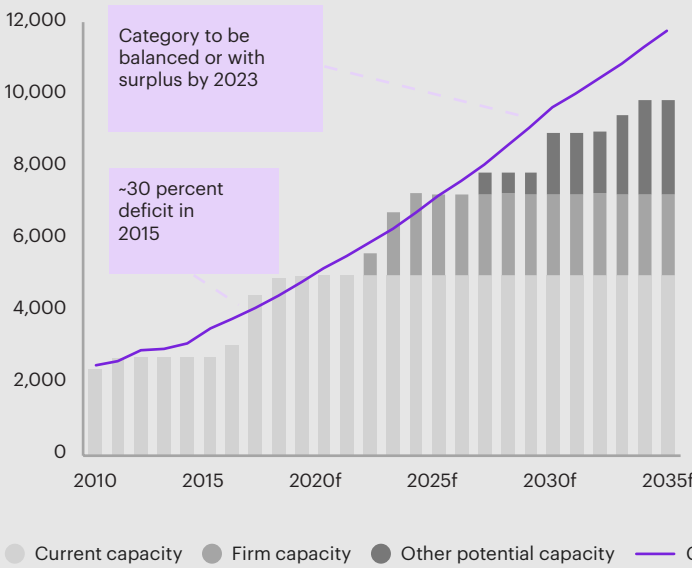
Notes: Bubble size represents Indian market size ('000 MT). Net imports = imports – exports.

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

Figure 4

Within a product segment, grade-wise supply–demand picture varies

Indian polyethylene supply–demand scenario¹



Grades in excess and deficit (select example, 2019)

Application	Grade	Market size (kilotons per year)
LLDPE film	1 MFI slip	700
HDPE blow molding	General purpose	200
LLDPE film	Metalocene	250
HDPE blow molding	Large blow molding	200

● Excess ● Deficit

¹ For linear low-density polyethylene (LLDPE) and high-density polyethylene (HDPE) only
Source: Kearney analysis

3 Choice of feedstock platform

Historically, given India’s net surplus and limited gas production, naphtha has been the dominant feedstock for Indian producers. However, increasing global availability of alternate feedstocks will likely have an impact on Indian production.

Shale gas feedstock led the resurgence of petrochemical production in the US. Increased availability of natural gas liquids (NGLs) (for example, ethane, propane, and butane) and advances in storage and transportation facilities have made these feedstocks available for global players. This has made it easier for them to switch to the new feedstock when it is margin-accretive. As a result, several established players in the Western world have upgraded their assets to increase flexibility in their production and to improve long-term competitiveness. For example, LyondellBasell’s Equistar Chemical has built feedstock flexibility to process NGLs in addition to naphtha. Borealis also upgraded its Stenungsund cracker to add NGLs to its feedstock slate.

In India, Reliance has installed an off-gas cracker complex of about 1.5 MMT with the capability to use both propane and ethane as feedstock. The company has invested in setting up an end-to-end supply chain for importing and storing ethane from the US. Additionally, greenfield petrochemicals units in India are increasingly adopting mixed feed in their assets. For example, OPaL has flexibility in its cracker configuration to process a wide basket of feedstocks such as naphtha, ethane, and propane. HPCL’s HRRL project will also include a dual-feed steam cracker unit for its petrochemical production.

Finally, emerging technologies such as crude-to-chemicals are opening new avenues for petrochemicals production globally and potentially in India as well.

Multiple feedstock routes for petrochemical production will add complexity and volatility in trade flows and margin realization. Depending on the availability and price scenario, the relative competitiveness of different feedstock options will vary over time (see figure 5). To mitigate the risks and build a competitive advantage, Indian petrochemical players need to carefully assess the capex versus opex implications of building feedstock flexibility in their existing and upcoming petrochemical assets.

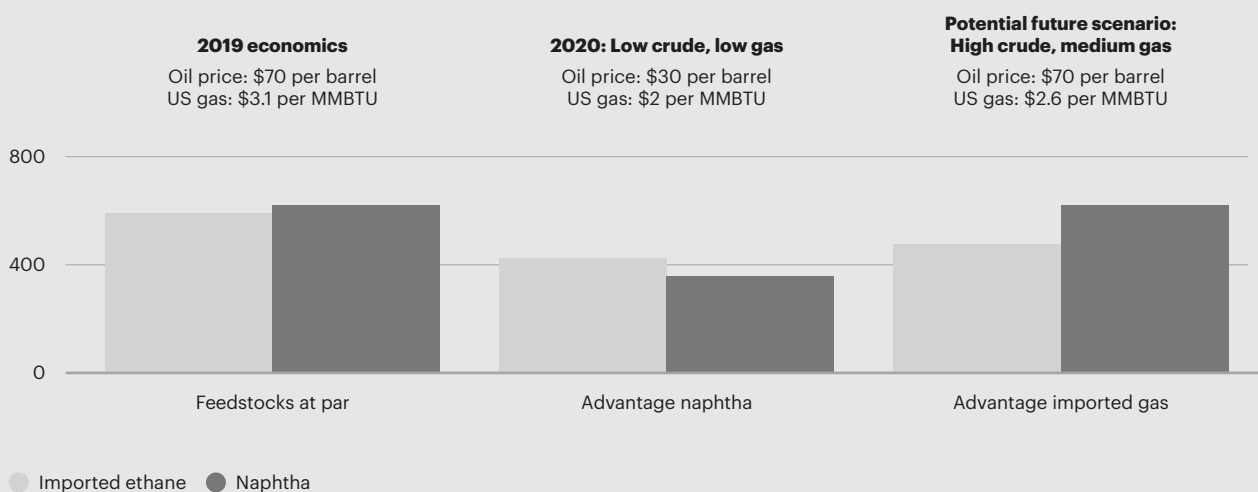
4 Partnerships to go far and fast

The Indian petrochemical industry has primarily grown through organic expansions. However, the industry is now increasingly open to mergers and acquisitions (M&A) and partnership opportunities, for both domestic and global companies. Although most global petrochemical giants have a limited presence in India, a growing number of players are actively looking to expand their presence in the country.

In addition, the emergence of reasonably sized domestic targets, easing regulations on foreign investment, and improving infrastructure facilities have helped drive further M&A interest in this space.

Figure 5
Cracker economics vary based on feedstock price scenarios

Ethylene cash-cost comparison for naphtha vs. imported gas for cracker in India (\$ per ton)



- The relative cost competitiveness of feedstock varies with time, which impacts cracker economics.
- To be competitive, several players have built feedstock flexibility in their crackers.

Note: MMBTU is million British thermal units.

Sources: Nexant, Bloomberg, US Energy Information Administration, Energy Management and Information Systems; Kearney analysis

Multiple models have emerged as global and domestic players find synergies to win in India. First, global oil and gas and chemical giants are targeting big-ticket investments in established domestic companies to mark their entry into India. For example, Saudi Aramco recently signed a memorandum of understanding to evaluate up to a 20 percent equity stake in Reliance's oil-to-chemicals business, valued at around \$15 billion. Second, strategic partnerships are emerging between global and domestic players to take advantage of global companies' technological expertise and domestic companies' understanding of the Indian market. For example, the Russian petrochemicals company Sibur formed a joint venture with Reliance for production of butyl rubbers. Similarly, Adani, Borealis, BASF, and ADNOC are evaluating a joint venture for a propane dehydrogenation (PDH) plant for acrylates, oxo alcohols, and PP production. In addition, Indian public sector undertakings (PSUs), Saudi Aramco, and ADNOC are evaluating setting up a West Coast refinery and petrochemicals complex with a total investment of \$45 billion and petrochemicals capacity of 18 MMT. Finally, global players are also targeting niche manufacturers to diversify downstream. For example, DSM India acquired SRF Limited's engineering plastics business.

The enhanced pace of partnership and M&A opportunities in the Indian petrochemicals market can potentially shift the dynamics of competition in the industry, with India emerging as the next horizon for global giants to unlock a new frontier for growth.

5 A massive push to go green

The global sustainability mega trend, driven by changing consumer preferences, non-governmental organization (NGO) activism, and a push from regulators, is driving petrochemical producers to focus substantially on embedding sustainable practices across their business.

Global petrochemical producers have taken a variety of approaches to embedding sustainability in their business operations. For example, Neste, a Finland-based oil refining and marketing company, has partnered with LyondellBassell to develop bio-based PP and linear-density PE grades for production at commercial scale. UK-based INEOS is collaborating with UTM Germany, a dairy products manufacturer, to develop a chemical recycling technology for converting polystyrene to styrene monomer. Petrochemical end customers, such as consumer products major Unilever, are evolving their strategy to include the circular economy in their overall corporate agenda. Unilever has already announced ambitious plans to halve the amount of virgin plastic it uses in its packaging by 2025.

In India, environmental action has taken the form of state governments, such as in Maharashtra, Tamil Nadu, and Madhya Pradesh, enacting stricter regulations to ban single-use plastics. A much-discussed nationwide ban on single-use plastics is projected to impact domestic plastic consumption by as much as 10 percent.

While regulation has mainly focused on single-use plastics, Indian producers have already started adopting a series of sustainability measures in their businesses. For example, Reliance partnered with third-party agencies in 2018 to recycle post-consumer PET bottles into fibers. With the growing global importance of sustainability, we expect the Indian petrochemical industry to start adopting a much wider range of sustainability and "circularity" measures in the coming decade.

The evolution of the circular economy in India is still at a nascent stage, with plastics recycling largely driven by an informal network of street pickers or NGOs. Several innovative start-ups have also mushroomed in this space recently. The scale of such activities continues to remain small. However, as more and more end customers such as Unilever start adopting specific circular economy goals, we expect Indian petrochemical players to gear up in response to this emerging customer and regulatory trend.

In the coming decade, we expect sustainability and the circular economy to drive steady disruption across the petrochemicals landscape, leading to the emergence of new stakeholders (for example, recyclers) and new partnership models in the value chain.

6 Dynamic regulatory environment for trade

We expect the evolving regulatory environment for trade to continue to be a significant driver of market dynamics in the Indian petrochemical industry. As the demand–supply situation continues to evolve across product categories (for example, global and domestic surplus in PE), we expect the regulatory framework to also evolve. For example, a case could be made for increasing customs duties or anti-dumping levies or other non-tariff barriers for polymers, similar to the recent increase in PVC duties from 7.5 percent to 10 percent in 2019. This could reduce the competitiveness of global imports and help improve margins for local players.

Overall, incumbents and new entrants will need to factor in a dynamic regulatory environment as they prepare their business plans for breakthrough growth in India.

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Five imperatives for riding the petrochemicals wave

The coming decade in India’s petrochemicals market is likely to be characterized by substantial opportunities and significant disruptions. We see five key imperatives for incumbents and new entrants to the sector.

1 Place the right portfolio bets

Investing in the right molecular chains 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, the competition landscape, and potential disruptions before making strategic long-term bets (see figure 6). A robust portfolio strategy for the Indian petrochemicals 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.

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. Alternatively, they can explore other C2/C3 downstream products such as ethylene oxide, propylene oxide, and acrylates.

New entrants can enter one of the white spaces in downstream petrochemicals products or expand into competitive segments with a better value proposition. For example, new players can enter into C4 and aromatics chains, which have abundant feedstock supply but limited downstream derivatives production; for example, polycarbonates, linear alkyl benzene, and butyl rubber.

Niche petrochemicals and specialty players that depend on large petrochemical facilities for feedstock need to reevaluate availability of intermediates and building blocks amid rising domestic petrochemical capacities. This would allow them to identify opportunities for upstream integration or expansion of their portfolio offerings.

Figure 6

Comprehensive evaluation of petrochemical molecules will be crucial for defining a robust product portfolio strategy

Product shortlisting criteria

Market attractiveness	Ease of implementation	Strategic considerations
— Current and future market size	— Value chain positioning and separation from building blocks	— Portfolio considerations: synergies and interlinkages between products, room for future downstream diversification
— Supply-demand balance and market deficit	— Access to technology	— Future risks due to regulations and push toward sustainability
— Profitability assessment	— Feedstock availability	
— Competitive landscape with entry barriers	— Marketing complexity	

Source: Kearney analysis

2 Adopt differentiated go-to-market models

As discussed earlier, India's go-to-market (GTM) models have evolved in response to the highly fragmented, credit-starved base of downstream petrochemical 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 toward 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- and 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. Petrochemical 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 toward value-based selling. This model will focus on key large customers to justify the return on investment.

Channel partners will remain a vital 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 and 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 (see figure 7 on page 16).

Figure 7

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

1 Commodity: direct sales

Move toward low-overhead, no-frills, digital-first model to counter margin pressure

- Move established large and medium customer base to direct sales instead of agents
- Use digital to reduce overheads, such as through online product and application information, transparent pricing, ordering portals, and supply chain digitalization
- Create low-touch model via standardization (for example, for order quantity, lead times, and credit)

2 Specialty: direct sales

Evolve from product marketer to solution provider

- Reorient sales force toward value-based selling
- Build in-house capabilities to support product innovation, testing and trials, and troubleshooting
- Invest in building relationships with key customers, such as through value-added services and joint product development complexity

3 Indirect sales

- Develop efficient export channels with credible partners, given domestic surplus for select products
- Revamp channel structure (including type of partners and number) in line with portfolio evolution and expected volumes
- Use the evolving channel partner landscape to reduce in-house sales and marketing complexity, and create strong customer value proposition

Source: Kearney analysis

3 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 petrochemical 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 use six levers to embark on a P&L transformation journey (see figure 8 on page 17).

a) Pricing excellence can provide 2 to 5 percent improvement in the top line and profitability.

For chemical commodities, it is crucial to identify the comprehensive set of price drivers, not just those related to market, but also customer-specific (for example, strategic importance, cost to serve, value-added services, and available alternatives) internal factors (volume target and inventory position) and order-specific drivers (size, urgency, and customizations). Players need to move away from subjective "gut" calls to more analytics-driven processes to arrive at customer-specific target pricing. The pricing process needs to be supported by robust governance and alignment of sales teams' key responsibility areas to ensure effective implementation. For specialty chemicals, it is crucial to establish transparent costs and margins for stock-keeping units, and a value-based pricing approach to extract maximum value. Analytical and digital tools can significantly help by automating the target price calculations and supporting sales teams to sustain the benefits.

b) A zero-based approach is highly effective to drive leaner organizational costs.

Starting from a zero base challenges legacy costs, ties costs to specific functions and activities, and establishes transparency to avoid blanket changes. Such an approach can drive 10 to 15 percent improvement in sales, general, and administrative costs.

c) External spend on materials and services across the value chain represents more than 70 percent of the total P&L cost for petrochemical players.

Strategic sourcing levers combined with digital enablers can unlock tremendous value from this spend. Analytics is significantly changing the game in procurement—the use cases abound, including, input raw material price forecasting, market intelligence engines, automated spend cube analysis, advanced sourcing platforms, and digital contract management. It is crucial for petrochemical players to take a business-driven approach and prioritize the right use cases to extract maximum value from their suppliers.

d) Digital-led efficiency improvements in manufacturing and supply chain operations present the biggest area of opportunity, which was not traditionally available.

Petrochemical plants generate vast amounts of data, which can now be processed using machine learning based on advanced algorithms to drive yield improvements without capex investments. Digitalization of equipment data (for example, via sensors and handheld devices), combined with analytics, is enabling predictive maintenance to reduce maintenance costs and improve plant availability. Integrated planning platforms allow for optimization across the manufacturing and supply chain network to reduce total cost-to-serve via better production scheduling, shorter lead times, and lower inventory across the supply chain nodes. Players can reduce conversion costs by 5 to 10 percent by embracing digital operations.

Figure 8

Digital-led reset solutions deliver comprehensive and rapid earnings expansion

Solutions	Topline	P&L cost areas ¹				Balance sheet	Improvement potential ² (percentage)
		SG&A ¹	Raw materials	Logistics and 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 analysis

e) Working capital optimization represents another opportunity to derive value.

Scientific inventory norms based on factors such as safety stock, cycle stock, and service level can help optimize the raw material and finished goods inventory. Smart management of accounts receivables and payables is another area that can free up cash from the balance sheet.

f) With the upcoming wave of investment in petrochemicals, players need tight capex management to ensure in-budget and on-time completion of projects.

Given the high capex and complexity of petrochemicals projects, project management can be complicated. More than 61 percent of projects end up above budget and approximately 40 percent end up behind schedule. A robust capex management approach, with a strong focus on value generation and value assurance, can provide significant value in such programs. Value generation interventions focus on driving efficiency across design, procurement, claims, and operational readiness to optimize overall costs. Typical initiatives consist of value engineering, design-to-cost, a strategic sourcing approach to contracting, structured processes for change, claims approval, and operational readiness planning. Value assurance interventions focus on on-time completion via robust stage-gating processes, strong project management with clear governance, integrated project control across all interfaces and suppliers, proactive risk management, and a comprehensive management information system with right key performance indicators, supported by a digital platform to ensure a single version of truth and real-time availability of information. Done well, this approach can result in a 4 to 6 percent reduction in capex cost and drive value via on-time completion.

4 Strengthen M&A and partnership capabilities

Strategic partnerships will be one of the key winning themes for petrochemical businesses in India. Domestic petrochemical players can partner with other domestic producers of downstream derivatives 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, M&A between specialty and commodity petrochemical players in the same molecular chain can help the new company benefit from being a vertically integrated player. It can, for example, create feedstock securitization for specialty products and provide flexibility to manage downstream production, based on market conditions, to drive 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.

5 Embed sustainability into ways of working

Over the next decade, sustainability is bound to be high on the agenda for petrochemical manufacturers and other industry stakeholders. Forward-thinking companies will be stewards of sustainability. This approach will help to avoid disruptions in the business, such as from a sudden decline in demand because of a plastic ban, and also help to develop strong equity with external stakeholders and end users. Indian petrochemicals companies can play a pivotal role in the circular economy by driving a sustainability agenda. Companies can explore multiple routes, including mechanical and chemical recycling or renewable feedstock platforms. Four moves will be essential to building a sustainability value pillar:

- Develop a clear strategy, carefully considering where to play (product innovation and recycling value chain enabler) and how to win (greenfield setup, acquisition, or partnerships) to ensure the program's long-term feasibility.
- Be willing to experiment to fine tune and arrive at the right value chain play.
- Scout for partnerships rather than reinventing the wheel. Use the technological expertise of established stakeholders, such as innovative start-ups and NGOs, as a catalyst to get the program off the ground.
- Build a sector consortium to engage in positive public relations among key stakeholders. Define the sector's value proposition and the intended positioning for sustainability brand equity. Develop a robust sustainability advocacy strategy across a variety of communication platforms.

Domestic players can access the financial, technological, and operational know-how of their global partners to accelerate their growth plans.

The growth story continues

India’s petrochemicals market has enjoyed strong momentum over the past few years, and we expect the growth story to continue over the coming decade. However, in the context of growing domestic and global supply, increasing trade uncertainties, and a growing regulatory focus on sustainability and the circular economy, several disruptions could alter the petrochemical landscape. In this context, incumbents as well as new entrants will need to carefully assess their options and build a highly differentiated “Made for India” strategy to capitalize on the attractive opportunities and to overcome the unique challenges posed by the Indian market (see figure 9).

Figure 9

The best way to ride India’s petrochemicals wave varies by stakeholder

Existing petrochemical players	Global players entering India	Domestic players entering petrochemical industry	Niche and specialty players
<ul style="list-style-type: none"> — Plan for next wave of growth through strategic portfolio expansion — Revamp go-to-market model to drive differentiation and customer stickiness — Reset P&L costs to drive profitability and competitiveness — Invest in sustainable solutions across the value chain 	<ul style="list-style-type: none"> — Form a robust portfolio strategy based on a detailed understanding of product markets — Identify the right domestic partners for an M&A–strategic alliance to set up production in India 	<ul style="list-style-type: none"> — Develop a distinct portfolio strategy built on a deep understanding of white spaces in the domestic market — Adopt disruptive go-to-market models that are not constrained by legacy, to drive breakthrough differentiation 	<ul style="list-style-type: none"> — Given increasing domestic petrochemical production, explore upstream integration and alliances to secure feedstock — Reevaluate portfolio to capture downstream opportunities arising from enhanced domestic availability of petrochemical intermediates and derivatives — Build a sustainable value engine to create distinct propositions

Source: Kearney analysis

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