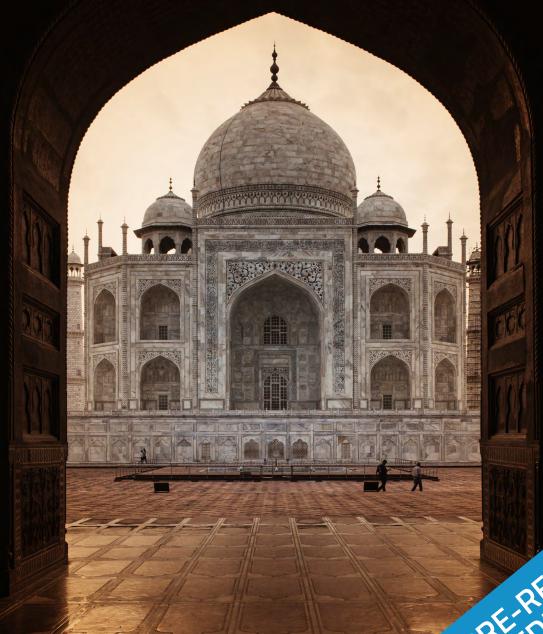


India Chemicals 2018



PRE-RELIONI PRE-RELIONI



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India Chemicals 2018 Pre-Release

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Dear Reader,

It is our pleasure to collate this special feature on India's chemicals industry. This is a special pre-release of our Industry Explorations publication, which has been created especially for the attendees of India Chem 2018, by GBR with the support of The Department of Chemicals and Petrochemicals, Government of India and FICCI.

As international field journalists, we have the privilege of speaking with the brightest minds that drive innovation, manufacturing, exports and growth within the chemicals industry. Companies and executives are striving to continue making a bigger mark for India on the global map through increased trade and foreign collaboration fuelled by a strategic focus on increased domestic manufacturing.

This is truly an exciting time for India. With its chemicals market currently valued at US\$160 billion, with US\$32 billion in specialty chemicals, the industry is projected to grow to US\$300 billion by 2025. With domestic and international demand increasing, especially in agrochemicals, surfactants, colourants and paints and coatings, India's chemical industry has seen double-digit growth from 2013 to 2017, and, through our research, we have explored the trends and business practices that have enabled this growth.

India's ease of doing business has also jumped 30 places in the World Bank Group's Index following major tax reforms last year and a National Action Plan has been set up to address chemical regulation and pollution.

Key insights we have gleaned through our field research in India include; how companies across the value chain are responding to recent changes in regulation. The new Goods & Services Tax law (GST) is streamlining processes so long held down by bureaucracy; how increasing domestic consumption and a supply shortage in China due to new environmental regulations are leading to both increasing domestic and international demand; and how companies are striving to meet the goals of the 'Make in India' campaign set forth by national governance.

A second central theme is the increased focus on sustainability, not only in operations but also as a core value of the industry. In addition to reducing their environmental footprint, companies are increasingly innovating ways in making sustainability a defining feature of their corporate culture. We have heard voices becoming louder on the future of sustainable business operations for the chemicals industry in India, and expect to see continued innovation and focus in this realm.

A special thank you to our association partners, the Indian Chemicals Council (ICC) and the Indian Specialty Chemicals Manufacturers Association (ISCMA) for extending their support, and the range of C-Level executives that have shared their wealth of insights with us through the research process. We hope you enjoy the read as you learn about India's growing potential of becoming a regional chemicals powerhouse.

Neha Premjee

Project Director

Global Business Reports



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Julian Issa



Lucrezia Falcidia

India: Potential to Proceed

Expectation increases as development gathers pace

India has long been a country of potential. Promises of rapid development and prosperity have often been made, yet the delivery has taken its time. Recently, as part of the BRICS economies, India has stepped up its case of becoming a regional manufacturing hub and not only for commoditized products. India's GDP annual growth rate has been at least at 5.5% over the past 10 years and its economy is expected to grow by 7.3% in the next financial year (2018-2019) according to the World Bank. India's chemicals industry is also witnessing sizeable growth. Between 2010 and 2015, it posted a strong compound annual growth rate (CAGR) of 13% according to JM Financial Institutional Securities, reaching US\$160 billion by 2017. It is expected to almost double to US\$300 billion by 2025 according to the government. But what is contributing to the sector's increased fortunes?

RISING DOMESTIC DEMAND MEETS A GLOBAL SUPPLY SHORTAGE

The Indian chemical industry's rapid growth, which is forecasted to have a CAGR of 8% to 10% to 2025, can be put down to both domestic and international factors. Increasing development is leading to an insatiable demand in a number of end-user markets - including personal care, agrochemicals, food, feed and paints and coating - which is resulting in higher consumption of chemicals per capita.

"India is becoming one of the most important regions globally in terms of specialty chemicals. There has been a significant rise in the production of functional chemicals, especially for corrosion prevention and electroplating. There is a clear move from companies moving towards low-volume, high-value productions. Moreover, companies are demonstrating awareness in understanding their customers' needs and finding new innovative solutions to address them."

-Vinay Patil,
President,
Indian
Specialty Chemicals
Manufacturers
Association

INDUSTRY AT A GLANCE



2018 forecast

PETROCHEMICALS & CHEMICALS 2017

7.219 SHARE

of total manufacturing sector



India annually till 2025

1.2% SHARE

chemicals sector represents
1.2% of National Gross
Value Added



largest consumer of oil globally



largest consumer of coal globally

Sources: World Bank Group, International Monetary Fund Government of India, India Rating





INTELLIGENT SOLUTIONS TAILORED TO YOUR NEEDS

Dai ichi is one of the pioneering specialty chemical companies in India. The company commenced in 1963, in technical collaboration with Dai -Ichi Kogyo Seiyaku of Japan.

Dai Ichi has recently expanded manufacturing capabilities with a new plant in Dahej, in effect doubling its present capacity.





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A growing middle class and increasing urbanization are specifically contributing on doubling capacity at our to this. According to the National Council of Dahej site with a new plant. Applied Research, the Indian middle class
The rationale behind this was could grow from 31 million households in 2008 to 148 million households by as part of the Petroleum, 2030, quadrupling consumption power. Moreover, India's urban population is expected to increase by 275 million by (PCPIR). The plant itself will

Narendra Modi's 'Make in India' initiative combined with stringent environmental regulations put in place in China, have also led to increased opportunities for India's manufacturers. Furthermore, a temporarily weakened rupee is contributing to rising export competitiveness and trade wars disrupting global dynamics are underlining India's credentials as an alternative partner to China. "The global turbulence, due to oil price movement and possible trade flow changes as a result of protectionist regimes across the world, may not impact India as adversely due to its inherently large domestic market strength and stable political regime via a vibrant democracy," said H. S. Karangle, director general of the Indian Chemical Council.

"We are currently focused to be increase our footprint Chemicals, Petrochemicals and Investment Region be a digitalized state-of-theart facility."

-Shernaz Vakil, Chairperson and Managing Director, Dai-ichi Karkaria Association





The 'Make in India' Initiative



The 'Make in India' initiative was launched by Prime Minister Narendra Modi in September 2014 as a wider set of nation-building initiatives.



The government is building six industrial corridors to develop land and quality infrastructure



Since the initiative's launch, India's 'Ease of Doing Business' has jumped from 142nd (2014) to 100th (2018) in the World Bank's Doing Business ranking.



Since the initiative's launch, India's foreign direct investment (FDI) inflow has increased by 55% and FDI equity inflow by 63%.



"Make in India' for chemicals specifically has seen limited success till now. The intent is correct as a lot of chemicals are imported, but there are some fundamental issues that need to be resolved for the campaign to gain momentum. One of the most critical elements to get competitive manufacturing in India is feedstock security."

-Anshuman Maheshwary, Partner, A.T Kearney

> "I believe that science needs to be left to the scientists and industry to the industrialists. The government should not be the driver of this change, rather a facilitator. The scientists and industrialists are smart enough to figure out what the right path is and should have the ability to do so by themselves, if the conditions are made more conducive.



-Tejas Parekh, Country Manager, Connell Brothers



"We are actively contemplating investing in some manufacturing capabilities within India and believe that India will be a future hub of manufacturing not only for our existing products but for some of the new R&D molecules that are in the pipeline. In order for us to invest in India, we need the support of the aovernment."

-Pramod Thota, President, FMC India

H. S. Karangle

Director General, Indian Chemical Council



How has India's chemicals industry evolved over the past The India offers availability of highly skilled technical manpower, a decade?

last decade. The growth is likely to continue for many more years. It is projected to reach US\$402 billion by 2025. The reasons for this are due to the growth of the economy – which is at 8% GDP annual growth - a large young population, massive infrastructure investment, a rise in middle income group, thriving retail outlets, 100 smart
The National Action Plan sets out to simultaneously advance cities, modernization of agriculture and low per capita chemical consumption base. As a result, in the past decade, there has been robust growth in refining, petrochemicals, paints, agrochemicals, pharmaceuticals and specialty chemicals.

India's specialty chemical industry is now at US\$32 billion. Are you seeing a move away from the production of base chemicals towards the production of higher value-added derivatives?

The demand for base chemicals in India is still very large. In fact, there is a large deficit in base chemicals and building blocks exist, which presents an opportunity for investors. For example, methanol acetic acid, VAM PvOH styrene monomer acrylates, and SAP phenol are a few products where large imports are taking place. Specialty chemicals demand is growing at a fast pace and the sector requires investment, technology, local application development and R&D. The opportunity in this segment is tremendous and India, with a strong respect for IPR, is probably best suited for hi-tech chemical companies to come in with investments and enjoy a long-term sustainable growth.

manufacturers?

'Make in India' is a massive government initiative to attract world, may not impact India as adversely due to its inherently large investment & technology from global industry leaders. With a population of more than 1 billion and an increasing purchasing power, local manufacturing is an attractive proposition. China, the United States, France, Japan and the UAE are part of 'Make in India' program. Companies like Boeing, MV Agusta, GE, General Motors and Cummins have already committed resources. Moreover, many hitech companies have set up their R&D facilities in India as there is a in the stock market has been excellent in the past five years and it large pool of highly skilled technical manpower.

What are the main challenges and advantages for the international chemicals producers wanting to invest in India?

strong IPR regime as well as a strong legal system in place. Finally, The Indian chemical industry has seen spectacular growth over the India has a good level of ease of doing business and a favorable stable industrial climate. The challenges include the fact that the infrastructure is still developing and there is a lack of chemical ports and chemical parks with common effluent treatment.

India's development and climate change-related objectives. Are you seeing the industry prioritize sustainability?

The Indian chemical industry is adopting sustainable practices to meet international quality standards. The draft National Chemical Policy lays great emphasis on climate change related objectives and sustainable operations of all the activities. More members of the Indian chemicals industry are adhering to Responsible Care.

How has the new single Goods and Services Tax (GST) impacted India's chemicals manufacturers?

A single GST tax has improved the ease of doing business tremendously. For the manufacturers, input credit has become easy and the system is more aligned to global GST models. The government has been proactive and has been easing the systems to facilitate business and over the next few years the GST methodology and practices is expected to be completely in line with global standards..

What are your expectations for India's chemicals industry over the coming three to five years?

How is the 'Make in India' initiative impacting local chemicals The global turbulence, due to oil price movement and possible trade flow changes as a result of protectionist regimes across the domestic market strength and stable political regime via a vibrant

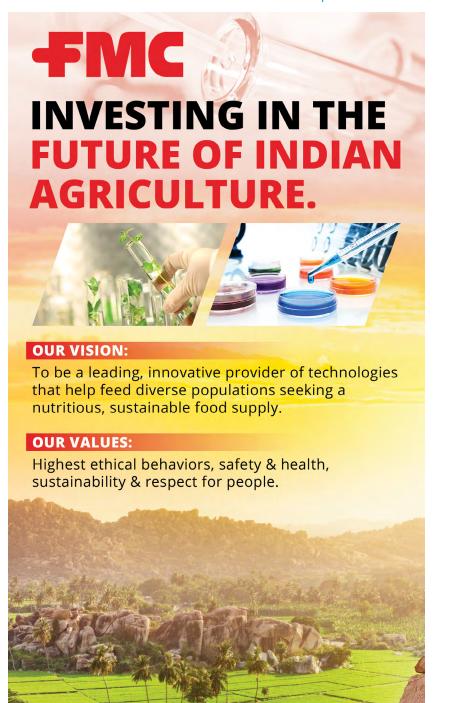
Can you provide a final message to our readers?

The growth of the chemicals industry in India will continue in double digits for many more years. The performance of the chemicals sector has outperformed most sectors. This is likely to continue. The final message to the readers would be - participate in the growth of India, invest in the chemicals sector and deliver your shareholder robust returns for many years..

A HELPING HAND FROM THE GOVERNMENT

With respect to governance, India is trying to strip bureaucratic complications, which have for so long hindered crossstate development. The new Goods and Services Tax (GST), which came into effect in June 2017, has been a key stepping stone unifying the country into a single market as It has replaced numerous federal and state taxes. Since its implementation, India has jumped 30 places in the World Bank's Ease of Doing Business Index (2018), albeit still at 100th. Despite variables such as 'Protecting Minority Investors' and 'Getting Electricity' being as high as 4th and 29th respectively, the country ranks as low as 164th for 'Enforcing Contracts' and 181st with respect to 'Dealing with Construction Permits'. More work clearly has to be done, but the country is moving in the right direction.

Vinay Patil, president of the Indian Specialty Chemical Manufacturers Association, highlighted that the implementation of GST will improve the working capabilities of India's manufacturers as it reduces the number of indirect taxes as well as the cost of doing business. M. P. Aggarwal, chairman of Sajjan India also agrees with Patil's sentiments. 'GST is a great idea which will greatly decrease costs including initial investment. These initiatives will make India's manufacturing and cost base more dynamic' said Aggarwal.



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"India is going to become a regional manufacturing hub. The government has launched the Make in India campaign and a lot of effort has been put to make the regulatory and macroeconomic environment conducive to this. However, India remains a net importer of a number of feedstocks and there needs to be the right import strategy put in place."

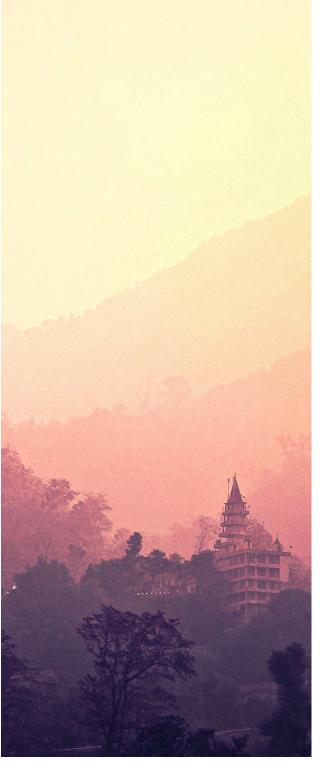


-L Balakrishna, Managing Director -**Brenntag**

REPEATING CHALLENGES LIE AHEAD

Although clear action has been taken by both industry and government alike, old and new cracks continue to deter India's long-term prospects as a regional chemicals manufacturing powerhouse. A key hindrance remains the lack of feedstock options. The government had approved of four Petroleum, Chemical and Petrochemical Investment Regions (PCPIRs) in the states of Andhra Pradesh (Vishakhapatnam), Gujarat (Dahej), Odisha (Paradeep) and Tamil Nadu (Cuddalore and Naghapattinam), to improve efficiency and collaboration but finding an anchor tenant to provide a reliable flow of feedstock continues to be the key flaw. For now, the country can rely on its close geographical proximity to the Gulf for cheap feedstock. However, as prices remain volatile moving forward



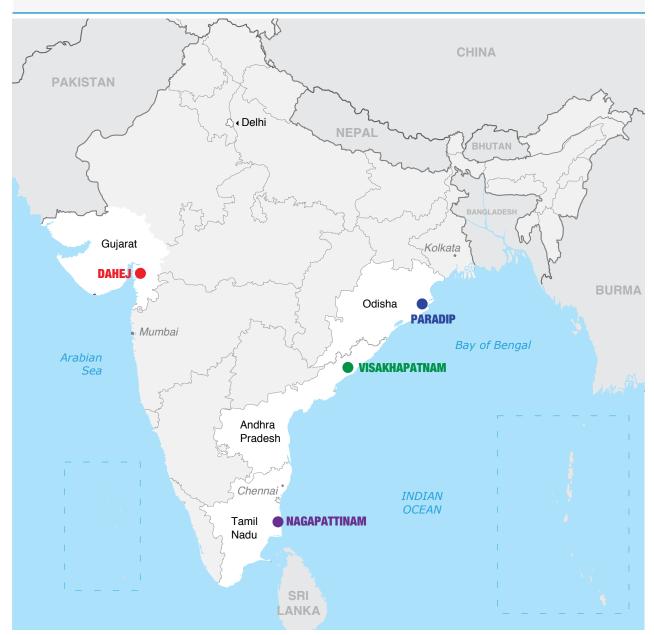


capabilities will be a question of when, not if.

India's Chemicals and Petrochemicals Secretary P. Raghavendra gives birth to each value chain in the chemicals industry and Rao underlined the importance of implementing an integrated

and domestic demand continues to increase, building feedstock policy, highlighting that by 2025, the ethylene deficit would be at 7.5 million tonnes, the equivalent of five new crackers. Feedstock without it, India dependence and lack of security will remain.

PETROLEUM, CHEMICALS, PETROCHEMICALS **INVESTMENT REGION CLUSTERS**





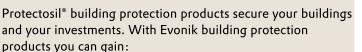
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Sudhir Shenoy Dow India - Dow Chemical

How is BASF prioritizing R&D in India?

A significant investment we made here was building our own Innovation Campus, with its own R&D center in Mumbai, which caters to the discovery of new molecules, particularly for agricultural applications. Other areas of research include for the care chemicals business, performance chemicals, solutions, as well as pigments and dispersions businesses.

manufacturer in the Indian market?

India's market continues to rapidly grow and there are a lot of growth opportunities. There are always certain challenges that are faced by most manufacturers, often related to the need for a more adequate infrastructure. Additionally, India does not have natural feedstock and so our raw materials need to be imported. Although these are challenges, we compensate for it by having great chemical engineering and technological skills.

How has the new single GST impacted the chemicals cross-business collaboration and allows our customers the industry?

GST is making the environment more efficient. For example, the transportation system has become at least 20% more efficient post-GST. The second area of efficiency is that in order to optimize taxes, we used to have a lot of warehouses all over India as having a warehouse just across the border meant optimizing on state taxes. This is not needed anymore. Conclusively, we are also seeing efficiencies in terms of consolidating our stocking points. The third efficiency is how GST is formalizing the whole economy. Prior to GST implementation, a large proportion of businesses were not in the formal economy. When things become more formalized, I believe companies like BASF will benefit as that is what we have been doing for many years.

Could you introduce us to Dow Chemical's presence in

Dow Chemical has been present in India for over 60 years, but our presence has dramatically grown in the last 15 years. This is partly due to the fact that the market has been on a fast track of growth. Our supply capability has also improved, especially in the last couple of years with the completion of Sadara. Our investment in Saudi Arabia with Saudi Aramco has been a substantial asset What are the major challenges you face as a large from where we supply India amongst other markets. A lot of effort has been put into R&D and innovation at a localized level in India, which has enabled us to go after market segments where the needs are very different compared to the rest of the world.

How is Dow's Pack Studios contributing to your development in the market?

The Pack Studio is an evolution of a journey that we have been on for a long time. What we did with the new innovation center is to combine all of our technologies under one roof. It encourages opportunity to view the entire portfolio and determine what makes the most sense for them.

How are you strategizing growth in India moving forward?

There is opportunity everywhere today in India. The question is what are we capable of being able to monetize within our needs, our capabilities and availability? We have to prioritize, and our focus is to value-add and move up the value chain. Although Dow India typically operates in what we term as a polymer or a petrochemical market, we look for segments where there are gaps, where performance improvement is required or where value can be captured by the brand owners. Sustainability is one driver which we have been working on for the past five years.

THE NEXT STEP

India's chemicals sector is at an exciting period of development. The vast potential is without doubt, but questions need to be answered. In a country as vast and populated as India, creating a thriving collaborative ecosystem, such as Singapore's Jurong Island or Houston, will be challenging. However, if the PCPIRs can be supported by a strong infrastructure and reliable anchor tenant, a major hurdle will have been cleared. Development remains in its infancy but learning from other jurisdictions will be pivotal to quick and efficient progress. Sudhir Shenoy, CEO of Dow India, said: "It is still in an evolutionary process. We do not want to repeat mistakes, because it is an industry that has its challenges with respect to the environment, health and safety. We want to learn from other geographies that are perhaps ahead of us and learn from their mistakes." said Shenoy.

"As China currently has a

at the moment due to the abundance of talent at a

low-cost and high-quality

products.'

CEO.

-Roma Shah.

Eastmen Chemicals

supply shortage due to new environmental regulations. more companies are looking towards India. There are many advantages to this





