India Chem 2022

Post Show Report: Key discussion points

02 - 03 November 2022

Report

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1. Introduction

- The Indian Chemicals & Petrochemicals Industry is growing rapidly due to the positive reforms undertaken by the Government of India in recent years and atmosphere of encouragement. Chemical industry in India is a diversified industry, covering about 80,000 commercial products. It provides key building blocks to a host of downstream industries such as automobiles, textiles, papers, paints, soaps, detergents, pharmaceuticals among many others. It is a capital-intensive industry which employs approx. 2 Mn people in India.
- The estimated size of the Indian chemical sector stands at approx. USD 163 billion in FY 18 and it is expected to grow at ~9% per annum to reach $304 Bn by FY2025. 100% FDI in this sector is permitted under the automatic approval route and the manufacturing of most of the chemical products is de-licensed except for a few hazardous chemicals.
- In pursuance to your vision of Make in India and to provide impetus to the growth of the sector, Department of Chemicals and Petrochemicals, Government of India and Federation of Indian Chambers of Commerce and Industry (FICCI) have organized the 11th biennial edition of India Chem, from 17th to 19th March 2021 at Taj Palace, New Delhi India with the theme “India: Global Manufacturing Hub for Chemicals and Petrochemicals”.
- India-Chem is one of the largest events of Chemicals and Petrochemicals industry in Asia—pacific region. The foundation of this successful journey was laid in the year 2000 and was inaugurated by then Hon’ble Prime Minister Late Shri Atal Bihari Vajpayee. Over the years, it has gained enormous popularity and established itself as an internationally recognized event.
- The primary goal of India Chem series is to bring together global Diaspora leaders, CEOs, government authorities, key industry players and subject matter experts from around the world in an open dialogue, under one roof to discuss the key developments, sectoral issues, and the way forward with respect to Indian chemicals and petrochemicals industry.
- India Chem 2021 has helped to develop possible strategies, sharing insights, exploring opportunities and challenges which will shape the Chemicals and Petrochemicals Industry in India and across the world in the next decade.

2. Program Schedule

Day 1: Wednesday 02nd November, 2022	
1000 – 1800 hrs	Exhibition
1000 – 1100 hrs	Registration
1130 – 1245 hrs	Conclave on Specialty Chemicals
1245 – 1345 hrs	Business Networking Lunch
1400 – 1430 hrs	Exhibition Inauguration by Hon'ble Minister and Visit to the Exhibition
1430 – 1600 hrs	Inaugural Session
1615 – 1720 hrs	CEOs Round Table
1720 – 1730 hrs	Networking Tea Break
1730 – 1830 hrs	India – US Chemicals & Petrochemicals Forum
1900 hrs onwards	FICCI Chemicals & Petrochemicals Awards Distribution Ceremony
2000 hrs onwards	Business Networking Dinner
Day 2: Thursday, 03rd November, 2022	
1000 – 1800 hrs	Exhibition
1000 – 1800 hrs	Buyer Seller Meet
1000 – 1100 hrs	Conclave on Dyestuff Industries
1130 – 1300 hrs	Conclave on Global Agrochemicals Industry
1300 – 1330 hrs	Business Networking Lunch
1330 – 1430 hrs	Conclave on Global Petrochemicals Industry
1400 – 1530 hrs	Conclave on Process, Plant Machinery, Pumps & Valves
1530 – 1700 hrs	India – EU Chemicals & Petrochemicals Forum
1700 hrs onwards	High Tea

3. Highlights from the Day 1

3.1. Conclave on Specialty Chemicals

Day 1: Wednesday, 02nd November 2022	
1130 – 1245 hrs	Conclave on Specialty Chemicals
About the session: The specialty chemicals industry in India has witnessed a secular growth over the past few years, driven by a strong traction in the end-user markets, and emergence of India as the preferred manufacturing destination for companies across the globe. It has been one of the best performing segments in the Indian manufacturing sector. Specialty chemicals account for a major share of more than 50% of chemical exports, dominated by agrochemicals, dyes and pigments, etc. The session will delve into the role of the Chemical Industry in making India a USD 5 trillion economy by 2025. The stakeholders will also explore opportunities for attracting investments in various subsegments of Specialty Chemicals to reduce the dependence on imports. Additionally, the session will focus on the various key issues with respect to investment facilitation and incentivization, expedition of clearance and approvals, implementation of mandatory standards, development of downstream industries.	
Moderation by Mr. Jayant V Dhobley, Business Head and CEO, Aditya Birla Group	
1130 – 1135 hrs.	Opening remarks by **Shri Susanta Kumar Purohit**, Joint Secretary (Chemicals), Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India
1135 – 1145 hrs.	Presentation by **Mr. Deepak Mahurkar**, Partner, Leader India Oil & Gas Industry Practice, PwC India on “Overview of Specialty Chemical Industry”
1145 – 1235 hrs	Industry Interaction: State Perspective by **Shri R. Karikal Valaven**, IAS, Special Chief Secretary to Government, Industries & Commerce, Government of Andhra Pradesh • **Mr. Mukesh Malhotra**, Country Manager & Managing Director Solvay Specialties India Pvt Ltd. • **Mr. Rajen Mariwala**, MD, Eternis Fine Chemicals • **Mr. Suresh Ramachandran**, MD, Arkema India • **Mr. Kapil Malhotra**, Global Business Unit Head- Fluoropolymers, Gujarat Fluorochemicals Limited • **Dr. Sangeeta Srivastava**, Executive Director, Godavari Biorefineries Ltd. • **Mr. Sagar Kaushik**, Chief Operating Officer, UPL
1235 – 1245 hrs.	Remarks by **Shri Arun Baroka**, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India

Key discussion points

The agenda of the session was to encourage industry – government participation

Mr. Jayant V Dhobley, Business Head and CEO, Aditya Birla Group has moderated the session and gave the snapshot of Indian chemicals & specialty chemicals market and highlighted few sectors where India currently has reached global level and others where India is hardly present.

- Current Indian chemical industry size is $175 billion. Within that Specialty chemicals segment, which generates larger margins constitutes around 20% of the total and is growing at 2-2.5 times GDP consistently over the last decade.
- The estimated size of specialty chemical industry by 2025 is $65- $70 billion dollars while the global market size will be about $ 1 trillion, which implies there is still room for more growth.
- While India has reached global positions in segments like Agro chemicals, dyes & pigments, the country falls behind in segments like high performance polymers, nutraceuticals.
- India has advantages in terms of having excellent capabilities in process engineering on which the development of the specialty chemical industry depends and in terms of better availability of bio feedstock to help in reducing carbon footprint

Shri Susanta Kumar Purohit, Joint Secretary (Chemicals), Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India highlighted that specialty chemicals is one of the important sectors of chemical industry and that it is expected to grow at around 13-15%. He discussed the key growth drivers of the segment to be focused upon:

- Strong domestic demand potential - Current penetration ratio of specialty chemicals in India is very less and therefore there is strong potential for domestic demand
- Strong export potential – Currently India's contribution to global trade is less than 5% in specialty chemicals segment, therefore huge potential to increase exports
- Skill - India has got competitive advantage in terms of availability of talent and skilled workforce
- Government policies and support - India has industry friendly policies like 100% FDI allowance and India's rank in ease of doing business has significantly improved to 63.

Mr. Rajen Mariwala, MD, Eternis Fine Chemicals has elaborated upon the following points:

- India should focus on those specific areas in chemical sectors that can be supported by technology and skill currently available in India
- Since India is currently not a big market for specialty chemicals industry, government push for exports is essential
- Developing the ability to build global scale plants by making industrial estate available to build large scale facilities
- Developing skilled manpower by focusing on industry - academia partnership through integrated 5-year programs which can increase exposure

Mr. Sagar Kaushik, Chief Operating Officer, UPL has elaborated on what Indian companies can do to develop in the chemicals and specialty chemicals segment:

- India needs to invest in creating footprint in global market by developing supply chain capabilities in destination markets

- India also needs to work on rebuilding the image of the sector in terms of safety issues and environmental issues associated with the sector
- India to also focus on upgrading the skill of workforce
- India's potential to make manufacturing processes cheaper and sustainable will provide it with great opportunity in agrochemicals market which is transitioning from invention to innovation phase
- Manufacturing processes are to be made end to end
- Visibility of sustainability is important in terms of value creation to increase exports in agrochemicals segment
- Agrochemical market should focus more on digitization, mechanization and increase the usage bio feedstocks to make it more sustainable and useful for end users

Dr. Sangeeta Srivastava, Executive Director, Godavari Biorefineries Ltd. has highlighted the success of ethanol biofuel program which was policy driven and that such similar drive is required for the growth of bio-based specialty chemicals sector which is important to reduce carbon emission. She further discussed the following key points:

- India needs to focus on issues like high import prices of ethanol used as feedstock for chemical industry
- Environmental clearances must be made single window and systems must be fast and flexible so that demands can be catered to quickly

Mr. Kapil Malhotra, Global Business Unit Head- Fluoropolymers, Gujarat Fluorochemicals Limited has focused on specialty polymers segments and elaborated on growth drivers, opportunities, and improvement areas for the sectorGrowth drivers: He mentioned that Saint Gobain was expecting around 30% CAGR growth in a few 'sunrise' sectors like EV battery segment, 5G, solar panels, hydrogen fuel technology. Growth of these sectors implies the growth of polymer chemicals which are building blocks for them.

- Opportunities: Countries adopting China plus strategy provide great opportunities for India
- Improvement areas:
  - PLI schemes required for 'sunrise' sectors to increase infrastructure investments
  - BIS system upgradation required to restrict cheap imports
  - Startup ecosystem must be encouraged in the chemical sector for developing technology
  - Ministry should incentivize carbon emission reduction measures and adoption of greener technologies

Mr. Suresh Ramachandran, MD, Arkema India has elaborated on how India can become an attractive investment destination for MNCs. He elaborated on following points:

- MNCs would not just be interested in export market but also in domestic consumption potential – therefore balance between domestic consumption and export is important

- It is importance to develop indigenous technology and measures like setting up R&D innovations centers, research focused universities and importing people from countries like Germany are to be taken to develop in house technologies.

Mr. Deepak Mahurkar, Partner, Leader India Oil & Gas Industry Practice, PwC India gave an overview of the specialty chemicals market in India and how it compares globally. The key highlights of the presentation were:

- Indian specialty chemical demand is growing at a CAGR of 12% to reach 64 billion USD by 2025
- Few sub-segment markets such as Flavors & Fragrances (F&F), construction and water chemicals are growing at CAGR of 17%, 15% and 15% respectively greater than the growth rate of overall specialty chemicals segment
- India is the 4th largest agrochemical producer globally
- India has the highest market share in certain natural ingredient segments such as spice oleoresins and mint extracts in the F&F market
- Indian chemicals and petrochemicals market is expected to grow from 178 billion USD from FY 2020 to 263 billion USD by FY 2025 at a CAGR of 8.1% while specialty chemicals market is expected to grow from 39 billion USD in FY 2020 to 69 billion USD by FY 2025 at a CAGR of 12%
- In FY 22, there was a record high export of chemicals of around 29.3 billion USD
- Major challenge in specialty chemical industry is the dependence on import of petrochemical intermediates which can be solved by reducing custom duty of feedstocks and setting up of tanks and pipelines infrastructure at port facilities
- An investment of INR 8 Lakh Cr (107.38 billion USD) is estimated in chemicals and petrochemicals sector by 2025 due to factors such as growing demand, high growth in revenue of Indian manufacturers, China+1 strategy, competitive prices, and export market potential

Shri Arun Baroka, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India has concluded the session by addressing the key issues raised by speakers.

Concluding Points:

Shri Arun Baroka covered the below mentioned points, while concluding the session.

- As a part of skill development India, more and more people are being trained each year.
- Image rebuilding for the sector must be done in terms of the accidents and risks associated with the sector.
- Government and private sector investments in the sector must be boosted
- Time taken for environmental clearances should be brought down and we need to move towards clearances based on self-declarations
- Quality control orders should be issued for all BIS standards

3.2. Inaugural Session

Agenda

Day 1: Wednesday, 02nd November, 2022	
1430 – 1600 hrs	**Inaugural Session**
1430 – 1435 hrs	Lighting of the Lamp
	Felicitation of the dignitaries
1435 – 1440 hrs	Welcome Remarks by **Mr. Prabh Das**, Chairman- FICCI Petrochemicals Committee and MD & CEO, HPCL – Mittal Energy Ltd.
1440 – 1450 hrs	Global Perspective by **Dr. Detlef Kratz**, President, Group Research, BASF
1450 – 1500 hrs	Keynote Address: Indian Industry Perspective by **Mr. Nikhil Meswani**, Executive Director, Reliance Industries Limited
1500 – 1510 hrs	Sectoral briefings by **Shri Arun Baroka**, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India
1510 – 1515 hrs	Release of Knowledge Paper prepared by **FICCI** & **PwC**
1515 – 1525 hrs	Address by **Shri Gudivada Amarnath**, Hon'ble Minister of Industries, Infrastructure, IT & Electronics, Government of Andhra Pradesh
1525 – 1535 hrs	Guest of Honor Address by **Shri Bhagwanth Khuba**, Hon'ble Minister of State, Ministry of Chemicals & Fertilizers and Minister of State, Ministry of New & Renewable Energy, Government of India
1535 – 1550 hrs	Chief Guest Address by **Dr. Mansukh Mandaviya**, Hon'ble Union Minister of Health & Family Welfare, Chemicals & Fertilizers, Government of India
1550 – 1600 hrs	Concluding Remarks & Vote of Thanks by **Mr. Deepak C Mehta**, Chairman, FICCI National Chemical Committee and Chairman and Managing Director, Deepak Nitrite Ltd.

Key discussion points

India Chem 2022 inaugural session was held at Pragati Maidan, New Delhi on 02nd November 2022. The 12th edition of this Biennial International Exhibition and Conference was back to its old in-person/ physical format- while also being live streamed on YouTube platform. The theme of the event was "**Vision 2030 – Chemicals & Petrochemicals Build India**" and the program was held from 02nd - 03rd November 2022.

Welcoming the gathering, Sapna (Anchor/ MC) gave a few key insights into the objective of the event – to showcase tremendous potential and supportive government policy for sustainable growth in this sector and it being a single platform for both domestic and international investors and other stakeholders to interact and forge alliances, thereby providing immense potential for trade and investment in a mutually beneficial way

The honorable chief guest and other distinguished dignitaries were invited on the stage to light the ceremonial lamp and formally inaugurate the exhibition and conference India Chem 2022.

Dr. Mansukh Mandaviya, Hon'ble Union Minister of Health & Family Welfare, Chemicals & Fertilizers, Government of India, **Shri Bhagwanth Khuba**, Hon'ble Minister of State, Ministry of Chemicals & Fertilizers and Minister of State, Ministry of New & Renewable Energy, Government of India, **Shri Gudivada Amarnath**, Hon'ble Minister of Industries, Infrastructure, IT & Electronics, Government of Andhra Pradesh, **Shri Arun Baroka**, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India, **Mr. Nikhil Meswani**, Executive Director, Reliance Industries Limited, **Dr. Detlef Kratz**, President, Group Research, BASF, **Mr. Prabh Das**, Chairman- FICCI Petrochemicals Committee and MD & CEO, HPCL – Mittal Energy Ltd., **Mr. Deepak C Mehta**, Chairman, FICCI National Chemical Committee and Chairman and Managing Director, Deepak Nitrite Ltd. inaugurated the event by lighting the ceremonial lamp.

Mr. Deepak C Mehta, Chairman, FICCI National Chemical Committee and Chairman and Managing Director, Deepak Nitrite Ltd. was invited onto the stage to welcome the chief guest and felicitate the honorable chief guest, **Dr. Mansukh Mandaviya**, Hon'ble Union Minister of Health & Family Welfare, Chemicals & Fertilizers, Government of India, with a green certificate which is an initiative by FICCI wherein a grove of 10 trees will be planted in the Sundarbans National Park, West Bengal in the name of the honorable minister.

Mr. Prabh Das, Chairman- FICCI Petrochemicals Committee and MD & CEO, HPCL – Mittal Energy Ltd. then welcomed guest of honor, **Shri Bhagwanth Khuba**, Hon'ble Minister of State, Ministry of Chemicals & Fertilizers and Minister of State, Ministry of New & Renewable Energy, Government of India, **Shri Gudivada Amarnath**, Hon'ble Minister of Industries, Infrastructure, IT & Electronics, Government of Andhra Pradesh, and **Shri Arun Baroka**, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India with green certificates.

Mr. Prabh Das, Chairman- FICCI Petrochemicals Committee and MD & CEO, HPCL – Mittal Energy Ltd. in his inaugural speech discussed the major economic trends and highlighted the opportunities present in the Indian chemical Sector. He discussed the following key points:

- India's GDP is growing at 6-7% with the chemical and petrochemical segment growing at 7-8%. The per capita consumption of polymers is 1/3rd of the world's average. India has the largest young population globally and rapid urbanization is taking place in the country.
- The current focus of the industry is – 1) Personal and process safety; 2) Decarbonization and circular economy; 3) Environment, Social & Governance

Dr. Detlef Kratz, President, Group Research, BASF in his keynote address presented the global perspective and the need for innovation and research to find solutions for the future and about connecting knowledge across the globe across regions. He also emphasized the purpose of BASF – to create chemistry for a sustainable future. To achieve this, BASF has set distinct sustainability commitment targets:

- **Zero-emission by 2050**: BASF currently has 22 million tons scope 1 and 2 emissions. They are aiming to reduce 25% emissions (6 million tons) by 2030. 50% of emissions are from fossil energy sources and if they can greenify this, half the target will be reached. This should be complemented by CO_2 free technologies and CO_2 sequestration.
- **Double circular sales by 2030**: Target is to double circular sales of 2019 to 17 billion Euros by 2030. In a circular economy, there is no waste as the waste stream of one industry becomes the raw material of another. To achieve this, the value chain must be re-considered, not just logistically but also technically to force new interfaces and partnerships where chemistry will play a key role.
- **Grow with sustainable products**: Target to grow accelerator sales to 22 billion Euros by 2030. The portfolio of products needs to be revised regularly with products being bettered toxicologically, safety-wise and from a sustainable perspective.

The above three pillars also overlap as he mentions that the regulatory bodies need to be in dialogue with the industry to understand what is doable as regulations in the new world must be simple, unambiguous and require a high speed of investment. Customers and consumers are also asking for more sustainable products and they need transparency to decide what they are willing to pay for.

Further, he also mentions how the chemical industry is looking for hydrocarbon feedstock on availability, price, and the way it is used in the chemical industry. It has moved from biomass to coal to oil and now to gas as the stoichiometry is right. The ultimate lever for CO_2 reduction is electrification with renewable energy. The other option is to upgrade low-energy feedstocks such as waste, off gases, biomass and even CO_2 that will require far more energy which will be 3-4 times as much energy as it is today. A KPI is the amount of renewable energy per saved ton of CO_2.

In terms of R&D expenditure of the total industry as a percentage of GDP. For Germany, the absolute spending is around 100 billion euros per year out of which BASF spent 2 billion euros (2% of total expenditure in Germany). Korea fares significantly well in this chart, while India does not fare well. In terms of perspective, it can be said that public funding is proportionately high in India but industry spending in R&D is comparatively low.

In conclusion, the complexity of the task to achieve a sustainable future is much higher and an innovation ecosystem of industry, customers, regulatory bodies, universities, etc. need to be achieved as many hands can

contribute to value for our planet. The good news is that the chemical industry will continue to play a leading role as an enabler for sustainability.

Mr. Nikhil Meswani, Executive Director, Reliance Industries Limited in his briefings about the India industry perspective discussed the following key points:

- In the aftermath of COVID, the growth shot up to 6% and immediately after that we faced extreme volatility in prices, uncertainty in markets and a supply-chain crisis which we never saw. The extreme volatility today has reduced the growth by half to 3% with surging inflation, high interest rates, high energy prices, high fertilizer price and high food price.
- Emerging economies such as countries in Asia will be the key engine of growth in the coming years with the shining star 'India' and India that will provide the growth and savings to the world. While the world is struggling with grim forecasts, India is growing at 7% this year being the fastest growing global economy. India has surpassed the UK as the 5th largest economy and is driven by strong consumption in home markets.
- India's well targeted policy mix accompanied with structural reforms towards ease of doing business and initiatives of Government of India making sure outdated laws are phased out and finally embracing the Global Best Practices is making sure we surely and steadily are on the way to become a 10 trillion-dollar economy sooner rather than later and we will only be the third country in the world to achieve it after USA and China. This is driven by demographics, consumption, and technological capabilities.
- During the COVID crisis, India managed to manufacture PPE kits at 1/3rd the cost of China, not only for domestic use but also as exports to global countries. India also ran a vaccine program for over 1.2 billion people to keep the people safe. The chemical industry also did its part by converting industrial oxygen to medical oxygen, saving thousands of lives daily.
- 80,000 products are used from our industry and 96% of all manufactured products in the world, particularly in India, consume chemicals. Chemicals cater to an extremely diverse range of sectors including agriculture, food, clothing, transportation, communication, and healthcare. We are growing in India in the industry just over 9%.
- India is the 6th largest producer of chemicals globally and the 4th largest in Asia, however, the global market share of India is only 3% compared to China's 45% and USA's 12%. India exports to 275 countries and the recent initiatives of the government to encourage Free Trade Agreements (FTAs) in a modern framework and make sure they foster cross-border investments is a positive step in this direction.
- In terms of the key future growth initiatives, the challenges/ key areas to focus on are –
    - Expanding outreach and creating a global footprint
    - Reduce dependence on imports to be Atmanirbhar
    - Invest in R&D
    - Extreme digitization
    - Changing perception from being a polluter to solution provider
    - Sustainability and compliance with our environment to leave a better planet for tomorrow
- The opportunity in India if we include commodity chemicals and specialty and create a manufacturing hub for the world in 'China+1' initiative is enormous and will exceed half a trillion dollars. Adding fertilizer to this will double the opportunity size.
- Sustainability and circularity, oil to chemicals, advanced materials and renewables are our current mega trends globally. Foremost is sustainability and we need to make sure to become resource efficient, circular approached and reduce our carbon footprint. Transforming this will add 6 trillion dollars to global economy and 6 million jobs.

- Reliance Industries, today, recycles more than 2.5 million bottles and are looking to bolster their capacity to double it at 5 million bottles making sure India has the highest rate of PET recycling globally. Reliance converts this waste into polyester and fibers.
- In India, chemicals are the second largest item of import in our trade bill, and this can be converted into an opportunity one new CAPEX cycle and convert India into a manufacturing hub and value-added processing hub. This is both a strategic and an economic rationale to ensure we transform our chemical industry is transformed in a sustainable growing environment.
- India is investing over 75,000 crores in this industry today, and making sure
- Over the last two decades with fast paced economic reforms India has emerged steadily reflected by the fact that average GDP growth rate has been more than 7% in the last two decades.
- India not only handled pandemic emphatically but became manufacturing hub for the vaccine development.

In conclusion he highlighted that, “Chemicals are intrinsic to the path of the future. The sector will unleash to contribute to new opportunities. Our commitment and efforts will make sure we build a stronger India and a transformed path.”

Shri Arun Baroka, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India gave the sectoral briefings of the chemicals and petrochemicals industry discussing the following key points:

- India is positioned at 7% GDP growth compared to other major economies such as USA, China, and Japan at around 2-3%
- India has emerged as an attractive investment decision because of the resilience to the global economic swings mainly due to consumption potential and Government’s industrial friendly policy
- In terms of manufacturing, India is poised to become a major growth pillar to the Indian economy which is aided by Government’s push to self-reliance and vision to become a 5 trillion USD economy by 2024
- India’s manufacturing competitiveness is fueled by progressive Government policy and some of the facilitating Government initiatives such as stable democracy, streamlined regulatory and tax framework, quality labor at competitive cost, robust investment policies and high-quality infrastructure available in the country
- India has improved its Global Competitiveness ranking by 6 positions in 2022 from 43rd in 2021 to 37th in 2022
- Chemical industry in India has been a significant contributor to the manufacturing sector and to the economic growth of India. India is the 2nd largest manufacturer and exporter of dyes. India’s per capita consumption of chemicals is about 1/10th of the global average.
- Presuming a business-as-usual scenario at a growth rate of 8%, Indian chemical industry is poised to become 260 USD billion by 2025 and 383 USD billion by 2030
- Chemicals such as PVC, PTA, VCM, Methanol, Acetic acid among many others represent chemicals which can be invested in as there is a supply deficit due to growing demand and insufficient domestic capacity
- In terms of the end-use industries, segments such as agrochemicals, care and hygiene, iron and steel, textiles and pharma are expected to exhibit high growth by 2024
- Policy initiatives by the Government has been the game changer for Indian chemical industry. Industrial infrastructure, governance and clearance, skilled manpower and labor laws, regulatory and quality standards, availability of feedstock, and local manufacturing, exports & innovation have been the game changers.

He further emphasized that, “This is a very good time for industry to set up their business in India and this kind of opportunity will not come again with the geo-political situation in the world is such that India is expected to showcase a good growth rate. The climate provided by the Government is very congenial and Government is welcoming the industry to set up their manufacturing in India and there is a constant interaction with the industry to identify the challenges and resolve the issues.”

Shri Gudivada Amarnath, Hon’ble Minister of Industries, Infrastructure, IT & Electronics, Government of Andhra Pradesh highlighted the importance and significance of the state and shared some key observations detailed as follows:

- Andhra Pradesh is home to many renowned chemical and petrochemical industries including HPCL, ONGC, IOCL, Reliance, Grasim Industries, Tata Industries, BASF, Deccan Fine Chemicals, Nagarjuna Fertilizers, Coromandel Fertilizers and many more, due to its inherent strengths and owing to its strategic location
- The production of chemical and petrochemical sector in the state had reached 11.9 billion USD, contributing to 8% of India’s production
- The chemicals and petrochemicals sector has almost 7.3 billion USD committed investment employing almost 1,39,000 employees
- The exports of chemicals and petrochemicals in Andhra Pradesh recorded almost 22% growth in 2021 with almost 2.1 billion USD
- With a resource base of 1,130 million metric tons, the Krishna-Godavari River has the maximum number of oil and gas reserves

- Andhra Pradesh Petroleum, Chemicals and Petrochemical Investment Region (PCPIR) is the largest in the country which is 640 square kilometers notified by the Government of India
- Andhra Pradesh is home to the largest full conversion hydrocracker unit of HPCL in Visakhapatnam and is expanding its capacity to 15 million metric tons by the end of this year. Additionally, one of the world’s deepest undergrounds liquified petroleum gas storage cavern project has been built near the city of Visakhapatnam.
- With almost 5,100+ MSMEs operating in organic and inorganic chemicals, plastics, specialty chemicals, industrial gases, agrochemicals, and fertilizers with a growth rate of 12%
- Andhra Pradesh was ranked #1 for ease of doing business for the 3rd consecutive year
- Andhra Pradesh has the second largest coastline of the country and closest proximity to petrochemical nations such as Middle East, Asia-Pacific and East Asia with several ports equipped to handle liquid cargo and feedstock supply making Andhra Pradesh an eastern gateway to India
- Andhra Pradesh is the only state with 3 industrial corridors – Visakhapatnam-Chennai, Hyderabad-Bangalore, and Bangalore-Chennai
- Hon’ble Chief Minister of Andhra Pradesh, Shri YS Jagan Mohan Reddy committed to port-led industrial development to be able to connect to the inter-land to the global trade networks through their ports thereby creating seamless logistic corridors
- Andhra Pradesh is the second largest mineral storehouse in India. In the PCPIR region of Visakhapatnam and Kakinada, a 169 km pipeline is being developed under Kakinada Srikakulam pipeline natural gas grid.

Further, he concluded by saying that “There is a huge untapped potential in the chemical sector which is a crucial component to reducing import dependence. Through this platform, we wish to inform you that the State Government is ready to provide you with all necessary support. We have a risk-free land bank under PCPIR region at reduced upfront cost covering 6 SEZs and 24*7 power and water supply. I, therefore, take this opportunity to welcome to the state of Andhra Pradesh to all the industries to come and explore Andhra Pradesh as a potential partner of growth where abundance meets prosperity.”

The dignitaries on stage were joined by **Mr. Deepak Mahurkar**, Partner, Leader – India Oil & Gas Industry Practice, PwC India, and **Mr. Nikhil Kalane**, Manager, Chemicals Competency, Oil & Gas Practice, PwC India and the knowledge paper on 'Sustainability and the chemical industry' prepared by FICCI and PwC was then released by Hon'ble Chief Guest and Hon'ble Union Minister

Shri Bhagwanth Khuba, Hon'ble Minister of State, Ministry of Chemicals & Fertilizers and Minister of State, Ministry of New & Renewable Energy, Government of India shared few insights on the potential of chemicals and petrochemicals market in India.

- India can cater to the domestic as well as global demand of chemicals and petrochemicals because India is a nation of young citizens and will remain a country of young citizens in 2037 and has tremendous potential for growth in the coming years
- In the last 8.5 years, under the leadership of Shri Narendra Modi, Hon'ble Prime Minister of India, has made India a more competitive and invited more foreign companies to set up manufacturing and invest in India
- Along with the world competitiveness, world class infrastructure in terms of roadways, railways, airways, waterways, and ports have been developed
- Even after the COVID crisis and Russia-Ukraine war situation, India has still maintained a high GDP growth rate which is greater than that of developed nations such as China, US, and Japan
- Today, under new and renewable energy, in the last 8.5 years, the production has grown 3 times and the Government of India has announced a production target of 500 GW by 2030.
- Government of India has rolled out industry friendly policies to invite more manufacturers and investors to come to India

Dr. Mansukh Mandaviya, Hon'ble Union Minister of Health & Family Welfare, Chemicals & Fertilizers, Government of India shared few insights on importance of industrial development to grow chemicals and petrochemicals industry:

•An ecosystem between the industry, government and customer needs to be built to grow the industry and move the nation forward

•During the COVID crisis, when the virus started to spread among the population in India, Shri Narendra Modi held a meeting with the nation's top scientists and highly ranked officials. The outcome of the meeting was to provide vaccination; however, the typical situation is that vaccines are developed in other nations and then it reaches India 8-10 years later after testing and approval process. Due to the high population of India and the severity of the situation, it was collectively decided by the scientists and industry to develop and manufacture India's own vaccine. The first dose of vaccine globally was administered in December 2020, while India administered its first vaccine dose in January 2021 showing the potential and capability of the nation to research, develop and manufacture products of its own.

- The ‘Atmanirbhar Bharat’ initiative was taken by the government to develop industries in India to cater to domestic demand of critical products. It was done to promote manufacturing in India and provide a balance between the export and import of products (trade balance)
- The PLI scheme was introduced to support ‘Atmanirbhar Bharat’ initiative by having multiple discussions with industry stakeholders to understand their challenges and concerns and promote domestic manufacturing
- This was followed up by continuous discussions with the industry after the schemes were rolled out and during implementation phase to understand further constraints and reform or transform the policy/ initiative if necessary to better ease of doing business
- India is home to the largest number of unicorn startups globally. There was a situation during COVID where there was a shortage of cargo containers for import and export. A meeting was set up with key industrial players and it was suggested to them to start production of cargo containers for India’s requirement. Today, in Bhavnagar, Gujarat, an ecosystem has been formed with a container manufacturer making 200 containers per day. A tender was rolled out for 10,000 containers in India by CONCOR, which was won by the manufacturer who will provide 10,000 indigenous manufactured containers to Railways.
- The Government of India wants to work together with the industry to understand what they can do to build industrial parks, achieve zero liquid discharge, and reduce deep sea discharge among various other opportunities
- Increasing population has contributed to a high growing demand for all products and markets in India, that the world is currently looking at India as an emerging market and one of the best destinations for countries to invest in.

Mr. Deepak C Mehta, Chairman, FICCI National Chemical Committee and Chairman and Managing Director, Deepak Nitrite Ltd. elaborated upon the following points while concluding the session.

Concluding Points:

- India in the last couple of years have grown from being the 7th largest to the 5th largest player in the world of chemicals. There are a few things which are happening positively that is going to change the situation and make it even better:
    - For the ‘China+1’ strategy, India is one of the preferred nations for chemicals sector compared to other nations such as Vietnam and Thailand
    - Due to the Russia-Ukraine war, Europe has also been looking at India as a ‘Europe+1’ strategy to grow their business outside of Europe and not in China
    - Changes that have taken place in India in the last couple of years such as rapid increase in demand and production, strong support from the Government, amount of investment coming in from government as well as public/ private funding
    - Growth of the chemical industry is set to cross 380 billion USD in 2030, however, with the pace that the Government is supporting the industry, this target can be achieved 3 years ahead of forecasted time

3.3. CEOs Round Table (Closed Door Event)

Agenda

Day 1: Wednesday, 02nd November, 2022	
1210 – 1410 hrs.	**CEOs Round Table**
About the Session: The chemical & petrochemical industry has been one of the robust segments of the manufacturing sector in India. The rising focus on India can be attributed to India's operating conditions and cost competitiveness. Also, the country's proven success in meeting outsourcing requirements has led to the increase in the ranking year on year. The session will have discussions on the investment potential of bulk chemicals, petrochemicals, plastics, specialty chemicals, crop protection chemicals, and brainstorming on the Production Linked Incentive (PLI) scheme. The session will also have a brief discussion on the key challenges faced by strategic investors while evaluating investment opportunities in India. The roundtable aims to bring the Government and the industry together to discuss the myriad investment opportunities and challenges that impede ease of doing business in the chemical and petrochemicals industry in India	
Moderation & setting the tone by **Mr. Deepak Mahurkar,** Partner, Leader India Oil & Gas Industry Practice, PwC India	
1615 – 1620 hrs	Opening remarks by **Mr. Deepak C. Mehta**, Chairman, FICCI National Chemical Committee and Chairman & Managing Director, Deepak Nitrite Ltd.
1620 – 1625 hrs	Presentation on Industry Outlook by **Mr. Deepak Mahurkar**, Partner, Leader India Oil & Gas Industry Practice, PwC India
1625 – 1630 hrs	Setting the tone by **Shri Arun Baroka**, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India
1630 – 1650 hrs	**States – Views & Suggestions**
1630 – 1635 hrs	**Shri R. Karikal Valavan**, IAS, Special Chief Secretary to Government, Industries & Commerce, Government of Andhra Pradesh
1635 – 1640 hrs	**Dr. Vipin Sharma**, IAS, Chief Executive Officer, Maharashtra Industrial Development Corporation, Government of Maharashtra
1640 – 1645 hrs	**Mr. Hemant Sharma**, Principal Secretary, Industries Department, Government of Odisha
1645 – 1650 hrs	**Shri P. Mohangandhi**, IAS, Secretary, Government of West Bengal
1650 – 1705 hrs	**CEO's Interaction**
	CEOs: 1. **Mr. Mukesh Malhotra**, Country Manager & Managing Director, Solvay Specialties India Pvt. Ltd. 2. **Mr. Jayant V Dhobley**, Business Head and CEO, Aditya Birla Group 3. **Dr. Sangeeta Srivastava**, Executive Director, Godavari Biorefineries Ltd. 4. **Mr. Deepak C. Mehta**, Chairman & Managing Director, Deepak Nitrite Ltd. 5. **Mr. Sagar Kaushik**, Chief Operating Officer, UPL 6. **Mr. Gurinder Singh**, Managing Director, Opal 7. **Shri N.K. Aggarwal**, Chairman, Crystal Crop Protection Limited 8. **Mr. Prabh Das**, Managing Director & CEO HPCL - Mittal Energy Ltd. 9. **Mr. R G Agarwal**, Chairman Dhanuka Agritech Ltd. 10. **Mr. Janardhanan Ramanujalu**, Vice President, Regional Head- South Asia & Australia, SABIC India

	11. **Shri Sujoy Choudhury**, Director (Planning & Business Development), Indian Oil Corporation Ltd. 12. **Mr. Ankur Aggarwal**, Managing Director, Crystal Crop protection Ltd. 13. **Mr. Narayan Krishna Mohan**, Managing Director, BASD India 14. **Mr. Suresh Ramachandran**, Country head & Managing Director, Arkema India 15. **Mr. Anil Bhatia**, Vice President & Managing Director – India, Emerson 16. **Mr. Sai Prasad Jadhav**, CEO, Epsilon Carbon Pvt. Ltd. 17. **Mr. A S Sahney**, Executive Director, Petrochemicals, Indian Oil Corporation Limited 18. **Mr. Avinash Verma**, President – Operations, Petrochemicals, Reliance Industries Limited 19. **Mr. Jacob Duer**, President and CEO, Alliance to End Plastic Waste 20. **Mr. Kapil Malhotra**, Global Business Unit Head – Fluoropolymers, Gujarat Fluoropolymers Limited 21. **Mr. Vinod Paremal**, President & Managing Director, Evonik India Pvt. Ltd. 22. **Mr. Raju Kapoor**, Director – Industry & Public Affairs, FMC India Pvt. Ltd.
1705 – 1710 hrs	Guest of Honour Address by **Shri Bhagwanth Khuba**, Hon'ble Minister of State, Ministry of Chemicals & Fertilizers and Minster of State, Ministry of New & Renewable Energy, Government of India
1710 – 1720 hrs	Chief Guest Address by **DR Mansukh Mandaviya**, Hon'ble Union Minister of Health & Family Welfare, Chemicals & Fertilizers, Government of India
Vote of Thanks by **Mr. Prabh Das**, Chairman – FICCI Petrochemicals Committee and Managing Director and CEO, HPCL-Mittal Energy Ltd.	

Key discussion points

In this conference close to 25 top leaders from chemical industry both domestic as well as international companies and government of states like Andhra Pradesh, Maharashtra, Odisha, and West Bengal participated to discuss the importance of key issues and topics like future course of development, investment, and growth prevalent to the chemical sector.

Mr. Deepak C. Mehta, Chairman, FICCI National Chemical Committee and Chairman & Managing Director, Deepak Nitrite Ltd. gave his remarks regarding the issues with effluent that requires to be diluted to be bio-treated. However, several challenges are poised with using water for dilution of waste effluent from Pollution Control Board (PCB).

Mr. Deepak Mahurkar, Partner, Leader India Oil & Gas Industry Practice, PwC India brought forward his industry view on the obligations, challenges, and opportunities, few of which are mentioned below:

Sustainability creates more trust, lower cost, more growth, and lower risk

The increasing sustainability focus of the industry can be attributed to various factors such as regulatory compliance, cost reduction, revenue, value to society etc. Chemical companies comply with regulations for chemical management & handling, its usage, environmental management, disaster & energy management, special categories of chemicals

Embedded carbon footprint associated with oil & gas feedstock is a major challenging area; tightened supply of oil & gas feedstock and price volatility are other challenges

Chemical sector has a unique position for value creation, inducing sustainability at different nodes of its own value chain and to its customer industries

- Green hydrogen as chemical feedstock, manufacturing green ammonia, carbon capture, CO_2 conversion to valuable products, plastic recycling – Opportunities in chemical industry
- (A) Adapt & adopt sustainability frameworks, (S) Engage stakeholders, (P) Prioritize material issues, (I) Integrate sustainability with core business, (RE) Report, disclose & communicate

To conclude, market awareness, focus on technology and agile approach are the key factors enabling sustainability.

Shri Karikal Valaven, IAS, Special Chief Secretary to Government, Industries & Commerce, Government of Andhra Pradesh discussed the following points:

- Andhra Pradesh has the largest PCPIR in the nation with proposed 10 billion USD investment and 1.5 lakh people employed
- Andhra Pradesh is undergoing huge logistics and infrastructural development to better ease of doing business

Dr. Vipin Sharma, IAS, Chief Executive Officer, Maharashtra Industrial Development Corporation, Government of Maharashtra mentioned the following details:

- State of Maharashtra contributes to 15% output of India in pharmaceuticals and 14% output in India in chemicals and petrochemicals
- Maharashtra is also home to 13 dedicated chemical zone having common effluent treatment plant, common hazardous waste transportation storage facilities are present

Mr. Hemant Sharma, Principal Secretary, Industries Department, Government of Odisha, mentioned significant and important details about the state of Odisha:

- Odisha is the largest producer of steel and alumina
- Huge opportunity present in the metal and mining sector with presence of pure earths such as TiO_2
- Government of Odisha will build the infrastructure around the plant such as roadways and effluent treatment plants before the construction of the plant commences to facilitate ease of plant operations when the plant is commissioned

Mr. Janardhanan Ramanujalu, Vice President, Regional Head- South Asia & Australia, SABIC India focused on the need for:

- Need for a perspective plan and to facilitate next set of feedstocks for production cycle
- Need to follow global standards for complex chemicals thus making exports and entering foreign markets easier for Indian players

Mr. Avinash Verma, President – Operations, Petrochemicals, Reliance Industries Limited

- Relook and revise government procedures for regulatory approvals as this is a lengthy and complex process
- Support to scale up capacity to meet global requirements, and not only India demand
- Enforcing of standards need to be done with conviction in the industry

Dr. Sangeeta Srivastava, Executive Director, Godavari Biorefineries Ltd. talked about sustainability and highlighting the below points:

- Today, sustainability has become a necessity for all companies. Manufacturers are looking to incorporate biochemicals in terms of green carbon from 30% to 100%
- Need to invest in solutions focusing on waste management to contribute to circular economy

Chief Guest, **Dr. Mansukh Mandaviya**, Hon'ble Union Minister of Health & Family Welfare, Chemicals & Fertilizers, Government of India mentioned the following points:

- Develop a combined ecosystem including the Government and industry players to move the industry forward
- Understand why foreign companies are not entering/ investing in India. What is the way forward to make the ease of doing business (from procuring land to construction to production) better to attract foreign companies?

Mr. Prabh Das, Chairman – FICCI Petrochemicals Committee and Managing Director and CEO, HPCL-Mittal Energy Ltd. proposed Vote of Thanks thus concluding this event.

Concluding Points:

- There is an urgent need to simplify current regulatory approval process
- It is important to focus on including sustainability in chemicals and petrochemicals manufacturing
- Following global standards is necessary to ease the trade of complex chemicals

3.4. India – US Chemicals & Petrochemicals Forum

Agenda

Day 1: Wednesday, 02nd November 2022	
1730 - 1830 hrs.	**India – US Chemicals & Petrochemicals Forum**
About the Session: The U.S.-India strategic partnership is founded on shared values including a commitment to democracy and upholding the rules-based international system. The United States and India have shared interests in promoting global security, stability, and economic prosperity through trade, investment, and connectivity. In 2021, overall U.S.-India bilateral trade in goods and services reached a record 157 billion USD. The United States is India's largest trading partner and most important export market. The forum will provide a platform to share and understand the investment potential in Indian Chemicals & Petrochemicals industry to support "Make in India" initiative, scope of collaboration and business expansion of US companies in India, recent progress in Research and Development in US, Technology transfer for the development of Indian industry, improvement in bilateral trade between India and US. USIPF is the Partner Association of this forum.	
Moderation by Mr. Mohammad Athar, Partner, PwC India	
1730 – 1735 hrs.	Opening Remarks by **Ms. Nivedita Mehra**, Managing Director, India, USISPF
1735 – 1740 hrs.	Overview on "Collaborative Opportunities between India and US" by **Mr. Mohammad Athar**, Partner, PwC India
1740 – 1745 hrs.	Address by Representative from U.S. Embassy & Consulates in India
1745 – 1825 hrs.	**Industry Interaction** • **Mr. Nolty Theriot**, Senior Vice President of Government Affairs and head of the energy, manufacturing, environment, and infrastructure • **Ms. Preeti Jain**, Director, Business Development and Government Relations, LanzaTech • **Mr. Rakesh Mehta**, Director of ExxonMobil Chemicals in India • **Mr. Anil Bhatia**, Vice President & Managing Director – India, Emerson • **Mr. Raju Kapoor**, Director – Industry & Public Affairs, FMC India Pvt Ltd. • **Mr. Rajeev YSR**, Head Investment Promotion, APEDB
1825 – 1830 hrs	Remarks by **Shri Arun Baroka**, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India

Key discussion points

Mr. Mohammad Athar, Partner, PwC India moderated the session and gave a brief introduction on India – US partnership focused on chemicals and petrochemicals sector. The overall trade is doing extremely well having crossed 150 billion USD between the two nations. The trade in chemicals sector has crossed 7 billion USD between India and USA. The intent of the discussion is to cover what would be required for this partnership to continue following the below points:

- Sustainability, green manufacturing, and the role of technology in this
- Regulatory scenario and ease of doing business so that companies in the US can do business in India with more comfort

Ms. Nivedita Mehra, Managing Director, India, USISPF highlighted the following points:

- The bilateral trade has gone over 150 billion USD and there is genuinely a movement for American companies to seriously consider India as they diversify from China
- The conversation about secure supply chain is at the forefront of their minds and while we have seen interest over the last few years, we see it culminating now.

Mr. Rakesh Mehta, Director of ExxonMobil Chemicals in India, said:

- ExxonMobil has a long-standing commitment to India and has 3 decades of operational legacy here. They have invested into R&D – Bangalore center is looking into:
  - Lifecycle of product
  - Material utilization
  - Waste management
  - Emissions
- The company is focusing on plastic waste recycling. Technology to reduce use of plastic by reducing the thickness of packaging
- Time taken for infrastructure around the plant is too long and starts only after the plant is set-up and needs to be faster

Mr. Anil Bhatia, Vice President & Managing Director – India, Emerson, mentioned the following points:

- Emerson pioneered the engineering and innovation ecosystem in India for the automation companies with more than 4,000 engineers working in Pune, Delhi, and Chennai
- Technology is the need of the hour for the chemical industry. There are 4 areas where the chemical industry will look at, namely – productivity, safety, emissions, and technology. Technology that is globally available should be provided in India rather than reinventing the wheel.
- In the last 7-8 years, lot has changed and is also further going to change boosting the trade relations between India and the US. Time taken for infrastructure to develop around the plot/ land is done after the industry zone is announced- which is different in other countries where the infrastructure is already in place before the industry zone is set up.
- Need to adapt technology faster and readily available technology are key factors

Ms. Preeti Jain, Director, Business Development and Government Relations, LanzaTech, highlighted the following points:

- LanzaTech focuses on technology which uses waste carbon material – Agri-residue, municipal solid waste, waste plastic material or off gases and is converted to sustainable fuel (ethanol). They are also working on bio-catalyst synthetic strains, which is a biotechnological process to produce Isopropyl Alcohol (IPA), Acetone, and many other commodity and specialty chemicals.
- In India, currently the energy transition is happening, however, the energy transition will not be complete it touches the chemical industry. Industry must look for a new model, for example, 4-5 billion USD investment is required for a cracker, 40 or 50 plants can be set up using new technologies which can enable energy decarbonization, DE fossilization and net zero targets
- 'Make in India' initiative is very important – making products for India, innovate using tremendous resource pool of talent in India and deploy technology, not only for India but also for global markets

Mr. Raju Kapoor, Director – Industry & Public Affairs, FMC India Pvt Ltd.

- FMC is a global leader in crop protection and crop management operating in India for last 3 decades
- Productivity levels of crops are 1/3rd or 1/2nd of the global best and there is significant scope to move forward. Approximately 200,000 crore INR worth of crops gets wasted on pests every year.
- FMC is working to move from product driven to solution driven company to work with farmers throughout the crop life to provide them solutions irrespective where the solution comes from them or anywhere else
- Regulatory or registration timeline of 2-4 years is not conducive for India as India has a very narrow product portfolio. Government should consider new safer molecules that can be fast-tracked through the regulatory process
- Laws that are prohibiting them to hire women in the manufacturing plant for that role need to be revisited and removed to promote employment of women in the manufacturing sector

Shri Arun Baroka, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India gave the vote of thanks and assured the panellists that the points are well-noted and will be followed up on.

Concluding Points:

- There is great excitement towards partnership for investment as well as trade in various sectors

- Technology is available and affordable. It can be propagated, and a bit of policy push would be required to achieve this.
- Multiple avenues to look over from the policy side – regulations to make it more inclusive, technology diffusing, ready industrial clusters
- Few other elements to think about – innovative financing, IPR structure

3.5. FICCI Chemicals & Petrochemicals Awards Distribution Function

Agenda

Day 1: Wednesday, 02nd November 2022	
1900 - 2000 hrs	**FICCI Chemicals & Petrochemicals Awards Distribution Ceremony**
1900 - 1910 hrs	Welcome Remarks by **Mr. Deepak C Mehta**, Chairman - FICCI Chemical Industry Committee, Chairman Gujarat State Council and CMD, Deepak Nitrite Ltd.
1910 - 1920 hrs	Address by **Shri Bhagwanth Khuba**, Hon'ble Minister of State, Ministry of Chemicals & Fertilizers and Minister of State, Ministry of New & Renewable Energy, Government of India
1920 – 1930 hrs	Chief Guest Address by **Shri Mansukh Mandaviya**, Hon'ble Union Minister of Health & Family Welfare, Chemicals & Fertilizers, Government of India
1930- 2000 hrs	FICCI Chemicals & Petrochemicals Awards Distribution
2000 hrs onwards	Business Networking Dinner

List of Awardees 2022

S. No.	Category	Company
For Product Innovator of the Year		
1	Chemicals	Epsilon Carbon Private Limited
2	Chemicals	Asian Paints Limited
3	Petrochemicals	Reliance Industries Limited, Hoshiarpur Manufacturing Division
4	Petrochemicals	Indian Oil Corporation Limited, R&D

5	Petrochemicals	Xpro India Limited, Barjora Unit II
For Manufacturing Process Innovator of the Year		
6	Petrochemicals	Engineers India Limited
For Sustainability in Best Green Product		
7	Petrochemicals	Reliance Industries Limited
For Sustainability in Best Green Process		
8	Chemicals	Rallis India Limited
9	Chemicals	Inventys Research Company Private Limited
10	Petrochemicals	Reliance Industries Limited
For Sustainability in Excellence in Safety		
11	Chemicals	Excel Industries Limited
12	Chemicals	Clariant Chemicals Ltd, Cuddalore
13	Chemicals	Rashtriya Chemicals & Fertilizers Limited, Trombay Unit
14	Chemicals	National Peroxide Limited
15	Petrochemicals	Indian Oil Corporation Limited
16	Petrochemicals	Xpro India Limited, Barjora Unit II
For Efficiency in Energy Usage		
17	Chemicals	Grasim Industries Limited, Chemical Division-Ganjam
18	Chemicals	DCM Shriram Limited, Unit: Jhagadia
19	Chemicals	Gharda Chemicals Limited, Lote Division
20	Petrochemicals	Brahmaputra Cracker and Polymer Limited
For Efficiency in Water Usage		
21	Chemicals	Uflex Limited – Chemical Business
22	Chemicals	Jubilant Ingrevia Limited - Gajraula Plant
23	Chemicals	The Dharamsi Morarji Chemical Co. Ltd., Roha
24	Petrochemicals	Kothari Petrochemicals Limited
For Commendable Work for Changing Public Perception		
25	Chemicals	Jubilant Ingrevia Limited, Gajraula Plant
26	Chemicals	Tagros Chemicals India Private Limited
27	Petrochemicals	BASF India Private Limited
For the Most Environment- Friendly Company		
28	Chemicals	Godrej Industries – Chemical Division
29	Chemicals	Aarti Industries Limited
30	Petrochemicals	Reliance Industries Limited - Hazira Polyester Manufacturing Division
31	Petrochemicals	HPCL-Mittal Energy Limited
For Excellence in Sub Sector		
32	Agrochemicals	UPL Limited, Unit-5
33	Agrochemicals	UPL Limited, Unit-2, Ankleshwar
For Digitech front Runner of the Year		
34	Chemicals	Gharda Chemicals Limited, Lote Division
35	Chemicals	Lanxess India Private Limited

36	Petrochemicals	Reliance Industries Limited
37	Petrochemicals	Indian Oil Corporation Limited
For Excellence in Exports		
38	Chemicals	Insecticides India Limited
39	Chemicals	Epsilon Carbon Private Limited
40	Chemicals	Elkay Chemicals Private Limited
41	Chemicals	Jeevan Chemicals Private Limited
42	Petrochemicals	Reliance Industries Limited
For Promoting "Make in India"		
43	Promoting “Make in India”	Bharat Petroleum Corporation Limited, Kochi Refinery
For Company of the Year		
44	Chemicals	Navin Fluorine International Limited
45	Petrochemicals	Reliance Industries Limited
46	Petrochemicals	Indian Oil Corporation Limited
For Lifetime Contribution to the Industry		
47	Lifetime Achievement	Shri. Chandrakant Gogri, Chairman-Emeritus, Aarti Industries Limited
48	Lifetime Achievement	Shri. Purnendu Chatterjee, Chairman, Haldia Petrochemicals Ltd

4. Highlights from Day 2

4.1. Conclave on Dyestuff Industries

Agenda

Day 2: Thursday, 03rd November 2022	
1000 – 1100 hrs	**Conclave on Dyestuff Industries**
Moderation by **Mr. Janak Mehta**, President, Dyestuffs Manufacturer Association	
1000 - 1005 hrs.	Opening remarks by **Shri Susanta Kumar Purohit**, Joint Secretary (Chemicals), Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India
1005 - 1010 hrs.	Industry perspective by **Mr. Anjani Prasad**, MD Archqroma India Pvt. Ltd.
1010 - 1050 hrs.	CEOs Interaction • **Mr. Janak Mehta**, Dyetex Corporation • **Mr. Jitendra Patel**, K. Patel Chemo Pharma Pvt. Ltd. • **Dr. Shavak Bhumagara**, Eskay Dyestuffs & Organic Chemicals Pvt. Ltd. • **Mr. Haresh Bhuta**, Alps Chemicals Pvt. Ltd. • **Mr. Anjani Prasad**, Archroma India Pvt. Ltd. • **Mr. Vatsal Naik**, Mahavir Synthesis Pvt. Ltd. • **Dr. G.V.G. Rao**, Atul Ltd. • **Mr. Pravin Kabutarwala**, Colourtex Industries Pvt. Ltd., • **Mr. Vinod Singhania**, Ravi Dyeware Co. Pvt. Ltd • **Mr. Natu M Patel**, Chairman and Managing Director, Meghmani • **Mr. Greeven Kharawala**, Jay Chemical Industries Ltd • **Mr. Yogesh Parikh**, Avani Dyechem Industries • **Mr. Pankaj Mehta**, Aarti Industries Ltd
1050 - 1055 hrs.	Remarks by **Shri Arun Baroka**, Secretary, Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India
1055 - 1100 hrs.	Vote of thanks by **Mr. Jitendra Patel**, (MD K. Patel Chemo Pharma Pvt. Ltd.)

Key discussion points

Moderation by Mr. Janak Mehta, President, Dyestuffs Manufacturer Association

Mr. Janak Mehta, President, Dyestuffs Manufacturer Association shared his insights which are highlighted below:

- In India, this is the only industry which has 17% market share globally and is also export positive in the sense that the foreign exchange we earn is much more than the foreign exchange we spend on importing raw materials or finished goods. Among chemicals sub-sectors, colorants, agrochemicals, and generic pharma are the only 3 sub-sectors which are export positive.
- China has about 29% global market share and India's market size is about 6.7 billion USD while China's market size is more than 11 billion USD
- 5 areas have been identified which are needed to prepare a policy document for Vision 2047 are:

- Raw material and feedstock
- Human resources and labor
- Market development
- Technical upgradation and innovation
- Environment

Mr. Anjani Prasad, MD Archroma India Pvt. Ltd., gave a perspective of the dyestuff industry and mentioned the following points about what's happening around in terms of the consumer industry:

- Market for America supplies for apparel is shifting to Central America
- Home textile market is huge in India and export volumes to the US are also high, however, there are no FTAs in Europe to sell their product in this region
- In Denim area, the consumption is local and 20% of volumes is only exported, however, there is a lack of skill in garment making and the quality in innovation especially in terms of sustainability

- In technical textiles, a lot of technology transfers are required in India
- In the paper industry, India is 14th in terms of pulp requirement globally. However, with the plastic ban and shift of packaging material, is creating a lot of things on innovation topics specifically on barrier coatings and the packaging industry
- Leather industry is well developed in India, but it depends on the fashion. Sustainable leather which comes from protein and other natural sources will become very important to develop as an innovation topic for influencing colorization.
- Detergent industry is also consuming a lot of dyes and pigments
- In the personal care and cosmetic segment, natural-based products are coming in and natural color products should also be taken care of

- Agrochemicals need more sustainable pesticides, where neem and other based products will be there
- Cluster formation necessary (textile parks such as Tirupur) from end to end including Fiber to fabric to retail
- Measures to promote domestic capacity building for petrochemical intermediates (Import of chemicals such as acetic acid to be reduced and domestic manufacturing units to be set up)
- Need for setting up open innovation portal through collaboration with research facilities and universities
- Promoting innovation and technology transfer in sustainable dyes and pigments
- In terms of developing the market, we are relying on brands from outside India. These brands are playing around a lot as they are restricting a lot on their specifications and barriers created through certification. We need to play the entire value game and need to put a lot of enterprises to play a brand game. For example, in textiles, Aditya Birla and Reliance are the only two large players operating in this segment, however, there is so much scope to play the big brand game.
- A lot of work must be done in terms of end-use industry in creating a brand with global recognition

Mr. Janak Mehta, President, Dyestuffs Manufacturer Association elaborated on few areas that had been identified and are needed to prepare a policy document for Vision 2047

- Availability of feedstock at international prices will be the future growth of colorant industry
- Feedstock should be identified in a judicious way where a decision can be made cautiously on which products to be manufactured domestically and which products to be imported
- Promote the production of naphthalene derivatives which were being made in India for a long time and then shifted to China
- The period of investigation of anti-dumping duty proceedings is too high.

- Skill development program through Centers of Excellence (Studies available with the department to be revised)
- Revision of labor laws including decriminalization of accidents
- Need to implement measures to improve exports
- Scheme/ policy to support the National Association to reach out directly to end users rather than traders (like MDA/MAI scheme that is available to export promotion councils)
- Support for textile manufacturers (end-users) to develop global recognized brands that will help dye manufacturers also develop strong brand
- Image building of the dyestuff and chemical industry overall
- Hazardous chemicals list needs to be revised because not all by-products of chemical industry are hazardous; as per the Waste Management Act, all by-products from chemical industry is treated as hazardous

Dr. G.V.G. Rao, Atul Ltd. talked about the following points:

- The dyes industry is growing at beyond double digits and India is only present in two segments – Sulphur and Reactive. Globally, dispersed dyes are the biggest segment and is being used in athletic and sportswear in a significant way.

  - They approached the Government for PLI on anthraquinone
  - In denim, India has self-reliance in Sulphur black, and India is also exporting to global market. However, India doesn't have a strong presence in indigo
  - Every day, there is a new requirement coming from the textile industry. Last week, the limit on apparel fabrics was 20 ppm, while this week it is 10 pm and it may be 4 ppm next week. Understanding these limits and making products to meet those requirements can be achieved through an innovation forum. Government can take a role of aggregator by setting up a digital platform/ portal to reduce transaction costs and connect with various dye manufacturers to understand industry requirements.
- Funding support to universities to help upgrade and develop unit processes in dyes manufacturing to increase efficiency of process

Mr. Vatsal Naik, Mahavir Synthesis Pvt. Ltd. talked about the following points:

- Naphthalene derivatives are essential for reactive and acid dyes. India was a pioneer for naphthalene derivatives; however, this position was lost in the 90s due to bad pricing
- We should focus on having the feedstock, majorly the naphthalene based one, and India is not naphthalene surplus, and it is something to think about. India imports around 30,000 MT per annum of beta-naphthol from China which is a very large amount

Mr. Pankaj Mehta, Aarti Industries Ltd talked about the following points:

  - The company will look at naphthalene derivatives such as beta-naphthol and other chemicals to see how the viability of the project would be by connecting with the dyes manufacturers
  - Dyestuff industries is quite fragmented with various companies and each having its own perspective. However, as a collective, it is difficult to gauge and compete on the world scale. Government can take a role of aggregator by setting up a digital platform/ portal to reduce transaction costs and also connect with various dye manufacturers to understand industry requirements.
- CSR funding to be allowed to be used for R&D at recognized institutes/ universities

Mr. Jasbir Singh, CEO, Amber Enterprises talked about the following points:

- Benzene, toluene, and naphthalene are key raw materials. Anthraquinone is also equivalently important, and Indian production is currently suffering due to the availability of low-cost Chinese product. Anthracene based vat dyes must be promoted to be manufactured locally
- Certain grants can be provided to CETPs for technology upgradation as they have been using old technologies
- There should be a distinguishing factor between the violator and the law abider, as the industry suffers due to few violators
- Rationalizing the deep-sea discharge norms

Mr. Yogesh Parikh, Avani Dyechem Industries talked about the following points:

- To achieve Zero Liquid Discharge (ZLD), the liquid is converted into gas and released into the air thus polluting the air which is a challenge. Therefore, all CETPs should be given separate as per the requirement

- CTA amendment is required as it takes long time for approvals
- ECA amendment should be reviewed as there is no pollution load and it takes long time
- CETPs has high TDS volumes, some % of untreated sewage should be allowed to be mixed to bring COD and BOD levels down

Mr. Vatsal Naik, Mahavir Synthesis Pvt. Ltd. talked about the following points:

- Textiles and petrochemical industries are closely related where petrochemical companies provide the raw materials for textile industry
- Textile is the 2nd largest employer and the most polluting industry. They are the biggest consumer of dyestuff and research in this area is required so that the textile industry can reduce pollution. The buzzwords of the industry are sustainability, circularity, and traceability
- India has slipped from 2nd position to 5th position in terms of export of textiles
- Besides the conventional textiles, there is a mission called, National Technical Textile Mission (NTTM) which is basically research oriented in terms of fundamental and applied research. In fundamental research, they are eyeing for development of new fibers as India has limited production of high-quality fibers such as aramids, ultra-high molecular weight polyethylene, glass fibers, carbon fibers. Out of 1,000 crore INR, they have spent 240 crore INR as of 03rd November 2022.
- Testing with dyes and chemicals is required and is very important as there are stringent norms for testing if a company wants to export the product

Shri Sujit Kumar Bajpayee, Joint Secretary, Ministry of Environment, Forest & Climate Chang, Government of India talked about the following points:

- The issues highlighted by the key industry players were noted down and it will be divided into two categories – directly related to EC and other which is related to Air and Water Act
- On the EC front, the Environment Clearance is dealt in three stages:
  - When you take a Terms of Reference for preparation of EIA studies
  - Compare the EIA studies and conduct public hearing, if required
  - Come back to Government for Environmental Clearance
- Terms of Reference (Tor) for the chemicals sector is standard Tor. Company can apply for Tor and get it instantly
- Preparation of EIA/ EMP studies once the Terms of Reference is taken, next day the public hearing can be applied for. In case it is not required, company can directly apply for EC
- Some activities such as permanent fencing, construction of temporary sheds using prefabricated modular structures, site office guards storing material machinery, provision of temporary electricity and water supply for site office guards are allowed while working on the Terms of Reference
- The entire system is automated and visits to the office for clearances are not required. Can be done remotely through video conferencing.
- In 2020, in the chemicals sector, the average EC approval time came down from 300 days to 118 days and now it has come down to 62 days in 2021 and as on 02nd November 2022, it was 52 days

Discussion ended with a vote of thanks by **Mr. Jitendra Patel**, (MD K. Patel Chemo Pharma Pvt. Ltd.)

Concluding Points:

- Average environment clearance time has come down from 300 days to 50 days
- Another meeting will be scheduled between industry representatives & DCPC to further discuss on the challenges faced with respect to environment or any other issues and the remedies to tackle these challenges

4.2. Conclave on Global Agrochemical Industry

Agenda

Day 2: Thursday, 03rd November 2022	
1400 – 1600 hrs.	**Conclave on Global Agrochemical Industry**
About the Session: Indian agrochemicals industry is identified as the Champion sector by the government of India and is all set to align with best international practices and regulatory reforms. Indian government continues to focus on the growth and development of Indian agriculture and sweeping changes are taking place in Indian agriculture. With the discussion on growth drivers like policy reforms in accelerating the growth in the agriculture sector, improved farmer awareness and incomes, the present scenario, and the way forward, stakeholders will also talk about the self-reliant Indian agriculture sector in the session. The session will also focus on the key issues with respect to destruction in the Supply Chain, Spurious Pesticides, Farmer's Awareness, Training of Farmers, etc. Some of the most critical success factors for global agrochemical companies like significant R&D activities, strong brand equity, widespread distribution network, and a robust product pipeline will also be touched upon.	
Moderation by **Mr. Ashok Varma**, Partner, PwC India	
1130 – 1135 hrs.	Welcome Remarks by **Shri Arun Baroka**, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India
1135 – 1140 hrs.	Presentation by **Shri RG Agarwal**, Chairman, FICCI Crop Protection Committee & Group Chairman, Dhanuka Agritech "Scope and opportunities in Indian Agrochemicals industry"
1140 – 1145 hrs.	Presentation by **Mr. Ashok Varma**, Partner, PwC India on "Industry Overview"
1145 – 1150 hrs.	Keynote Perspective **Mr. Vikram Shroff**, Director, UPL Ltd.
1150 – 1220 hrs.	**Industry Interaction** Address by **Mr. Natu M Patel**, Chairman and Managing Director, Meghmani • **Mr. Simon-Thorsten Wiebusch,** Executive Director, Bayer Crop Science Limited & Country Division Head, Crop Science division of Bayer for India, Bangladesh, and Sri Lanka • **Mr. Ankur Aggarwal**, Managing Director, Crystal Crop Protection Ltd. • **Mr. Katsuyoshi Tanabe**, Senior Manager, Agro Solutions Division, Mitsui Chemicals • **Mr. Raju Kapoor**, Director-Industry & Public Affairs, FMC India Pvt. Ltd. • **Mr. N S Barhat**, CMD, Aristo Biotech and Lifescience Limited • **Mr. Anil Kakkar**, Vice Chairman, CropLife India
1220 – 1230 hrs.	Remarks by **Shri Manoj Ahuja**, Secretary, Department of Agriculture & Farmers Welfare, Government of India
1230 – 1240 hrs.	Guest of Honor Address by **Shri Bhagwanth Khuba**, Hon'ble Minister of State, Ministry of Chemicals & fertilizers and Minister of State, Ministry of New & Renewable Energy, Government of India
1240 – 1255 hrs.	Chief Guest Address by **Shri Narendra Singh Tomar**, Hon'ble Minister of Agriculture & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India
1255 – 1300 hrs.	Vote of Thanks by **Mr. Simon Thorsten Wiebusch**, Executive Director, Bayer Cropscience Limited & Country Division Head, Crop Science division of Bayer for India, Bangladesh, and Sri Lanka

Key discussion points

Moderation by Mr. Ashok Varma, Partner, PwC India

Mr. RG Agarwal, Chairman FICCI - Crop Protection Committee and Group Chairman, Dhanuka Agritech Ltd. felicitated **Shri Narendra Singh Tomar**, Hon'ble Minister of Agriculture & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India and **Shri Manoj Ahuja**, Secretary, Department of Agriculture & Farmers Welfare, Government of India with green certificates.

Shri Arun Baroka, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India welcomed the chief guest and other dignitaries to the session on Agrochemicals. He mentioned that the chemicals sector is growing approximately 1.5 times greater than the GDP of India. Sub-sectors such as specialty chemicals, agrochemicals and dyes are growing at a faster rate compared to overall chemicals industry in India. Exports are also on the rise with a few sub-sectors being net exporters although the overall chemicals industry is a net importer.

Shri RG Agarwal, Chairman, FICCI Crop Protection Committee & Group Chairman, Dhanuka Agritech talked about the following points:

- Crop exports crossed 50 billion USD
- Globally, there are around 1,170 pesticides while in India, there are only 300 pesticides. It needs to be understood why foreign companies are not bringing more products to India.
- Compared to China, 3% of pesticides is used in India
- Need support on regulatory clearance as the timelines for registering and getting approval of new molecules is high
- Illicit trade of agrochemicals needs to be stopped and more stringent rules should be in place
- New technology with green chemistry pesticides needs to be investigated

Mr. Ashok Varma, Partner, PwC India talked about the following points:

- Agrochemicals is a 50,000 crore INR industry with approximately 36,000 crore INR generated from exports
- Low awareness from farmers about agrochemicals and they need to be further educated
- In terms of policy and regulatory challenges, the timeline for registering new molecules is very high.

Mr. Vikram Shroff, Director, UPL Ltd. talked about the following points:

- Inflation in foreign countries gives opportunities to export food to those countries
- In terms of trade surplus, agriculture is larger than pharmaceuticals

Mr. Simon-Thorsten Wiebusch, Executive Director, Bayer Crop Science Limited & Country Division Head, Crop Science division of Bayer for India, Bangladesh, and Sri Lanka highlighted that the supply chain disruptions and energy crisis in Europe gives India the opportunity to be an agricultural export hub.

Mr. Ankur Aggarwal, Managing Director, Crystal Crop Protection Ltd. mentioned that India has been lacking in terms of R&D, however, off late with all the recent initiatives, lot of companies are coming up with various innovations and investing more into R&D.

Mr. Katsuyoshi Tanabe, Senior Manager, Agro Solutions Division, Mitsui Chemicals mentioned that a balance between generics and originals need to be maintained as currently, generics dominate in India

Mr. Raju Kapoor, Director-Industry & Public Affairs, FMC India Pvt. Ltd. talked about the following points:

- To grow the industry, the most important factor that is required currently in the industry is technique and technology
- Investment is required in cutting edge chemistry that will be safe for crops, applicator, and environment
- Investment into biologicals is key
- Investments should be carried out combining cutting edge chemistry and biologicals to achieve precision faming/ agriculture
- Fast-track mechanism should be in place for regulatory approvals

Mr. N S Barhat, CMD, Aristo Biotech and Life science Limited highlighted that the policies on farming need to be reviewed. For example, glyphosates which are the most used agrochemical globally is banned in India. Glyphosates are used in non-cropped areas. Safe and judicious use of pesticides must be done by the applicator.

Mr. Anil Kakkar, Vice Chairman, CropLife India mentioned that the policies on drones were fast-tracked and are now being implemented. He also talked about well-qualified people with degrees in agriculture working with small and marginal farmers. Only if the weak link is uplifted, the productivity will increase rapidly. He requested the Government to bring in a policy which allocates certain regions to companies to increase the productivity of small and marginal farmers promoting sustainable technologies.

Shri Manoj Ahuja, Secretary, Department of Agriculture & Farmers Welfare, Government of India talked about the decision to conduct a joint meeting between the chemicals and agriculture Government and industry. One meeting was already conducted in which a few key challenges were discussed that could be resolved in the short term and few on the policy and laws which would be long-term.

India has the potential to be a global player in terms of agrochemical industry and it is sized at 60,000 crore INR currently out of which 53% is being exported and 47% is being used domestically. There is also a potential for the size of exports to increase 10 folds.

And end-to-end integrated package needs to be given to the farmer including providing fertilizer, pesticides, precision farming techniques, etc. A policy framework can be worked on where work can be done in certain villages where new technology, processes and products can be provided including an entire integrated package solution.

It is necessary to provide the farmers with good quality fertilizer and pesticides and other inputs. A system needs to be created with co-operatives, FPOs, etc. to share proper knowledge and make the agrochemicals easily available to the farmers.

Shri Bhagwanth Khuba, Hon'ble Minister of State, Ministry of Chemicals & fertilizers and Minister of State, Ministry of New & Renewable Energy, Government of India talked about the comparison of pharma for humans to agrochemicals for plants and the judicious and regulated use of it is required. He also ensured the industry leaders that their concerns have been considered and will be discussed further in detail to find solutions around the challenges faced in the agrochemicals industry

Shri Narendra Singh Tomar, Hon'ble Minister of Agriculture & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India highlighted the importance of the role of agrochemicals in farming. It is the case that, at times, to predicate, understand and assert the requests, the time taken is too long, however under the leadership of Shri Narendra Modi, the speed to identify the challenge and come up with solutions has been faster and solution has always been reached at.

He also highlighted that the situation of India has changed itself and its position globally as well and it has been possible only because of the strength of the industry players combined with the leadership of Shri Narendra Modi and the Government of India. With the growth of the farmers, the production and productivity of the nation also grows. Awareness of the right usage of fertilizers and pesticides should be given to farmers. At one point in time, irrigation techniques were available, however, the electricity required for irrigation was not available.

He also further mentioned that any joint discussions that would be required with the industries and other ministries of the Government, they will support that and make sure they tend to the challenges of the industry and try to come up with solutions.

Discussion ended with vote of thanks by **Mr. Simon Thorsten Wiebusch**, Executive Director, Bayer Crop Science Limited & Country Division Head, Crop Science division of Bayer for India, Bangladesh, and Sri Lanka.

Concluding Points:

- Image building for the agriculture and the industry inside and outside the country is very important

- We should ensure access to the newest – digital, but also chemical and trade technologies to Indian farmers and make India globally competitive and drive towards country’s visions
- India should take advantage of the current energy crises in Europe and capitalize on chemical projects
- Policies related to farming need to be reviewed and chemicals such as glyphosates which are the most used agrochemical globally are to be unrestricted in India.

4.3. Conclave on Global Petrochemicals Industry

Agenda

Day 2: Thursday, 03rd November 2022	
1400 – 1600 hrs	**Conclave on Global Petrochemical Industry**
About the Session: The session will witness policymakers and industry captains discussing the global outlook, key trends, and synergy between the regions (access to Gulf Cooperation Council Reserves) to develop the Petrochemical Industry. The session will also focus on the strategies to enhance domestic production by balancing the dependence on imports to become truly self-reliant (Aatmanirbhar), Unlocking the new value opportunities, achieving excellence, and leveraging the synergy between Petroleum and Petrochemicals.	
Moderation by **Ms. Azzah Fawzi**, Partner, PwC Dubai	
1330 – 1332 hrs.	Welcome Remarks by **Shri Arun Baroka**, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India
1332 – 1335 hrs.	Industry Perspective by **Mr. Prabh Das**, Chairman- FICCI Petrochemicals Committee and MD & CEO, HPCL Mittal Energy Ltd.
1335 – 1340 hrs.	Sectoral Overview Presentation by **Ms. Azzah Fawzi**, Partner, PwC Dubai
1340 – 1405 hrs.	**Industry Interaction** • **Mr. Avinash Verma**, President - Operations, Petrochemicals, Reliance Industries Limited • **Mr. Rajesh Samarth**, Vice President – Managing Director, Lummus • **Dr. Shishir Sinha**, Director General, CIPET • **Mr. Deepak C Mehta**, Chairman and Managing Director, Deepak Nitrite Ltd. • **Mr. Janardhanan Ramanujalu**, Vice President, Regional Head- South Asia & Australia, SABIC India • **Mr. Gurinder Singh**, MD, Opal • **Mr. MV Iyer**, (Director Business Development) GAIL India Ltd. • **Shri Sujoy Choudhury**, Director (Planning & Business Development), Indian Oil Corporation Ltd.
1405 – 1410 hrs.	Address by **Shri Pankaj Jain**, Secretary, Ministry of Petroleum & Natural Gas, Government of India
1410 – 1415 hrs.	Guest of Honor Address by **Shri Bhagwanth Khuba**, Hon'ble Minister of State, Ministry of Chemicals & fertilizers and Minister of State, Ministry of New & Renewable Energy, Government of India
1415 – 1425 hrs.	Chief Guest Address by **Shri Hardeep S Puri**, Hon'ble Minister of Petroleum and Natural Gas & Housing and Urban Affairs, Ministry of Petroleum and Natural Gas, Government of India
1425 – 1430 hrs.	Vote of Thanks by **Shri Deepak Mishra**, Joint Secretary (Petrochemicals), Department of Chemicals and Petrochemicals, Government of India

Key discussion points

Moderation by Ms. Azzah Fawzi, Partner, PwC Dubai

Shri Arun Baroka, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India welcomed the chief guest and other dignitaries to the session. He also talked about the importance of

petrochemicals in the chemicals and petrochemicals industry – value, volume, historical nature of petrochemicals which is why they scheduled this exclusive session on petrochemicals.

Mr. Prabh Das, Chairman- FICCI Petrochemicals Committee and MD & CEO, HPCL Mittal Energy Ltd. talked about the following points:

- Government needs to work towards encouraging companies both domestic and foreign to set up units in India and encourage existing manufacturers to expand capacity due to the high market growth potential
- Target should be to meet domestic requirement and export products to cater to global demand

Ms. Azzah Fawzi, Partner, PwC Dubai talked about the following points:

- Growth of petrochemicals industry in India is 1.5 times the growth of GDP of India
- There needs to be increased diversified usage of feedstock and not just dependent on C2 and C3 streams
- Integration across the value chain from upstream to downstream is necessary
- Supply demand gap in 2025 is large and this will lead to R&D opportunities, strategic investments, and joint ventures/ collaborations
- Changing the strategy to be more sustainably focused gives the opportunity to lower costs, increase top line, and provide new potential opportunity and value to the company

Mr. Rajesh Samarth, Vice President – Managing Director, Lummus highlighted the major challenge with circularity being sourcing the right kind of feedstock and not having the undesired material in it. The industry as such, including manufacturers and packaging companies, need to come together and put such a recycling system in place and decide where the waste will go and end up. The right kind of technology is required to sort the materials for recycling.

Dr. Shishir Sinha, Director General, CIPET mentioned that there are three major factors when it comes to different kinds of innovation – energy, environment, and economics. He also talked about the importance of understanding the market before investing in R&D.

Mr. Deepak C Mehta, Chairman and Managing Director, Deepak Nitrite Ltd. talked about the following points:

- The mindset of people is that petrochemicals market encompasses only PP and PE, however, awareness needs to be increased about the potential and various product lines of the petrochemicals industry
- In the Polyethylene (PE) and Polypropylene (PP) markets, China is 4 times and 6 times bigger than India respectively
- In the Polyvinylchloride (PVC) and Acrylonitrile Butadiene Styrene (ABS) market, China is bigger than India by 18 times
- Major challenge is to ensure important feedstock such as ethylene and propylene is available
- Make tank farms available at ports for ethylene and propylene storage

Shri Hardeep S Puri, Hon'ble Minister of Petroleum and Natural Gas & Housing and Urban Affairs, Ministry of Petroleum and Natural Gas, Government of India talked about the following points:

- Ensure the industry leaders that the Government of India will connect with Oil Marketing Companies (OMCs) to understand how to convert feedstock challenges to opportunities
- 600 million people in urban cities and economy growing at 7%
- Approximately 25% of global energy requirement is projected be from India by 2040
- Policies on exploration and production in sedimentary basins have been rolled out
- Refining capacity is forecasted to increase from 251 MMTPA to 400 MMTPA by 2040

- Shifting from coal based to gas based and renewable based energy. The blending capacity of biofuels have also increased
- Per capita consumption of chemicals is 1/10th of global consumption
- India is a net importer for chemicals except for benzene and polyester

Mr. Janardhanan Ramanujalu, Vice President, Regional Head- South Asia & Australia, SABIC India talked about the following points:

- Low carbon technologies are a major challenge
- Need to work on electrification of processes – low intensity water consumption, low intensity electricity usage, low carbon technologies etc.

Mr. Gurinder Singh, MD, Opal talked about the following points:

- Industry perception should change for plastics and awareness of the positives of the industry should be spread among the common population
- End consumer awareness should be increased and sensitized that industry it not the problem, but what happens after is the major challenge

Mr. MV Iyer, (Director Business Development) GAIL India Ltd. talked about necessity to build infrastructure of pipelines to transport fuel/ gas from ports to facilities that are far away from ports

Discussion ended with vote of thanks by **Shri Deepak Mishra**, Joint Secretary (Petrochemicals), Department of Chemicals and Petrochemicals, Government of India

Concluding Points:

- Large number of opportunities exist in petrochemicals sector and it's time to grab these opportunities to make India the leading petrochemical player in the world
- Sustainability is becoming an overarching principle of business today
- Access to low carbon technology at affordable cost is important to enable sustainability in the petrochemicals sector
- Capacities for downstream specialty chemicals needs to be developed and given importance. Access to olefinic feedstocks has been the roadblock for the development. It is important to develop tank farms at ports for the imports of these feedstocks.

4.4. Conclave on Process, Plant Machinery, Pumps & Valves

Agenda

Day 2: Thursday, 03rd November 2022	
1400 – 1530 hrs.	**Conclave on Process, Plant Machinery, Pumps & Valves**
About the Session: The Process Plant Machinery, Pumps & Valves Roundtable session involves the opinions mapping of Stakeholders and drawing actionable initiatives to create an impactful difference for the industry through the benefit from growing technology adoption and innovations, collaboration across geographies and supportive ecosystem, specifically in post- covid era. India's industrial sector is likely to register a growth of 11.8% in 2021-2022, spurred by consistent efforts of the government to bring in various infrastructural, fiscal, and structural reforms and foreign direct investment inflow. The India process plant machinery market will reach USD 7.7 billion in 2027 from USD 4.8 billion in 2021. The process plant machinery market is mainly driven by the increase in domestic and manufacturing output and a growing number of opportunities in key end-user industries with Foreign Direct Investment (FDI) inflow. The stakeholders will deliberate on the strategies to boost the sector by offering insight on the prevailing Geopolitical situation, domestic and export opportunities, technology adoption and exchange, need for innovation, necessary policy changes, developing economic and business relationship with emerging countries for collaboration meeting global standards and guidelines.	
Moderation by **Mr. Karan Chechi**, Director, TechSci Research (Knowledge Partner for PVPE roundtable)	
1400 – 1405 hrs.	Welcome address by **Shri Susanta Kumar Purohit**, Joint Secretary (Chemicals), Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India
1405 – 1415 hrs.	Industry perspective by **Mr. K Nandakumar**, Chairman, FICCI – PVPE Committee and Chairman & Managing Director, Chemtrols Industries
1415 – 1425 hrs.	Global Perspective by **Mr. Sitanshu B Bhatt**, Director, Global Procurement Centre India (GPCI), Linde Engineering India Pvt Ltd.
1425 – 1510 hrs.	Discussion on theme: Technology, Innovation, and Collaboration in a supportive ecosystem: A paradigm shift of India's process plant machinery, pumps & valves industry • **Mr. K. Nandakumar**, Chairman & Managing Director, Chemtrols Industries Pvt Ltd. • **Mr. Sitanshu B Bhatt**, Director, Global Procurement Centre India (GPCI), Linde Engineering India Pvt Ltd. • **Mr. Kaushik Banerjee**, General Manager – Marketing & Business Development, Larsen & Toubro • **Dr. Vijay Chaudhry**, President, Bry-Air (Asia) Pvt. Ltd. • **Mr. Tim Wilkins**, Business Unit Leader | Asia Pacific, Flexim • **Mr. Lalit Mohan**, Managing Director, Flexim India • **Mr. Bharat Ajwani**, Managing Director, Tecnik Valves • **Mr. Raghunath P Tate**, National Manager – Learning, Armstrong International • **Mr. Vaishnav Nigam**, AGM, Armstrong International • **Mr. Dinesh Satheesan**, President & Chief Marketing Officer, Sanmar Engineering Technologies • **Mr. Anurag Sharma**, Business Consultant- EMG, Parker Hannifin India Pvt. Ltd.

	• **Mr. Pushpendra Singh Jadon**, Head Sales & Marketing, ISGEC TITAN METAL FABRICATORS • **Mr. Prashant Mishra**, National Sales Manager - Chemicals & Petrochemicals, Premier Tech • **Mr. Sanjeev Babyloni**, Managing Director, Errand Enterprises • **Mr. Naishadh Bhatt**, Business Development Manager – EMG(India), Parker Hannifin India Pvt Ltd. • **Mr. Manoj Gupta**, National Sales Manager, Bry- Air (Asia) Pvt Ltd. • **Mr. Vikram Anand**, - Manager Business Development, IEC Fabchem Ltd. • **Mr. OM Mhaske**, Executive Director, Mask Seal • **Mr. Shashi Shekar**, Senior Vice President, Epsilon Carbon Pvt. Ltd.
1510 – 1515 hrs.	Address by **Shri Vikas Dogra**, Deputy Secretary, Ministry of Heavy Industries, Government of India
1515 – 1525 hrs.	*Release of Knowledge Paper Chief Guest: Address by **Shri Krishan Pal**, Hon'ble Minister of State, Ministry of Heavy Industries, Government of India*
1525 – 1530 hrs.	Vote of Thanks by **Mr. Dinesh Satheesan**, President & Chief Marketing Officer, Sanmar Engineering Technologies

Key discussion points

Moderation by **Mr. Karan Chechi**, Director, TechSci Research (Knowledge Partner for PVPE roundtable)

Shri Susanta Kumar Purohit, Joint Secretary (Chemicals), Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India gave the welcome address and spoke about the availability of technical personnel at competitive rates, growing demand with opportunity in the domestic as well as export market, business friendly policies by central and state governments inviting investments in the various industries. There are few challenges that are prevalent in this sector and the Government is acting with need for:

- R&D
- New technologies
- Making process more environment-friendly

He also indicated that the rate of growth of the industry is very high, and the key points discussed during the session will be investigated and they will work together with the industry to move the industry forward, accelerate this process of improvement, bringing in more investment, and improve our export potential.

Mr. K Nandakumar, Chairman, FICCI – PVPE Committee and Chairman & Managing Director, Chemtrols Industries highlighted the following points:

- 40 years ago, when a refinery was built in India, hardly 10% of the equipment was made in India including process plants, pumps, valves. However, today, in a refinery, 90% of the equipment is produced in the country and in a petrochemical plant, 85% of the equipment is produced domestically. In 40 years, India has come

of age and there is no doubt that India can become a global manufacturing hub for process plants and equipment in the coming years

- There is a need for integrated efforts by the government and other stakeholders to grow the industry
- All chemical and petrochemical plants undergo reactions at various processing parameters including temperature, pressure, emissions, vaporization, etc. which may lead to corrosion. These are a few areas where critical monitoring is required.
- In the present scenario, around 2.25 trillion USD is GDP of India with capital goods around 15% and process plants will be around 6 billion USD in 2021. Per capita income of India is hovering around 1,850 – 1,900 USD. For a country with a 1.3 billion population and sustainable development, the per capita income should be around the range of 6,000 USD by 2047. The GDP would be around 30 trillion USD, out of which capital goods is 15% and process plants should account for approximately 1.1 trillion USD.
- By 2027, to achieve a 5 trillion-dollar economy in which 700-800 billion USD should be capital process plants which is achievable as the growth of the process industry (refining and petrochemicals) comes from African and Sahara regions. India has developed a lot of credentials in that region by being a principal supplier to refinery in Nigeria. India can be a preferred process plant and equipment vendor to global refiners and petrochemical manufacturers.
- Today, the growth potential is controlled by certain factors beyond what is technology, innovation, and development, namely – Environment, Societal and Governance which will drive global business.
- To cater to the global market, global standards must be met which are already in place as Indian standards have majorly been derived from global standards
- There are certain areas where some work is required, especially on the instrumentation and control, testing laboratories need to be integrated globally and certification bodies need to have global accreditation
- Looking at the future, to sustain global business, digitalization is the most important aspect. There has been a lot of focus from the Government to promote digitization including development of 40 skill councils, provision of software tools necessary, however, there has been hesitation from the industry to adopt digitalization maybe due to conventional manufacturing methods
- Connectivity, data accusation, data management, integration and people & skill are few key areas to focus on in skill development and digitalization. A roadmap is to be formed by the Government working together with FICCI and the skill development council to develop a platform that can be used by Small, Medium and Large Enterprises.
- With the target set by the Government of India of net zero by 2070, the process plant and machinery need to work sector wise to achieve this target. Lot of emphasis by the chemical process industries such as refineries, petrochemical plants, fertilizer units, to go into net zero unit wise. Critical areas to work on are carbon capture technology and metallurgy.

Mr. Sitanshu B Bhatt, Director, Global Procurement Centre India (GPCI), Linde Engineering India Pvt Ltd. talked about ‘Make in India’, support from Government in terms of policies and initiatives. India has excellent manufacturing making use of all digitalization platforms. There are still some specialized areas where India is dependent on the imports and therefore need to focus more on R&D.

Age-old processes from 1960s and 1970s are still being used which are not being audited. Upgradation of these technologies will infuse speed and scalability. If this is done and then combined with digitization such as IoT, ML and AI which will facilitate it forward and multiply it in terms of the performance.

In FY 2021-2022, 4.5 billion USD is from this category of equipment, out of which, 75-80% is being exported. Feedback from global clients is very important and has been mixed. Maintaining these market numbers today itself requires a lot of effort. There is a

problem with what we sell, we execute and what we deliver as all these 3 things are not in line. Therefore, there is a need for consistency and sustainability of the commitment made to the supplies, specifically foreign supplies.

It was suggested that out of the 2% expenses allocated from a business to social responsibility, 1% can be routed to Research & Development.

He further concluded by saying, “Industry must sensitize on quality and delivery while cost is competitive in India. If our quality and deliveries are sustained and consistent, sky is the limit. Equipment reliability, availability, operability, and safety are very important aspects.”

Roundtable Interaction

Mr. Manoj Gupta, National Sales Manager, Bry-Air (Asia) Pvt. Ltd. talked about the global supply chain disruptions affecting the India market and how Bry-Air (Asia) Pvt. Ltd. is managing adequate supply of critical raw materials for the equipment. For example, they got a good order from a European country, and they introspected knowing the challenges they will face from the supply chain point of view. They came out with some strategies to change their five strategies of supply chain and they came back with a solution that if they are going to come up with an ecosystem supply chain also, keeping in mind the backup of the suppliers, inventory management, and a contingency plan with the stakeholders within the organization. Hence, they could manage the delivery within 4 weeks minimizing the time.

Creating a supply chain ecosystem is the one green area where the companies must work by different ways and means knowing their strengths in the organization and improvement areas.

Mr. Kaushik Banerjee, General Manager – Marketing & Business Development, Larsen & Toubro talked about the different strategies that can be followed to ensure businesses can survive during crises like COVID-19 and the key expectations of supply chain participants in the industry. The company managed to maintain 100% delivery of equipment during the COVID-19 lockdown restrictions. Majority of the equipment is exported outside India. The company aims to position themselves as the world’s #1 fabrication company and currently, L&T is among the top 3 fabrication companies globally.

One major change the company has undertaken in recent times is the adoption of Industrial Internet of Things (IIoT) and digitalization where most of the activities on the shop floor are being automated, which has increased productivity many folds. During the lockdown, the company also had to reduce the manpower intensity such that work would go on, but at the same time not endangering lives. All these mechanisms that were put in place will be sustained over a period and even if another crisis is to happen in the future, the company is equipped to face these challenges.

Lot of raw materials used to manufacture equipment are sourced from outside India from regions such as Europe, Japan and elsewhere. The company is trying to see how best the procurement of these materials can be localized to overcome difficulties of getting shipments done, logistics challenges, and restrictions from importing from China and other places.

They are also promoting their vendors to adopt digitalization and automation techniques that can integrate and develop an ecosystem so that everyone can work in a synchronized and harmonious way to deliver the product in the best possible manner.

Mr. Dinesh Satheesan, President & Chief Marketing Officer, SanMar Engineering Technologies talked about ways to be less dependent on the global supply chain and utilize indigenous products. He mentioned that during the COVID crisis, US China trade war, geopolitical situation during the last 3 years have put a strain on the global supply chain and they have realized that it is very fragile.

The company in the early days of its business adopted a method of setting up Joint Ventures with leading companies in the world that manufacture flow control products and solutions and they have been successful in running this set-up.

There is a need to import foreign technology and the operations should be managed here to produce the products and supply to the Indian industries.

One of the challenges was that they were still dependent on imports for certain components. Their foundry was also dependent on scrap materials and alloying elements. With the Swiss blockage, material movement was a problem. So, they worked on making a backup inventory pileup as a short-term solution. They tried to work with their end-users and suppliers, giving them prior notification of possible spikes in demand and preparing them to be ready for this situation. The customers were also very supportive in terms of helping manage inventory at their end also.

They also shifted suppliers from Europe and Japan to India for certain products like fluoropolymers which go into sealants. They were able to source locally and customize it according to their requirements and quality standards.

He concluded by saying that more products that are being imported should be produced domestically, onshore those manufacturing here so that our dependence on imports is less.

Mr. Sanjeev Babyloni, Managing Director, Errand Enterprises discussed the expectations when the company imports and expectations when the company exports. One of the key factors that is looked at today is quality and anybody who is buying equipment expects a good quality product. The players in India have come a long way in terms of improvement of quality, however, there is still scoped to improve quality and still not reached the stage of 100% quality.

The company exported its product to a well-reputed party in India. They then outsourced it to a smaller party which was then further outsourced to a smaller party. The material was third party inspected and exported it and when it reached the site in a European country, there were certain quality issues and when they went down the line to find out where the issues came from, at the lowest level, there was certain level of mess up which then resulted in everyone getting a bad name. The equipment was meant to be exported back to India and when it came back, the company attended to it and fixed up the issues which was majorly corrosion and metallurgy related.

Where the product is outsourced to an MSME and the quality of the product is expected to be good, there needs to be certain improvements in maintaining quality standards. The companies which are manufacturing in India, and which is a manufacturing hub for Indian industry as well as global industry, the quality is generally maintained well, but when the company majorly focuses on supplying to Indian industry, there is certain amount of compromise on the quality.

Mr. Anurag Sharma, Business Consultant- EMG, Parker Hannifin India Pvt. Ltd. spoke about the advantages of being a global name over domestic companies and the key challenges when doing business in India and in export markets. He mentioned that we have a kind of bias towards global brands built over the years due to nurturing, education, societal pressure, among others. The first thing that comes to everybody's mind in terms of global brands is reliability and quality. All companies either are like a global brand or want to become like a global brand either in terms of aspiration or intent.

Few of the advantages of being a global brand are listed below:

- Acceptance is one of the key advantages for global brands. There is no resistance or reluctance from companies to enter the plant even unscheduled.
- When people buy products from global brands, they have some areas of their concerns eliminated – that it's going to perform, and it has reliability and can focus on other areas of plant operations

The only area of concern for global brands is the cost, however, luckily with Government initiatives, since liberalization in 1991, there have been a lot of changes happening in the industry and lot of companies are showing promise in coming to India.

India is in a unique position between Germany and Japan to be one of the 2 or be better than the two. This should be the aspirational requirement for the Indian industry to be their own benchmark, rather than taking benchmark from Germany or Japan.

One key point of concern is the quality of infrastructure such as roads in front of industrial parks and estates which needs to be developed by the Government

Mr. Naishadh Bhatt, Business Development Manager – EMG(India), Parker Hannifin India Pvt Ltd. mentioned that when global companies come to India, they have an objective of either market acquisition or mitigate the supply chain challenges. When they come to India, they bring not only the product but also the processes which drives the quality output.

He further highlighted that our standards should not define the parameters but the process standards which will help us to be equivalent to the global standards of other countries to compete at a global level. The next important thing which other industries are doing is cluster development. This industry should also focus on that and to boost up production in India, these clusters need to be developed with good infrastructure. Government should also work on what the company invests in during R&D and expansion also apart from providing benefits, that will encourage global companies to invest more money to the Indian market and Indian manufacturing services.

Mr. Shashi Shekar, Senior Vice President, Epsilon Carbon Pvt. Ltd. talked about the key challenges to adopt sustainable energy in India. In terms of renewable energy, the major challenge is the CAPEX on what you invest and how far you get the benefit for which the Government's help is required. We also need to investigate the use of renewable energy with the core sectors. Integrating the usage of energy from one plant to another. For example, excess steam from one plant, if one can develop an energy cycle to use that steam.

In terms of policy, they require support from the Government if they are investing in CAPEX for any energy saving, that should be either subsidized or interest benefit to be provided.

Mr. OM Mhaske, Executive Director, Mask Seal talked about how India can make significant progress to adopt sustainable energy as India is playing a major role in shaping the sustainable development goals. India's target of 500 GW renewable energy by 2030 will help in bringing down emissions as currently, 75% of India's electricity is produced by coal which is contributing to the increase of Carbon Dioxide in the air.

Government has already offered subsidies in terms of renewable energy; however, the subsidies need to be advertised and more benefits on subsidies can be offered to promote adoption of renewable energy by all industries.

Mr. Pushpendra Singh Jadon, Head Sales & Marketing, ISGEC TITAN METAL FABRICATORS, talked about the growth moment in fabrication industry. In the last 4 years, there has been high growth in the tantalum and niobium market in India which was not there earlier. The downtime is very important for the industry and the industry is somehow realizing that factor and they are upgrading the metallurgies from Hastelloy and silicon carbide to metals such as tantalum and niobium. There is a paradigm shift towards tantalum which is also sustainable. Reactive metal and exotic metallurgy have been booming for the last 4 years.

The chemical industry with 'China+1' concept is getting orders from BASF, Bayer, and other players to make fine chemicals which was earlier manufactured in China. They have their own specifications on what metallurgies are to be used and these exotic metallurgies are coming into the picture more and more. There is an increase in demand in India and a lot of projects are coming up as the industry is booming.

None of the raw materials (Titanium, Zirconium, Tantalum and Niobium) are available domestically, and are therefore being imported. The duty structure is not very suitable as raw material is being imported at a higher duty. China is currently not exporting Zirconium to India and therefore, it must be sourced from Europe or US, where the price is 30-40% more expensive than China.

Mr. Prashant Mishra, National Sales Manager - Chemicals & Petrochemicals, Premier Tech talked about Make in India solution, and it ask to deliver lot of automation projects for leading Indian Chemical & Petrochemical companies. For example, in the last 3 years, the company has provided 10 complete automation solutions to leading Indian petrochemical sectors. They developed a local automation solution through their satellite manufacturing process from their global team and delivered the project. They also offer 100% Make in India solutions to other sectors such as carbon black and food and beverage. Reducing the import burden for critical components of this sector equipment and encouraging them to improve the export market and increase margins.

Mr. Tim Wilkins, Business Unit Leader | Asia Pacific, Flexim mentioned about the India market from an external perspective. India is a low cost and price competitive market and the quality of products from Make in India initiative is very important and needs to be focused on. Companies should focus on best practices and make sure that it can be competitive on a quality standpoint as well for the rest of the market.

Mr. Vikram Anand, - Manager Business Development, IEC Fabchem Ltd. talked about the competitiveness of the products from India at a price and quality standpoint. The competitiveness in terms of price is very high, however, the competitiveness in terms of quality is not that high. Since most Indian companies are manufacturing for Indian customers, the demand for quality from the customer side is very low but the demand for more competitive price is very high. Companies need to look at the lifecycle cost of the product and not just the price of the product now.

To produce high quality products that can compete at a global level, the Indian customer must be more stringent and demand quality when buying equipment from Indian manufacturers. Few companies cater to the domestic market as well as export market, however the type of customer is of two – Indian customers require low price while foreign customers require high quality.

The adoption of technology is going to have a positive impact; however, the question really is how technology pervades into the industry. In countries such as Germany and Netherlands, there is a strong industry and academia interface where the technology flows from the academia to the industry. Taking view of Europe, the industry should be given an opportunity to set agendas and drive research in research institutions.

In response to **Mr. Vikram Anand**'s comment on industry academia interface, **Shri Susanta Kumar Purohit** highlighted that the Government is working on a portal to connect research institutions and the industry to create a synergy and align the academic institution with the industry

Shri Vikas Dogra, Deputy Secretary, Ministry of Heavy Industries, Government of India talked about the formation of ecosystem for technology, innovation, and collaboration. There are 3 main components for innovation:

- Industry to come forward with practical problems
- Academia where the talent is available, infrastructure is almost there, however, the application of that research into the market is not available
- Student who will carry forward this torch in the future

Government of India thinks that innovation is an industry driven program and Government is there only to handhold. There is a challenge with the confidence of industry towards institutes whether they will be able to come up with the solution that the industry is seeking. Another challenge is confidentiality as it is a very competitive market, companies are in a very closed shell to share their data and information.

The government tried to make a linkage between academia and industry. In phase I, one of the verticals was Technology, Innovation Platforms (TIPs) where 6 platforms have been made by IIT Madras (focusing on robotics), CMTI, ICAT, ARI, BHEL (focusing on heavy industries) and HMT (in collaboration with IISC Bangalore). Each platform catered to a novel idea.

As of 03rd November 2022, 72,000 students, academia and industries have logged in and they have given 144 grant challenges, out of which, 34 futuristic technologies have already been sanctioned. In January 2022, this was carried forward and in phase-II of the scheme and already, the Government has sanctioned 28 projects worth 900 crore INR in the last 10 months and disbursed 95 crore INR already.

To conclude the session, the knowledge paper for PVPE roundtable conference in collaboration with FICCI and TechSci Research was released by **Shri Susanta Kumar Purohit**, Joint Secretary (Chemicals), Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India.

Concluding Points:

- Replacing old pumps and valves, which are energy guzzlers, with energy efficient machines is very important and access to capital is necessary for it
- The duty structure needs to be revised to have access to raw materials such as Titanium, Zirconium, Tantalum and Niobium, at an economical rate.
- Indian companies have tremendous capabilities to develop quality products. Companies now need to look at the lifecycle cost of the product and not just the price of the product now.
- Government has offered subsidies in terms of renewable energy; however, the subsidies need to be advertised to enable awareness in the industry
- Suggestions on having a separate ministry discussion with all the manufacturing sectors' representative (chemical, steel, power etc.) to devise solutions is necessary to overcome the challenges

4.5. India – EU Chemicals & Petrochemicals Forum

Agenda

Day 2: Thursday, 3rd November, 2022	
1530 - 1700 hrs	**India – EU Chemicals & Petrochemicals Forum**
About the Session: The EU and India share common values and interests in each other's security, prosperity, and sustainable development. India's bilateral trade with EU amounted to USD 116.36 billion in 2021-22. Despite the global disruptions, bilateral trade achieved an impressive annual growth of 43.5% in 2021-22. Currently EU is India's second largest trading partner after US, and the second largest destination for Indian exports. The trade agreement with EU would help India in further expanding and diversifying its exports of goods and services, including securing the value chains. Both sides are aiming for the trade negotiations to be broad-based, balanced, and comprehensive, based on the principles of fairness and reciprocity.	
Moderation by Mr. Amit Kaushal, Executive Director, PwC	
1530 - 1540 hrs.	Opening Remarks by **Shri Susanta Kumar Purohit**, Joint Secretary (Chemicals), Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India
1540 - 1550 hrs.	Address by **Mr. Amit Kaushal, Executive Director, PwC**
1550 - 1650 hrs.	**Industry Interaction (45 mins.)** • **Mr. Mukesh Malhotra**, Country Manager & Managing Director Solvay Specialities India Pvt Ltd. • **Mr. Suresh Ramachandran**, Country Head & Managing Director Arkema India • **Mr. Pramod Bhandari**, Chief Financial Officer, IG Petrochemicals • **Prof. RK Khandal**, President (R&D) and Business Development, India Glycol Limited • **Mr. Kapil Malhotra**, Global Business Unit Head- Fluoropolymers, Gujarat Fluorochemicals Limited • **Mr. Sanjeev Kalia,** Government Relations & Advocacy, BASF • **Mr. Rajeev YSR** - Head Investment Promotion, APEDB
1650 - 1700 hrs.	Remarks by **Shri Arun Baroka**, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India

Key discussion points

Session moderated by Mr. Amit Kaushal, Executive Director, PwC

The session started with opening remarks from **Shri Susanta Kumar Purohit**, Joint Secretary (Chemicals), Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India –

- Chemical and Petrochemical sector, very important and touches every part of our life. India is poised with a very good growth of chemical and petrochemical sector at present, because of various drivers discussed in the previous sessions.

- India-EU forum is very important because despite the covid challenges, the bilateral trade had a very impressive growth of 43.5%. This session is to see since the growth potential is very high, what's the scope of our growth of India-EU bilateral trade and exchange of best practices between two countries and what we can do further for the trade exchange between the two countries in a better way and how we can help mid the growth of the sector in domestic as well as global arena.

The moderator of the session, **Mr. Amit Kaushal, Executive Director, PwC**, introduced all the panellists in the forum and shared his thoughts on India-EU trade relations –

- Trade between India and EU is 2000 years old, and it gives inspiration on how we can build this trade further. Though from a quantum and value perspective, there is an opportunity to accelerate even further in terms of India being significant trading partner of EU

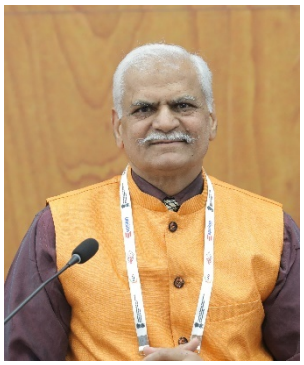
- In India, all the sub-sectors are growing, driven by demand in downstream products. With this perspective, forecasting a higher level of growth in coming years. India is expected to become 4th largest economy by 2024, essentially there is an opportunity to participate in the growth story. We can get support on ESG, design, digitalization, and technology transfer sectors from European countries.

- In terms of Europe, the share of chemical business in global market is going down significantly from 24.9% in 2010 to 14.4% in 2019 and further going down in years ahead. In the current scenario, there is an increase in energy cost and coupled with weak demand, it's leading to slowdown and shift of production in other countries. There is a significant movement happening in shifting production to other regions, as it's not looking viable for European companies to continue doing business there. This is a huge opportunity for Indian companies to support the EU market.

- Europe can start developing India as sourcing destination. We have a huge talent pool here, with access to experience, products etc. There is another opportunity of fast tracking the FTA with the European union. Another opportunity is to simplify the license approval process in India as well as Europe to simplify to energize. Another requirement is to ease the mobility of people.

The forum further discussed on top 3 constraints for EU-India trade activities and top 3 key-focus areas to accelerate the trade

Prof. RK Khandal, India Glycol Limited –



- India not blessed with petroleum resources, but with talent to create new molecules, processes, and technologies. We need to focus on more renewable resources. A new ministry required to focus on COP26 and COP27 as the world is transitioning from black carbon to blue carbon and now to green and next will be purple carbon.
- Indian policy makers need to focus more on specialty chemicals. It shall be defined in the manner that they are derived from renewable resources. We have chemistry, processes, and technologies, which nobody in the world has. We should pick up those technologies, which nobody is doing currently. We should be the leader in niche technologies.
- Few suggestions for planning – Short term: Government should align to support industry growth; create center of excellence in multiple regions; create a separate cell in ministry to target import substitution. Mid Term: Focus more on green hydrogen and CO2 capture technologies. Long Term: Industry should be self-sustainable

Mr. Mukesh Malhotra, Solvay Specialities India Pvt Ltd. –

• Regulatory framework is the major constraint that hampers today. When you want to export from India to Europe, we have REACH regulations, but instead of aligning the standards, Indian government has started enforcing BIS standards. From the point of manufacturers, it just adds the costs. We could be complying with REACH standards, but to import from Europe now we need BIS certifications too. It delays the whole process. There must be some collaborations at regulatory level, where the countries could come up with some standard regulations which are accepted at both sides, so that it can ease the compliance cost for the manufacturing industry.

Mr. Suresh Ramachandran, Country Head & Managing Director Arkema India

- During COVID, Indian government and Indian embassies partnered with European companies for zeolite based micro sieves. The way it was done was a fabulous collaboration and benchmark for everyone.
- About constraints, one of the big challenges is to present India as an attractive destination compared to countries such as China, Vietnam, Philippines, Malaysia. It is not China+1, but China+n which is competing with India, however India will still gain the highest share. We must raise the Indian position. Many recent initiatives – PLI scheme in battery space will bring a lot of investments.
- Another region where India and EU can collaborate is sustainability and circular economy. Europe is the leader with most of the sustainable demands originating from customers in Europe.
- Pace of change from Industry 4.0 to next levels will be very fast and there will be a requirement of skilled manpower.

Mr. Sanjeev Kalia, Representative from BASF

- India is the second largest trade partner for Europe. In chemicals, India exports EU around 19%, but in 2019 there was an edge of Indian exports to European market. This is a positive note and can be taken forward.

- The barriers are mostly related to regulations. EU has green deal, which will be implemented soon and REACH. With respect to FTA, it will be done post agreement with group of 27 countries, which is a long process and still a challenge and need to see if interests of both the sides are taken care of. Another constraint is ease of movement of people

- India should explore and invest more in R&D. The conventional routes are changing, and it gives an opportunity for R&D to invest in and be the future.

Mr. Kapil Malhotra, Gujarat Fluorochemicals Limited –

- GFL was the largest market supplier of fluoro polymers to Europe last year. There are some constraints. First is technology transfer. There is a hesitancy and conservatism from European companies to have any kind of technology transfer with an Indian partner. We should have confidence building measures, forums with embassies ambassadors so that technology transfers can happen to the Indian corporate companies. Even if Indian companies' approach, royalties, and technology transfer rates are too high which will not be viable to put up a plant. That kind of approach should not be there. We need the European ministry to investigate this.

- Second is regulatory framework. Through ICHA, the EU came up with a regulatory framework, based on multiple years of research. But Indian companies must instantly comply to their regulations. European governments can support companies in developing countries to develop technologies and products to comply with the standards.

- Another challenge is ease of mobility. Not easy to get a VISA, which again is applicable only for 30 days or 90 days and that too single entry. This needs to be modified.

Mr. Pramod Bhandari, IG Petrochemicals

- In India, the whole regulatory process is too complex as compared to countries such as Singapore. There is no sync between environmental regulatory and industry.

- India is a manufacturing hub but there is no logistic arrangement to export the chemicals, so that India can be a global hub

- Incentives should be given to the companies, who focus more on R&D

Mr. Sagar Kaushik, UPL

- India can follow EU's model of how industry, government, and academia work together to create new technologies.

Post the panel discussion, **Mr. Rajeev YSR** - Head Investment Promotion, APEDB, Government of Andhra Pradesh put light on how the state government is very much transparent for industries to flourish. The state has 3 industrial corridors and second largest port in cargo handling capacity. It contributes to 8% of chemicals and petrochemicals production value in India and hosts country's largest PCPIR region. He also pointed out that the country should focus on developing the skilled manpower, niche technologies such as green solutions and explore cross-functional application areas.

Shri Susanta Kumar Purohit, Joint Secretary (Chemicals), Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India closed the session by thanking all the industry representatives present in the forum on the behalf of **Shri Arun Baroka**, Secretary (Chemicals and Petrochemicals), Ministry of Chemicals & Fertilizers, Government of India, and assured them that the ministry would definitely take up their respective issues and suggestions forward to encourage fast growth of the industry.

Concluding Points:

Industry must emphasize on following focus areas for Mission 2030 and Vision 2047

- First focus area – Sustainability and safety; under this need to talk about net zero, work and collaborate on circular economy, green chemistry and work in focused way on hydrogen (generation, storage and distribution)
- Second focus area – People; India & EU can have seamless mobility of people between the two trading blocks; another discussion point is developing capability in R&D, manufacturing, digitalization so that we can make India future ready
- Third focus area – Process; strengthen our supply chain management, provisioning of transportation of specialized products, streamlining availability of ISO containers and vessels; streamline technology transfer, Regulatory framework, simplification and standardization
- Fourth focus area – marketing and communication of India as an investment region