The Thirteenth

ANNUAL INDIA CHEMICAL INDUSTRY OUTLOOK CONFERENCE

Vision 2025 – How Do We Leverage the Discontinuity / Disruption / Uncertainty in the Industry?

13 - 14 February 2020 | Mumbai | India

The Annual Mega Event of Indian Chemical Council – **The 13th Annual India Chemical Industry Outlook Conference** - was held in Mumbai on 13 & 14 February 2020. Hotel Sahara Star, an engineering marvel and the world's first 'hemisphere' three compound-curved custom designed and a clinical fusion of design and space, overlooking the Mumbai's domestic Airport was the venue this time for the 2-day program of ICC. In an ambience steeped in rich culture and superlative luxury, **Sahara Sapphire, Mumbai's largest pillar-less Multi-Purpose Event Hall** witnessed an unprecedented gathering of about 450 dignitaries comprising Captains of Industry from chemical and allied sectors, academia, research institutions, government departments, financial institutions, technology and financial consultants and other service providers to chemical and allied industries, etc.

The theme of the 2-day Conference was *"Vision 2025 – How Do We Leverage the Discontinuity / Disruption / Uncertainty in the Industry?"*

The global mega trends today are Environment Sustainability and Climate Change. The chemical industry today is impacted by these mega trends as never before. Added to this is the current topical issue of trade flow restrictions/ trade wars.

The chemical industry is facing multiple challenges across the world. This conference attempts to bring in the latest insights / trends in the chemical industry and experts views on how these challenges are being addressed.

PART VIEW OF THE GATHERING

Recent chemical industry trends - such as digital future of our industry, global merger and acquisitions, and the focus on downstream speciality chemicals - are important areas covered in the conference.

The chemicals industry is one of the major sectors of the economy and its growth is key to achieve the goal of a $5 trillion Indian economy by 2025. The sector not only provides raw materials, but also enables other industries grow faster by providing solutions and performance enhancements, that make products more saleable.

India's imports of chemicals, currently valued at about $55-bn and slated to reach $126-bn as the chemical industry grows to a size of about $350-bn, represents a significant investment opportunity – for domestic as well as international companies. Back-of-the-envelope calculations suggest that to be self-sufficient, India needs an ethylene cracker to be commissioned every year, at an investment of $5-bn for each. Currently, nearly 20 large projects, representing a cumulative investment of about $100-bn, are at different stages of implementation and approvals.

Since the chemical industry is capital intensive and highly asset based, this fundamental strength will sustain the industry at commodity chemical levels with efficiency plays with Industry 4.0. However economies of scale, capturing value chain stronger market reach may not sustain future growth models.

The new ecosystem could compel chemical industry to move closer to the customer and collaboration and convergence could become the new mantra of growth. The eminent speakers who made this program a memorable event to all deliberated on the new thoughts and new growth models that chemical industry need to embrace.

The conference also covered trade flows of chemicals and how the chemical industry would be impacted.

Oil & gas companies, eyeing opportunities in the chemicals space, will muscle in at a scale significantly above that of the traditional chemical companies, through advanced crude oil-to-chemicals (COTC) technologies. These are being developed to offset decline in markets for fuels – in particular automotive fuels – and to leverage the continuous growth that petrochemical markets will continue to offer.

While the projected peak for gasoline demand is expected in the 2025-2030 timeframe that for diesel is forecast for about five years later. Even jet fuel could come – at least to some extent – from renewable sources. The only bright spot it seems is for chemicals.

These were the crux of the deliberations at the 2-day conference that the delegates and others would like to carry along with them when they return to their work field.

The Two-day event started with the Opening Remarks by **Mr. Kamal P. Nanavaty,** Chairman-Conference and Exhibition Committee of ICC (President-Strategy Development, Reliance Industries Limited).

Mr. Kamal Nanavaty, observed that the focus on plastics, including wastes, and the emphasis on circular economy, will, in the short run, have an impact on plastic demand

MR. KAMAL NANAVATY, CHAIRMAN - CONFERENCE & EXHIBITION COMMITTEE OF ICC MAKING THE OPENING REMARKS

on account of reduction in plastic packaging. Furthermore, increased recycling is also likely to impact growth in consumption of virgin materials. "However, in the long run, newer applications and more intensive use of plastics in existing applications are likely to more than offset the reduction in consumption in the short run," he observed.

Mr. Vijay Sankar, President, ICC, pointed out that as the rest of the world shuts chemical manufacturing capacity, India is well placed to step in to serve this demand, in addition to the potentially large domestic opportunity. He welcomed the recent decision of the government to permit companies expand their capacity by up to 50% without having to go through elaborate environmental evaluations. "This is a positive move," he added.

MR. VIJAY SANKAR, PRESIDENT, ICC DELIVERING THE WELCOME ADDRESS

FIND BALANCE BETWEEN INDIGENOUS PRODUCTION AND IMPORTS

In his video address, **Prof. K. Vijayraghavan,** Principal Scientific Advisor, Government of India, urged the industry to rise to the challenge of ensuring equitable growth. "The industry must introspect on how much is reasonable to import in a globally connected world. This is a balance we need to find."

He also urged industry to dovetail with government missions, such as for providing clean water. "The opportunities in the rural sector are particularly important. Partnerships with CSIR labs can ensure innovative green chemistry development," he added.

UNPRECEDENTED LEVEL OF DISRUPTION

Mr. Bob Patel, President, International Council of Chemical Associations (ICCA) & CEO, LyondellBasell, USA, who was to grace the occasion as Chief Guest as per his earlier program also sent a Video message which was played for the audience.

In his message, Mr. Bob Patel, pointed to the "unprecedented level of disruption" that the global petrochemical industry is experiencing. These challenges, he believed, would change the way the industry thinks and operates.

Mr. Mansukh L. Mandaviya, Minister of State for Chemicals & Fertilizers, Government of India, also sent a Video Message wherein he congratulated ICC for conducting this international event and sent his best wishes for the program.

BUSINESS DYNAMICS

DEMOGRAPHIC CHANGES, REGULATIONS AND TECHNOLOGY RESHAPING GLOBAL CHEMICALS LANDSCAPE

The global industry has delivered above-average Total Return to Shareholders (TRS), as compared to the market as a whole, over the last 20 years, but a closer look at the trends shows that the industry is now falling behind, as managements are being challenged as never before to deliver performance in an increasingly complex world. In India, however, the growth prospects for the industry still remain bright, and the performance better than most other industries, though chemical output and demand is still puny in a global context.

While the global chemical industry gave 4% more returns than the markets as whole over a 20-year horizon, there is a fine structure under the data. In the last 10 years, it has performed just in line with overall

ANOTHER VIEW OF THE DELEGATES

markets, and in the last five years even fallen behind, delivering just 6% annual TRS growth, as compared to 9% by the market as a whole. "The industry is now dancing to a different tune on a global perspective, though not India," observed **Dr. Florian Budde,** Senior Partner, McKinsey & Company, while delivering the Keynote Address on the subject of "Headwinds and Tailwinds Shaping the Chemical Industry".

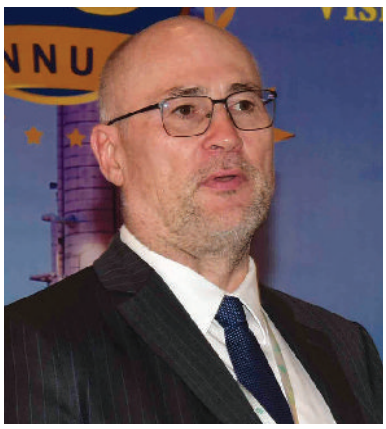
THREE KEY DRIVERS

Three major forces, according to Dr. Budde, are currently driving the global chemical industry: demographic trends; technology; and what he calls, "the revenge of the ecosystem."

Demographically, it is clear that the world is getting older and birth rates are coming down. One is also seeing a horizontal transfer of wealth from west to east, which seems inevitable considering just 10% of the world population will be living in North America and Western Europe by 2040. "This will lead to an extended period of political instability – some of which is already evident. We will see low interest rates in many countries and trade wars, as losers put up fences," Dr. Budde noted.

While China's current slowdown will take global growth rates down, it will take another 30 years till India gains the momentum to emerge a key driver. "Asia will be the centre of the new world, and talent will be scarce, especially in aging countries," he added.

As far as technology is concerned, Dr. Budde noted that the pace of development would accelerate, not slow. Pattern recognition will lead to transparency at several levels of performance – of companies and their parts; of individuals and employees; of equipment and products (technically and commercially). Artificial Intelligence (AI) will increase productivity by enhancing plant optimisation, enabling dynamic pricing, enhancing high throughput experiments and reducing the cost of complexity. "Technology will also enable new business models and changing customer value pools, at some point," he added.



MR. FLORIAN BUDDE, SENIOR PARTNER, MCKINSEY & COMPANY, DELIVERING THE KEYNOTE ADDRESS

The only way to reach the climate targets set out in the Paris accord is a massive reduction of consumption, especially in the advanced economies. For the chemical industry the implications are massive, as it is an industry of things. "We are going to see increasing regulation – some helpful, some misguided, and some panicky. The license to operate might be questioned. There could be potential significant short-term wealth reduction and high demand destruction by regulation," Dr. Budde warned.

"Growth assumptions that have been tightly linked to regulation will have to be rethought. Companies

will have to deal with much more informed and demanding shareholders," he added.

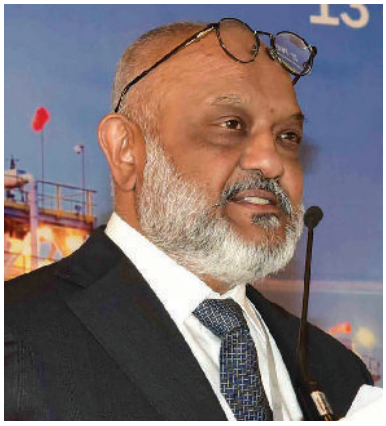
'WATCH OUT FOR CHEMICALS REGULATION'

Mr. P. Raghavendra Rao, Secretary-Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India, urged the

MR. P. RAGHAVENDRA RAO, IAS, SECRETARY-CHEMICALS & PETROCHEMICALS, GOVT. OF INDIA ADDRESSING THE DELEGATES

Indian chemical industry to be watchful of the upcoming chemical regulation policy. "Industry will be given an opportunity to provide inputs," he pointed while addressing the august audience as **Chief Guest** of the function.

The inaugural session of the packed 2-day event concluded with a Vote of Thanks by **Mr. Ravi Goenka,** Vice President – ICC who is also the Managing Director of Laxmi Organic Industries Ltd.



MR. RAVI GOENKA, VICE PRESIDENT-ICC, PROPOSING VOTE OF THANKS

INAUGURATION OF THE EXHIBITION

Like previous years, a mini Exhibition was also arranged in co-operation with Eliteplus, ICC's event managers, at the same venue. This enabled the exhibitors to successfully attract relevant, senior lever decision makers across all areas of the chemical industry, providing them with a perfect platform to engage with new prospects, bolster brand awareness and generate new leads. It also established a platform for leaders of private sector companies, public sector units, government bodies, industry experts and investors to interact on these opportunities.

Raw material suppliers, catalyst suppliers, equipment suppliers, lab services, process licensors, and allied services like Water, Power, It-Digitization, Logistics and Storage companies were amongst the exhibitors.

MR. P. RAGHAVENDRA RAO, IAS, INAUGURATING THE EXHIBITION

SECRETARY VISITING ONE OF THE EXHIBITION STALLS

MR. RAGHAVENDRA RAO IN THE STALL OF ONE OF THE ICC MEMBER-COMPANIES.

TECHNICAL SESSIONS

During the Tw-day Conference, there were Seven Technical Sessions and Three Panel Discussions. The Technical Sessions were mainly on the subjects of –

- **FINDING THE RIGHT PATH IN UNCERTAIN MARKETS – INDUSTRY MEGA TRENDS AND SEGMENT VIEW;**
- **VISION FOR CHEMICALS INC 2025: CONTRIBUTING TO INDIA'S USD 5TRILLION ECONOMY PLAN;**
- **RIDING TOWARDS GROWTH AND PROFITABILITY IN AN UNSTABLE ENVIRONMENT;**
- **EVOLVING TECHNOLOGY AND INNOVATION LANDSCAPE AND IMPACT ON CHEMICAL INDUSTRY;**
- **RESPONSIBLE CARE AND VALUE CREATION, etc.**

The Panel Discussions were on:

- HUMAN CAPITAL FOR BUSINESS GROWTH – VISION 2025
- IMPERATIVES FOR INDIAN CHEMICAL INDUSTRY TO ACHIEVE VISION 2025, and
- ROLE OF INFRASTRUCTURE IN CHEMICAL HANDLING AND LOGISTICS.

Panel Discussions were chaired and membered by Experts from the industry.

The 1st Session of the 2-day Conference was chaired by **Mr. Wouter de Geest,** Chairman of Flanders' Chamber of Commerce & Industry and member of the strategic committee at VBO (Belgian employers association).

FIRST SESSION OF THE EVENT: MR. RAVI RAGHAVAN MAKING HIS PRESENTATION. OTHER SEATED ARE: DR. PARTHA MAITRA, MR. AVINASH GOYAL, MR. WOUTER DE GEEST (SESSION CHAIRMAN) AND MR. PREET SINGH.

Dr. Partha P. Maitra, President-Strategy & Initiatives, Reliance Industries Limited presented the paper on ***"Impact of Mobility Transformation on Refining & Chemicals".***

According to Dr. Maitra, while the current lot of integrated refineries convert 10-25% of crude oil processed to petrochemicals, China's integrated para-xylene complexes convert about 40%, and future revamps of existing refineries could eye 25-50% conversion levels. New refinery builds will take this approach much further and eye petrochemicals conversion of the order of 70%, through a slew of technologies including steam and catalytic cracking, prorane/butane dehydrogenation, methanol-to-olefins, and reforming to maximise naphtha and/or aromatics. "We will likely see the evolution of oil and gas majors to chemical majors," Dr. Maitra added.

The next speaker of the day was **Mr. Avinash Goyal,** Senior Partner, McKinsey & Company. He spoke on the subject of ***"Growing Bigger and getting Stronger – The Future Drovers of Growth in Chemical Industry".***

INDIAN CHEMICAL INDUSTRY STILL AN OUTPERFORMER, BUT ...

According to Mr. Avinash Goyal, while the Indian chemical industry has consistently outperformed the overall market, the extent of

TABLE 1: IMPORT GAP FOR SIX VALUE CHAINS

VALUE CHAIN	2018 IMPORTS	KEY UNLOCKS	SOLUTIONS
C1: Methanol, formic acid, acetic acid, acetate esters, vinyl acetate, ethylene vinyl acetate, polyvinyl acetate	3,300-kt; $2,100-mn	Access to feedstocks	Strategic partnerships with local refineries/gas majors Invest in basic building blocks in feedstock-advantaged regions and build downstream value chains in India
C2: Ethylene dichloride (EDC), vinyl chloride monomer (VCM), polyvinyl chloride (PVC)	3,000-kt; $2,400-mn		
C4/C6: Styrene, polystyrene, ABS, SAN, styrene butadiene rubber	1,700-kt; $2,500-mn		
C3/C6: Phenol, acetone, bisphenol-A, polycarbonate, methyl methacrylate, polymethyl methacrylate	900-kt; $1,300-mn	Access to feedstock Access to technology Capability to offer application-specific solutions	Set up on-purpose PDH units Develop partnerships with refineries implementing propylene recovery units Partnerships with major chemical MNCs or independent technology licensors Partnerships with MNCs to develop and market solutions – e.g. for polymer compounding Targeted acquisitions to build capabilities, such as PU System Houses
C3: Acrylic acid, oxo-alcohols, acrylates, SAP			
C3: Propylene oxide, polyols, isocyanates, polyurethanes	500-kt; $1,000-mn		

SOURCE: MCKINSEY & COMPANY

outperformance has narrowed in recent times.

While TRS grew by 15% CAGR in the period from December 2008 to December 2019, as compared to 5% growth in the markets as a whole, and by an impressive 22% from December 2013 to December 2019 (vis-à-vis 6% CAGR growth for the overall market), in the last three years – i.e. from December 2016 to December 2019 – TRS growth in the chemical industry at 17% CAGR was only slightly better than 12% CAGR growth in the overall markets.

The industry has also outperformed its upstream sectors (metals & mining, and oil, gas & coal) and downstream sectors (consumer products, automotive, pharmaceuticals and construction materials), consistently over the past decade, though the extent of outperformance has also decreased in the last three years.

Mr. Goyal pointed to the $15-bn trade deficit in chemicals, driven largely by imports of 'petrochemical intermediates', which value reached $45-bn in 2018. "Solving for the import gap of six major value chains could help drive petrochemicals self-sufficiency in India," he observed (see Table 1).

The changing dynamics in China – driven by tightening regulatory norms and enforcement – will provide long-term advantage to select Indian players, besides some short-term opportunities for chemical companies in certain value chains. "Trade wars and shifts in global supply chains could present opportunities for Indian chemical companies, especially for those who have built scale to fortify their competitive advantage" Mr. Goyal added.

Mr. Goyal called on companies to think about compliance and sustainability from the point of view of protecting long-term shareholder value. "Sustainability is becoming an imperative, not a buzzword, with various stakeholders placing a premium on it."

Mr. Preet Singh, Managing Director, Lincoln International Advisors Pvt. Ltd. speaking on ***"Outlook for M&A in Indian Chemicals in light of Global Consolidation Wave"*** emphasised that "Merger and acquisition (M&A) activity in the Indian chemical industry has been extremely limited, and in 2019 was cumulatively valued at $7-bn, representing less than 1% of global M&As." There are several reasons for this, including the fact that organic growth opportunities are still abundant in India.

Indian sellers eyeing prospective buyers from abroad are compromised on several counts including:

- Sub-scale businesses that do not get adequate mindshare of global boards;
- EHS practices that do not meet global standards;
- Reluctance of family-run businesses to be seen as 'sellers'; and
- Valuation expectation mismatches.

While typical deal sizes in the global speciality chemicals context are of the order of $50-mn to $80-mn, in India they are typically in the range of $15-mn to $30-mn. "Chemical companies in India are trading at 40-50% premium to their global peers, and global strategies struggle to justify paying capital market benchmarks in India," he noted.

India's chemical industry has also not caught the eye of Private Equity investors, with a few exceptions. "Several M&A opportunities are

available globally to acquire new technologies as well as move downstream," Mr. Singh added.

Speaking on ***"Approaches for Broad-based and sustainable Development of Indian Chemical Industry"*, Mr. Ravi Raghavan,** Editor – Chemical Weekly, urged the industry to be watchful of the regulatory changes forthcoming, noting that they will restrict use of several chemicals of commercial significance. "Regulatory changes that could be modelled on the lines of the European chemical regulation, REACH, could severely restrict the palette of ingredients available to the downstream industries to formulate."

Mr. Raghavan, however, urged caution in the selective tinkering of tariffs and duties to afford protection to targeted companies, warning such a move will be a throwback to the 1980s and hinder competitiveness of the user sectors, wherein much of India's export success lies.

Environment clearances: On the issue of environment clearances, he noted that companies cannot start construction till these clearances are obtained and getting product mix approval also takes four to six months. "In such a scenario industry player misses out on opportunities to exploit short term market opportunities like the ones arising out of coronavirus outbreak," he stated.

"Certain initiatives have already been taken by the government in that 50% product mix change is allowed, but you have to prove that there is no increase in pollution load. So, the devil is in the details. We have to look at getting it corrected," he remarked.

Enhanced share of export markets can boost prospects for speciality chemicals:

Another opportunity for Indian chemical companies is increasing the share of export markets for speciality chemicals, currently dominated by China. While China's export value in top-three speciality chemical segments – intermediates for APIs, agrochemicals and dyes & pigments – is 2.7x that of India's, in the next six categories – plastic additives, electronic chemicals, food/feed additives, nutraceuticals, rubber chemicals, and flavours & fragrances – it is 12x India's. While the former provides opportunities for deeper market penetration, the latter new markets for India to explore (see Table 2).

TABLE 2: TOP SEGMENT IN SPECIALITY CHEMICAL EXPORTS

SEGMENT	GLOBAL MARKET CAGR, 2018-23	GLOBAL EXPORTS, US$ BN	CHINA SHARE	INDIA SHARE
API intermediates	6-7%	77	11%	4%
Agrochemicals	2-3%	72	17%	6%
Dyes & pigments	2.3%	66	12%	5%
Plastic additives	3-4%	15	8%	1%
Electronic chemicals	4-5%	15	22%	0.02%
Food/feed additives	2-3%	12	19%	2%
Nutraceuticals	4-5%	10	46%	2%
Rubber chemicals	2-3%	5	27%	2%
Flavours & fragrances	3-4%	5	46%	12%

SOURCE: MCKINSEY & COMPANY

Mr. Raghavan pointed to potential gaps that could emerge for critical raw materials for building a robust speciality chemicals business. He pointed, in particular, to the growing needs of purified ethylene oxide (PEO), which cannot be imported, and for acrylic monomers required for making resins used in paints & coatings, adhesives and in textile industries, amongst others. "Capacity for the latter is being created for the first time in India, but for the former there could be constraints going forward, although there is adequate capacity now. Transportation of PEO is best done by pipelines, and derivative plants need to be located in a cluster around a PEO producer. It is also time to once again consider production of PEO from alcohol, as is being done in India by one producer, and by another industry major in the US." Noting that the speciality chemicals business cannot thrive in the absence of a robust bulk chemicals industry, he called for collaborations between the two.

After the 1st Session, A Panel Discussion on 'HUMAN CAPITAL FOR BUSINESS GROWTH – VISION 2025" which was chaired by **Mr. Dinesh Mirchandani,** Managing Partner, Boyden International. **Ms Nita Keswani,** Chemicals Practice Lead, Boyden; **Mr. Adnan Ahmad,** Region Head-India, Clariant Chemicals (I) Ltd; **Mr. Kalyan Ram Madabhushi,** CEO-Global Chemicals - Aditya Birla Group; **Mr. Satish Rao,** Managing Director, Firmenich India; **Mr. U. Shekhar,** Chairman, Galaxy Surfactants Ltd were the panel members who lead a lively discussion.

Dr. Mritunjay Chaubey, Global Vice President ES&G Cell, UPL Limited made a Pre-Lunch presentation on ***"Aligning Indian Chemical Industries Effluent Discharge Standards with International Standards".***

Tightening environmental standards: Dr. Chaubey, pointed to the tightening environmental standards in India, and its impacts on chemical industries, in general, and the agrochemical industry, in particular.

The proposed standards in the Comprehensive Industrial Document (COINDS) on the pesticide industry, for example, lower the COD and BOD levels for effluent discharge from 250-ppm and 100-ppm to 150-ppm and 30-ppm, even as it places a 220-litres per tonne limit on the volumes that can be let out.

THE PANELLISTS: MR. ADNAN AHMAD, MR. KALYAN RAM MADABHUSHI, MR. DINESH MIRCHANDANI (MODERATOR), MS NITA KESWANI, MR. SATISH RAO AND MR. U. SHEKHAR

Furthermore, the Comprehensive Environmental Assessment of Industrial Clusters has defined a Comprehensive Environmental Pollution Index (CEPI) – a pollution-measuring index that exists nowhere else in the world. "In cases where environmental pollution in an area is contributed by other activities such as road dust, municipal solid waste, sewage, etc., and not primarily on account of industrial activities,

DR. MRITUNJAY CHAUBEY MAKING HIS PRESENTATION

putting a blanket ban on setting up a new industrial unit or expansion of industrial activities may not provide the desired outcome of restoring environmental quality," Dr. Chaubey observed.

According to him, CEPI may act as a powerful non-tariff barrier against India-made products in the international market, adversely impacting exports.

The CEPI guidelines also impose stringent Zero Liquid Discharge (ZLD) norms for obtaining Environmental Clearance (EC) in a CEPI area. This will impose a huge financial burden on industries, as the setting up of a 2.5-mlpd (million litres per day) ZLD facility will cost close to Rs. 100-crore and impose operational costs of Rs. 1,500 per litre of effluent treated, in comparison to costs of Rs. 40-crore and Rs. 500 per litre to treat the same quantity of effluent to meet prior discharge norms.

The next Session on "FINDING THE RIGHT PATH IN UNCERTAIN MARKETS – SEGMENT VIEW" chaired by **Mr. Bimal L. Goculdas,** Addl. Vice President-ICC (Managing Director & CEO, The Dharamsi Morarji Chemical Co. Ltd.).

Mr. K. S. Karthikeyan, Expert Associate Partner, McKinsey & Company, made the 1st presentation under this session on ***"Feeding the***

TABLE 3: TECHNO-ECONOMIC FEASIBILITY OF ZLD & ETP PLANTS

PARAMETERS	UNIT	ETP TO MEET DISCHARGE NORMS	ETP TO MEETS ZLD NORMS
Power consumption	KW/Day	7,740	30,760
CO2 emission	Tonnes/Day	6.3	25.2
Solid waste generation	Tonnes/Day	30	61
Chemical consumption	Kg/Day	1,160	2,626
Capital cost	Rs. crore	40	100
Operational cost	Rs./kl	500	1,500

CAPACITY TO TREAT 2.5-MLPD SOURCE: UPL LTD.

THE SESSION CHAIRMAN AND SPEAKERS: MR. K. S. KARTHIKEYAN, MR. R. D. SHROFF, MR. S. GANESAN, MR. RAKESH BHARTIA, MR. BIMAL GOCULDAS (SESSION CHAIRMAN), MR. KRISHNAMOHAN NARAYAN, MR. ABHAY DUBEY AND MR. NEELANJAN BANERJEE.

Chemicals Eco-system: Boosting Investments".

Investments in India's chemical industry was a piffling $35-bn in 2019 – far behind the $208-bn investment in USA and $200-bn in China. While new investment interests worth $70-bn have been announced in the last three years, foreign direct investments (FDI) into the chemical industry are still a trickle, and hover around the historical levels of 3-4% of total FDI inflows.

"Despite consistent improvement in the ease of doing business ranking – from 142 in 2014 to 63 in 2020 – India still lacks attractiveness for investments compared to its Asian peers, due to high factor costs and lack of business friendliness," Mr. Karthikeyan, noted.

IMPORTANT ROLE OF ANCHOR INVESTORS

To boost investments – local and foreign – he urged focus on conceptualising, building and operating state-of-the-art specialised petrochemicals infrastructure and utilities, along the lines available in several parts of Asia (e.g., Jurong, Shanghai), Europe (e.g., Antwerp, Ludwigshafen) and the US (e.g., Gulf Coast). Key to building clusters will be the anchor investor, who can ensure supply of specified feedstock volumes to downstream units.

These initiatives need to be supported by policies and incentives to improve competitiveness and ease of new project implementation, and include: single-window, fast-track clearance; reduction in clearance timelines; subsidy on land; relaxation in corporate rate policy; availability of social infrastructure; timely release of funds for infrastructure development; and incentives on electricity, especially renewable power.

Mr. Karthikeyan also mooted the creation of a 'Chemical Innovation Fund' to develop the knowledge ecosystem and promote industry-institution partnerships. "Industry associations and government agencies can use this fund to give projects to research institutes to develop new products, indigenous technologies and processes, and skill development programmes, amongst others."

USHERING INNOVATION:

Mr. Krishnamohan Narayan, Managing Director, BASF India Ltd., while making his presentation on ***"Speciality Chemicals the next Wave of Innovation/New Era of Material Science"***, lamented that despite an educated workforce, India has limited investments in R&D, and that the propensity for fundamental research has been traditionally low. "Traditional research, augmented with digital disruption, can accelerate innovation. Resource prioritisation and regulatory frameworks are essential to create an innovation ecosystem," he noted.

DISCERNIBLE RELATIONSHIP BETWEEN AGROCHEMICALS USE AND AGRICULTURAL PRODUCTION

"Indian Agro-chemicals Industry – Achieving Global Scale and Relevance" was the topic of presentation made by **Mr. Rajjubhai D. Shroff,** Chairman – UPL Limited jointly by **Mr. S. Ganesan,** Vice President-Agri-Business of UPL Limited.

Mr. Shroff and Mr. Ganesan, pointed to a discernible relationship between the use of agrochemicals to protect crops and agricultural output, which neither the introduction of Bt crops (cotton, corn, soybean), nor

PANEL DISCUSSION: MR. VIJAY SANKAR (MODERATOR) ADDRESSING THE DELEGATES. SEATED ARE: MR. RAKESH BHARTIA, MR. BIMAL GOCULDAS, MR. ADNAN AHMAD, MR. U. SHEKHAR AND MR. DILIP SAWHNEY.

promotion of organic farming has impacted.

"Growth of ayurveda, homeopathy, naturopathy etc. has not affected global pharmaceuticals growth, which increased from $601-bn in 2005 to $1,205-bn in 2018. Ditto for agrochemicals. Every dollar spent on agrochemicals now gives better value than before, thanks to increasing use of generics," they observed.

Indian consumption of agrochemicals, he noted, at 52,750-tonnes in 2017, represented just 1% of global consumption, and has contributed to agricultural production of 397-mt in 2018 – 12% of global output. Globally, India ranks second in agricultural production and 13th in agrochemical usage.

Exports of agrochemicals from India have been rising steadily and at $3.0-bn in 2019 accounts for 8% of global agrochemical exports. India's export performance is only bettered by China (14% share), Germany (12%), USA (12%) and France (10%). "India's agrochemicals trade has been consistently fetching a trade surplus, which can increase significantly going forward, with policy facilitation aimed at enhancing domestic manufacture for the global market," Mr. Ganesan added.

SUSTAINABILITY INITIATIVES

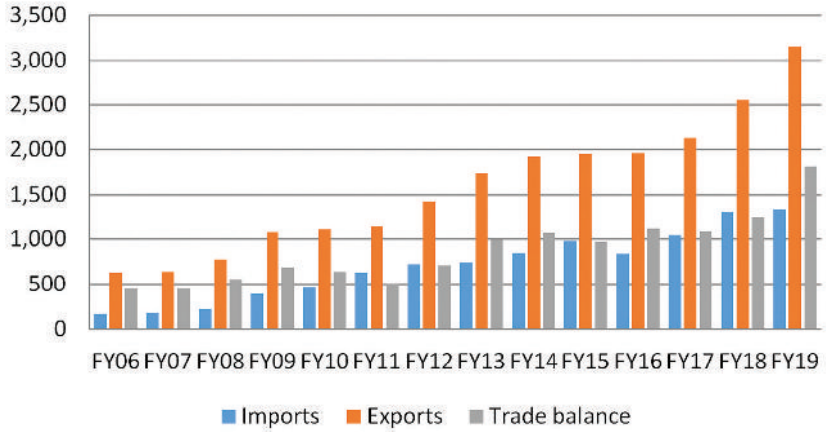
While making his presentation on ***"Towards a Sustainable Future – A Clear Road Map"*, Mr. Neelanjan Banerjee,** Vice Chairman & Managing Director, Lanxess India Pvt. Ltd. pointed to his company's efforts to eliminate coal as an energy source. By 2023, biomass, solar and wind energy will replace coal at the company's two manufacturing sites at Jhagadia (Gujarat) and Nagda (Madhya Pradesh).

"Beginning 2024, Lanxess India will be saving 150-kt of carbon dioxide annually," he observed.

Mr. Abhay Dubey, Heavy Industry Leader-Asia Pacific Region of Rockwell Automation India Pvt. Ltd., made the last presentation on ***"The Connected Enterprise – Enabling Vision 2025 for the Indian Chemical Industry".***

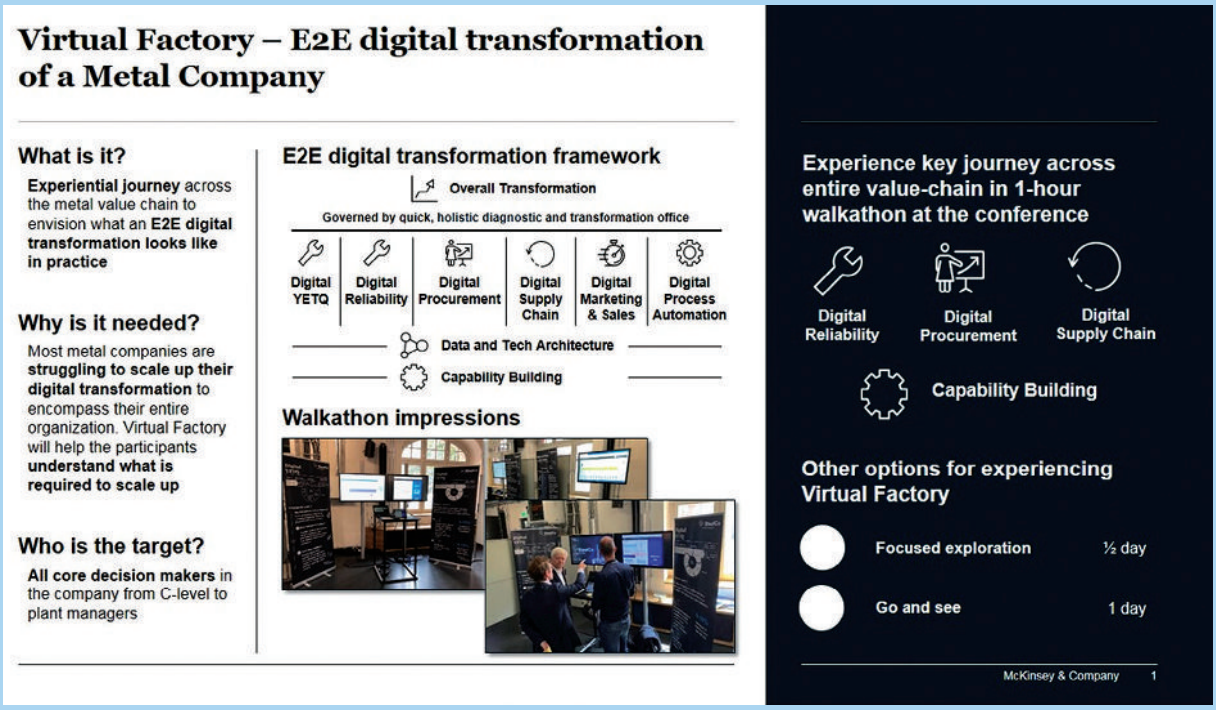
This session was followed by a **Panel Discussion** on the subject of "IMPERATIVES FOR INDIAN CHEMICAL INDUSTRY TO ACHIEVE VISION 2025". **Mr. Vijay Sankar,** President-ICC was the moderator and **Mr. Bimal L. Goculdas,** Addl Vice President-ICC; **Mr. Rakesh Bhartia,** CEO, India Glycols Limited (Past President-ICC); **Mr. Adnan Ahmad,** Region Head-India, Clariant Chemicals (India) Ltd; **Mr. U. Shekhar,** Chairman, Galaxy Surfactants Ltd and **Mr. Dilip Sawhney,** Managing Director, Rockwell Automation India, were the panellists.

FIG. 2: INDIA'S TRADE IN AGROCHEMICALS, $ MN



FACTORY OF THE FUTURE

Mckinsey & Company, the Knowledge Partner of the 2-day event, came out with a beautiful theme –Factory of the Future - along with an interactive model display on a 2000 sq. ft. stall, and with an expert flying in from Europe for this purpose.



Mr. Rami Kalouche and **Mr. Pinak Dattaray,** Associate Partners, McKinsey & Company made presentations on ***"Digital & Analytics in Manufacturing and Supply Chain for Agro-Chem Industry"*** and ***"What it takes to Build Next Gen Factory?",*** respectively.

The crowd then dispersed for the **Live Demo** of the "Factory of the Future" set-up at the venue by McKinsey & Company.

The 2nd day's program started with ***Mr. Samir Kumar Biswas,*** Joint Secretary-DCPC, Ministry of Chemicals & Fertilizers, Government of India, addressing the delegates.

Mr. Biswas urged the domestic industry to learn from the developments in China, where a number of chemical plants have been ordered shut due to pollution concerns, and advised adoption of sustainable practices in operations. "The ultimate aim should be to move towards a circular economy, wherein the industry doesn't have any impact on the environment. And from that perspective, self-regulation through 'Responsible Care' is a great initiative," he noted.

MR. RAMI KALOUCHE AND MR. PINAK DATTARAY WITH MR. B. VIVEK SHETTY, CHAIRMAN VISWAAT CHEMICALS LTD.

MR. SAMIR KUMAR BISWAS, JT. SECRETARY-DCPC, ADDRESSING THE DELEGATES

MR. DANIEL ROCZNIAK PRESENTING A MEMENTO TO MR. SAMIR KUMAR BISWAS

"A key opportunity lies in reducing the rising import dependency by enabling 'Make in India' for various chemicals and also to cater to requirements of the neighbouring countries by exports," Mr. Biswas said. "The government will provide all necessary support for attracting investments and sourcing technologies," he added.

The First Session of day-2 on "VISION FOR 2025: CONTRIBUTING TO INDIA'S USD 5 TRILLION ECONOMY PLAN" was chaired by Mr. Suresh Ramachandran, Country Head & Managing Director, Arkema India.

Mr. Deepak C. Mehta, Managing Director, Deepak Nitrite Limited made the 1st presentation on ***"Building Competitiveness: Infrastructure set up (Chemical Parks) and EODB".***

Chemical clusters key to efficiencies: Mr. Deepak Mehta,

TECH. SESSION: ON THE DAIS ARE - MR. A. K. GUPTA, MR. DEEPAK DATTA, MR. DEEPACK C. MEHTA, MR. SURESH RAMACHANDRAN AND MR. RICHARD BOLTE JR.

called for the creation of an ecosystem where the industry is "permanently competitive," instead of seeking tax breaks and other incentives from the government. "We should look to squeeze out costs, and that can happen if chemical clusters are created – close to ports with anchor units and pipeline connectivity. The cost of material movement should be significantly low and all utilities should be easily available," he said.

One key requirement to ensure competitive advantage is access to feedstock. "India is a feedstock-disadvantaged country. However, with feedstock now available abundantly in nearby regions, it doesn't matter much as to how much of feedstock we have, but how we are able to bring the closest feedstock by making the supply chain work more efficiently," he said. "Bringing down cost of logistics by one-fifth will bring immense competitive advantage in," he added and hoped that coordinated efforts by the chemicals, shipping and finance ministries would help ensure lower shipping costs.

Mr. Mehta also urged the chemicals ministry and industry to convince the finance ministry to make available infrastructure funds with 18-20 years tenure to help build the infrastructure needed for creating chemical clusters.

Project Management Expertise: The challenges associated with implementing mega projects were detailed by **Mr. Deepak Datta,** President & Head, Reliance Project Management Group, Reliance Industries Ltd. (RIL), while making his presentation on ***"Managing Mega Projects".*** He gave the example of the recently completed Jamnagar Phase 3 ('J3') expansion of RIL – a mega project completed in less than five years.

A mega project usually involves a billion dollar-plus investment and is very complex. It is of long duration and involves large labour pools, said Mr. Datta, while adding that the RIL project involved managing 145,000 people in one location alone. Speaking about attributes of successfully managing mega projects, he listed issues like a good scope definition, a detailed plan, compliance to regulatory requirements, technology licensing, material sourcing & logistics, construction execution plan, etc.

He noted that if India is looking to achieve the target of becoming a $5 trillion economy by 2025, it would most certainly involve "few hundred" mega projects being executed. This would have serious implications for managing resources and logistics, Mr. Datta said. "If all the $5 trillion economy related projects start being executed at the same time, I don't think there will be enough resources even on a global basis. The time is running out if we are aiming for the $5 trillion economy mark by 2025," he remarked.

In his presentation on the ***"Imperatives of Building a Global Distribution Network",*** Mr. Richard Bolte Jr., Chairman & CEO, BDP International, noted the decisive trend among BDP's customers towards deploying and investing heavily in digital supply chains. "We currently have five projects in which we are co-investing with our clients to build and transform their supply chains, most notably in the area of visibility and predictive analytics, which we see as two of the leading trends, besides better use of big data. So digital supply chain is definitely something that will be transformative in 2020 and beyond," he noted.

Mr. Bolte Jr. expected the current year to be "an interesting" one for freight rates and capacities. The year started out with the prediction that the IMO 2020 regulations could impact pricing to some degree, but that hasn't really played out as yet, he remarked. Capacities will certainly

A PART VIEW OF THE AUDIENCE ON DAY - 2

be challenged now, as a result of the Coronavirus outbreak, he added.

Mr. Bolte noted that many new companies in the logistics space are coming up with newer ways of thinking, and traditional global logistics or supply-chain company should not be worrying about the existing set of competitors, but focus on non-industry type of competitors that are set to enter the scene with a completely different view.

In terms of building a global distribution network for the chemical industry the key imperative is in setting up a safe and secure global supply chain, which is efficient, excellent and cost effective, he said. Other important aspects of building a chemical distribution network include local knowledge, due diligence, evaluating & managing risks, identifying vendors who share the same value systems, considering the effects of processes being developed, communication with all stakeholders and knowledge sharing, Mr. Bolte added.

Understanding the dynamics of various trade measures is key to address dumping concerns and managing risks from rising imports, according to **Mr. A. K. Gupta,** Founder, TPM Consultants. He made this comments while making the last presentation of the Session on ***"De-risksing the Industry: Protection Against Tariff Wars and Dumping".***

Trade remedy measures include antidumping, anti-subsidies and safeguards. The two branches of safeguard measures comprise increasing tariffs and quantity restrictions. "A third form of safeguard law called tariff quota has been introduced in the latest Budget," Mr. Gupta informed. Speaking about non-tariff measures like BIS certification, he said the caustic-chlorine industry would be aware of how short-lived the benefits accruing from such measures are. "Imports were restricted when the BIS requirement was introduced, but caustic prices have again come down," he noted.

As far as tariff measures are concerned, he said there is a need for sensitising the government to the industry's needs. "The industry needs to proactively participate in negotiations," Mr. Gupta noted. Speaking about the trends in anti-dumping investigations over the past three decades, he said globally the chemicals segment accounted for 33%, while in India the figure was 54%. "So, chemicals have been one of the sectors that has benefited the maximum under the trade measures," he observed. Speaking about the applicability of the different forms of trade measures, Mr. Gupta said the affected party cannot decide which method to opt for, but it will depend on the situation they are faced with. "If faced with unfairly priced imports, then antidumping comes into play. In case the foreign producers' costs and prices are low and this is because of any kind of government support, then we need to talk about anti-subsidy measures. In case of sudden increase in imports, safeguard measure comes into play," he observed.

Antidumping is only a corrective measure and may or may not involve the imposition of a duty; if the foreign producers accused of dumping get into an agreement with the Government of India, measures may not apply. Similarly, anti-subsidy is also a corrective measure, but safeguard is a protective measure, informed Mr. Gupta.

In terms of relief provided under each measure, he said in antidumping and anti-subsidy cases, additional duties are usually imposed, while in safeguard cases

TECHNICAL SESSION: SEATED ARE: MR. SHOHAB RAIS, MR. RAKESH BHARTIA, MR. RAJENDRA GOGRI AND MR. SUYOG KOTECHA

either additional duty, quantity restrictions or tariffs quota can be imposed.

"The timeframe for relief in case of antidumping and anti-subsidy is 6-18 months, while for safeguard it could even be over-night. Safeguard can really work very quickly, but it doesn't mean that every case can be a fit case for safeguard. Safeguard can be invoked only as an emergency measure and only when the situation so demands," he said

The coverage of antidumping and anti-subsidy is company- and country-specific and would not apply to all imports of that particular product into the country. However, safeguard applies to all countries across the board, except certain exemption given to developing countries. The duty period for anti-dumping and anti-subsidy is five years and extendable from time to time provided circumstances justify it. Safeguard duty period typically ranges from six months to three years; the law provides for not going beyond 10 years. There can be an extension of duty from time to time, but under safeguard this is rarely done.

The elaborate data requirement for all these measures has meant that it has remained largely beyond the MSME sector, said Mr. Gupta. There is an on-going discussion on ways to reducing the data requirements, he added. Speaking about certain myths associated with these measures, he said that the notion that the imposition of duties will restrict imports is not true. "These measures will only bring imports at a fair price," he observed. The other notion that the measures take a long time to get implemented is also not true, he said adding that there are cases that have seen initiation of measures in less than a month's time.

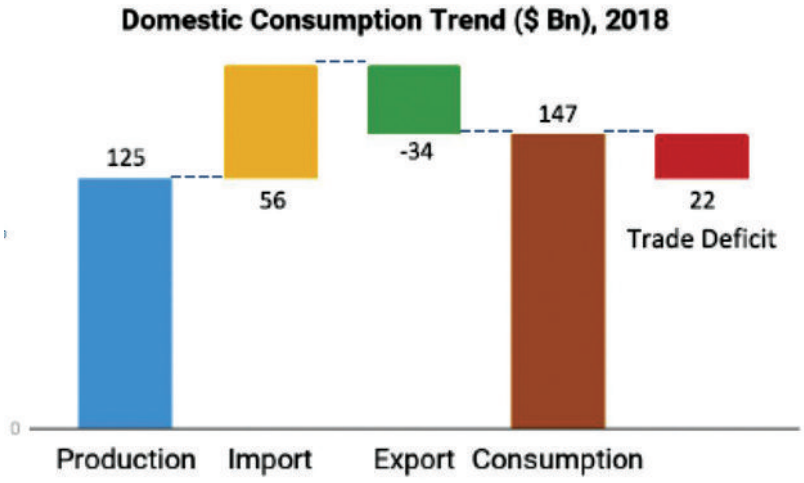
Mr. Rakesh Bhartia, CEO, India Glycols Limited, chaired the next Session on "RIDING TOWARDS GROWTH AND PROFITABILITY IN AN UNSTABLE ENVIRONMENT".

Mr. Shohab Rais, Chief Operating Officer-Indian Chemical Business, TATA Chemicals Limited made the first presentation on ***"Impact of Mega Trends in Food & Agriculture on Industry Value Pools".***

The next speaker was **Mr. Rajendra V. Gogri,** Chairman & Managing Director, Aarti Industries Limited and he made an excellent presentation on the subject of ***"What Will Help Indian Chemical Players Succeed?"***

Mr. Gogri pointed out that $56-bn worth of chemicals being imported into the country presents huge opportunity for import substitution. At the same time, exports of $34-bn underline the inherent export potential of the industry, which could be ramped up successfully. "So, the Indian chemical industry has a three-pronged route to grow: increased consumption; import substitution; and possibility of becoming a global manufacturing hub – and it can truly be a major driver for achieving the $5 trillion economy target of the government," he added.

FIG. 1: INDIAN CHEMICAL INDUSTRY: TRADE DEFICIT



Mr. Gogri noted that over the years, India has grown a critical mass in its intermediate and speciality chemicals sectors. He underlined the opportunity arising out of the huge increase in Chinese labour costs in the past 10 years, which has now become double that of Indian labour costs in dollar terms. However, the industry should learn from the mistakes of the textiles sector, which could not benefit from the labour costs arbitrage, and lost out to nations like Vietnam, Bangladesh and Sri Lanka. "Global multinationals need alternate sourcing destinations from China, and other emerging countries who may have a labour cost advantage do not have an ecosystem in chemicals like India," he emphasised.

Addressing duty anomalies: In his remarks on duty structure and incentives for the industry, he alluded to the continuous "tug of war" between the basic chemicals players and intermediate & speciality sector on imposition of import duties. "Basic chemicals players want higher duties to remain competitive and are pushing for non-tariff barriers to compensate for scale disadvantage. Here the import duties are between 0-7.50%. Meanwhile, the intermediate and speciality players push for lower duty on raw materials to stay competitive and avoid duty inversion. The current import duties here are about 5-10%. This leads to confused policy decisions and suboptimal outcome for the industry's ecosystem," he noted.

He also highlighted the issue of deemed duty inversion, wherein

under advanced licence, exporters bring in raw materials, which are already available in the country, as the duty drawback is less than the import duty component of the raw material cost. "Unfortunately, the duty drawback has been further reduced recently from 1.3% to 1.1% for a lot of chemicals. The Indian industry is losing out on volumes. There needs to be immediate logical correction so that the duty drawback rate is equal to the import duty component of the raw materials," he pointed out.

Mr. Gogri suggested an across-the-board increase in import duty for the entire value chain from feedstock to speciality chemicals by about 5% for 10 years, while taking steps to correct deemed duty inversion in current duty drawback rates. To compensate for the increase in import duty, 50% of that increase or 2.5% could be offered as duty drawbacks so that the exporters are not impacted. Besides this he called for providing FTA (free trade agreement) protection to the chemical sector for 10-year period, and avoiding other non-tariff barriers. "These measures will bring better economic viability for the basic chemicals sector, while giving additional duty revenue of close to $2-bn to government. The revised duty structure can accelerate investment cycle across the chemical value chain," he added.

Mr. Gogri emphasised the need for effective collaboration to move up the value chain for maintaining global competitiveness and for making India a global manufacturing hub for speciality chemicals. In this context he noted that India is seen as a neutral location by Western innovators and the country possess all elements like cheap manpower, talent, political stability, etc. needed to capitalise on this opportunity. However, very few in the top-100 global companies have invested in India in the last five years. "Around 60 of the top-100 chemical companies in the world have not invested anything in India between 2014 to 2018," he said.

Mr. Gogri urged ICC to take the lead in liaising with government departments to create a comprehensive strategy and a well-coordinated effort by which the top-100 global companies can be encouraged to set up manufacturing in India either by the joint venture route or manufacturing outsourcing. Meanwhile the domestic industry should look to bridge the gap between the end-use industry and intermediate manufacturer, and upgrade their technical capabilities to cater to new markets and reduce the import bills, he said.

In terms of TRS, companies focused on commodity or on speciality chemicals have delivered almost equally good returns over a timeframe of 10-15 years. However, companies that have transitioned from speciality to commodity have, in many cases, either not created that much value, or in some cases even destroyed value. It is in this context that **Mr. Suyog Kotecha,** Partner, McKinsey & Company, listed strategies to adopt when a speciality business gets commoditised through his presentation on ***"What to do when a Speciality Chemicals Business gets commoditized?"***

ANOTHER VIEW OF THE AUDIENCE

PANEL DISCUSSION: ON THE DAIS ARE – MR. LUC ARNOUTS, MR. SUDHIR SHENOY (MODERATOR), MR. RAJESH GANESH, MR. AJAY SINGH AND MR. RAJNISH KHANDELWAL

In many cases there is no internal alignment on extent of commoditisation in an organisation, said Mr. Kotecha. This can be addressed by developing a framework looking at factors like price trends of the product portfolio under consideration, margin trends, reorder rates, number of competitors and changes in past one year, cost to serve per unit volume, etc. With such a systematic exercise, the extent of commoditisation can be quantified, following which the company has to decide on a new operating / business model based on the extent of commoditisation. The last, but crucial, step, is where most organisations flounder.

The nature of governance looks very different for these two types of businesses across functions. "Innovation and R&D in speciality business will be focused on tailored market and customer requirements, versus no tailoring in commodities. Most of the R&D innovation in commodities will focus on reducing cost of production. In marketing and sales, the focus of a speciality business is on building a value-pricing mind-set and high service levels, while in commodity businesses the focus is on reducing cost to serve and having a very rigid product portfolio management to manage profitability. In operations, speciality business will look at reducing changeover times, optimising run times while the commodity focus will be on utilisation, etc.," Mr. Kotecha explained.

The next **Panel Discussion** on the subject of "ROLE OF INFRASTRUCTURE IN CHEMICAL HANDLING LOGISTICS" was moderated by **Mr. Sudhir Shenoy,** CEO, Dow India.

Mr. Luc Arnouts, Vice President – International Relations and Networks, Antwerp Port Authority; **Mr. Rajesh Ganesh,** Managing Director – Indian OilTanking Limited; **Mr. Ajay Singh,** Head-Supply Chain Management, Aquapharm Chemicals Pvt Ltd; and **Mr. Rajnish Khandelwal,** Senior Vice President, J.M. Baxi Group were the panellists.

During a panel discussion Mr. Sudhir Shenoy stated that the lack of quality infrastructure – like ports, roads, railways and pipeline network

DR. PRAKASH TRIVEDI, HON. EDITOR - CHEMICAL NEWS, PRESENTING A MEMENTO TO MR. SUDHIR SHENOY.

TECHNICAL SESSION: ON THE DAIS ARE – MR. VINOD KUMAR, MR. RAVI KAPOOR, MR. SUDHIR R. DEO, MS KHUSHBU CHAPLOT CHAUDHARY AND MR. VAIBHA DUA.

– not feedstock, is the biggest challenge facing the Indian chemical industry. "Thailand, Singapore and even China are not feedstock-rich, but we have not been able to compete with them because of these problems," he said.

Mr. Luc Arnouts noted that PCPIRs in India could look to replicate the success of the Port of Antwerp, which is the largest integrated chemicals cluster in Europe. The port is built on three pillars: the port function involving loading and unloading of ships; a logistics complex for providing storage and value-added services for all commodities; and the integrated chemical function located inside the port area.

Mr. Rajesh Ganesh noted that storage terminals in the country are small and not built to specifications required by regulations.

Mr. Rajnish Khandelwal pointed out that though logistics constitute roughly 13% of product costs, it is usually not given due importance. He urged companies to look at the option of using ISO tanks for movement of chemical cargo from port to hinterland locations.

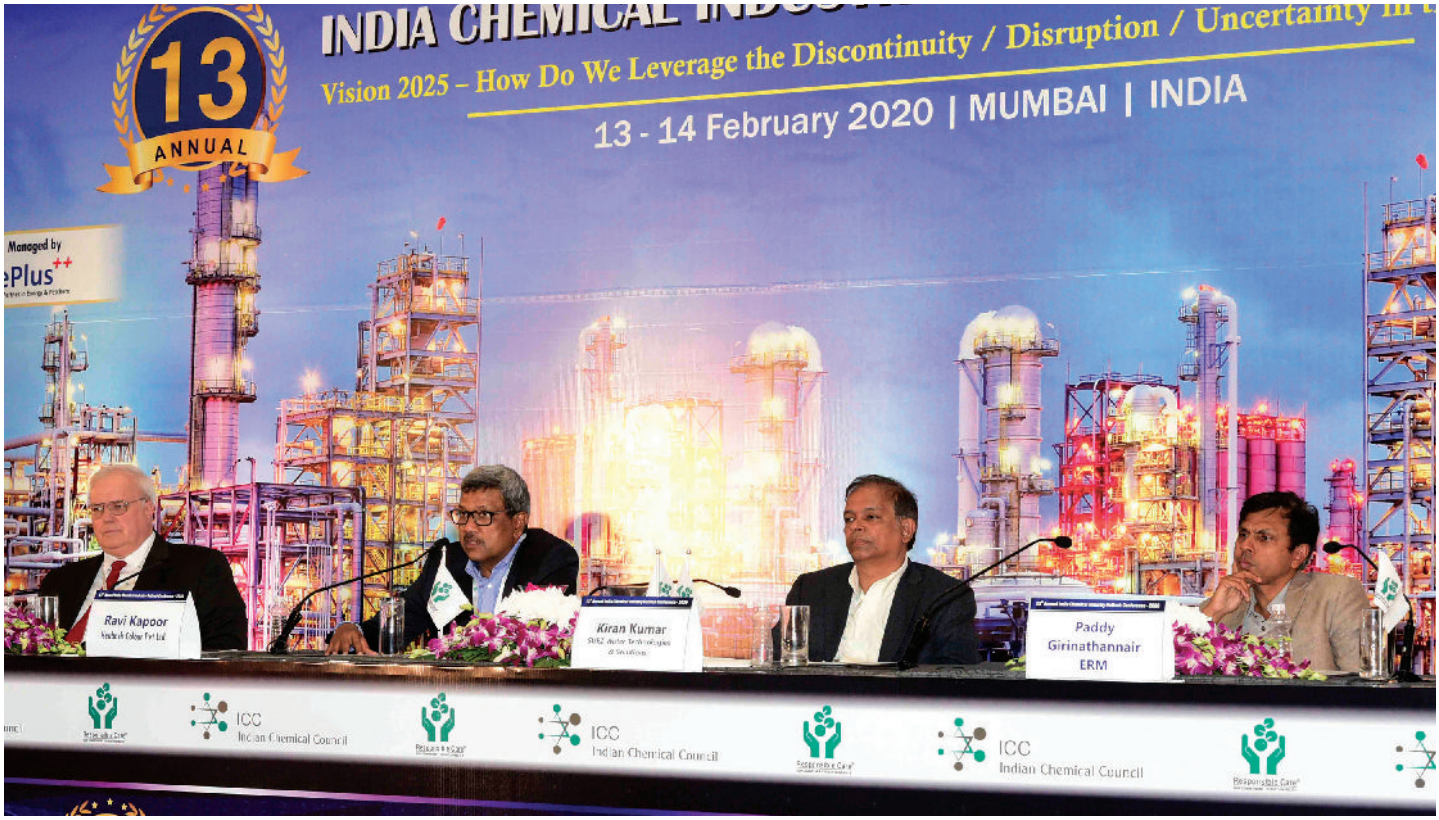
Mr. Ajay Singh during the discussion highlighted the problems associated with transportation of chemicals via roads.

Mr. S. R. Deo, Managing Director, NOCIL Limited (Chairman – Technology & Energy Expert Committee, ICC) chaired the Technical Session on "EVOLVING TECHNOLOGY AND INNOVATION LANDSCAPE AND IMPACT ON CHEMICALS INDUSTRY".

Mr. Vinod Kumar, Managing Director, Accenture, who leads the chemicals practice for Asia Pacific, Middle East and Africa regions, while making his presentation on ***"How Can We Shape the Digital Future of our Country?"*** stated that the 'post digital era' will be a world that tailors itself to fit every moment and "businesses will influence individual realities with hyper personalisation and on demand services. "Digital companies, including chemical companies, now have the power to exactly know the end-user. That has put into question the traditional models of whether a company is in the B2B space or a B2C space. Every company is now in the B2B2C space," he said.

Ms Khushbu Chaplot Chaudhary, Senior Manager-Plantweb Solutions, Emerson Process Management (India) Pvt Ltd while presenting the paper on "Pragmatic Approach to Digital Transformation in Chemical Industry" stated that the chemical industry has surged ahead of the oil & gas sector in the digital transformation journey.

Noting that approximately one trillion dollars in company value is lost every year to suboptimal operating performance, she said that reducing maintenance costs by half and increasing plant availability by 4% can help companies post top quartile performance. "Digital



SESSION ON RESPONSIBLE CARE: SEATED ARE – MR. DANIEL ROCZNIAK, MR. RAVI KAPOOR (SESSION CHAIRMAN), MR. KIRAN KUMAR AND MR. PADDY GIRINATHANNAIR

transformation enables companies to achieve and sustain top quartile performance," she said and added, "In order to make the work of the next generation engineers more productive and efficient, it is important to give them the digital tools where they can put in the maximum amount of time in analysing the data and giving the best outcome of it."

According to Ms Khushbu, the five essential competencies of digital transformation include: automated workflow, decision support, workforce up-skilling, mobility and change management.

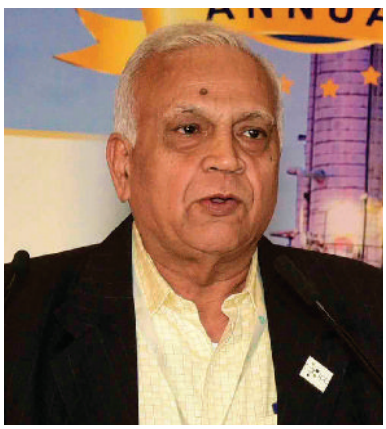
Making the last presentation at this Session on ***"Optimizing Procurement and Delivery with Digitization"*, Mr. Vaibhav Dua,** Partner, McKinsey & Company, spoke about how digital is the "natural next step" in the evolution for procurement. "Advanced analytics and automation are creating better and faster insights, allowing step changes in value generated. The procurement function is increasingly drawing on external resources and innovation to bring new insights and capabilities to the business," he said.

The last Session of the Conference on the subject of – "RESPONSISBLE VALUE CREATION" was chaired by **Mr. Ravi Kapoor,** Managing Director, Heubach India (Immediate Past President, ICC). In his opening remarks, emphasising the importance of **'Responsible Care'** in driving sustainability, Mr. Ravi Kapoor said, "If you are a **'Responsible Care'** company, it is not guaranteed that you will be a successful, sustainable company, but if you are not a 'Responsible Care' company, it is guaranteed that you will not be a successful, sustainable company."

Mr. Daniel Roczniak, Senior Director-Standards, Sustainability & Market Outreach, American Chemistry Council (ACC) addressed gathering on his favourable subject on ***"Responsible Care Global Charter and Current Status".***

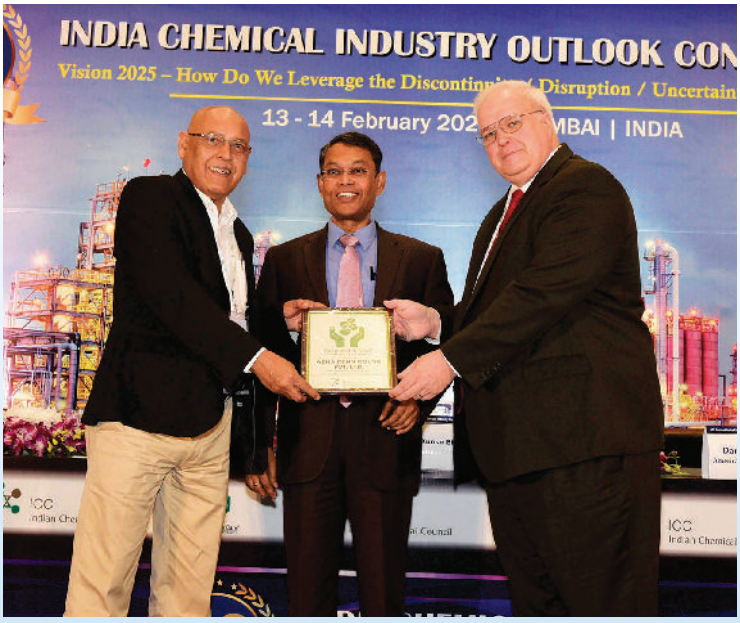
Mr. Kiran Kumar, Senior Vice President, SUEZ Water Technology & Solutions, spoke on ***"How to Manage Your Own Waste"*** and Mr. Paddy Girinathannair, Technical Director, ERM India Pvt Ltd, made the last presentation on ***"Managing Contamination Risk & Liability – Experience in India".***

The two-day event concluded with a customary Vote of Thanks by Mr. H. S. Karangle, Director General, ICC.



MR. H. S. KARANGLE, DIRECTOR GENERAL-ICC, PROPOSING VOTE OF THANKS.

PRESENTATION OF RESPONSIBLE CARE LOGO



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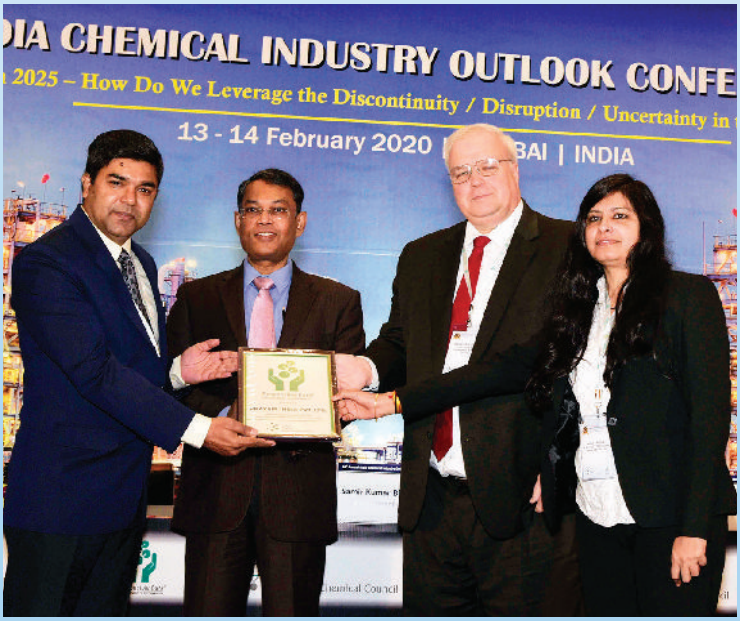
Eight more member-companies of ICC have been granted permission to use the **Responsible Care Logo** after completing stringent audits by ICC team.

Representatives of the ICC-Member companies viz: **Asha Penn Color Pvt Ltd; DCM Shriram Ltd; Excel Industries Ltd; Gulbrandsen Chemicals Pvt Ltd; Hikal Limited; Paushak Limited; Praxair India Pvt Ltd and Solaris Chemtech Industries Ltd** received the replica of the Responsible Care Logo at the hands of Mr. Samir Kumar Biswas, Joint Secretary-DCPC, Ministry of Chemicals & Fertilizers, Government of India and Mr. Daniel Roczniak, Senior Director-Standards-Sustainability & Market Outreach, **American Chemistry Council (ACC)**, during the first session on the 2nd day of the 2-day Conference.

HIKAL LIMITED

PAUSHAK LIMITED



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