

FAI Activities

Improving Professional and Personal Effectiveness

The Fertiliser Association of India - Northern Region (FAI-NR) organized a training programme on **Improving Professional and Personal Effectiveness** during February 27 – March 2, 2023 at Jodhpur, Rajasthan. Seventy-two participants from fourteen member companies attended the programme. The training programme was inaugurated by Mr. Arvind Chaudhary, Director General, FAI, New Delhi.

In his address, Mr. Arvind Chaudhary stated that he is delighted to see the gathering of the officers nominated by the member companies in such a large numbers. As per the feedback being received, he informed that FAI training programmes are tailor made and meet the needs of the personnel working in different disciplines of the fertilizer sector in the most befitting manner. Through such training programmes, the knowledge gap is bridged by the providing updated information. He requested the participants to be interactive and participative to get their doubts cleared from the experts of the sector.

He mentioned that agriculture provides food, feed, fibre, and fuel to meet the demand of growing population across the world. It is the backbone of Indian economy and share of agriculture in India's GDP is 16-17%. Evolution of high yielding varieties of wheat and rice in late 1960s and other crops later, had revolutionized the Indian agriculture. Production of foodgrains has increased from 72.3 million MT in 1965-66 to 315.7 million MT in 2021-22. There has been considerable growth in production of other crops also. Growth in agriculture has been a savior of Indian economy. He briefed about the National Food Security Act 2013. The country is running food security programme by providing highly subsidized or free foodgrains to the needy population of the country.

Mr. Chaudhary pointed out that among the three key agri-inputs, the contribution of fertilizers alone in increasing foodgrain production is about 50%. Therefore, fertilizer has played and will continue to play an important role in increasing agriculture production in the country. Out of 8 core sectors, only fertilizer sector showed positive growth during COVID-19. In terms of operational efficiency, energy use and environmental standards, fertilizer industry is a world class. The industry is performing the onerous task of reaching subsidy to the farmers on behalf of the Government of India. He then gave an overview of capacity, production, import and consumption of various fertilizer



Mr. Arvind Chaudhary lighting the lamp at the inaugural session. Others seen in the picture are participants, a faculty and FAI officials

products and fertilizer policy in vogue from late 1970s.

He mentioned that consumption of fertilizer products was about 64 million MT in the country in 2021-22. He then stated that subsidy on fertilizers is a cost realization to the industry and it is routed through the fertilizer industry for administrative convenience. The difference between cost of production/import and MRPs to the farmers is reimbursed to the fertilizer companies as subsidy. The Government of India has been successfully providing additional allocation of subsidy for the last three years to protect the farmers from high international prices of fertilizers, and raw materials used for production of fertilizers.

In his concluding remarks, he advised the participants to be attentive in the presentation and get the clues for amicable solution of the problems and their implementations. He wished the programme a success.

Earlier in his welcome address, Dr. D.S. Yadav, Director (Publications & Public Relations), FAI, New Delhi briefed about objectives of the programme and the topics to be covered by the learned faculty. He then gave an overview of FAI, its activities, training programmes and four monthly journals in addition to adhoc publications brought out by the Association. He requested the participants to become professional and technical members of the FAI to get the benefits of the journals and activities of the Association.

Mr. Harinder Kaushik, Officer, FAI-NR, New Delhi proposed a vote of thanks.

The four day training programme covered important topics, namely Current Situation and Outlook for Indian Fertilizer Market by Mr. Arvind Chaudhary; Fertilizer Marketing Strategies in the



DG, FAI with faculty, participants and FAI officials

Changed Environment by Mr. Dileep Singh, Chief Marketing Officer, Indorama India Private Limited, New Delhi; Fertilizer and Raw Material Scenario in India and Improving Professional Skills – Key to Success by Dr. D.S. Yadav; Nano Fertilizers in Agriculture and Marketing Strategy by Mr. S.S. Dalal, Joint General Manager (Marketing) IFFCO, New Delhi; Prominent Features of Fertiliser (Control) Order 1985 and Recent Developments by Mr. Shyam Babu, Director, Central Fertilizer Quality Control & Training Institute, Faridabad; International Trade and Port Operations by Mr. Rajesh Kumar Sahni, Assistant General Manager (Supply Chain), Yara Fertilisers India Private Limited, Gurugram; Development Strategy for Brand Equity by Mr. Sanjeev Randeve, Deputy General Manager (Corporate Communication & Human Resource), National Fertilizers Limited, Noida; Importance of Balanced Fertilization in Indian Agriculture by Dr. V.K. Tomar, General Manager (Marketing), KRIBHCO, Noida; An Update of Pricing and Subsidy Policies for the Fertilizer Sector by Mr. S. Shivakumar, General Manager (Corporate Finance), RCF, Mumbai; Improving Logistics Operations by Mr. V.S. Chauhan, General Manager (Supply & Distribution), Chambal Fertilisers and Chemicals Limited, Gadepan, Kota; Salient Features of iFMS/DBT in Fertilizer Sector by Mr. Hemant B. Dabak, Chief Manager (Marketing), Hindustan Urvarak & Rasayan Limited, New Delhi; Improving Productivity of Ammonia - Urea Plants and Cost Optimization by Mr. U.C. Bajpai, Senior General Manager (Production), IFFCO, Kalol; and Soft Skills for Success (Interpersonal Skills, Time Management, Effective Leadership, Team Building, Stress Management) by Mr. Kumar Saurabh, Director, Leaderz Walk Life Skills Education, Noida.

Mr. Sanjiv Kanwar, Chairman, FAI-NRC and Managing Director, Yara Fertilisers India Pvt. Ltd., Gurugram was the chief guest at the valedictory session. In his on-line address, he stated that he was very eager to attend this programme physically but due to last minute changes unable to do so. He

mentioned that more than 60% of Indian population is attached to agriculture. Share of agriculture in GDP is 16-17% in the country. In view of growing economy, the contribution of agriculture to GDP should be 25% by 2030. It is doable provided the challenges are properly addressed. The export of agriculture produce in USA in value terms is about four times more than India. The emerging problems in agriculture in the country comprised of deterioration in soil health due to indiscriminate/imbalanced use of fertilizers and more use of water; growing deficiencies of nutrients more so of secondary and micronutrients such as sulphur, magnesium, zinc and boron; deepening of water tables resulting in increase in dark zones; etc. In view of non-address of problems of Zn deficiency, 2 out of 5 children are stunted. There is increase in anemic in women due to iron deficiency. To provide same Fe to human being, 2 apples are required now compared to 1 apple in 1950s. Mr. Sanjiv Kanwar then pointed out that average yields of crops in China and Brazil are 50 to 60% more than India. Water as well as fertilizer use efficiency in both the countries is more than India. Ways and means need to be sought and addressed. Further knowledge gap between the research and farmers is quite high which needs to be bridged by sincere efforts of all concerned. Government of India's fertilizer subsidy may reach to Rs. 2.5 lakh crore in the current year. In view of depressed MRP of urea, farmers are using more urea at the cost of phosphatic and potassic fertilizers. This is resulting in imbalance in use of plant nutrients and decline in crop response to fertilizers. He underlined that every grain of fertilizer is put to proper use. Prime responsibility of all concerned inclusive personnel working in fertilizer companies is to educate the farmers on balanced and proper use of fertilizers.

He then apprised the trainees about the long time taken in registration process of new fertilizer products. In view of liberalization process of water



DG, FAI giving certificate to a participant

soluble fertilizers in the form of general specifications, innovative products are available in the market and farmers have easy access to such innovative products. In view of improved quality, the export of grapes has shown an increase of 30 to 40% over 2014. Therefore, policy intervention is necessary to liberalize the registration process. The farmers of the country are very innovative and hard working, they should be provided with level playing fields in India in line with developed nations.

In his address, DG, FAI mentioned that in addition to improving professional skills, personal skills also play vital role in one's life to succeed. Mr. Kumar Saurabh covered very effectively various areas of

soft skills for success with practical exercises even. One of the course being taught at Harvard University, which focuses on happiness, self-esteem and motivation is becoming very popular. To proceed for happy life, maintain true relation and interact with seniors and subordinates to solve the problems and accomplish the work. With yoga, *surya nadi* one of the three channels of energy in the body is fully energized resulting in better metabolism activity and mental focus. He advised the participants to practice yoga in the morning for healthy life.

At the end, Mr. Arvind Chaudhary requested the trainees to develop habit of writing articles for contributing in FAI Journals and wished them every success in their endeavour.

DG, FAI distributed certificates to the participants. On behalf of participants, Mr. Abhishek Tripathi, Assistant Vice President (Personnel and Industrial Relations), Indorama India Private Limited, Jagidhspur, Amethi; Ms. Uma Gandhi, Chief Manager (Finance), RCF, Mumbai and Mr. Uma Kant Tripathi, Assistant Manager (Marketing), HURL, Ayodhya shared their views and appreciated the course content and faculty of the programme. Participants found the programme useful and educative. Mr. Harinder Kaushik proposed a formal vote of thanks at the end of programme.

Recent Development in Catalysis in Process Industry

FAI in collaboration with Indian Institute of Chemical Engineers (IICChE) organized a two-day Seminar on Recent Development in Catalysis in Process Industry, during 21-22 March 2023 at New Delhi. The Seminar was inaugurated by Mr. Gaurav Mathur, Managing Director, Chambal Fertilisers and Chemicals Limited, New Delhi. Mr. Arvind Chaudhary, Director General, FAI, New Delhi delivered the special address. Dr. S. Nand, Additional Director General, FAI and Chairman, IICChE-NRC and Mr. C.P. Srivastava, Honorary Secretary, IICChE-NRC were also present. The Seminar was attended by more than 90 participants from fertilizer, refinery and petrochemicals industries including a large number of students and faculty from academic institutes.

Mr. Gaurav Mathur, in his inaugural address mentioned that on 21st March 2006, Mr. Jack Dorsey founded twitter which catalyzed the social media. It happens to be March 21st when developments in catalyst are being discussed. He highlighted that the catalyst development helped to reduce the ammonia synthesis pressure from 600 atm in 1960s



Executives from left to right are Dr. S. Nand, Mr. Arvind Chaudhary, Mr. Gaurav Mathur and Mr. C.P. Srivastava

to about 150 atm at present. The catalysts not only played significant role in improving the industrial processes like ammonia and nitric acid but also in day-to-day life such as catalytic converters in cars. He pointed out that while the need for decarbonization of ammonia production like blue ammonia production by carbon capture and sequestration through physical process and deep underground storage are emerging, there is limitation in underground storage withholding

capacity for long. Therefore, areas of conversion of carbon dioxide to useful chemicals should be explored.



Mr. Mathur mentioned that process intensification is another area which helps in cost optimization and economic production. He gave an example of ammonia converter which is quite a large equipment. Reducing the size of equipment can help in saving large energy in upstream and compression. He further mentioned that application of catalysts in biochemical processes can play an important role. One of the areas of interest is to improve organic carbon content in soil.

He complimented the IChE and FAI for organizing the Seminar. He hoped that there would be cross learning amongst participants from different industries while students can learn from real life experiences.

Earlier, Mr. Arvind Chaudhary, highlighted the importance of human resource and FAI's activities around it. He mentioned that FAI has joined hands with IChE-NRC in organizing the programme on the important subject of catalyst. He pointed out that a variety of catalysts are used in production of ammonia and sulphuric acid. The Seminar would provide opportunity to present and discuss the latest developments in the area. It also provides opportunity for interaction between different industries on the one hand and between industry and academia on the other.



Mr. Chaudhary mentioned that catalysts manufacturers would be sharing information on the latest developments and newer catalysts. At the same time, they will also receive feedback from user industry. Academic and research institutions have important role in carrying out both basic and applied research in the areas of surface science and material science. Testing of catalysts at bench scale is also important aspect of catalyst research. Therefore, the Seminar provides good opportunity to researchers to share their latest findings. He hoped that all will benefit from the two-day event and specially the students present from different institutions

Earlier, Dr. S. Nand, welcomed the guests, invitees and delegates. He informed about IChE is a body of chemical engineering professionals which works for development of the discipline in the country. In addition to providing various fora for exchange of information, IChE also conduct exams to award

membership which is equivalent to bachelor's degree in chemical engineering. The institute also recognizes the achievements of the Chemical Engineers for their work in research and industry. One of the other major objectives of the Institute is to bring the faculty, scientists and students from academic and research institutes and practicing engineers together. He informed about the some of the recent programmes organized by IChE which included a Seminar on Green Hydrogen and Green Ammonia which was attended by more than 200 delegates/specialists from all over the world.

He pointed out that catalysts have helped to provide food, energy and all the comfort of life with production of various useful materials. Catalysts also have a very important role in maintaining the clean environment. He hoped that the presentations arranged from catalyst manufacturers, user industries and researchers would be beneficial to all.

Mr C.P. Srivastava, presented a vote of thanks at the conclusion of the Inaugural Session. He thanked the guests for sparing their valuable time and addressing the participants. He thanked the FAI and Executive Committee of IChE-NRC and office bearers of IChE-NRC for their support to the programme.

The Seminar was divided into five sessions. The **Session I on Catalysts for Ammonia Production** was chaired by Mr. G.K. Gautam, Director (Technical), IFFCO, New Delhi. Five papers were presented in the Session on Overview of Ammonia Production in India by Mr. Manish Goswami, FAI, New Delhi; Magcat SMR Catalyst to Increase Hydrogen Production by Mr. Abhinav Deshwal, UNICAT, Catalysts Technologies, Noida; Catalyst Developments in Reforming and Shift Duties by Mr. Rajesh Garg, Sud-Chemie India Pvt. Ltd, New Delhi; Sustaining de carbonization through next Generation Catalyst by Mr. Sanghadeep Gautam, Haldor-Topsoe, Faridabad and Operating Experience with the Latest Primary Reformer Catalyst Replacement in Ammonia Plant by Mr. B.P.S. Mehta, IFFCO, Kalol.

The **Session II on R&D in Catalysts for Fuel Production** was chaired by Mr. Ajay N. Deshpande, Ex. Director (Tech), EIL, New Delhi. Three research papers were included in the Session viz. Novel Catalyst for Sustainable Fuel Production by Dr. Saleem Akhtar Farooqui, CSIR-IIP, Dehradun, Turning Catalyst Design Pathways : A Holy Grail for Rational Design of Industrial Functional Materials by Dr. Manjesh Kumar, Department of Chemical Engineering, IIT Delhi and "Treatment



Prof. Basu delivering valedictory address. Other seen in picture from left to right are Mr. Manish Goswami, Dr. S. Nand and Mr. C.P. Srivastava

Catalyst for Improved Performance of LCO Hydrocracker by Mr. Debasis Sarma, RIL, Jamnagar.

The **Session III on Operating Experience of Plants-Case Studies** was chaired Mr. R.K. Chopra, Managing Director, Kribhco Fertilizers Limited, Noida. The case studies were presented on Operating Experience of Shift and Synthesis Catalysts in Ammonia Plant by Mr. Satish Kumar Singh and Mr. Abhishek Singh, Chambal Fertilizers & Chemicals Ltd., Gadepan; Operational Experience of Catalyst of Secondary Reformer in IFFCO Aonla by Mr. Chandan Kumar Mishra, IFFCO, Aonla and Experience of Primary Reformer and Shift Catalysts in Ammonia Plant by Mr. P. Senthil Nayagam, SPIC, Tuticorin.

Session IV titled **Other Topics** was chaired by Dr. S. Nand. The Session included two papers viz. Recent Developments in Sulphuric Acid Catalyst by Mr. G.M. Patel, Ex-Executive Director, GSFC, Vadodara and Thermo-Catalytic Conversion of Lignin for Synthesis Gas and other Products by Mr. Kaustabh Goswami, Guru Gobind Singh Indraprastha University, New Delhi.

The **Session V on Energy Transition through Catalysts** was chaired by Mr. V.K. Goyal, Ex-Executive Director, NFL, Noida. The papers presented during the session included Bi-reforming of Biogas for Producing Green Hydrogen by Mr. Vijayaraj M, IOC R&D Centre, Faridabad; Empowering Transition with KBR Technologies by Mr. Ankit Apoorv, KBR, Gurugram; and Next Generation Catalyst for Sustained Growth by Mr. Gautam Pandey, Honeywell UOP, Gurugram.

All presentations were well received followed by a lively question and answer session.

Prof. S. Basu, Department of Chemical Engineering, IIT, Delhi and Ex-Director, CSIR-Institute of Minerals and Materials Technology, Bhubaneswar, delivered the valedictory address in the concluding session. He complimented the organizers for covering all the important areas in catalysts. He expressed that

catalysts are the heart of a chemical plant. Business of chemical industry has changed significantly in last 100 years. With the developments in technology, the shape of fertilizer, process, and petrochemical industries would be different in next couple of years. The energy source for fuel would shift from conventional fossil fuels to solar and wind. In case of fine chemicals, polymers, paints, synthetic fibers etc. the feedstock will change from fossil fuel to biomass. Other areas of biomass application would include integration of plants of cement with bio-refinery, Fisher Tropsch chemistry for production of higher hydrocarbons, etc. He also emphasized that due to emphasis on decarbonization, there will be lesser use of conventional energy sources. To conserve energy, we will require catalysts that can help carry out reactions under ambient conditions.

Prof. Basu underlined that the cost of renewable energy would reduce significantly in coming years which requires development of a new electrochemical catalyst. The developments can lead to even deposition of single atom of active material. There is new avenue for development of electrochemical catalysts and photocatalysts which are at laboratory scale now. The use of these catalysts can help in low cost production of green ammonia. However, the developments in conventional catalyst is also not saturated as there is always scope for imparting new characteristics to existing catalysts.

Earlier, Mr. C. P. Srivastava welcomed Prof. Basu and gave a brief account of two days proceedings.

Dr. S. Nand in his address, pointed out that during the recent world health crisis, importance of food and fuel were well recognized. Agriculture played a pivotal role in meeting the food requirement of large population. Catalysts played important role in fertilizer production which are key to agricultural productivity and catalyst helped in production of high quality environment friendly fuels. He mentioned that various sessions deliberated on the catalysts role in production of ammonia, sulphuric acid, refineries, petrochemicals, green energy, etc. He hoped that all who attended the Seminar were benefited.

Mr. Manish Goswami, Chief (Technical), FAI, New Delhi presented a vote of thanks at the conclusion of the Seminar. He thanked Prof. Basu for insightful address. He thanked chairmen of the five sessions, all the presenters, the Executive Committee of IICChE-NRC for their time and efforts and participants in making the Seminar such a success.

International Supply Demand Balance, Price Forecast and Indian Fertilizer Policies

FAI organized a programme on **International Supply Demand Balance, Price Forecast and Indian Fertilizer Policies** in collaboration with **S&P Global Commodity Insights (Fertecon)** during 15th to 17th February, 2023 at Bhubaneswar, Odisha. Mr. K.J. Patel, Unit Head and Director, IFFCO-Paradeep, Odisha inaugurated the programme. The programme was attended by 65 participants representing 24 fertilizer companies. In addition, 2 participants were from DoF.

Mr. A.C. Dubey, Additional Director (Economics), FAI, New Delhi welcomed the chief guest, speakers and participants. He apprised the participants about the purpose of this programme and topics to be covered by the learned faculty drawn from fertilizer companies and international organizations and requested them to participate actively to gain maximum benefit from the programme.

In his address, Mr. K.J. Patel thanked FAI and S&P Global (Fertecon) for providing the opportunity to inaugurate this international programme. He appreciated the recent government initiatives by way of budget allocation, increasing subsidy rates, etc. He also stated that domestic fertilizer industry has been quite responsive to the government initiatives and has ensured that Indian farmers did not face any shortage despite Covid crisis, disruption in global and Indian logistics and abnormal spike in international prices of fertilizers and raw materials. Fortunately, these prices have started coming down. He further highlighted the industry initiatives in complying with new environmental standards fixed by the government and industry's strive to reducing the overall carbon footprint by way of production, imports,

distribution and consumption of fertilizers. He underlined the industry initiatives in fighting with disposal of industrial waste, by-products including gypsum through innovative ways. He concluded that with proactive initiatives of the government, the industry will continue to contribute towards agricultural growth and food security with reduction in carbon footprints as envisaged by GOI.

Ms. Yatika Gupta, Economist, FAI, New Delhi proposed a vote of thanks.

In all, sixteen presentations were made. S&P Global Commodity Insights (Fertecon), a pioneer in providing consultancy and analysis in fertilizer and agriculture provided in-depth research and presentations of short to medium term supply-demand scenario and international price forecast for major fertilizers and raw materials in four presentations. Mr. Georgy Eliseev, Principal Analyst, Ammonia, Dubai, in his presentation on Outlook for Global Ammonia and Urea Markets highlighted the recent developments in prices of urea and ammonia and brought out disconnections between east and west prices owing to supply shocks created by the ongoing Russia-Ukraine crisis. He further talked about the impact of the crisis on fertilizer exports, and curtailments in production because of high energy costs. In his presentation on Outlook for Phosphate Fertilizers and Raw Materials, Mr. Alberto Persona, Principal Analyst –Phosphates and Potash, London, explained recent price trends and trade flows for phosphates amid Russia-Ukraine crisis. He further elaborated on the reasons for increased demand disruptions and price rises. He elucidated how higher production costs had affected the production choices across



Mr. K.J. Patel addressing the participants. Others seen in the dias from left to right are Mr. Alberto Persona, Mr. Georgy Eliseev and Mr. A.C. Dubey

the globe. Furthermore, Mr. Persona stated that new cash flows in the sector in terms of new investments have the possibility of meeting new demands from the areas of Middle east and Africa. He envisaged improved nutrient use efficiency specifically in India. He also touched upon the importance of sustainability, decarbonisation and nutrient recycling in his presentation.

Mr. Xin Zhi Chong, Director – Gas and LNG, Singapore, made a presentation on A Changing Gas World Order: The Impact of the Russia-Ukraine Crisis on Europe and Global LNG Prices. He discussed the impact of the crisis on increased volatility in LNG prices and how the reduced supply to European markets tightened the global LNG markets. He expected that the situation of tightened global LNG markets will continue till mid-2020s. India's domestic gas supply is expected to peak in 2026-27, supported by new gas production from the eastern and western offshore acreages. The gas demand is expected to grow at 3.4% in the medium term mainly driven by feedstock requirements. Ms. Ankita Pandey, Senior Research Analyst, Gurugram, made her presentation on Outlook for Global Potash Market and mentioned the reasons for rising prices of potash caused by high energy costs, strong demand with 75% concentration in top 8 major markets and supply shortfalls. Further, she explained the demand and supply scenario for Asia and particularly for India as well as the policies and factors that impact its demand in India.

Ms. Hiti Taluja, Chief Commercial Officer, CENTREX, Australia, made a presentation on Challenges for Financing and Development of Phosphate Rock Mines with Special Reference to Australia. She briefed about the prospects, quality and process of flagship Ardmore Phosphate Mine. She also discussed about the key challenges of developing phosphate mines namely capital, location and regulatory environments.

Mr. Neeraj Sharma, General Manager (M&D), IPL, New Delhi, in his presentation Indian Demand-Supply of Potash and Pricing Policy, highlighted the global production and demand of potash and upcoming new capacities. Further, he discussed the trends in imports and consumption pattern in India. The loss of supplies from Belarus and Russia caused higher international prices which led to demand destruction in India. However, with new capacity additions globally, prices are expected to fall by 20-30% in the next year.

Mr. Anshul Mathur, Partner and Ms. Nitum Jain, Principal Associate, Lakshmikumaran & Sridharan, New Delhi, made a virtual presentation on Fertilizer Industry- Indirect Tax Issues that included an explanation on amendments related to refund of

input tax credit services, refund under inverted duty structure due to government subsidy and likely scenario with inclusion of natural gas under GST.

Mr. C. Narasimha Reddy, Business Unit Head (Agri Business), Jubilant Agri and Consumer Products Limited, Gurugram, made the succeeding presentation on Integrated Policy for SSP Segment – Issues and Prospects. He provided a brief overview on the importance and history of SSP and suggested measures to promote the use of SSP.



Further to this, Mr. Manoj Mishra, Managing Director, Matix Fertilisers and Chemicals Limited, Mumbai brought up the issues and concerns of new urea plants in his presentation. Dr. Shashikant N. Bhende, General Manager-Agronomy & K-Mag Product Management, Mosaic India Private

Limited, Gurugram, through his presentation apprised the participants on the present situation and future prospects in case of specialty fertilizers, micronutrients, bio-stimulants, etc. The day concluded with a panel discussion on Issues of Urea Industry under Existing Policies and Workable Reforms. Mr. R.M. Deshpande, Senior Executive Director, Nagarjuna Chemicals and Fertilizers Limited, Hyderabad, highlighted the existing urea policies and issues faced by the industry. Mr. Niranjan Lal, Director (UPP & FP), DOF, New Delhi, shared his views and opinions on the same and stated that the government will keep working for the welfare of the farmers as well as the industry.

Mr. Ajay Mishra, AVP-Business Development, Indian Gas Exchange Limited, Noida, made the presentation on new opportunities in the field of natural gas, supply, trade, bidding & procurement by the fertilizer sector using the gas exchange. Ms. Ruchi Shukla, Head-Energy, MCX India Limited, Mumbai, deliberated on risk management opportunities through which the fertilizer industry may hedge against risks by entering into gas contracts on MCX platform. Mr. S. Shivakumar, General Manager (Corporate Finance), RCF, Mumbai, deliberated on issues and concerns of the fertilizer sector in relation to ESG financing. The session concluded with a panel discussion by Dr. Tina Soni, Director (P & K), DOF, New Delhi and Mr. Harish Mata, Vice President-Supply Chain Management (Fertilizer), Coromandel International Limited, Hyderabad, on issues of P&K industry and way forward.

In the end, Mr. A.C. Dubey thanked all the speakers for making excellent presentations and also the participants. He also extended sincere thanks to Coromandel International Limited, MCX, Mid-gulf International Limited, IGX, IZA and IPL for providing support and sponsorship in the programme. ■