

SPG-India, Jaipur 2017

25 Years of Energizing Exploration

The 12th Biennial International Conference & Exposition of SPG India was inaugurated by Hon'ble Minister of P&NG and Skill Development & Entrepreneurship, Govt. of India, Shri Dharmendra Pradhan, at JECC Jaipur on 17th Nov 2017.

Mr. Dharmendra Pradhan addressed the august gathering of distinguished Geoscientists & Academicians. This was his second consecutive visit to SPG conference, he stressed upon theme of conference "Energy Through Synergy". In his inaugural address he emphasized upon the importance of Oil sector in India's energy ecosystem and its role in national economy. Elaborating on the changing energy scenario, he mentioned the historic stages of development of the energy supply and its impact on industry. Further, he expressed that the first industrial revolution was a result of development of Coal-steam derived energy. In due course of time, the energy sourcing changed over to hydrocarbon followed by electricity. With India being the third largest consumer of the energy in the world, the honorable minister emphasized upon bringing new and alternate energy sources like gas hydrates and renewable energy resources in the energy supply chain.

He mentioned that conferences like Jaipur-2017 are platform to provide an environment for various players of the energy arena to come together and exchange ideas for scientific and technological innovations. He reminded that it is because of the technological breakthrough that the focal area of hydrocarbon production has moved out of Gulf to USA.

In his opinion, data is a key factor for growth and old data viewed from a new perspective over a period of time, can result in new opportunities. Referring to geoscience technologies as the key link in improving exploration success for oil and gas in the country, he categorically expressed his expectations from the geoscientific community to reduce

import dependency by at least 10% and ensure energy affordability, sustainability and accessibility for entire spectrum of people of India in order to fulfill the vision of the Prime Minister of India.

Talking about policy decisions taken by Govt. of India, he made reference to various initiatives taken by the Govt. to facilitate the ease of carrying out business in energy sector of India, while ensuring that the revenue income will also grow. As part of the inauguration, the honorable minister released the Souvenir and special issue of half yearly journal of SPG-India, GEOHORIZONS.

While speaking on this occasion, Padma Vibhushan, Dr. Anil Kakodkar, Former Secretary, Department of Atomic Energy, emphasized upon the 'Exploitation of Knowledge' for national growth. Talking about the importance of knowledge, he emphasized upon the need to develop a peer system to retain decision specific knowledge. He also opined that hierarchical system is not conducive for proper utilization of knowledge in decision making. Towards this he exhorted the energy sector for nurturing a body of peers to develop the youngsters.

In the inaugural session, the Union Minister Shri Dharmendra Pradhan presented the coveted B S Negi Convention Gold medal and life time achievement award to Mr. P S N Kutty, Former-Executive Director, ONGC for his lifetime achievement in the field of geosciences.

The inaugural session was also addressed by Mr. Shashi Shanker, CMD, ONGC & Chief Patron SPG, Mr. A K Dwivedi, Director (Expl) ONGC & Patron SPG, Ms Nancy House, President, SEG USA, Mr. Marcel Van Loom, Director, EAGE, Netherland & Mr. D Purkayastha, President SPG, India. Dr. N P Singh, Secretary, SPG-India, presented vote of thanks.



Shri Dharmendra Pradhan, Minister of P&NG and Skill Development & Entrepreneurship, Govt. of India, during Inaugural Session of the conference



Inauguration and Lightening of Lamp by honorable union minister Shri Dharmendra Pradhan



Padma Vibhushan, Dr. Anil Kakodkar inaugurating the Poster session of the Conference



August gathering of Geoscientific fraternity during inaugural function of SPG India Jaipur 2017



Honorable Petroleum Minister gave the coveted B S Negi Convention Gold medal and life time achievement award to Mr. P S N Kutty, Ex-Executive Director, ONGC during the inaugural session

Energy Road Map of India: Pathways to the Future Energy System

The second day of 12th Biennial International Conference & Exposition of SPG India, Jaipur 2017 started with a panel discussion on “Energy Road Map of India”. The panel had eminent experts of the energy sector and academia. Shri Rohit Banerjee, Director (Project)-NPCIL, Shri Ajay Kumar Dwivedi, Director (Exploration) ONGC & Patron SPG India, Prof Shireesh Kedare and Prof T N Singh, both from IIT Mumbai presented their views on the Energy Road Map of India.

The panel discussion was set rolling with opening observations by Shri A K Dwivedi. He emphasized upon the need for ensuring energy reach to the bottommost of the stakeholder in the energy supply chain. Elaborating about the energy ecosystem, Shri Dwivedi expressed that there is a strong need of enabling policies for ensuring better facilitation for different players in energy arena like the hydro power, thermal, nuclear, coal and hydrocarbon sector- each of which is involved in energy production. He also mentioned about the need for an integrated approach for efficient, cost effective and viable energy solution. He brought out that the National Oil Companies are performing to their best within the framework of governing policies, for the energy security of this country. He emphasized Geoscientific community to play a complimentary role to integrate and utilize renewable sources of energy effectively; synergy among the players in various energy sectors is the need of the hour.

Speaking in the panel discussion, Prof Dr. T N Singh brought out inevitability of use of coal as energy source in India. Being the most abundant and accessible energy resource, coal free energy cannot be envisaged for India in the near future. We should aim to achieve high efficient, low cost and low Carbon Emission energy. One solution for sustainable use of coal is 'Coal to Liquid' (CTL) technology which has already been tested in Africa. Use of Carbon Di Oxide (CO₂) injection for improvement of recovery factor in E&P sector needs to be implemented. Prof. Singh stressed upon the strategic integration of all the energy sectors, including biomass and non conventional under one policy framework, is the requirement for sustainable energy solutions for the society. In



(Panelist of “Energy Road Map of India”)

this regard he cited the strides taken by Norway in energy management.

Prof Shireesh Kedare from IIT Mumbai presented current energy scenario and use of energy per capita in our country vis a vis the global trends. He further added that the depletion of the fossil fuel (Oil, Gas and Coal) has a finite time period. He opined that the energy sectors need to focus on:

- Research and Developments
- Policy and Economics
- Development of sustainable storage

He further added that the socio-political and effective policy issue needs to be addressed on priority in a time bound manner. He referred to “Vividhita Me Ekta” with more emphasis on providing energy services to the bottommost strata of the society. He quoted the example “The first Global Revolution”, a report by the council of the Club of Rome, which analyses the energy requirement of humanity.



Mr. Ajay Kumar Dwivedi responding to the audience after panel discussion

Shri Rohit Banerjee, Director (Project)-NPCIL, presented the Nuclear power scenario in India. He informed that modern nuclear reactors have adequate levels of security and there should be no public concern over safety of Nuclear Power Plants and power generation system of NPCIL. He concluded that, the high energy demand can't be ignored in any form, keeping view of environment and affordability.

A special session of invited talks on “Advances in Geophysics” was conducted by Shri D Purkayastha, President SPG India. The invited guests who shared their ideas on the occasion were, Ms Nancy House, President SEG USA, Mr. Marcel Van Loon, Executive Director EAGE and Dr. Ravi Bastia from OilMax.

Speaking in this session Ms Nancy House informed that SEG has the large membership base spread over 128 countries. She informed that SEG has been closely involved in addressing the Water Crisis in remote village of Salri, Madhya



Pradesh, India using EMI (Electro Magnetic Induction surveys) with the help of Ground Water Board.

Dr. Ravi Bastia touched upon advances in interpretation techniques, and importance of new ideas citing examples from the Russian fold belt, Tupi field of Brazil and fields from GOM among others.

Mr Marcel Van Loon gave an overview of activities of EAGE.

The Global Affairs committee (GAC) of SEG, EAGE, SPG, SPWLA, Indian chapter AAPG & IGU held discussion in the afternoon session of SPG India. Mr. R V Rao, the representative of SPWLA presented his views to form a committee of different societies to transfer knowledge and geoscientific ideas.

Dr. Kalachand Sain, representative of IGU expressed necessity of establishing a relation between IGU and SPG to achieve common goal and promote geoscience. The committee also discussed about feasibility of intersociety membership, to get the benefit of membership of other society. It was however felt that this aspect needs to be deliberated further for modalities. Mr. C Visweswara Rao, Vice president of SPG-India and convener of the conference, welcomed the idea while agreeing that some more discussions are needed for mode of collaboration and other possible implications. Mr. Dhruvendra Singh, representative of APG expressed that meticulous planning is required for such conferences. Ms. Nancy House, SEG representative emphasized importance of multidisciplinary conferences to bring different disciplines under common platform.

Mr. D Purkayastha, President, SPG India, gave concluding remarks emphasizing the need of deciding modalities to provide common inter society platform to share the ideas.

The student community actively participated in the conference, through dedicated quiz program for Students. The quiz program witnessed participation of 26 students from 13 Indian Universities, supported by their faculty members. It



Mr. CV Rao, Vice president of SPG India and convener steering the Global Affairs committee (GAC) meeting

was a lively quiz session with youthful enthusiasm from students. Banaras Hindu University (BHU) emerged as the winners with IIT Kharagpur and IIT (ISM) Dhanbad being the first and second runners up respectively. IIT Madras was at 4th position.

During the day, 16 technical sessions covering a wide range of topics on Seismic Modeling, AVO Inversion and Attributes; Rock Physics and Petrophysics; Exploration in Frontier areas; Interpretation and Volume Based Visualizations; Reservoir Modeling: Seismic to Simulation; Unconventional Exploration and Exploitation and Seismic Data Processing amongst others. These sessions witnessed keen interest from the delegates in the technical presentations made along with the parallel poster sessions.

The third day of 12th Biennial International Conference & Exposition of SPG India, Jaipur 2017 saw enlightened insights on the session theme of “NOC's Role in The New Oil

Order”. Mr. Ajay Kumar Dwivedi Director (Exploration) ONGC, moderated the session graced by the presence of Mr. Sudhakar Mahapatra Former Director (E&D) OIL, Mr. Gaz Bisht, Director Topaz Energy, and Mr. PK Sharma, Director (Operations) OIL.

Mr. Sudhakar Mahapatra presented his structured views by first highlighting the two critical components of the session's topic, namely, what is meant by the 'New Oil Order' and the difference in response of the NOCs vis-à-vis the IOCs. The New Oil Order can be viewed as a composite of 'external threats' and 'internal challenges'. Under the former, emergence of disruptive technologies and emergence of 'Mobility As A Service' (MAAS) coupled with the low oil prices calls for a three-pronged response of Lessons Learnt, revisit importance of integration and quickly capitalize on business opportunities. Elucidating about internal challenges, Mr. Mahapatra referred to resources in increasingly difficult terrains, exemplified with reference to Venezuela's Orinoco heavy oil belt; keeping abreast of technologies and the relatively slower growth of unconventional sources. He then brought out the differential response of NOCs given their societal obligations and governance constraints.

Mr. Gaz Bisht, Director of TOFAZ Energy, presented his views on how the instability of oil prices in current scenario, has affected the Geopolitics mentioning that traditional players have lost the control over oil market. The oil production from shale has become a success story in US with oil production enhancing from 1.25Mb/Day in 2013 to 4.03 Mb/day, in 2015. In the current changing scenario, NOC's have to keep pace with relevant policies across the globe. He explained the key pillar strategies of IOC's

- Cost Reduction
- de-risking deep water exploration
- Transferring/ selling of non-core assets
- Merger or acquisition of loss making companies



Student quiz programme in progress with the quiz master



Mr. Gaz Bisht, Mr. Sudhakar Mahapatra, Mr. AK Dwivedi, and Mr. PK Sharma

He quoted few examples from Malaysia, Senegal and Kutch Saurashtra basins of India and stressed upon necessity of forging strategic partnerships, and reshaping the business model.

Mr. PK Sharma, Director (Operations) OIL, also brought out the challenges faced by the hydrocarbon industry in face of changing administrative regimes from nomination era through NELP and now to HELP. In such changing scenario, the NOCs have to keep up and adapt to the new business rules.

He touched upon importance of improving recovery factor, leveraging global partnerships, and reducing the discovery to production cycle. From the geophysics perspective he emphasized upon the importance of chasing the untapped plays.



Mr. PK Sharma Director (OPS)-OIL

In the second Plenary session of the day on Technology Updates, three speakers representing technology majors M/s GEOTERIC, M/S Halliburton and M/s Schlumberger showcased their upcoming technologies. Dr. Gaynor Paton representing GEOTERIC made a presentation on advancements in cognitive interpretation, which enables the earth models to be defined and validated in the seismic data. She explained how cognitive interpretation helps in accurate interpretation in less time while honoring the data.

Mr. Punit Dubey from Halliburton presented Landmark's Integrated E&P applications, cloud technology and real time well planning in difficult terrains, all of which are aimed at reducing the cycle time. He detailed his presentation through a case study of a private cloud in Murphy Malaysia.



Mr. Sudhakar Mahapatra & Mr. AK Dwivedi, During Plenary Session

Mr. Carlo Caso from Schlumberger introduced all new cognitive E&P environment-DELFI. He also elaborated upon cloud computing and mobile seismic interpretation. DELFI primarily uses big data, cloud technology and super computing power and thereby provides an integrated multi-user platform for geoscientists, drilling and production engineers.

Poster Sessions:

During the conference, in parallel, 5 poster sessions witnessed presentation of 100 posters on varied topics of

Energy business. The posters evinced keen interest among the delegates.

Technical Sessions:

In parallel, 08 (Eight) Technical sessions were also conducted on various topics covering Emerging technologies, Exploration in Frontier Areas, Rock physics & Petrophysics, Challenges in Imaging, Seismic data processing, Unconventional Exploration & Exploitation and Reservoir Modeling - Seismic to Simulation, from International level.



Mr. Ajay Kumar Dwivedi Director (Exploration) ONGC & Patron SPG



Keen Observation on Posters: Shri P S N Kutty, Mr. R V Rao-CLS, Mr. Anand Prakash and Delegates

Exposition:

Showcasing the Technology by Various NOC's and Service Providers.

Glimpses:



Valedictory Function:

Award and Valedictory function of the Conference was held in the evening with Dr. Shailesh Nayak, former Secretary-MoES and President-IGU as the Chief Guest and Dr. V.M. Tiwari, Director-NGRI as the Guest of Honour. Shri. C.V. Rao, VP-SPG India, summarized proceedings of SPG 2017. Thereafter an MoU was signed between SPG-India and the IGU by their respective Presidents followed by presentation of various awards under different categories. This was followed by conferring of Awards won by participants under various categories of the 12th Conference. Shri. A.K. Dwivedi thanked Ms. Nancy House, President SEG-USA and

Mr. Marcel Van Loon, Executive Director EAGE-The Netherlands, for their continued co-operation and support.

Shri D Purkayastha, President SPG-India, made a special announcement commemorating the Silver Jubilee Year of SPG-India; this covered the following:

- In collaboration with SEG-USA, the Society shall jointly organize two technical workshops to be held during later half of 2018 and the first half of 2019 in Mumbai and New Delhi respectively. These shall cover aspects of sub-basalt and fold-belt imaging.

- 'Best Paper' and 'Best Poster' awardees of this 12th SPG-Conference, shall be sponsored, at SPG-India's expense, to participate in the technical program of EAGE's Conference & Exhibition, June-2018, to be held in Copenhagen, Denmark. EAGE has confirmed the inclusion of both (Best paper & poster) in the EAGE-2018 Conference.
- EAGE has offered to publish the award winning article of SPG's GEOHORIZONS in the EAGE publication 'FIRSTBREAK'.
- EAGE shall sponsor, at EAGE's expense, the Winning Team of SPG-2017's Student's Quiz Programme, namely the IIT-BHU Team, a place in the final GEOQuiz round of the EAGE-2018 Copenhagen Conference.



Valedictory Session in progress



Glimpses of Valedictory function

Dr. V.M. Tiwari, Director, NGRI while speaking on the occasion, appreciated the participation of large number of students in the conference. He emphasized that coal and petroleum are going to be present at least for next 25 years in India. Therefore, it is important to appropriately address the environmental concerns and socio-political impact on economy. He appreciated the standards of exposition.

Dr. Shailesh Nayak appreciated the theme of SPG-2017 in the present context. Considering the fact that energy is central for human existence, there is a need to ensure clean, affordable and accessible energy across the entire spectrum of society. He also stated that although, alternate energy sources are taking rapid strides in development, matching coal and oil as low cost option of energy would not be easy to challenge. He opined that there is a need to make efforts towards gas hydrates and shale gas development and towards increasing energy efficiency. There is a strong need for technology break through for clean, sustainable and affordable energy solution. Towards this, it is of paramount importance to promote multi-disciplinary and even trans-disciplinary research.

In conclusion, Shri. C.Visweswara Rao, Convenor of the conference & Vice President, SPG India delivered the vote of thanks.