



'The Changing Exploration Landscape of India: Breakthrough Ideas'  
September 28, 2016

## Recommendations



## **Recommendations from ‘The Changing Exploration Landscape of India: Breakthrough Ideas’ held on September 28, 2016**

A workshop on the ‘Changing Exploration Landscape of India: Breakthrough Ideas’ was organized by PetroFed to delve into the challenges and opportunities in the Indian E&P sector. As the demand for oil & gas is bound to grow, India needs to look forward to the increases in domestic production as well, failing which the pressure on imports would further escalate.

A number of policy reforms have been ushered in the recent past. Going forward, new ideas are required on the ground to change the flat production of oil and gas scenario in the country.

An annexure containing the list of speakers, panelists and participants has been enclosed for reference.

The key discussion points & recommendations based on the workshop are listed here;

### **Key Issues;**

### **Leads:**

- On the prospects of new discovery, out of the 26 sedimentary basins, 16 have been explored; 10 are yet to be explored. Resources potential amounting to 28 billion tons out of which 17 billion tons is yet to be converted to in place reserves.
- A paradigm shift is required in understanding the basins based on the reprocessed data and interpretation. The Barmer basin where Cairn has been successful was initially considered as tertiary basin, however new data, new thinking and new ideas suggest it to be a composite i.e. rift and passive margin basins.
- The hydrocarbon potential in Andaman basins where many velocity anomalies exist below the BSRs needs to be investigated for gas. On similar lines, in the Bengal delta area, there are thick sediments between 15-20 km overlying the basement. These areas are

expected to have very good gas prospects and thus need to be extensively explored.

- There is a need to follow the technical leads in individual basins.
- As per world statistics 68% of Oil & 63% of gas both 1P & 2P come from the Mesozoic sediments. The Mesozoic is favorable from climatic perspective to generate the hydrocarbons mainly on a zone of 30 degree on either side of equator. In Indian context more efforts are needed to explore Mesozoic strata especially located in West coast on-land and offshore basins.

The prospective areas have to be prioritized in terms of potential and these may be assigned to consortium based on their strengths. This would be followed by the multi-client data acquisition covering these areas. The processing and interpretation is to be carried out by a team with multiple concepts.

To realize the potential of Mesozoic a National Task Force may be formed between DGH, MoP&NG and E&P companies to take action in a time bound manner.

There is a need to develop suitable workflow and reach out to global technology providers. In the case of Mesozoic and sub-basalts, 3C seismic could be an enabling tool. The learnings from Kutch by Cairns, ONGC & other operators should be shared.

Another perspective would be, in Indian subcontinent the scope of this appears to be very limited. We must pursue deeper areas viz. Kerala Konkan for Mesozoic.

- The ratio of exploration wells and development wells is quite skewed at 1:3. One observation could be that we are drilling too many exploration wells whereas the second observation could be that we are in a new industry/new player where we are still exploring. There needs to be conformity in the fact that if we are drilling one exploration well, we need to drill at least 10 development wells.

## **Organizational**

- Within the organization, the concerned exploration people need to put their mind together for success. The disciplines need to take a backseat and on this, one of the company said they called their people only as explorationalists rather than geologist, geophysicist etc.
- Sharing of knowledge - Concept of Petroleum Club of India - bringing experienced people of the Oil and Gas industry to a common platform for generating new ideas on a continuous basis. It can take lion's share of responsibility of challenges faced by the industry in the country. It can also include members from DGH and MoPNG. It can also have regional branches.

## **Technology & Collaboration:**

- There is a need for good quality data; which is processed consistently across the blocks in order to make a meaningful story and role of DGH will be vital to achieve the same.
- It is necessary to understand how technology is used and based on that, work out standardized work flows and a collaborative approach both within the organization and with the service provider.
- It was felt that a clear cut roadmap is missing on collaboration. It's a difficult proposition to bring about this collaboration. It was felt that the best suited technology providers should be selected on a nomination basis which does not currently exist. Unless these technology providers are invited to be partners, it will be difficult to address the decline in mature fields.
- Need to be efficient in identification of suitable technology adoption for requirement and the pace at which it can be used. Practices and technology are needed so that years are not taken in exploration.



- Technical forum consisting of young professionals to take charge and share the work done by them in their respective fields with senior professionals sitting in the audience and listening to them. It is very important to bring in young talent not just as part of audience but also as part of the panel.
- Technology partnerships and choosing partners by NOCs is very critical. Company needs to have freedom to choose the partner with the mechanism that the wealth transfer to private companies needs to be balanced. The need to choose the right partner and bring companies into the country according to the requirement is essential.
- Shale gas needs to be fast tracked. The resource base needs to be worked out and for that multi-client survey needs to be carried out.

#### **Policy:**

- There are essentially three major time zones for E&P sector in India - 1956-1991, 1991-2000 and 2000-2016. After mid 90s hardly any big discovery has been made by ONGC. However, OIL discovered deeper Paleocene - Eocene prospects in upper Assam in 1990s. The major reason for the slip is that inspite of ample kitty, realization of the same has not been made. Before 90s, 2 NOCs were free to go anywhere in India and go to the government stating that they want a block in this particular region and that particular request was preceded by years of data gathering. This role was then transferred to DGH and NOCs were treated as any other company. The basic responsibility to create new areas for new plays was lost because ONGC & OIL were told to concentrate on acreage held. For new acreage, they had to compete with private companies and within their discovered portfolio, ONGC & OIL were told to give certain part of kitty to private companies for new round of exploration activities.
- We know 50% of sedimentary areas are unexplored and now government has taken very timely and tactical steps to come up

with open acreage policy. However what is lacking is that ONGC and OIL have been asked to acquire seismic data in poorly explored basins. The motivation in continuity of exploration by NOCs is not there because they are not being given the choice to choose area/blocks. In case of other countries like Malaysia, Petronas does not participate in acreage rounds but have option of PI at development stage. This provision needs to be made to ensure continuity & spurt in exploration.

- Terms to be made more attractive for PSUs to carry out further exploration in Category IV basins.
- There was a spurt in E&P activities during the 90s with the introduction of JV, pre-NELP and NELP. It is expected that the present DSF round will also see the second phase of enhanced E&P activities in India.
- There is a need to create Farm-in opportunities to existing Oil and Gas fields for PSUs; being the fastest way to induct new technologies and help enhance current production level. This will bring collaboration and develop new skills to introduce and implement IOR/EOR schemes. It was also suggested that Farm-in entry to be allowed in medium size 100-200 mmbbl field (about 45 Nos) for technology induction and production enhancement.
- Farm in issues have financial implications for the government. Need to work out something so that unfair advantage is not gained by some.
- There is a need to revisit present policy of allowing exploration in mining lease areas.
- Government is trying to create an ecosystem so that players can work efficiently. Sharing knowledge is very crucial for this purpose of betterment.
- Efforts are needed to reduce life cycle of exploration by 3 - 4 years.
- There is a need to diversify and bring new players in the exploration industry, especially in DSF round.

- The risk appetite is another element that is crucial for success in exploration sector. There needs to be a step by step procedure in increasing this appetite over time.
- With acreage portfolio approach, we are limited by boundaries. We are forced because of limited acreage and repeatedly we are recycling this acreage. The outcome is smaller pools and exploration around discovered areas. We are not going out and that is the basic problem. Overall we are now limited by acreage and not money. This needs to be changed.
- DGH has a big role in becoming a captain for exploration activity in India. With major changes in data management issues, India could become a platform for transformation in exploration activity. Instead of formal bidding activity, continuous process can be initiated so that players can go with a proposal to do regional studies.
- Service industry is a bottleneck which has not grown in India. The economies of scale are not being realized.

### **Recognition & Rewards:**

- Recognition - Although there are awards such as Padma Shri, it is believed that the sector has got limited attention. In order to encourage and attract people to exploration, we can award/recognize the person or team responsible for discovering new oil and gas fields in onshore, shallow water and deep water say, with a minimum benchmark of 50, 100 and 200 mmbbls respectively.
- There is also a need to celebrate exploration success not just within the company but also across the sector. It is important to give recognition to individual/team and celebrate success.

### **Key Recommendations;**

- Amend Guidelines of Exploration in Mining lease area (Feb 2013) - allow exploration at PSC terms/GIIP to unleash the potential of blocks.

- Since the Mesozoic oil & gas contribute 68% & 63% respectively of world hydrocarbon, it has been proposed that in order to realize the potential of Mesozoic in India, a National Task Force may be formed between DGH, MoP&NG and E&P companies to take action in a time bound manner.
- The motivation in continuity of exploration by NOCs should be encouraged by allowing them to choose blocks in the areas where they have been asked to carry out seismic survey by the government.
- A clear cut roadmap on collaboration with technology partners is essential so that the service providers who have propriety technology can be utilized by E&P operators to enhance oil, & gas production.

It has been proposed that Farm-in entry be allowed in medium size 100-200 mmbbl field (about 45 Nos) for technology induction and production enhancement.

- To constitute “Petroleum Club of India”, a forum for generating new ideas for the Oil and Gas industry.
- Natural gas pricing & marketing freedom is required to spur exploration & investments.
- To carryout drilling of parametric wells in line with National Seismic project.
- A need has been felt to have another session - **Breakthrough Ideas Part II** - so that ideas are transformed to actionable points.

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**Workshop on The Changing Exploration Landscape of India: Breakthrough Ideas on  
September 28, 2016 at India Habitat Centre, Lodhi Road, New Delhi**

**Speakers (Inaugural)**

1	IHS	Dylan Mair	Senior Director of Ops.
2	Tata Petrodyne	S.V Rao	ED & CEO
3	DGH	Mahendra Pratap	Dy. DG

**Panelists**

4	ONGC	A K Dwivedi	Director (Exploration)
5	OIL	S. Mahapatra	Director
6	Cairn	Ananthakrishnan B	Director (Exploration)
7	ONGC Videsh	Sudhir Sharma	Director (Exploration)
8	former DG, DGH	Dr. Avinash Chandra	
9	Former ED ONGC	P S N Kutty	former ED Exploration ONGC
10	MoP&NG (Spl. Remarks)	Amar Nath	JS (E )
11	OVL (Concluding Remarks)	N K Verma	MD

**List of participants**

S.NO	Organisation	Name	Designation
12	BP	Amit Wankhede	
13	BG	Nipun Pradhan	GM
14	Cairn	Sivakumar Pothapalli	Director
15	Cairn	Dr. Chirag Shah	
16	Cairn	Pinakadhar Mohapatra	Head Exploration
17	Cairn	S. Roychoudhary	Director
18	Cairn	B. Ghosh	DGM Exploration
19	GAIL	Rajesh Bagaria	CM
20	GAIL	G. Varatharajan	DGM
21	HOEC	P Elango	MD

22	IHS	Nirmal Shani	
23	IHS	Gauri Jauhar	
24	IHS	Anup J Nair	Energy Mgr.
25	IOCL	Pankaj Singh	DM (E&P)
26	IOCL	Sobham Pathak	SM (E&P)
27	OIL	R . Dasgupta	ED (CA)
28	OIL	S.K. Jena	ED (E&D)
29	ONGC	H. Madhavan	GM
30	ONGC	Sh. B.S. Dhillon	GM(G)
31	ONGC	Sh. Puneet Suri	GM(G)
32	ONGC	Sh. Pradeep Kumar Bhatnagar	GM(G)
33	ONGC	Sh. Gayadhar Parida	GM(G)
34	ONGC	Ms. Swati Sathe	DGM(Geology)
35	ONGC	J Tikku	DGM (GP)
36	OVL	Ajeet Deshwal	ED
37	Prize Petroleum	Dr. Prabhakar Thakur	
38	RIL	Ajay Khandelwal	
39	RIL	U S Sharma	VP
40	SLB	S. Kumar	MD
41	SLB	J. Sharma	Global Accounts Dir
42	SLB	Vineet Prakash	GM (South Asia Region)
43	SLB	A. Roy	
44	SLB	Pushp Sapru	Key Account Manager
45	PetroFed	Dr. R K Malhotra	DG
46	PetroFed	S. Rath	Director (E&P)
47	PetroFed	R. Bahl	Director (FT&L)
48	PetroFed	Dr. Preeti Jain	JD (EP&P)
49	PetroFed	Kaushiki Sinha Ray	Sr. Assit. Director





67 Discovered Small Fields on offer by Govt. of India  
Source : Directorate General of Hydrocarbons (DGH), [www.dghindia.org](http://www.dghindia.org)



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