

Executive Summary

1. Introduction

Private sector participation in hydrocarbon exploration and production (E&P) in India dates back to the Government of India's decision of 1991 to invite foreign and domestic private sector companies to participate in the development of oil and gas fields already discovered or partly developed by National Oil Companies (NOCs¹). New Exploration Licensing Policy (NELP) was formulated by the Government of India (GOI) during 1997-98 to provide a level playing field to both public and private sector companies in exploration and production of hydrocarbon. NELP became effective from February 1999. Since then, licenses for exploration are being awarded only through a competitive bidding system. Under NELP, NOCs are required to compete on an equal footing with Indian and foreign companies to secure Petroleum Exploration Licenses (PELs). Upto 31 March 2014, the GOI announced nine rounds between 1999 and 2010, inviting companies to bid for exploratory blocks under deep water, shallow water and onshore category in various basins.

Keeping in view the vital role of hydrocarbon sector in the economic growth of the country and to have a long-term policy i.e. 100 per cent exploration coverage of the Indian sedimentary basins by 2025, for the hydrocarbon sector, MOPNG formulated the Hydrocarbon Vision–2025 in March 2000.

A Performance Audit of Oil India Limited (OIL)'s hydrocarbon exploration efforts (2009-10 to 2013-14) was conducted against the above backdrop. Audit attempted to see whether OIL's exploration efforts had been taken up with proper planning and executed with efficiency and effectiveness to achieve its own and the nation's envisioned hydrocarbon goal. The main audit findings and recommendations are as follows.

¹ Oil & Natural Gas Corporation Limited and Oil India Limited

2. Main Audit Findings

Efforts of OIL towards Hydrocarbon Reserve Accretion

2.1 The net increase of hydrocarbon reserves was only under probable category. The work of reserves estimation was conducted through in-house team of OIL from 1967. While oil reserves under 2P (proved plus probable reserves) category increased, it decreased under 1P (i.e. proved) category. Oil reserves under 3P (i.e. possible) category decreased indicating non-addition of new fields through exploration activities. Gas reserves under all the categories declined from 2009-10 to 2013-14. Hence, OIL underperformed in proving of reserves which is necessary for future sustainable development of hydrocarbon sector. **(Para 3.1)**

2.2 Reserve accretion targets are fixed after taking into account the total number of exploratory wells planned for drilling during a year and also the exploratory drilling success of previous years. In India, the major exploration and production activities of OIL are carried out in Assam & Assam-Arakan and Rajasthan. In Assam & Assam-Arakan, during the years 2009-10 and 2010-11, there was an overall decreasing trend in respect of reserve accretion. OIL did not achieve its target for reserve accretion at Rajasthan during last five years. The total reserve accretion was only 59 per cent of the targeted quantity. **(Para 3.2)**

2.3 Reserve Replacement Ratio (RRR) measures the relationship between new reserves accreted and oil produced, reflecting how well an oil company is replacing its production. Though OIL achieved RRR of more than 1 in Assam & Assam-Arakan during the period from 2009-10 to 2013-14, the Ultimate Reserve Accretion registered a downward trend. Consequently, the RRR has a declining trend from 1.84 in 2009-10 to 1.31 in 2013-14. **(Para 3.3)**

2.4 OIL made 33 hydrocarbon discoveries in Assam & Assam-Arakan under Nomination regime² during the period from 2009-10 to 2013-14, including four discoveries which were yet to be monetized. Out of four discoveries pending for monetization, three discoveries were currently techno-economically unattractive for field development and one discovery is awaiting stimulation. **(Para 3.4)**

² Before introduction of New Exploration Licensing Policy in 1997, the National Oil Companies viz., ONGC and OIL were awarded blocks for exploration on nomination basis and are known as "Nomination Blocks".

2.5 In NELP, in spite of being one of the NOC with technical experience in the E&P sector, performance of OIL lagged behind peers in the industry. Out of the total discoveries during NELP period, OIL made only one discovery in Punam well in Rajasthan which is yet to be monetized (April 2015) though the discovery was made in July 2012. **(Para 3.4)**

Efficiency and Economy in Survey Process

2.6 OIL did not achieve its own targets of 2D survey with respect to revised plan target except in 2 years. Similarly, it did not achieve its own target in 3D for 3 years. OIL drastically reduced its targets in both 2D and 3D in first two years of twelfth five year plan from the Planning Commission targets. **(Para 4.1)**

2.7 No norm for timely Acquisition, Processing and Interpretation (API) completion was set/fixed by OIL to carry out in-house survey work. In absence of any norm, OIL did not have any control over the time schedule of survey work. In respect of 10 completed survey works, time taken to complete the API cycle ranged between 472 and 2005 days and in respect of 13 survey work-in-progress, the works remained incomplete from 330 days to 2069 days after completion of acquisition/ processing of data. In case of outsourced survey, excess time was taken in 9 contracts (75 per cent) out of 12 contracts examined, ranging between 1 month and 20 months. **(Para 4.2.1 & 4.2.2)**

2.8 Examination of survey contract also revealed deficiencies in the contract leading to undue benefit to the contractor, payment of penalty towards unfinished work programme and expenditure on survey works without value addition. **(Para 4.3)**

Efficiency and Economy in Drilling Operation

2.9 In exploratory drilling, there were significant shortfalls in the drilling of exploratory wells during the period 2009-10 to 2013-14. In development drilling, there was significant cumulative shortfall in the drilling of development wells during the period from 2009-10 to 2013-14. OIL depended more on development drilling (ranging from 48 to 66 per cent) and less on exploratory drilling (ranging from 34 to 52 per cent) resulting in shortfall in exploratory drilling as compared to development drilling. The

low prioritization of exploration efforts undermined the overall objective of adding new fields of hydrocarbon as envisioned in Hydrocarbon Vision 2025. **(Para 5.1.1.1)**

2.10 The efficiency of drilling rigs is judged on the basis of commercial speed and cycle speed. There were abnormal fluctuations in commercial speed and cycle speed of own rigs and hired rigs during the period from 2009-10 to 2013-14, while the number of rigs remained the same. OIL did not fix norms for commercial speed and cycle speed for its own rig and also did not fix and incorporate the same in the contracts for hired rigs. **(Para 5.1.1.3)**

2.11 The percentage of Non-Productive Time (NPT) in case of own rigs increased from 31 per cent in 2009-10 to 39 per cent in 2013-14. In case of chartered hire rigs, the percentage of NPT increased from 19 per cent in 2009-10 to 45 per cent in 2013-14. Although the ONGC norm for NPT is less than 10 per cent and international norm is less than 5 per cent, the average actual NPT of own rigs of OIL was 40 per cent and chartered hire rigs was 35 per cent. Norm for NPT has not yet been fixed by OIL. NPT of own workover rigs ranged between 7 and 13 per cent and chartered hire workover rigs ranged between 5 and 18 per cent during the period from 2009-10 to 2013-14. **(Para 5.1.1.4)**

2.12 Delay in production testing resulted in under utilization of rigs and loss of meterage which resulted in increase in NPT. In 59 wells (30 wells drilled by own rig and 29 wells drilled by chartered hire rig), OIL failed to complete the production testing as planned. The delay in completion of production testing ranged between 9 and 94 days. As per the status report of the wells as on 31 March 2014, in 8 wells the production testing remained incomplete even after a lapse of two to four years. Total delay for production testing in case of own rigs was 1005 days and in case of chartered hire rigs was 980 days during the period from 2009-10 to 2013-14. On account of delay in production testing, OIL paid ₹ 88.02 crore in 29 cases towards standby charges to the contractor against the chartered hire rigs. **(Para 5.1.1.5)**

2.13 The ideal life span of a drilling rig ranged between 20 and 25 years depending on various factors viz. use, maintenance etc. Vintage of in-house drilling rigs were in the range of 9 and 36 years as on 31 March 2014. Similarly, out of 13 existing in-house workover rigs, the vintage of 9 workover rigs was in the range of 25 and 35 years and vintage of 4 workover rigs was in the range of 5 and 25 years. Since OIL is operating

with a fleet of very aged equipment, it affected the exploratory drilling of OIL due to high NPT. **(Para 5.1.1.6)**

2.14 OIL did not initiate any action till December 2010 for procuring drilling rig to reduce its dependence on the hired rig. The last procurement of drilling rigs made by OIL was in 2006 only for replacement of old drilling rigs. Subsequent action of OIL in December 2010 for procurement/commissioning of drilling rigs did not materialize on account of legal dispute and an accident of the rig carrying vehicle. As such OIL still depended on hired rigs. **(Para 5.2.1)**

2.15 While reviewing the management of contracts for acquisition of own rigs and for chartered hiring of rigs, Audit found inordinate delay in procurement of rigs, higher dependence on chartered hire rigs, avoidable time allowed for mobilization of rigs, violation of contractual terms and conditions, idling of rigs etc. OIL gave preference to a supplier over manufacturer in procurement of rigs which lacked transparency. Further, it placed purchase order to a supplier for supply of drilling rigs without resorting to fresh tender, violating CVC guidelines. It also allowed the supplier to change specification of rig after finalization of contract. In another case OIL deprived itself of getting competitive rate by not going in for fresh tendering. **(Para 5.2.2)**

Effectiveness of Exploration Efforts

2.16 Under the Nomination regime, OIL was granted Petroleum Exploration License (PEL) in 16 blocks during the period from 1985 to 1999. During last five years ending 2013-14, OIL converted only two blocks, that too partially, from PEL into Petroleum Mining Lease (PML). Out of five operational PELs, OIL applied for extension in three blocks (Dibrugarh, Tinsukia and Deomali), in respect of which the approval of DGH was awaited (December 2014). In balance two PEL blocks (Jairampur Ext. and Namchik PEL) allotted in May 1990 and April 1999, OIL initiated action to drill in two locations. OIL had 22 PML blocks under operation during the period from 2009-10 to 2013-14, out of which five blocks remained idle from 4 to 14 years after conversion into PML, where the reasons were under OIL's control. **(Para 6.1.1 and 6.1.3)**

2.17 Upto round-IX, GOI offered 360 exploration blocks, out of which 254 blocks were awarded till 31 March 2014. OIL participated in all the nine NELP rounds and

submitted bids for 67 blocks and was awarded 40 blocks either alone or in the form of consortium. Out of 40 blocks awarded, in 11 blocks OIL performed as operator and paid LD of ₹ 68.63 crore towards unfinished minimum work programme during 2009-10 to 2013-14 in respect of 6 relinquished blocks. The percentage of participation in NELP rounds was quite low except in round-IX where OIL bid for 50 per cent of blocks offered. **(Para 6.2.1 and 6.2.3)**

2.18 The delay in granting of PEL by the concerned State Government also delayed the process of exploration. The PSC for block (KG-ONN-2004/1) was signed in March 2007, however, the PEL for 511 Sq. Km area in Andhra Pradesh was granted in February 2008, after a gap of 350 days from signing of PSC, and the PEL for 38 Sq. Km area in Puducherry was granted in June 2010, after a gap of more than three years from signing of PSC. **(Para 6.3.1)**

2.19 There were delays in exploration of blocks and non completion of committed Minimum Work Programme (MWP) within the exploration phase, due to non-obtaining of clearances by the MOPNG from different Ministries/ Departments before carving out of blocks for inclusion in the offer list of NELP round or even award of blocks under Nomination or pre-NELP period. This did not enable OIL to concentrate fully on their area of specialization (i.e. exploration and production). In seven blocks the exploration effort of OIL was held up due to delay in getting clearances or non-availability of clearances from the concerned Ministries/ Departments. **(Para 6.3.2)**

2.20 The weightage given in MOU for exploration activities of OIL towards timely completion of NELP blocks and payment of penalty in case of default was nil. Parameters with respect to seismic survey and drilling of wells in domestic field have not been given its due weightage in the MOU. Seismic surveys have been removed from the MOU target since 2011-12. Besides, parameter for drilling of wells under NELP was removed from MOU target since 2013-14. **(Para 6.3.3)**

2.21 OIL also bid for NELP blocks in the same area where it had relinquished an earlier PEL block for logistic constraints. It was also noticed that in two PEL blocks relinquished by OIL, hydrocarbon discovery was made by private operators under Pre-NELP/NELP regime. **(Para 6.4.1 and 6.4.2)**

Monitoring of Exploration Activities

2.22 OIL was not able to utilize the entire BE in all the years from 2009-10 to 2012-13. In 2013-14, expenditure under survey and exploratory drilling remained less than BE though overall expenditure exceeded BE due to increased investment in Joint Ventures. For all the five years, the actual expenditure against survey and exploratory drilling fell short of BE by 13 to 40 per cent. **(Para 7.1.1)**

2.23 The Hydrocarbon Vision 2025 inter-alia included, 100 per cent exploration coverage of the Indian sedimentary basins by 2025, to keep pace with technological advancement and application and be at the technological forefront in the global exploration and production industry. Actual expenditure on R & D activities was less than the BE in all the years during the period from 2009-10 to 2013-14; the reasons for such wide variations were not on record. **(Para 7.1.2)**

2.24 The exploration group consists of Geophysics, Geological & Reservoir and Drilling Department which plays a key role in exploration activities of OIL. There was shortage of manpower in these departments despite its importance in exploration activities. **(Para 7.2)**

2.25 OIL is having an Internal Audit Department headed by a General Manager who in turn reports to Director (Finance). During the period from 2009-10 to 2013-14, the post of GM (IA) remained vacant and the IA department directly reported to Director (Finance). Ideally the functioning of IA department should be independent and should report directly to CMD; contrary to this, the IA department of OIL was reporting to Director (Finance). **(Para 7.3)**

2.26 The contract manual did not specify the time line for different stages of contract processes in order to obtain the goods and services in time. It also did not include comprehensive guidelines regarding fixation of responsibility in case of damage or loss of drilling units/ sub-surface tools/ equipments of contract while carrying out the jobs. There was no schedule of programme for award of contract prepared by the concerned department. OIL has not fixed any norm for finalization of tender and award of the contract. As a result, no control mechanism was in place to ensure timely award of contract. Further, the contract manual was not updated since October 2009. **(Para 7.5)**

3. Recommendations

OIL as well as MOPNG may ensure that OIL's core business, i.e., hydrocarbon exploration as an upstream NOC is given priority as recommended below:

- OIL may build necessary capability to ensure proving of reserves by commensurate upgradation from 3P to 2P and 2P to 1P category of reserves.
- In the MOU the weightage given to “accretion to recoverable reserves” may be increased by MOPNG to emphasise higher importance of the core activity of exploration.
- Norms for the API cycle may be formulated and linked with performance parameters. OIL may closely monitor its survey contracts to ensure timely completion of exploration.
- MOPNG should take necessary steps to ensure that NOCs abide by the exploration targets assigned to them.
- OIL may finalize its procurement plan in time to replace the vintage rigs, both drilling and workover.
- OIL should be able to use its experience and resources to be able to operate in the competitive NELP regime and bid judiciously for prospective blocks.
- OIL should adhere to MWP schedules so as to fully explore the blocks and to avoid liquidated damages.
- MOPNG should ensure availability of clearances for carrying out exploratory activities before awarding the blocks.
- Proper monitoring on utilization of budget is called for to avoid shortfalls.
- OIL should pay attention to its R&D activities and keep abreast of latest technologies especially in view of the fact that it is a cash rich company.
- OIL should quicken its action on recruiting executives in technical departments as well as in internal audit department.
- The contract manual may be updated and the awarding of contracts need to be in line with CVC guidelines, principles of financial prudence and monitoring of contracts execution may be made more stringent.
- Reporting mechanism of OIL needs to be strengthened for creating MIS and monitoring of them by the different bodies culminating in the BOD.