Chapter II

Performance Audit relating to Government Company

Gujarat State Petroleum Corporation Limited

Exploration and Development Activities of Gujarat State Petroleum Corporation Limited

Executive Summary

Introduction

Gujarat State Petroleum Corporation Limited (the Company) was incorporated on 29 January 1979. The Company along with its subsidiaries and associates has a presence over the entire energy value chain spanning across a range of oil and gas activities comprising oil and gas exploration, development and production, gas trading, gas transmission, gas distribution and power generation. The performance audit focused primarily on the exploration and development (E&D) activities of the Company for the period 2011-12 to 2014-15.

Status of blocks held by the Company

Of the total 64 blocks held by the Company as on 1 April 2011, 37 blocks were surrendered during the performance audit period and the Company had 27 blocks in hand as on 31 March 2015. Of these 11 blocks were under E&D and 16 blocks were under production.

Exploration and Development (E&D)

The major activity under E&D carried out during the period of the performance audit was the development of the Deen Dayal West (DDW) area of the KG block. The Field Development Plan (FDP) for DDW area was approved by the Management Committee (MC) in November 2009 with stipulated date of commercial production from December 2011. The trial production started in August 2014 and the commercial production has not commenced so far (November 2015).

The FDP for DDW assumed a gas price of US $ 5.7/MMBTU (Million British Thermal Unit) and was not viable at the Government approved gas price formula of US $ 4.2/MMBTU prevailing at the time of submission of FDP. The viability of the FDP was further compromised by the underestimation of costs, non-addressing of technological uncertainties, and deficiencies in project implementation. The Company did not address properly the risks associated with cost and technology as stated below which has resulted in uncertainty regarding the future prospects from the block where an investment of around ₹ 19,576 crore had been made as of March 2015.

- ***Against FDP estimates of US $ 547 million, the tender cost for offshore facilities was US $ 810 million (48 per cent higher). Further, the actual costs incurred were US $ 1,058 million.***
- ***Non finalisation of appropriate drilling technology and unresolved low permeability issue led to uncertainties regarding commercial production.***
- ***Cost overruns were noticed due to deficiencies in contract management and higher drilling costs.***

Production

During 2011-15, the revenue from production activity was reduced from ₹ 230.30 crore to ₹ 152.51 crore (i.e. by 33.78 per cent) due to reduction in prices of Oil and reduction in production of gas from 119.24 MM^3 (million cubic metres) to 50.21 MM^3. Hazira block was the main gas producing block contributing 110 MM^3 out of 119.24 MM^3 produced in 2011-12 which declined to 36.9 MM^3 in 2014-15. The sale quantity of test gas from KG block for 8 months (August 2014 to March 2015) itself was 64.81 MM^3 which was more

than the combined production of 2014-15 from all producing blocks of the Company indicating the significance of the KG block in the Company's portfolio.

Surrender of blocks

Out of the 64 blocks on hand as on 1 April 2011, during the period 2011-15, the Company surrendered 37 blocks which included 10 overseas and 27 domestic blocks and had written off exploration expenditure worth ₹2,514.65 crore for 29 surrendered blocks (₹1,734.12 crore for overseas blocks and ₹780.53 crore for domestic blocks). In the remaining eight surrendered blocks the expenditure of ₹478.07 crore was yet to be written off as of March 2015.

Out of the 11 overseas blocks held as on 1 April 2011, the Company surrendered 10 blocks (nine operator and one non-operator) during 2011-15. North Hap'y and South Diyur blocks in Egypt were the major overseas blocks which were surrendered. The delays in execution of Minimum Work Programme (MWP) led to huge cost overruns in the North Hap'y block and the Company incurred US $ 263.98 million which was 76 per cent higher than the committed expenditure of US $ 150 million.

The Company went ahead acquiring overseas blocks during 2006-10 mainly as an operator with considerably high participating interests without any prior experience overseas as an operator. Further, the delayed execution of the work committed resulted in cost escalations in overseas blocks. As a result, the Company had incurred expenditure of ₹1,757.46 crore for 10 surrendered overseas blocks, of which ₹1,734.12 crore has been written off.

Financial Position

As on 31 March 2011, the total borrowings of the Company were ₹7,126.67 crore which had increased by 177 per cent to ₹19,716.27 crore as on 31 March 2015. The Company had to rely heavily on borrowings mainly for activities in the KG block. The total interest burden increased from ₹981.71 crore in 2011-12 to ₹1,804.06 crore in 2014-15. Further, there were outstanding dues of ₹2,329.52 crore not recovered from Joint Venture (JV) partners.

Monitoring of blocks as a Non-operator

The Company did not exercise its right to conduct audit of JV accounts periodically and in a timely manner in blocks where it was a non operator. Further, in cases where audit was conducted, the Company did not pursue the Audit Reports.

Recommendations

- ***Risks associated with cost, technology and price realisation may be properly considered while venturing into exploration and development activities and means of risk mitigation such as induction of strategic / financial partners may be timely considered wherever necessary.***
- ***The Company may exercise due caution in venturing into overseas exploration and should endeavor timely completion of work committed.***
- ***The Company needs to ensure that realization from Joint Venture partners are made promptly.***
- ***The monitoring of the blocks where the Company was non-operator needs strengthening through non-operator audit and periodic review of the status of activities in such blocks.***

Introduction

2.1 Gujarat State Petroleum Corporation Limited[1] (the Company) was incorporated on 29 January 1979. The Company along with its subsidiaries and associates has a presence over the entire energy value chain spanning across a range of oil and gas activities comprising oil and gas exploration, development and production, gas trading, gas transmission, gas distribution and power generation. The upstream business activities of exploration,

[1] It was called Gujarat State Petrochemicals Corporation Limited prior to November 1994.

development and production (E&P) and midstream activity of gas trading are carried out by the Company while its subsidiaries and associates are carrying out other midstream and downstream activities.

The management of the Company is vested with a Board of Directors (BOD). The Managing Director (MD) is the chief executive officer and is assisted by 13 heads in charge of various departments of the Company. The BOD has constituted various committees, *viz.,* Project committee, Audit committee, HR Committee, etc., to assist it in performing its duties.

Segments of the Company

2.1.1 The Company has three segments of operations *viz.,* E&P, Gas Trading and Wind Power and the financial information related to these segments for the period from 2011-12 to 2014-15 is shown below:

Table 2.1: Segment Information

(₹ in crore)

Particulars of Segment	2011-12			2012-13			2013-14			2014-15		
	E&P	Gas Trading	Wind Power	E&P	Gas Trading	Wind Power	E&P	Gas Trading	Wind Power	E&P	Gas Trading	Wind Power
Revenue	224.19	8,204.42	34.59	216.14	9,979.23	44.58	177.33	11,708.92	39.94	162.86	10,738.07	45.37
Net Profit / (Loss)	-266.84	1,247.64	-22.85	-10.44	1,339.53	-25.00	-1,588.97	1,745.20	-5.35	-460.65	532.24	37.40
Assets	14,260.36	777.65	312.25	19,442.85	914.49	268.57	22,232.58	787.15	229.05	25,366.71	1,229.20	201.51
Liabilities	10,562.35	629.39	135.32	13,863.83	1,010.61	5.43	16,256.73	722.99	4.32	20,037.72	1,195.12	4.05

Source: Segment Information as provided in the Annual Accounts of the Company

The major contribution to the revenue and the net profits of the Company was from the Gas Trading segment whereas the majority of the Company's assets and liabilities were under the E&P segment. Further, during the last four years, the Company had incurred capital expenditure of ₹ 15,601.43 crore in the E&P activities. Thus, in terms of expenditure incurred, the E&P segment was the major activity of the Company whereas gas trading was the main revenue generating activity of the Company.

Status of blocks held by the Company

The contract area where exploration activities are carried out is identified as a block.

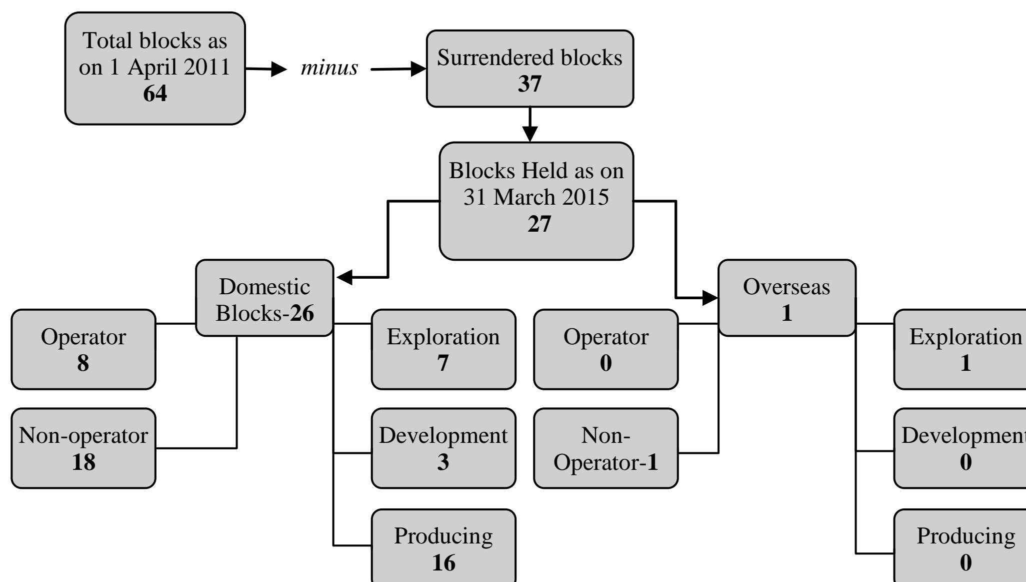
2.1.2 Up to 31 March 2011, the Company had acquired 56 domestic blocks and 12 overseas blocks. Out of the 56 domestic blocks, the Company had acquired 13 blocks during the pre-New Exploration Licensing Policy (NELP) phase (1994 to 2001) while 43 blocks were acquired by bidding under various NELP rounds viz., NELP II to VIII and Coal Bed Methane-II (2002-2011). No blocks were acquired during our audit period of 2011-15. Out of the total 68 blocks acquired by the Company, four had been surrendered (three domestic and one overseas) and the Company had 64 blocks in hand at the beginning of the period of audit, i.e., on 1 April 2011. Of the total 64 blocks (50 blocks under Exploration & Development and 14 under Production), 37 blocks (36 from Exploration and one from production) were surrendered[2] during the

[2] Based on analysis of the risks and returns expected from the block and low prospects of the block, the JV partners arrive at a conscious decision to surrender a block in the Operating Committee (OC) meeting. Thus, we have considered a block as surrendered when the OC approves the proposal for surrender of the block. Blocks, wherein the Company had decided to transfer its entire share (participating interest), were also considered as surrendered (also discussed subsequently at ***paragraph 2.10***).

period covered by the performance audit. Further during 2011-15, three more blocks became producing blocks.

The details of blocks as on 31 March 2015 are shown below:

Chart 2.1: Status of blocks as on 31 March 2015



Out of the 11 blocks under exploration and development, the Company was operator in four blocks and non operator in seven blocks. Out of the 16 producing blocks, the Company was operator in four and non operator in 12 blocks.

Scope of Audit

2.2 The last performance audit on the functioning of the Company was conducted for the period 2006-07 to 2010-11. The Report was under discussion by the Committee on Public Undertakings (November 2015). The current performance audit was conducted for the period of 2011-12 to 2014-15 and Audit examined various exploration, development and production activities of the Company during this period. Audit also examined the process adopted by the Company for surrendering/withdrawing from various blocks. Gas Trading and Wind Power segments have not been covered in this performance audit.

2.2.1 Out of 64 blocks with the Company as on 1 April 2011, Audit selected a sample[3] of 12 blocks: four each under exploration and development[4],

[3] Based on the information available from Annual Accounts upto 2013-14.

[4] KG Offshore (DDW) (Operator), MB-OSN-2005/5, MB-OSN-2005/6 (Mumbai Offshore) (Non-operator), South Diyur (Egypt) (Operator).

production[5] and surrender[6] for test check. The basis for sample selection was as follows:

- Blocks where capital expenditure of more than ₹ 100 crore each was incurred during 2011-14 were selected under exploration and development.
- Among producing blocks, one block each for operated and non-operated having highest production of oil and gas; one operated block where commercial production commenced in 2013-14 and one block where least production was done compared to investment made were selected.
- Among surrendered blocks, those having highest expenditure were selected.

In cases where the Company was non-operator, the cash call contributions (requests/calls for payments towards the expenses in the block from the operator) were examined in case of seven blocks where cash call contributions of more than ₹ 50 crore each were made during 2011-14. Out of these, three[7] blocks were already selected under exploration/production and four other non-operator blocks[8] were selected only for the purpose of verification of cash call payments.

Audit objectives

2.3 The performance audit of the Company was conducted with a view to ascertain whether:

- different phases involved in exploration and development activities were carried out timely in an efficient manner with due observance of relevant rules and regulations;
- production was undertaken as planned;
- decisions for surrender of blocks were arrived at after detailed study/survey and due procedure was followed for surrender of blocks;
- the Company managed their finances prudently to ensure fund availability when required, raising of funds in a cost-effective manner and keeping the borrowings within desirable limits; and
- the Company safeguarded its financial interests in the blocks where it was non-operator.

Audit criteria

2.4 The following audit criteria were adopted for assessing the performance of the Company:

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[5] Hazira (Non operator)-Highest production, Tarapur (Operator) Highest production, CB-ONN-2003/2 (Ankleswar) (Operator), Bhandut (Non operator).

[6] North Hap'y (Egypt) (Operator), MB-OSN-2004/1 (Operator), MB-OSN-2004/2 (Non Operator), KG-DWN-2004/6 (Non Operator).

[7] MB-OSN-2005/5, MB-OSN-2005/6, Hazira.

[8] Cambay, CB-ONN-2004/2, KG-DWN-2005/1, MB-OSN-2005/1.

- Company's perspective plans/corporate plan/annual plans;
- New Exploration Licensing Policy – 1999;
- Contracts with consultants for acquisition and interpretation of seismic data, with Rig operators, other service providers and suppliers;
- Joint Bidding Agreements for E&P blocks;
- Joint Operating Agreements between JV partners;
- Minimum Work Programme in E&P blocks;
- Production Sharing Contracts (PSC) with Ministry of Petroleum and Natural Gas (MoPNG) after successful bid;
- Procurement Manual – for procuring services and supplies; and
- Agreements with institutions for financing.

Audit Methodology

2.5 The methodology adopted for attaining the audit objectives with reference to the audit criteria involved explaining the audit objectives to the top management through an entry conference, scrutiny/examination of records at the Head Office, interaction with the audited entity personnel, analysis of data based on audit criteria, raising of audit queries, discussion of audit findings with the management, issue of draft performance audit report to the management and the concerned department for comments and holding an exit conference with the management to discuss the findings.

An entry conference was held on 4 March 2015 with the Managing Director (MD) and officials of the Company in which the scope, methodology and the audit objectives were explained. The audit findings were reported (September 2015) to the Management/ Government of Gujarat. An exit conference was held on 29 October 2015 with the MD and officials of the Company to discuss the draft audit findings. The reply of the Management was received and has been considered while finalising the performance audit report. The reply of the Government is awaited (November 2015).

Audit Findings

2.6 Audit findings have been discussed under the broad headings of exploration and development; production; surrender of blocks; finance; and monitoring of activities by the Company in non-operator blocks. A glossary of the technical terms used in the performance audit report is provided in ***Annexure 3***.

The audit observations on the selected blocks have been discussed block-wise under sections for Exploration and Development, Production and Surrender of blocks. As on 31 March 2015, out of four selected blocks under Exploration

and Development, three selected blocks[9] were surrendered which have now been covered under the section Surrender of Blocks.

Exploration and Development

2.7 Once a domestic or overseas block is awarded to a contractor, a Production Sharing Contract (PSC) is entered into in case of domestic blocks and a Concession Agreement (CA) in case of overseas blocks. These agreements create the right to exploration for a contractor besides defining the rights and obligations of the parties to the agreement. The details of various stages involved in exploration and development are given in ***Annexure 4***.

Investment in blocks by GSPC for Exploration and development

2.7.1 During the period 2011-15, out of 50 blocks (as on 1 April 2011) under exploration and development phase, three domestic blocks started commercial production[10] whereas 36 blocks were surrendered. As on 31 March 2015, the Company had 11 blocks (10 domestic and 1 overseas) under exploration and development phase.

During the period from 2011-12 to 2014-15, the total investment in the 50 blocks on exploration and development was ₹ 15,601.43 crore. Out of this the major investment of ₹ 12,249.06 crore was for the KG-OSN-2001/3 (KG) block which was selected for test check under Exploration and Development.

KG-OSN- 2001/3 Block (KG Block)

2.8 The KG-OSN-2001/3 block (KG block) was awarded (February 2003) to Gujarat State Petroleum Corporation-Jubilant and-Geo Global Resources (GSPC consortium) by the Government of India (GoI) under NELP-III bid round. The block covers an area of 1,850 square kilometers. The Production Sharing Contract (PSC) was signed between the GSPC consortium and GoI on 4 February 2003. The Company is the operator of the block having 80 *per cent* participating interest (PI) whereas Jubilant and Geo Global Resources (GGR) have 10 *per cent* each. The Minimum Work Programme (MWP) incorporated in the PSC envisaged drilling of 20 exploratory wells in three phases. Although the Company drilled only 16 wells, GoI declared MWP as completed in 2008. There were total nine discoveries in the KG block: three under south western area (termed Deen Dayal West – DDW) and six in other areas of the KG block.

The Declaration of Commerciality (DOC) for three discoveries[11] of DDW was submitted (June 2008) and approved (December 2008) by the Management Committee[12] (MC) and its Field Development Plan (FDP) was submitted in June 2009. The DOC for the remaining six discoveries was subsequently

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[9] MB-OSN-2005/5, MB-OSN-2005/6 (Mumbai Offshore) (Non-operator), South Diyur (Egypt) (Operator).

[10] Ankleswar, CB-ONN-2004/1, CB-ONN-2004/2.

[11] Discovery wells KG-08, KG-15 and KG-17.

[12] Management Committee is constituted as per the PSC having members nominated by each contractor and Government of India for overseeing the petroleum operations for each block.

proposed (February 2013) and approved[13] (February 2014) by the MC. However, the FDP in respect of the six discoveries is yet to be submitted (November 2015).

The DDW FDP was planned as the first phase of the combined development of gas from multiple areas in the southern portion of the block. The Company had made three other discoveries[14] in adjoining areas by the time FDP for DDW was prepared and estimated that production from development of these could result in a combined gas production of 400 million standard cubic feet per day (mmscfd). The facilities envisaged in the FDP were therefore initially designed keeping in view the production expected from the development of the other discoveries in the KG block. The FDP for DDW was approved by the MC in November 2009.

The FDP, *inter alia*, included setting up of offshore well head platform and drilling of 11 development wells (in addition to four exploratory wells already drilled, which were to be converted to producing wells). The estimated capital cost of the FDP was US $ 2,751.04 million (₹ 13,122.46 crore at the rate of ₹ 47.70/US $ prevailing then).

As per the approved FDP, the estimated Oil and Gas In Place (OGIP) was 1.952 trillion cubic feet (tcf) with a projected cumulative production of 1.0596 tcf at a recovery rate of 54.3 *per cent*. The FDP had proposed commencement of commercial production by March/ April 2012 but the MC while approving the FDP stipulated the date for commercial production as December 2011.

A flow chart explaining the audit observations in brief on the implementation of FDP for DDW field of KG block is shown as ***Chart 2.2***. The major audit findings on the development of DDW are discussed below:

Viability of the FDP

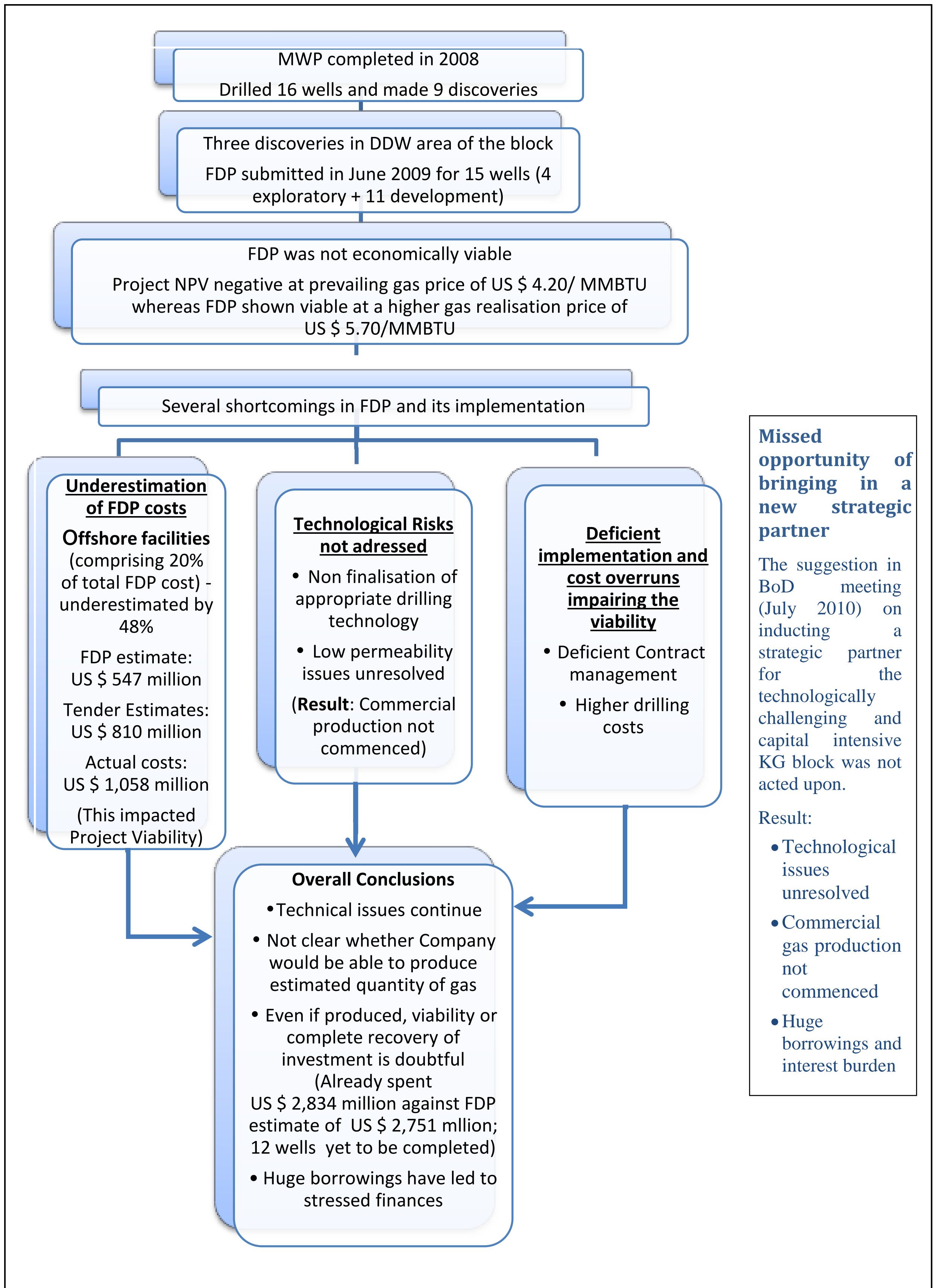
2.8.1 The Company assumed a gas price of US $ 5.7/Million British Thermal Units (MMBTU) for the viability of the project. However, the gas price as per the Government approved formula[15] at the time of preparation of FDP was US $ 4.20/MMBTU. Audit observed that the FDP recognised that the gas price of US $ 4.20/MMBTU showed negative NPV for the project. Thus, the FDP was not economically viable at the prevailing approved gas price. The viability was dependent on subsequent higher price if obtained through Government approval. Thus, Government controlled gas pricing mechanism was a very significant factor which was not addressed in the FDP.

[13] Gas in place of 8.392 trillion cubic feet (tcf) with recoverable reserve of 1.015 tcf (12 *per cent*).

[14] KG 16, KG 22, KG 31.

[15] The formula was finalised in respect of RIL-KG D6 with validity for five years from date of commencement of first commercial production. Subsequent communications indicated that the same gas price was applicable to all NELP contractors. This was a gross price including the royalty payable.

Chart 2.2: Audit Observations on DDW Development



The Management stated (November 2015) that at the time of preparation of FDP it was aware of the GoI pricing policy and the prevailing rate of US $ 4.2/MMBTU but the industry expected gas price deregulation in India and increase in global crude and gas prices. The FDP was prepared and submitted on the assumption that gas price would be revised upward during production phase. The Company was also aware that the PSC provided for sale at arm's length contract and in the price discovery process carried out by the Company it received offers above the floor price of US $ 8.50/ MMBTU subject to the approval of the Government.

Audit is of the view that any price formula discovered by the Company was subject to the approval of the Government. Further, the gas price formula with a base price of US $ 8.50/ MMBTU was not approved by the GoI.

Audit further observed that the gas pricing policy under NELP was due for revision from April 2014. Government of India notified (October 2014) the New Domestic Natural Gas Pricing Guidelines, 2014 applicable to all domestically produced natural gas. The price was to be revised after every six months based on a weighted average of the prices in USA, Mexico, Canada, European Union and Russia. The initial price[16] under the guidelines was US $ 5.05/MMBTU (effective from November 2014) which was revised to US $ 4.66/MMBTU with effect from April 2015 and again revised to US $ 3.81/MMBTU with effect from October 2015. The fact remained that prices were below the FDP estimate of US $ 5.70/MMBTU based on which the project was considered as financially viable. Thus the viability of the project even after commercial production of gas is doubtful.

Further, the viability of the project was further stressed due to underestimation of costs in the FDP, non-addressing the technological risks in the KG block and deficiencies in the implementation of the project. The same are discussed in the subsequent paragraphs.

Cost Estimates in the FDP and actual expenditure

2.8.2 As against the capital cost of US $ 2,751.04 million (₹ 13,122.46 crore) estimated in the FDP, the cost[17] incurred in the block up to 31 March 2015 was US $ 3,418.45 million (₹ 17,025.45 crore including the exploration costs). The major components of costs are given below:

[16] Gross gas prices.
[17] Cost of block indicates total expenditure including JV partner share (excluding borrowing costs).

Table 2.2: Comparison between FDP estimates and Actual costs up to March 2015

Project component	FDP (in million US $)	Actual (in million US $)	FDP estimate[18] (₹ in crore)	Actual (₹ in crore)
Well Head Platform	387.00	261.66	1,845.99	1,263.95
Process cum Living Quarters Platform		375.85		1,975.00
Subsea Pipe line	160.00	420.45	763.20	1,887.66
Onshore Gas Terminal	304.00	327.12	1,450.08	2,015.65
Development Drilling	860.00 (for completion of 15 wells)	344.40 (for 3 completed and 4 wells in progress)	4,102.20 (for completion of 15 wells)	1,979.05 (for 3 completed and 4 wells in progress)
Exploration Costs	950.00	950.00	4,531.50	4,531.50
Geology and Geophysics (G&G) cost and other costs	90.04	154.34	429.49	989.11
Total (for DDW area)	**2,751.04**	**2,833.82**	**13,122.46**	**14,641.92**
Exploration costs[19] (other than DDW)		**584.63**		**2,383.53**
Total (for KG block)		**3,418.45**		**17,025.45**

Source: FDP and JV Annual accounts for KG block

Cost of Offshore Facilities

2.8.3 The details of FDP estimates of offshore facilities as per parameters originally envisaged and actual contract award costs as per subsequent revised parameters after change in design of offshore facilities are given below:

Table 2.3: Offshore facilities -Estimates and parameters

(in million US $)

Offshore facilities in KG block	Original Parameters in FDP	Cost under FDP	Cost Estimates during tendering (2009-10)	Revised parameters due to higher costs (2010)	Actual contract award costs
Well Head Platform (WHP)	Capacity for gas production of 200 mmscfd	387	183	Capacity for gas production of 200 mmscfd	233
Process cum Living Quarters Platform (PLQP)	Capacity for gas production of 400 mmscfd		627	Capacity for gas production of 200 mmscfd	317
Subsea Pipeline (SP)	24” pipeline (for gas production up to 400 mmscfd)	160		20” pipeline (for gas production up to 400 mmscfd)	180
Total		**547**	**810**		**730**

Source: Information furnished by the Company

Audit noticed that the Company had underestimated the costs for the offshore facilities as the estimates at the tendering stage for original design parameters were 48 *per cent* above the FDP estimates. The Company had to realign the capacities of its offshore facilities in order to reduce its costs. Despite revision in the design parameters, the contracts were still finally awarded at 33 *per cent* above the FDP estimates.

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[18] At the rate of ₹ 47.70 prevailing in June 2009 (Submission of FDP).

[19] Exploration cost of US $ 584.63 million was for appraisal/ exploratory wells in the areas of KG block other than DDW. The Company proposes to submit a separate FDP for these exploratory wells. However, the same is not yet submitted (November 2015).

The initial underestimation of costs affected the overall economics of the project. The realignment of capacities of the offshore facilities also led to shift in the proposed date of commercial gas production in DDW from March/April 2012 to May/June 2013.

The Management stated (November 2015) that the level of engineering definition determines the level of accuracy of cost estimate of any facility and the cost estimate for PLQP in the FDP was based only on a conceptual stage of engineering which resulted in an estimate with a low accuracy level. It was stated that any attempt to improve accuracy level by firming up engineering details would have required additional time of at least one year leading to delay in the submission of FDP. Further, the variation between cost under FDP and actual contract award costs was only seven *per cent* of FDP estimate (US $ 2,751.04 million) which would be taken care of by sensitivity analysis.

It may be mentioned that the FDP formed the basis for the development of the entire project and there could not be any trade-off between delay and accuracy. The comparison between the FDP estimate and actual award for offshore facilities being only seven *per cent* of total FDP estimate does not take into account the fact that contract award costs are for facilities with reduced parameters. The underestimation is evident from the fact that the actual cost incurred for the creation of offshore facilities was US $ 1,057.96 million (₹ 5,126.61 crore) which was 93 *per cent* higher than the FDP estimates.

Technological risks in DDW leading to uncertainties

2.8.4 The DDW field has High Pressure High Temperature (HPHT) conditions and low permeability. A well in HPHT field is characterised by high pressure which could reach or exceed 705 kg per cm^2 (10,000 pounds per square inch) and temperature exceeding 150° C. Permeability determines the ease with which the reservoir fluid can move out or flow within the rock into the well.

The FDP recognised the HPHT and low permeability characteristics and specific uncertainties regarding permeability of the DDW field. Testing done during drilling in four wells (KG-8, KG-17, KG-15 and KG-28) also showed low values of permeability. Production rate is most impacted by reservoir permeability and connectivity. The FDP proposed to address production rate by employing well bore designs and completion techniques to maximise bore contact with the reservoir. The FDP was justified on the assumption that proven operational and technological means to develop HPHT reservoirs like DDW are readily available and that production of 200 mmscfd could be achieved using appropriate drilling and completion techniques.

The technological uncertainties noticed in Audit are enumerated below:

- The Company expected that drilling of slant/ multilateral wells[20] would be sufficient to resolve the low permeability issue of the field and obtain the

[20] Slant wells are slanting and multilateral wells involve drilling two or more wells from a single surface location, i.e., commencing as a single well and bifurcated after reaching a depth.

targeted production rate. Even though FDP recognised that hydraulic fracturing (HF)[21] was a technically feasible option, it was not included in the FDP as evaluation of HF done in the area was not available at the time of preparation of FDP.

However, there was uncertainty with respect to the success of the multilateral wells as evident from the fact that the FDP considered using HF if the multilateral wells failed to meet the targeted production.

- Subsequently, based on further studies to solve the low permeability problems, the Company awarded (October 2012) contract for carrying out HF jobs in six development wells. HF was initially attempted (August/September 2013) in one well (DDW D3) and failed to produce any result. A study on the failed job indicated (June 2014) that the main reason for failure could be the use of inappropriate fracturing fluid. Thereafter two wells (DDW D1 and D2) were completed without hydraulic fracturing.
- Despite the basic assumption of availability of appropriate technology at the time of preparation of FDP, the successive changes in approach for resolving the issue of low permeability and their outcome indicate that the Company is still not clear on how to obtain the proposed production rate from the wells. Audit noticed that the Board was apprised (May 2015) that the Company had not developed suitable drilling technology during the exploration phase and data gathering during the exploration stage was inadequate and these created problems in development operations.

Audit observed that the trial production from the DDW field commenced in August 2014, but the average production achieved in March 2015 was only 19.45 mmscfd (total targeted commercial production from DDW is 200 mmscfd). Commercial production has not commenced (November 2015) as production rate has not yet stabilised.

The Management stated (November 2015) that from the lessons learnt during the drilling of exploratory and development wells, changes in design of the well, specifications for casings and chemicals and completion strategy were envisaged. It also stated that by doing HF and multiple wells there would be increase in productivity, increase in reserve at low cost and thereby the complete recovery of investment was certain.

The fact remains that the technological issues are unresolved as on date (November 2015).

Award of work to a contractor not technically qualified

2.8.5 For implementation of the FDP for the KG block (DDW), the Company issued (April 2009) tender for Platform rigs[22] and the Company awarded (March 2010) the contract to Tuff Drilling (Consortium of Tuff Drilling Private Limited and Spartan Offshore Drilling). Audit noticed that

[21] Hydraulic fracturing is the process of pumping fluid into a well to improve productivity in a low permeability reservoir.

[22] Rig to be fixed and operated from the Well Head Platform.

Tuff Drilling had not designed, engineered or constructed a modular platform rig on its own. Further, on the clarification sought by the Company while evaluating the bid documents, Tuff Drilling replied that their subcontractor had relevant experience, which was accepted by the Company despite the tender condition for considering the experience of individual consortium members in case of Special Purpose Vehicle or joint venture companies. Thus, Audit is of the view that the technical qualification of Tuff Drilling was not according to the tender conditions.

Further, Audit observed that the well head platform from which the platform rig was to operate was expected to be ready for drilling (RFD) by March 2011 and the rig was to be mobilized by that time. As Tuff failed to mobilize the rig by the stipulated time (February 2011), the Company awarded (April 2011) the work to Nabors Drilling International (L-2 of the tender) and their rig was mobilized by February 2012. As the Well Head Platform was RFD by May 2011, the Company had to deploy a costlier Jack-Up rig for drilling the development wells during the period September 2011 to January 2012, which resulted in an additional expenditure of US $ 6.812 million (₹ 34.20 crore at the average rate of ₹ 50.20/US $).

The Management stated (November 2015) that the technical qualification was based on the experience of Spartan Offshore Drilling (SOD), a Consortium partner in designing, constructing and operating offshore rigs and that of the members of its senior management in modular rig construction. It was also considered that the Consortium had constructed eight rigs and that the Consortium gave the option of buying back the rig at a reduced price.

However, Audit is of the opinion that the tender conditions stipulated experience in both operating offshore rigs and building and operating offshore modular platform rigs. Neither of the Consortium partners had experience in designing, constructing and operating modular platform rig. The experience of individual members of senior management was not a consideration relevant to the tender and the eight rigs constructed by the Consortium as stated above were by a subcontractor and not a Consortium member.

Avoidable expenditure in offshore facilities

2.8.6 The actual cost of constructing a Subsea Pipeline increased from US $ 160 million (₹ 763.20 crore) to US $ 420.45 million (₹ 1,887.66 crore) mainly on account of avoidable payment of standby charges of ₹ 541.68 crore to the contractor as the Company did not obtain the required forest/wildlife clearance. This was already reported as ***Paragraph no. 3.6*** of Audit Report (PSUs)-Government of Gujarat for the year ended on 31 March 2014.

Audit further noticed that as the Company did not obtain the above forest/wildlife clearance, the pipeline laying schedule at PLQP location got shifted (December 2012 to March/April 2013). As a result, the barges of WHP-PLQP work had to be kept on standby during March–April 2013 in order to make the work front available for Subsea Pipeline work. The Company thus had to make payment of standby charges of US $ 11.12 million (₹ 68.32 crore) in respect of the WHP-PLPQ contract.

Cost overruns in drilling development wells

2.8.7 As per the FDP, the total estimated cost for 15 wells was US $ 860 million. The FDP envisaged meeting the requirement of 15 wells through completion of four existing wells (estimated cost US $ 70 million), drilling of three wells using jack up rig (estimated cost US $ 270 million) and balance eight wells by platform rig (estimated cost US $ 520 million). As per the FDP, six wells[23] had to be completed by the time of commencement of production.

Audit observed that the Company could not re-enter and complete any of the existing wells on account of drilling complications. Two development wells (DDW D1 and D3) were completed in June 2014 and test production commenced in August 2014. Drilling of one more well (D2) was completed and put under test production in September 2014. The three wells were completed at a cost of US $ 294.59 million which was nine *per cent* higher than well drilling costs under FDP. The drilling of four wells was in progress (August 2015).

The Management stated (November 2015) that the costs overrun was due to unplanned Drill Stem Testing (DST) and non-productive time on account of multiple tool failure, side track, completion problems and others.

However, the fact remains that all the 15 wells were to be completed by June 2015 as per the FDP, against which only three wells had been completed (November 2015). In view of the technological issues, the overall cost overrun in drilling would emerge only on completion of all the wells.

Present Status

2.8.8 The test production of gas in DDW commenced in three wells (August/ September 2014) and the commercial production has not been started due to non stabilisation of production. The Company sold the test gas to Gujarat Narmada Valley Fertilizers and Chemicals Ltd.

As of March 2015, the Company had already spent US $ 2,833.82 million (₹ 14,641.92 crore) for development of DDW area as against the FDP estimate of US $ 2,751.04 million (₹ 13,122.46 crore). As per the requirement of the FDP, twelve more development wells[24] are yet to be completed which would further escalate the project cost.

Overall conclusions on development in the KG block

2.8.9 The DDW is still under test production of gas (November 2015) as against the MC stipulated date of December 2011 for commencement of commercial production. Audit noticed that the Company did not adequately evolve the technology for obtaining the required production rate from the DDW field at the time of exploration and uncertainties regarding technology were still unresolved.

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[23] Completion of three out of four existing wells and three development wells.

[24] Four wells D4 to D7 in progress.

After the revision of gas pricing under the New Domestic Natural Gas Pricing Guidelines 2014, the financial viability of the project after commercial production remains doubtful as per the prevailing market scenario.

The Company had discussed the issue of going for a strategic partner in July 2010. However, no action was taken on this at an appropriate time. The Board belatedly constituted (May 2015) a Committee of Directors for exploring strategic options with regard to KG block like farming out Participating Interest, identifying strategic partner, financial partner etc., in view of the heavy financial burden resulting from the KG block. The Board of Directors on recommendations of the Committee decided (July 2015) to incorporate a Special Purpose Vehicle as subsidiary of the Company for hiving off KG block and it was also decided to simultaneously pursue the option of direct acquisition of Participating Interest in the block by a strategic investor.

The Company did not address properly the risks associated with cost, technology and gas pricing. This has resulted in uncertainty regarding the future prospects from the KG block where an investment of around ₹ 19,576 crore[25] was made as of March 2015. The development costs incurred in the block also resulted in increased borrowings and stressed finances for the Company.

The Management stated (November 2015) that the Company had initiated to get strategic partner with National/ International E&P majors for technical alliances and financial support and as a prerequisite an international consultant was engaged to estimate the gas and condensate in place and recoverable reserve for valuation of asset.

Production

2.9 Production activities include all the operations conducted for the purpose of producing petroleum or related products after the commencement of commercial production.

As on 1 April 2011, the Company had a total of 14 producing blocks. During the period 2011-15, the Company started production from three blocks[26] whereas one producing block (Sabarmati) was surrendered on account of negative cash flow. As on 31 March 2015, the Company had 16 blocks under production.

Proved and Probable (2P) reserves

2.9.1 Proved reserves of petroleum are reserves which on the basis of available evidence are virtually certain to be technically and economically producible (i.e. having a better than 90 *per cent* chance of being produced) and probable reserves are those which are not yet proven but which are estimated

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[25] Approximately 80 *per cent* of ₹ 17,025 crore *plus* ₹ 5,971 crore borrowing costs capitalised for KG block.

[26] 2013-14: Ankleshwar, 2014-15: CB-ONN-2004/1 and CB-ONN-2004/2.

to have a better than 50 *per cent* chance of being technically and economically producible. The Company included in its annual accounts, the details of the proved and probable reserves of those blocks which have commenced commercial production.

Table 2.4: Proved and Probable reserves of the Company

Particulars a	Opening Balance (01.04.2011) b	Addition c	Production d	Closing balance (31.03.2015) e = (b+c-d)
Oil (in million MT)	1.49	0.07	0.18	1.38
Gas (in MM^3)	507.91	76.12	326.11	257.92

Source: The Company's Annual Accounts

As given in the table above, the 2P reserves of the Company as on 31 March 2015 were 1.38 million MT of Oil and 257.92 million cubic metres (MM^3) of Gas. As per the approved FDP (November 2009), DDW area of KG offshore block had an estimated recoverable gas reserve of 1.0596 tcf (30,004 MM^3). The estimated reserve is approximately 116 times of the existing gas reserves of the Company. However the commercial production from the block could not be started (November 2015) as already mentioned at ***paragraph 2.8.4 and 2.8.9*** above.

Performance of gas and oil producing blocks

2.9.2 The year wise details of production, cost of production, revenue and profit/loss are given in the table below:-

Table 2.5: Revenue and profits from producing blocks (Company's share)

Particulars	2011-12		2012-13		2013-14		2014-15	
	Oil	Gas	Oil	Gas	Oil	Gas	Oil	Gas
Production (Qty) oil in MMT/Gas in MM^3	0.05	119.24	0.05	98.31	0.04	58.35	0.04	50.21
Total sales (₹ in crore)	230.30		220.56		189.10		152.51	
Total production expenditure (includes duties and taxes, depletion cost and others) (₹ in crore)	157.22		176.80		157.29		150.48	
Profit (without reckoning interest and finance charges) (₹ in crore)	73.08		43.76		31.81		2.03	

Source: The Company's Annual Accounts

During 2011-15, the revenue from production activity was reduced from ₹ 230.30 crore to ₹ 152.51 crore (i.e. by 33.78 *per cent*) due to reduction in prices of Oil and reduction in production of gas from 119.24 MM^3 to 50.21 MM^3. Hazira block was the main gas producing block contributing 110 MM^3 out of 119.24 MM^3 produced in 2011-12 which declined to 36.9 MM^3 in 2014-15. The reduced gas production from Hazira block during the period was due to the natural and gradual decline of reserves and productivity.

Audit noticed that the sale quantity of test gas from KG block for 8 months (August 2014 to March 2015) itself was 64.81 MM^3 which was more than the combined production of 2014-15 from all producing blocks of the Company indicating the significance of the KG block in the Company's portfolio.

Planned and actual production

2.9.3 Audit selected four producing blocks[27] (02 operator and 02 non-operator blocks) for test check. The planned and actual production in these blocks (including JV partners share) was as under:-

Table 2.6: Production of selected producing blocks during 2011-15

Sl No	Name of the block	Gas (in million SCM)		Oil (in bbls)	
		Plan	Actual	Plan	Actual
1	Hazira	351.61	425.65	3,09,911	3,83,118
2	Bhandut	3.30	0.00	2,538	1,466
3	Tarapur	27.02	19.65	1,67,888	1,18,341
4	Ankleshwar	0.09	0.08	17,500	13,292
	Total	**382.02**	**445.38**	**4,97,837**	**5,16,217**

SCM – Standard Cubic Metre , bbls - Barrels
Source: Information furnished by the Company

The planned production for gas and oil was achieved in the Hazira block. In Bhandut block, the planned gas production could not be achieved due to delay in commencement of production and the oil production had ceased from October 2011. In Tarapur block, the reasons for non achievement of planned production of oil and gas were delay in installation of Sucker Rod Pump (SRP) units and their frequent failures and absence of potential gas buyer in nearby area. In Ankleshwar block, the planned production for gas was almost achieved and the main reasons for non achievement of planned production for oil in this block were non continuous flow on account of reservoir property and delay in installation of artificial lifting despite specific provision in the Field Development Plan.

Surrender of Blocks

2.10 If the Company during the exploration phase does not meet with any success in discovery of oil and gas, then the JV partners for the respective block can surrender (or relinquish) the block under the provisions of the respective PSC / CA. Based on an analysis of the risks and returns expected and low prospects of the block, the JV partners arrive at a conscious decision to surrender a block in the Operating Committee (OC) meeting which is forwarded to the Management Committee (MC) or any other regulatory committee of the respective block for further approval. Subsequently, the Government approves the surrender / relinquishment of the block. Further, decisions, if any, of the Company to transfer its entire participating interests (PI) in the blocks to other JV partners are approved by OC resolutions. Thus, we have considered a block as surrendered when the OC approves the proposal for surrender of a block or the decision of the Company for transfer of PI has been taken.

Status of Surrender of blocks

2.10.1 Out of the 64 blocks on hand as on 1 April 2011, during the period 2011-15, the Company surrendered 37 blocks which included 10 overseas and 27 domestic blocks and had written off exploration expenditure worth

[27] **Operator**: Ankleshwar and Tarapur, **Non-operator**: Hazira and Bhandut.

₹ 2,514.65 crore for 29 surrendered blocks (₹ 1,734.12 crore for overseas blocks and ₹ 780.53 crore for domestic blocks). Audit observed that as per OC resolutions and information from JV accounts, in respect of remaining eight blocks[28], the decision for surrender was made, but the Company was yet to write off the expenditure of ₹ 478.07 crore for these blocks as of March 2015 (₹ 454.73 crore for seven domestic blocks and ₹ 23.34 crore for one overseas block in Indonesia).

Surrender – Domestic operations

2.11 The Company had 53 domestic blocks (nine operator and 44 non-operator) on hand as on 1 April 2011. Out of these, during the period 2011-15, the Company had surrendered 27 blocks (one operator and 26 non-operator).

Review of five test-checked blocks[29] revealed that all these were surrendered after the completion of MWP as there were no commercial discoveries. We observed that there were delays in completion of MWPs and the MWPs were completed after an extension ranging from nine to 14 months.

Surrender - Overseas Operations

2.12 The overseas blocks surrendered during 2011-15 are as follows:

Table 2.7: Expenditure incurred in surrendered overseas blocks up to March 2015

Sl. No	Name of the Block	GSPC PI (In %)	Date of PSC/ CA (DDMMYY)	Date / Period of surrender	Completion of MWP (Yes / No)	Block Expenditure (million US $)		Expenditure by GSPC (₹ in crore)
						MWP	Actual	
Operated Overseas Blocks								
	Egypt Region							***1,690.51***
1	North Hap'y	80*	09-03-08	Aug-14	**Yes**	150	263.98	1,273.74
2	South Diyur	80*	09-03-08	Feb-14	**Yes**	45	45.55	296.68
3	South Gulf of Suez	60	08-04-10	Jan-15	**No**	22	2.72	99.06
4	South Sinai	50	Not signed	BoD Decision (April 2013)	**NA**	29	NA	10.46
5	South Quseir	50	Not signed		**NA**	35	NA	10.57
	Yemen Region							***43.07***
6	Block - 19	45	17-03-09	Feb-13	**No**	16	6.46	16.08
7	Block - 28	45	17-03-09		**No**	13	6.33	15.81
8	Block - 57	45	17-03-09		**No**	13	5.97	11.18
	Indonesia Region							***23.34***
9	South East Tungkal	50.5	13-11-08	Nov-14	**No**	7.5	6.06	23.34
Non Operated Overseas Blocks								
	Australia Region							***0.54***
10	WA-388 Block	8.4	28-08-06	Sep-12	**Yes**	AUD 23.5	AUD 29.28	0.54
	Total expenditure							**1,757.46**
	Total expenditure written off							**1,734.12**

* including 30 *per cent* PI of Geo Global Resources (GGR) taken over by Company
Source: Information provided by Company

As can be seen from the table above, nine blocks in which the Company was operator in Egypt, Yemen and Indonesia were surrendered during the period of

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[28] Sabarmati, CY-DWN-2004/3, CY-PR-DWN-2004/1, MB-OSN-2005/5, MB-OSN-2005/6, CB-ONN-2005/10, AA-ONN-2003/1 and South East Tungkal-Indonesia.

[29] **Operator**: MB-OSN-2004/1; **Non Operator**: MB-OSN-2004/2, KG-DWN-2004/6, MB-OSN-2005/5, MB-OSN-2005/6.

audit while in Australia one block (WA-388-P) in which the Company was non-operator was surrendered.

2.12.1 Out of the 10 overseas blocks surrendered during 2011-15, three blocks[30] were surrendered due to the deteriorating law and order situation in Yemen and five blocks[31] were surrendered due to higher exploration costs which made the blocks commercially unviable for exploration. The total expenditure incurred for these eight blocks was ₹ 187.04 crore. Besides these, the major expenditure (₹ 1570.42 crore) was incurred in North Hap'y and South Diyur blocks of Egypt which are discussed in the succeeding paragraphs.

North Hap'y Block

2.12.2 The Company and its JV partners[32] had signed (March 2008) Concession Agreement (CA) for the North Hap'y Block with a minimum work programme (MWP) involving financial commitment of US $ 150 million (₹ 603.45 crore at the rate of ₹ 40.23/US $ prevailing on signing of CA). The Company completed (October 2012) the MWP for the block with a delay of seven months against scheduled date of completion of March 2012 as per the CA. Further, as the discoveries were found to be not commercially viable the Company finally decided (November 2013) to surrender the block.

The following was observed as regards the various stages of implementation of the MWP.

3D seismic data processing

2.12.2.1 The Company planned to complete 3D seismic data processing by December 2009[33] in order to complete the data interpretation and commence the drilling activity from September 2010 as per MWP. The due date of completion of data processing was subsequently shifted to September 2010 due to change in the method of processing of data. However, the work was actually completed in February 2011.

3D API refers to acquisition, processing and interpretation of seismic data to identify prospects for hydrocarbons

The availability of processed 3D seismic data was essential for further interpretation work and finalisation of exploration strategy. The delay in processing of 3D seismic data led to an overall shift in the schedule for commencement of drilling as the exploration strategy could not be finalised. As a result, the initial tender invited (August 2009) for hiring of rigs for the drilling activity had to be cancelled (January 2010).

The Management stated (November 2015) that the processed 3D seismic data was provided to 3D interpretation consultant in a phased manner from September 2010 to February 2011 in order to avoid any further delay in drilling plans.

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[30] **Yemen Region**: (i) Block 19, (ii) Block 28, (iii) Block 57.

[31] **Egypt Region**: (i) South Gulf of Suez, (ii) South Sinai, (iii) South Qusier, **Australia Region**: (iv) WA-388P Block, **Indonesia Region**: (v) South East Tungkal.

[32] JV partners for North Hap'y Block – (i) GSPC (Operator) (ii) GGR (iii) Alkor Petro.

[33] Date of completion as per original work order to CGG Veritas.

The reply does not appear to be convincing as despite providing the processed data in phases, the interpretation could be completed only in May 2011 due to non availability of the complete processed data leading to overall delay in commencement of drilling operations.

Commencement of drilling

2.12.2.2 After cancellation of the original tender for drilling rig, the Company invited a second tender in July 2010. However, due to delay in 3D data API, the drilling prospects were not identified and the drilling schedule was again shifted to August 2011. The rescheduling was not accepted by the bidder which resulted in cancellation of the second tender. In view of the exigency of the need for timely completion of MWP, the work was finally awarded (July 2011) at an estimated cost of US $ 89.55 million as against the original estimated cost of US $ 68.04 million.

The delay in 3D API activities and consequential delay in drilling activities led to shift in drilling commencement schedule from April 2011 to December 2011 which resulted in cost overruns in view of additional expenditure worth (estimated) US $ 21.51 million[34] (₹ 90.85 crore) being the difference in the estimated costs for hiring of rigs during second tender and the actual rig contract costs.

The Management stated (November 2015) that the second tender in July 2010 for hiring of rigs was with an intention to commence drilling in April 2011. As the contracts for materials related to drilling rig were awarded during February/March 2011 and its delivery was not expected before July 2011, the Company had revised its drilling commencement schedule to July/August 2011 which was not acceptable to the bidder. As the drillable prospects would not be ready by March 2011, the hiring of rig would have led to huge standby costs.

It may be mentioned that the delay in finalisation of drilling prospects was attributable to the delayed execution of 3D data API work by the Company as explained in ***paragraph 2.12.2.1***.

Drilling operations - Cost overruns

2.12.2.3 For drilling five exploratory wells, the Company had estimated cost of US $ 141.62 million with a period of 176.8 days. However, the actual drilling along with associated activities was conducted in 297.7 days which led to total cost of US $ 192.58 million.

There were delays in drilling operations due to problems related to breakdown and repairs of Blow Out Preventer Equipment on Rigs. This along with the testing carried in one exploratory well led to the increase in the drilling campaign time and the drilling activity under MWP was completed only in October 2012.

[34] US $ 89.55 million (₹ 397.51 crore at the prevailing rate of ₹ 44.39/US $) *less* US$ 68.04 million (₹ 306.66 crore at the rate of ₹ 45.07/US $ prevailing in December 2010 during commercial bid opening).

Financial implications due to time and cost overruns

2.12.2.4 Audit observed that the delays in execution of MWP led to huge cost overruns and the Company incurred US $ 263.98 million which was 76 *per cent* higher than the committed expenditure of US $ 150 million.

The Management stated (November 2015) that the cost overrun was mainly due to escalations in the prevailing market rate of all services relating to drilling activities including drilling rigs during award of contracts. Further, the unrest/ revolution in Egypt completely disrupted the drilling schedule deadline of April 2011 and the unstable Government and disruptions in the post revolution period affected the project planning and execution.

However, Audit is of the view that the market related cost escalations resulting from time overruns were due to avoidable delays and non synchronisation of activities in the implementation of the MWP. Further, the shift in drilling commencement from original September 2010 (under MWP) to December 2011 (when drilling actually commenced) was mainly on account of delay in finalisation of drilling prospects.

South Diyur block

2.12.3 The Company and its JV partners[35] executed (March 2008) a Concession Agreement (CA) with Egyptian authorities for the block with exploration phase I of four years which was extended up to February 2014 due to *force majeure*. The Company completed the MWP in October 2013 and decided to call off the campaign in the block in view of negative results in exploratory wells. The Company finally surrendered (February 2014) the block.

As per the CA, the contractor (the Company) had to spend a committed amount of US $ 45 million in exploration phase-I along with completing the MWP. If the expenditure at the end of exploration phase was less than US $ 45 million (₹ 181.04 crore at the rate of ₹ 40.23/US $ on signing of CA); such sum of deficiency was to be paid to GANOPE[36] (regulator).

Audit noticed the following regarding implementation of exploration operations in the block:

- The Company had incurred expenditure of US $ 40.29 million up to February 2014 which was claimed (April 2014) from the regulator. The regulator forfeited an amount of US $ 10.36 million (₹ 63.90 crore at the prevailing rate of ₹ 61.68/US $) from the Bank Guarantee (BG) furnished for the block. This included US $ 4.71 million towards the shortfall in the committed amount and US $ 5.65 million (₹ 34.85 crore) towards disallowances due to non adherence to procedural requirements and technical assessments of the regulator.

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[35] JV partners for South Diyur Block – (i) GSPC (Operator) (ii) GGR (iii) Alkor Petro.
[36] Ganoub El Wadi Holding Petroleum Company.

- The total expenditure incurred on the block was US $ 45.55 million (₹ 233.58 crore at the average rate of ₹ 51.28/US $ from March 2008 to December 2014) up to December 2014. The difference between the expenditure claimed (US $ 40.29 million) and expenditure incurred (US $ 45.55 million) was mainly on account of loss of US $ 3.29 million (₹ 19.77 crore at the rate of ₹ 60.08/US $ during June 2014 when materials were sold) incurred on the disposal of excess material procured by the Company due to deficient planning.

The Management stated (November 2015) that purchase orders for all major materials were issued prior to rig contract to ensure availability of materials and to avoid standby charges of rig on waiting for materials. It was also stated that materials were left over from the drilled wells due to encountering of basement at shallow depths.

It may be mentioned that had the procurement of materials been done in a phased manner expenditure on excess material could have been avoided.

Overall conclusions on overseas blocks

2.12.4 Audit observed that the Company went ahead acquiring overseas blocks during 2006-10 mainly as an operator with considerably high participating interests without any prior experience as an overseas operator. The Company had (March 2006) eight producing blocks[37] with relatively smaller reserves of which the Company was the operator only in one block. Thus, the Company had a limited experience as a successful operator of petroleum blocks even in the domestic arena. The delayed execution of the work committed resulted in cost escalations in overseas blocks. Further, the Company had to face difficulties under the strict regulatory environment in overseas which led to disallowance of expenditure incurred by it and legal difficulties. This was further compounded by international events like unrest in Yemen. The total expenditure incurred for the 10 surrendered overseas blocks was ₹ 1,757.46 crore, of which ₹ 1,734.12 crore has been written off.

Financial Position

Financial Position and working results

2.13 The segment information of the Company (referred to at ***paragraph 2.1.1***) showed the segment-wise revenue, profit/loss and the segment-wise assets and liabilities. The overall financial position and working results of the Company for the period 2010-15 are tabulated below:

[37] **Non Operator**: Hazira, Bhandut, Cambay, Sabarmati, Asjol, North Balol, Palej.
Operator: Unawa.

Table 2.8: Financial position for last five years

(₹ in crore)

Particulars	2010-11	2011-12	2012-13	2013-14	2014-15
Shareholders' Funds (Capital)	4,222.84	4,832.72	6,472.43	7,170.92	7,417.52
Long Term Borrowings	4,146.35	5,933.83	11,151.83	12,293.88	14,350.87
Short Term Borrowings	2,980.32	3,790.01	2,748.82	3,704.06	5,365.40
Other Liabilities	1,140.94	1,856.90	1,654.49	1,705.46	2,087.85
Total	**12,490.45**	**16,413.46**	**22,027.57**	**24,874.32**	**29,221.64**
Net Fixed Assets and CWIP	10,217.87	13,268.51	18,047.29	20,426.55	22,870.16
Other Assets	2,272.58	3,144.95	3,980.28	4,447.77	6,351.48
Total	**12,490.45**	**16,413.46**	**22,027.57**	**24,874.32**	**29,221.64**

Source: Annual Accounts of the Company

Table 2.9: Financial performance for last five years

(₹ in crore)

Particulars	2010-11	2011-12	2012-13	2013-14	2014-15
Total Income	**4,805.99**	**8,534.80**	**10,303.79**	**12,037.82**	**11,037.90**
Financial Cost	41.74	62.97	93.37	33.82	51.03
Exploration Cost written off	62.96	339.35	51.60	1,610.69	513.03
Other expenses (incl. adjustments)	4,298.07	7,190.93	8,911.68	10,296.30	10,442.13
Total Expenses	**4,402.77**	**7,593.25**	**9,056.65**	**11,940.81**	**11,006.19**
Profit before tax	**403.22**	**941.55**	**1,247.14**	**97.01**	**31.71**
Tax expenses & related expenses	80.27	333.81	400.57	61.52	8.01
Profit for the period	**322.95**	**607.74**	**846.57**	**35.49**	**23.70**
Other Parameters					
Earnings Before Interest & Tax	444.96	1,004.52	1,340.51	130.83	82.74
Borrowing Costs Capitalised	589.74	918.74	1,136.24	1,504.20	1,753.03
Total Interest Costs	631.53	981.71	1,229.61	1,538.02	1,804.06

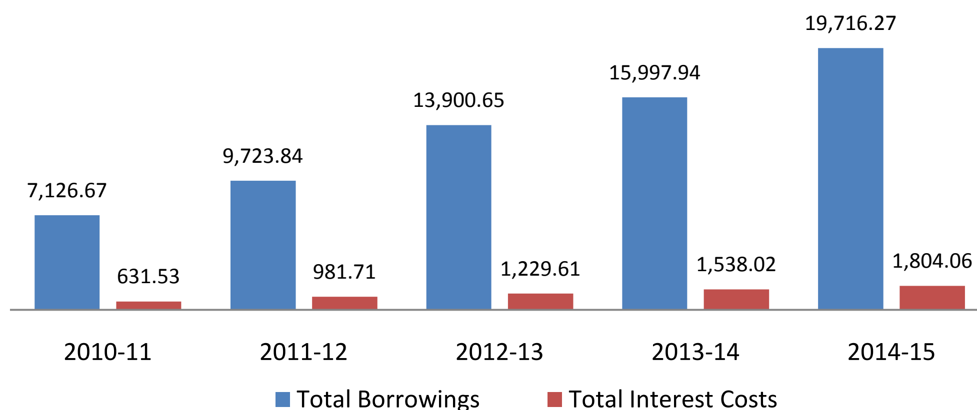
Source: Annual Accounts of the Company

The net profit of the Company reduced drastically in 2013-14 and 2014-15 as the Company had to write off exploration expenditure worth ₹ 1,610.69 crore and ₹ 513.03 crore respectively in view of the surrender of various E&P blocks.

Huge borrowings and increased interest burden

2.13.1 As on 31 March 2011 the total borrowings of the Company were ₹ 7,126.67 crore which had increased by 177 *per cent* to ₹ 19,716.27 crore as on 31 March 2015. The details of the borrowings of the Company and the resultant interest costs during 2011-15 are depicted in the chart below:

Chart 2.3: Borrowings and Interest Cost during 2011-15 (₹ in crore)



Audit observed that as a result of debt restructuring and raising long term borrowings using different long term debt instruments the Company was successful in reducing the average interest cost for borrowings from 11.65 *per cent* during 2011-12 to 10.10 *per cent* during 2014-15. However, due to overall increase in the borrowings, the total interest burden had increased over the four year period from ₹ 981.71 crore in 2011-12 to ₹ 1,804.06 crore in 2014-15. Of this, the major portion of borrowings was to finance the KG Block development activities.

Finances relating to KG block development

2.13.2 As the KG block had not yet (August 2015) started commercial production, the interest costs allocable to KG block worth ₹ 1,616.42 crore for the year 2014-15 were capitalised to the KG block in the books of accounts. In the event of start of commercial production during 2015-16, the entire interest relating to KG block would be charged to profit and loss (P&L) account. The preliminary estimates in the budget for the year 2015-16 indicate that the revenue from KG block might not be sufficient to meet the interest service obligations. Hence, considering the quantum of borrowings and associated interest costs for the Company, adequate and sustained production of gas from KG block would be required in future to sustain the financial position of the Company.

The Company on realizing the cost, technological and price related risks could have reduced their interest burden through greater equity infusion or seeking a financial partner.

The Management stated (November 2015) that the project revenue stream curve was similar to project life cycle wherein in the initial years of operations revenue grows till it reaches the peak. Thus, when the Company declares the commercial operation of KG DDW the initial revenue might not meet the debt servicing requirement; but once revenue stream reaches peak there would be sufficient margin to improve overall project financials.

Audit is of the view that project revenue stream curve reaching the peak was contingent on the production reaching the peak and as per FDP the peak

production was to start from third year after commencement of commercial production. However, till date (November 2015) the Company has not declared commercial commissioning. Further, the increased costs will also have a bearing on the profitability through higher depreciation and interest costs.

Receipt of dues from Joint Venture (JV) partners in operated blocks

2.13.3 As per the accounting procedure indicated in the Joint Operating Agreements (JOA) between JV partners, the operator shall raise funds for E&P operations through cash calls[38] and Joint Interest Billings[39] (JIBs).

Audit reviewed the JIBs of six test-checked blocks wherein the Company was an operator and noticed that as on 31 March 2015 the outstanding dues recoverable from the JV partners were ₹ 2,329.52 crore, of which ₹ 2,319.43 crore was in respect of three blocks as discussed below:

Table 2.10: Details of outstanding dues in three blocks

Name of block	JV Partners	Outstanding amount (₹ in crore)	Reasons
KG block	GeoGlobal Resources (India) Inc	1,734.60	Dispute between JV partners in relation to sharing of exploration costs incurred for the block under a separate agreement[40].
	Jubilant Offshore Drilling Pvt Ltd. (Jubilant)	313.65	Jubilant stopped making payment since October 2013 citing various procedural lapses. In spite of the fact that the Company was not agreeing with view of Jubilant, it had not claimed interest for the default.
North Hap'y	Alkor Petro	223.36	JOA was belatedly executed after 3 years from Concession Agreement. Further, Company had conducted only one and two OC meetings for North Hap'y and South Diyur block respectively. Alkor defaulted payments worth US $ 35.87 million for North Hap'y block and US $ 7.68 million for South Diyur Block citing reasons related to procedures under JOA and OC meetings. Company had filed (January 2015) a case for Arbitration for recovery of dues.
South Diyur	Alkor Petro	47.82	

Source: Information provided by the Company

Procedural lapses like delayed execution of JOA, inadequacy in providing information on operations and in conduct of meetings led to disputes by the non-operator and accumulation of dues. This led to the Company incurring expenditure of ₹ 2,319.43 crore for the share of the E&P activities of JV partners in the operated blocks which had remained unrecovered till date (November 2015).

The Management stated (November 2015) that matter of GGR was pending with MoPNG for transfer of PI to the Company. The Board had directed

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38 It means any request for payment of cash made by the Operator, in accordance with an approved work programme and approved budget to the JV partners in connection with JV operations.

39 A statement of cost and expenditure incurred during the previous month, indicating the amount payable by the JV partner after considering the advance received from them for the venture.

40 Dispute on the amount to be borne by the Company in accordance with Carried Interest Agreement.

(August 2015) to have further discussions with Jubilant for settlement and further, interest outstanding of ₹ 5.70 crore as of February 2015 had been claimed from them.

Monitoring of Activities in non operator Blocks

2.14 After allotment of a block, the Joint Venture (JV) partners execute a Joint Operating Agreements (JOA) among themselves which provides the framework of the relationship between the operator and the non-operators. The non-operator can keep itself aware of the activities in those blocks and monitor the activities through participation in the Operating Committee and Management Committee meetings, conducting an audit of JV Accounts maintained by operator and obtaining returns and other information.

Out of the 64 blocks in hand as on 1 April 2011, the Company was non-operator in 50 blocks. The various audit findings related to monitoring of its interests in these blocks by the Company in its role as a non-operator are as follows:

Conducting Audit of Joint Venture accounts

2.14.1 As per the JOA, the operator shall maintain the accounts relating to the JV operations. According to the JOA, the non-operator once per year shall have the right to audit JV Accounts and records relating to the accounting for any year within a 24 months period following the end of such year.

Audit noticed that the Company had not exercised the option of conducting the audit of JV accounts till 2010-11. Subsequently, out of the 50 non-operated blocks, audit of 36 blocks was got conducted (through Chartered Accountants). In case where audits were conducted, there were delays in finalisation of Audit Reports and its circulation to operator / other non operators for their response on the audit observations. Further, the Company did not pursue the Audit Reports.

The Management stated (November 2015) that most of the blocks were allotted during 2007-09 and major activities were carried out in the blocks in 2010-12 and hence the timing of taking up audit was appropriate. The delay in finalisation of reports was due to non receipt of information from the operator. It was also stated that there were enough provisions in the JOA to investigate willful misconduct of operator and hence expiry of 24 months did not come in the way of right of conducting investigations. The Company has relied on the non-operator audit done by other partners for the year it has not conducted the audit.

The reply is not convincing as there were 11 non-operator producing blocks allotted during 1994-2001 for which audit could have been got conducted earlier. The availability of other provisions could not be a plea for not using the JOA provision for audit. Further, the Company did not furnish details of non-operator audit done by other non operators.

Review of continuation/ discontinuation in a block

2.14.2 During the period 2011-15, the BOD of the Company reviewed (May 2015) only once the profitability status of 11 non-operator producing blocks. It was found that as on 31 March 2015, six non-operated producing blocks[41] were loss making.

Audit noticed that out of these six blocks, four blocks were incurring losses since 2011-12. However, Audit did not come across any policy of the Company to review profitability and to consider continuation/discontinuation in the non-operated blocks at regular intervals.

Looking at the continuous losses in these blocks, the BOD had appointed (May 2015) a Committee of Directors for taking necessary action for farming out participating interest in all of the above blocks.

The Management stated (November 2015) that the progress of blocks was discussed with the Company's management including the Managing Director on monthly basis where future prospects were considered taking into account factors such as activities during the year, requisite technology etc. However, no records of any such meetings were furnished to Audit.

Conclusion and Recommendations

2.15 The Company during the audit period surrendered 37 blocks out of 64 blocks in hand as on 1 April 2011. Out of 27 blocks in hand as on 31 March 2015, 16 blocks were under production and 11 blocks were under exploration and development. The major investment by the Company in the E&P segment was done for the development of the KG block. Audit examination of the exploration and development, production, surrender, financial position and monitoring of non-operated blocks revealed several areas requiring attention of Management as given below:

- The Company did not address properly the risks associated with cost, technology and price in development of the KG block. The Field Development Plan for DDW field did not take into account the fact that the project was not viable at the gas prices as per Government approved formula prevalent at that time and the viability was dependent on subsequent higher price if any obtained through Government approved formula for NELP contractors. This has resulted in uncertainty regarding the future prospects in the block where an investment of around ₹ 19,576 crore was incurred. The Company did not act upon the proposal for inducting strategic/ financial partner at an appropriate time in spite of the high costs and technological issues.

  - ***Risks associated with cost, technology and price realisation may be properly considered while venturing into exploration and***

[41] (i) Allora, (ii) Dholasan, (iii) North Kathana, (iv) Cambay, (v) Bhandut and (vi) Sabarmati block. Two blocks (Allora and Dholasan) were loss making from 2007-08. Bhandut from 2010-11, Cambay from 2011-12, North Kathana was in loss from 2010-11 with intervening period of profit in one year, Sabarmati block was in loss in 2010-11, 2013-14 and 2014-15.

development activities and means of risk mitigation such as induction of strategic / financial partners may be considered timely wherever necessary.

- The Company went ahead acquiring the overseas blocks during 2006-10 mainly as an operator with considerably high participating interests without any prior experience as an overseas operator. The delayed execution of the work committed resulted in cost escalations in these overseas blocks. The Company surrendered 10 out of 11 overseas blocks in hand during 2011-15 incurring an expenditure of ₹ 1,757.46 crore, of which ₹ 1,734.12 crore was written off.

  - ***The Company may exercise due caution in venturing into overseas exploration and should endeavor timely completion of work committed.***

- During the period 2011-15, the total borrowings increased by 177 *per cent* to ₹ 19,716.27 crore, mainly on account of development activities in KG block, which resulted in increase in interest burden from ₹ 981.71 crore in 2011-12 to ₹ 1,804.06 crore in 2014-15. Considering the quantum of borrowings and associated interest costs for the Company, adequate and sustained production of gas from KG block would be required in future to sustain the financial position of the Company. Further, there were outstanding dues of ₹ 2,329.52 crore not recovered from Joint Venture (JV) partners.

  - ***The Company needs to ensure that realisation from Joint Venture partners are made promptly.***

- Monitoring of operators, in JVs where the Company was a non-operator, was inadequate as the Company did not conduct the audit of the JV accounts and records. The profitability of non-operator blocks was not assessed on a regular basis by the Company.

  - ***The monitoring of the blocks where the Company was non-operator needs strengthening through non-operator audit and periodic review of the status of activities in such blocks.***