Chapter

3

Evaluation of Investment Opportunities

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3.1 Evaluation Process

The Company got investment opportunities through international bidding rounds invited by the host countries for exploration and production (E&P) activities, offers for farm out of participation interest from the existing consortium partners of a Block, information from empanelled Merchant Bankers/Consultants of the Company and diplomatic and other channels.

The Company, for acquisition of E&P assets, does not have a defined/documented policy. However, it constituted an Internal Multi Disciplinary team to evaluate the opportunities available to it and simultaneously engaged Legal, Technical and Financial consultants. The Multi Disciplinary team's advice along with the findings of the consultants is presented to the Management of the Company for decision making and approval by the Board for bidding in respect of those E&P assets which prima facie appeared viable to the Company. In case, the investment amount exceeded the financial competence of the Company i.e. USD 75 Million or ₹ 300 crore whichever is less, the proposal is forwarded for approval of Empowered Committee of Secretaries (ECS) and Cabinet Committee on Economic Affairs (CCEA).

The Ministry stated (October 2010) that there was neither a need nor was it considered desirable to have a defined procedure/policy for acquisition of oil and gas opportunities as each opportunity was a unique case.

The reply is not tenable as a documented policy will define the basic parameters around which the due diligence process could be carried out to appropriately mitigate the risk , as E&P business is capital intensive with uncertain returns.

Audit reviewed evaluation of investment opportunities in 20 out of 45 E&P assets. Certain inadequacies were noticed in evaluation of seven investment opportunities as discussed below.

3.2 Inadequate technical study and non-revalidation of data

The Company acquired (May 2004) Block-5 B, Sudan with 23.5 per cent participation interest at USD 24.06 million (₹ 109.44 crore) with "carry over finance" of 3.72 per cent participation interest of Sudapet (National oil Company of Sudan), as per sale/purchase condition, from OMV Aktiengesellschaft, Austria. Audit noticed that pre-acquisition technical study by the consultants - Gaffney, Cline & Associates (GCA), brought out that the assessed reserve in the block was based on limited data made available by the seller, without permission to copy data from the data room, limited available time (only two days) for review of data; and also pointed out the prevalent security problems in the designated Block area. Despite these reservations expressed by the consultant, the Company acquired this risky asset without revalidating the data.

Audit observed that the consortium upto the year 2006, could not implement the scheduled seismic and drilling plan for want of accessibility to the area and restrictions by the local authorities. Non-implementation of Minimum Work Commitment (MWC) led to additional security charges,

idle hiring charges for drilling rig, other incidental and operational charges after acquisition of the block.

GCA had also prioritized three prospects for drilling namely; Wan Machar, Barada-I and Kasafa-I with "un-risked speculative recovery" potential of 1267.2 Metric Million Stock Tank Barrel (MMstb), 317.1 MMstb and 26.4 MMstb respectively. The operator drilled only one prioritized swamp "Wan Machar" in addition to two wells (Munny Deng and Nyal) in non- prioritized swamp during 2008. The drilling of two prioritized swamp wells was dropped due to less prospectivity of reserves in Kasafa-I and allotment of Barada-I to third party by the local authorities. The three wells drilled brought no hydrocarbon discovery, and thus forced the Company to relinquish the block (19 February 2009) after incurring an expenditure of USD 89.5 Million equivalent to ₹ 423.84 crore.

The Management stated (January 2010) that due diligence has to be carried out with limitation of time and on the basis of available data and seeking different opinions is neither feasible nor desirable as there is no specific technology which can predict availability of hydrocarbons at particular locations except by drilling. Further, the security risks of the Block were known at the time of acquisition and this was factored in while negotiating the acquisition price.

The Ministry endorsed (October 2010) the reply of the Management.

We do not agree with the Ministry/Management's viewpoint as reasons for overlooking significant reservations expressed by the consultant were not available on record. Considering the limitation of time and non availability of technical data, as the Company was not in a position to conduct due diligence, it should not have gone ahead in acquiring this asset which caused high risk.

Our technical expert opined that the Company's reply that security risk in the stock was known at the time of acquisition and was duly factored in; was not corroborated in view of increase in cost from USD 34 million to USD 89.5 million which showed lack of understanding of ground realities and project planning. The prospects are prioritized not by only un-risked resources but with due consideration of chance of success, i.e., risked resources. If Barada area had been allotted to third party by local authorities in violation of PSC and it had un-risked resources higher than Munny Deng and Nyal; then the Company should have asked for reduction in work commitment. This would have substantially reduced the Company's risk and money outgo.

3.3 Incorrect analysis and interpretation of data

Daewoo International Corporation (DIC) offered 20:10:10 farm-out participation interest (July 2008) out of its 100 per cent stake in Block AD7, Myanmar to its JV partners, i.e., the Company, KOGAS (Korean Gas Corporation) and GAIL respectively. Company's technical team of geoscientists assessed (11 August 2008) potential reserves of 6.5 Trillion Cubic Feet (TCF) but on the other hand its Geologist & Geophysicists (G&G) Group opined (18 August 2008) that sands, considered for reserve estimates, had shaled out in major part of A1/A3 block as a result of which established pools were not expected to be present and reserves evaluated by the technical team were based on untested and un-established sand and on thin study.

However, the Company approved (September 2008) acquisition of 20 per cent participation interest by ignoring the opinion of G&G Group, with investment up to USD 20.8 million (₹ 93.6 crore) including "past cost" under Minimum Work Commitment (MWC) with an exploration period of six years.

The operator drilled two exploratory wells under MWC and had given low priority to the third prospect based on the discouraging results of the drilled wells and the low reserve estimates of the third prospect. However, the Company before relinquishing the block, got seismic data and drilling results of two wells re-examined from its G&G Group, who reconfirmed its earlier recommendation that block did not seem attractive from the point of view of hydrocarbon discovery. The Company decided (January 2009) not to enter into the next exploration phase and relinquished the block after incurring an expenditure of US$ 15.26 million (equivalent to ₹ 74.99 crore).

The Management stated (January 2010) that G&G team opined that G3, G5 and G6 sands which were gas bearing in the Blocks A1 and A3 were not seen in Block AD7. The G7 Sand which was the target in Block AD7 was not established and not tested in that area. According to G&G team, the technical evaluation team had taken 233 square km area and 20 metre thickness of reservoir for computation of reserves, which prima-facie appeared to be a maximum reserve case. Thus, there was no contradiction in views of G&G Group and Technical team.

The Ministry added (October 2010) that the block was taken with the knowledge that the gas bearing pools in A1 and A3 sands were not extending to AD7 and primarily required for establishing a potential new pool in AD7.

We do not agree with the Ministry/Management's viewpoint as G&G Group had clearly informed in August 2008 that established pools of gas were not expected to be present. Further, our technical expert also opined that G3, G5 and G6 sands which were gas bearing in Blocks A1 and A3 were not extending to AD7 Block; hence the risk in hydrocarbon prospectivity of the Block in view of only single stratigraphic G7 play was very high. Further, he opined that the observations of G&G group contradicted the Technical Group and were not considered in the subsequent approval process.

3.4 Inadequate technical evaluation of Block in Libya

The technical team of the Company after visiting data room of the Operator Turkish Petroleum Overseas Company (TPOC) found both blocks, NC-188 and NC-189 in Libya, attractive with higher discovery and larger potential reserves in NC-188 as compared to NC-189 with presence of a good number of leads and recommended further detailing thereof.

The Company without further detailing or revalidation of team's report from an independent consultant approved (January 2002) acquisition of 49 per cent participation interest in the above assets and entered into farm-in agreement with TPOC (22 August 2002) on payment (April 2003) of USD 0.15 million for study expenses and USD 3.5 million towards 49 per cent of past cost. The operator after drilling two wells during November 2003 to June 2004 in Block NC-188 found it bearing high exploration risks with only small limited reserve structures and therefore, decided to relinquish it. The in-house technical team of the Company re-evaluated the data and opined (March 2008) that the Block did not have any significant left over potential and recommended no further activity. The Company decided (May 2008) to relinquish its 49 per cent participation interest in NC-188 after incurring total expenditure of ₹ 68.51 crore on survey, drilling and other miscellaneous activities, which could have been avoided had the recommendation of the technical team been revalidated before acquiring the block.

The Ministry stated (October 2010) that the team that visited Ankara in October 2001 had made preliminary evaluations and recommended further detailing for each block. However, another team that visited Ankara in January 2002 found that several leads identified earlier had been confirmed as prospects and did not recommend further detailing.

We do not agree with the Ministry's viewpoint as the Company did not engage any technical consultant to validate the prospects of the project assessed by the in-house team. Our technical expert also agreed with Audit and opined that the decision of the Management to go for Block NC-188 without further detailing, in view of no activity since 1993, was not a prudent decision.

3.5 Unfruitful expenditure due to improper evaluation of reserve estimates

The Company received (July 2006) farm in offer for 30 per cent participation interest in Blocks 11 and 12, Offshore, Turkmenistan from Tristone Capital, advisor to Maersk Oil (MO). At the time of offer the consortium (Maersk Oil & Wintershall) provided seismic data acquired by it from Western Geco in 2003 and drilling report of the first well (Garadashlyk-I) which was abandoned without testing in 2006 due to mechanical problems. The in-house team of the Company analyzed (August 2006) the seismic data & the information of the region as provided by the operator and felt sufficient hydrocarbon had migrated to the Garadashlyk prospect and also identified two large scale prospects with recoverable reserves of 186 Million barrel (MMb) of oil and recommended that the proposal was worth pursuing.

Audit noticed that the Company instead of following its prescribed procedure for evaluation of this investment opportunity through technical, legal and financial consultants, got the same evaluated by its in-house team which studied only old data and drilling report of first well which was abandoned without testing in respect of which no test report was available.

Had the Company done due diligence, the absence or presence of basic elements like charge, seal and reservoir in E&P assets, which are necessary for availability of viable reserves of hydrocarbons in a particular region or block could have been ascertained well in advance. However, the Company could find the absence of these basic elements only after drilling of the second prospect i.e. Darta Deniz-1 well.

The Management stated (January 2010) that detailed independent techno-economic analysis of the identified prospects based on the understanding of the prospectivity of Blocks 11 and 12 by the Company's technical team was carried out, and the latest technical data acquired by the seller was subsequently studied during due diligence by the Company's technical team.

The Ministry added (October 2010) that the technical team had discussed the hydrocarbon potential based on the parameters like reservoir quality, trap integrity, source and migration of hydrocarbon into the trap and prolific hydrocarbon presence towards south of the Block 11 and 12 was a valid indication that the block was within known possible hydrocarbon province. Since the OVL team was technically sound, the necessity to hire consultants was not felt.

We do not agree with the Management/Ministry's viewpoint as possible prospects available in Garadashlyk structure could not be tested in the abandoned well. The above facts revealed that the decision to acquire 30 per cent stake in 2006 based on estimated 186 MMb of oil recoverable reserves of the seller, was done without associating technical, legal and financial consultants for evaluation of an investment opportunity. Further, this was also based on old seismic data of 2003 and by relying only on drilling report of the first well which was abandoned without testing; thereby rendering the entire expenditure of USD 14.96 million (₹ 67.32 crore) unfruitful.

Our technical expert, while agreeing with the audit observation felt that basic elements like presence of charge, seal and reservoir were required to be necessarily present in any block but in this case, none of the three elements were present and hence, due diligence itself was defective.

3.6 Wasteful expenditure

The Company acquired 100 per cent participation interest through signing Appraisal, Development and Production Sharing Agreement (Agreement) (2005) with Qatar Government represented by Qatar Petroleum for Najwat Najem Block, (NN) Qatar which permitted only extraction of Crude Oil in case of discovery from the designated block and in case gas or any other mineral was discovered, access to that was contractually not allowed to the Company. Audit noticed that at the time of signing the agreement, the Company estimated volume of Original Oil in Place (OOIP) at 187.72 million metric barrel of oil equivalent (MMBO) (Proved Oil-98.159 MMBO + Possible Oil-89.561 MMBO). The estimation of Oil reserves was solely based on maps and data provided by Qatar Petroleum without revalidation of Company's estimated reserves from an independent technical consultant especially when the Company was aware that it does not have contractual right on gas, if any, discovered.

The Company on drilling discovered that two layers were bearing non-producible oil to the tune of 17.68 MMBO and 21.31 MMBO, one layer had only 14.6 MMBO oil as proved, out of that only 2.24 MMBO was recoverable, one was water bearing and another three layers were gas bearing on which contractually the Company did not have any right. Moreover, actual recoverable crude oil discovery of 2.24 MMBO as compared to its estimated OOIP of 187.72 MMBO was significantly low. As a result of commercially unviable discovery of oil and no contractual right on the gas, the block was relinquished (May 2008) rendering entire expenditure of ₹ 369.45 crore (USD 82.10 million @ ₹ 45/USD) infructuous, which could have been avoided had the Company preferred revalidation of the data for vetting of its estimated reserves from an independent technical consultant rather than solely relying on the maps and data provided by the Qatar Petroleum.

The Management stated (January 2010) that estimated 187.72 MMBO OIIP (Oil Initially in Place) (Proved Oil -98.159 MMBO + Possible Oil -89.561 MMBO) based on the data made available by Qatar Petroleum and the system used for estimation of reserves was as per industry standard and practice. One cannot specify beforehand as to how much deviation are permitted.

The Ministry endorsed (October 2010) the reply of the Management.

We do not agree with the Ministry/Management's viewpoint as reserves estimation by the Company were solely based on maps and data provided by Qatar Petroleum and despite knowing that the deviation can not be specified, the Management did not go for revalidation of data from independent technical consultant. Further, internationally accepted Petroleum Resources Management System also indicates that the resource evaluation process consists of identifying a project associated with petroleum accumulation(s), estimation of the quantities of Petroleum Initially-in-Place, estimating that portion of those in-place quantities that can be recovered by each project; while the Company estimated only reserves of oil and not gas and that too , exclusively based on maps and data provided by Qatar Petroleum.

Our technical expert opined that analysis estimated by the Company on 2D data indicated OIIP of the order of 188 MMBO out of which 98 MMBO was placed in proved category which got reduced to less than 15 MMBO on drilling of appraisal well. Such a situation is not expected in standard industry practice. Risk in final analysis could have been mitigated in the initial stage itself if standard definitions and guidelines of Petroleum Resource Management System had been practiced by the Company.

3.7 Inadequate technical study and non-revalidation of data

The Company acquired (February 2007) 20 per cent Participating Interest (PI) from ENI (Operator), who was holding 60 per cent PI in Block "Mer Tres Profonde Node" (MTPN) in Congo by swapping with ONGC's 34 per cent PI in Block MN-DWN – 2002/1 in India based on equitable technical worth and not governed by financial worth.

At the time of swapping, the Block was in 3rd phase of exploration with commitment of one well. Till the end of phase-II the consortium drilled two wells i.e. HTNM-I, and ZULU MARINE-I but both were plugged and abandoned due to non-discovery of hydrocarbons.

Audit noticed that in-house team while evaluating the investment opportunity mentioned in their report that Operator had provided 2D & 3D seismic data only for view purpose, and the parameters considered by them for volumetrics and estimated volumes calculated were based on earlier (2002) interpretation. With this limitation the team had estimated the total reserve of 634.75 MMb for the block as estimated by the operator in respect of five prioritized prospects i.e. Hiti East, Hiti Central, Nkasu, Ntangu and Tehitebi.

Despite these reservations expressed by the in-house team as well as disappointing results of earlier drilled two wells, the Company acquired this risky asset without revalidating the data, deviated from its prescribed procedure for evaluation of investment opportunity through technical, legal and financial consultants.

Further, it was observed that after revalidation of 3D data, operator had replaced the earlier prioritized five prospects as mentioned above with another prospect i.e. HVAM-1 and estimated total reserve of 322.8 MBOE in 5 layers in view of the discouraging results of already prioritized prospects. However, on drilling of HVAM-I prospect operator discovered only a reserve of 20.22 MBOE in one layer. The operator also could not achieve the targeted depth of 5024 meters due to operational problem as drilling was stopped at a target depth of 4,516 meters. Therefore, the potential of the Oligocene section of the Paloukou Formation which was a secondary exploration target was not explored.

As a result of commercially unviable discovery of oil, the block was relinquished (December 2009), thereby rendering the entire expenditure of USD 11.59 million equivalent to ₹ 67.78 crore by the Company and USD 8.65 Million equivalent to ₹ 36.11 crore by ONGC (USD 8.65 million @ ₹ 45/USD) infructuous, which could have been avoided, had the Company preferred revalidation of the data from an independent technical consultant rather than solely relying on the estimated reserve as provided by the operator.

Management stated (Dec. 2010) that the operator is the custodian of all data generated in a block and in any consortium both partners and host government rely on data/information generated by operator. Further, being a swap deal, the company decided to carry out internal technical evaluations without appointing a third party consultant and the company engages technical, financial and legal consultants for due diligence of only producing/discovered assets of significant value. As the investment in this exploration acreage is comparatively lower in comparison to discovered or producing assets, it was considered adequate to rely on in house assessment.

We do not agree with the Management's viewpoint as reserve estimation by the Company was solely based on data provided by the operator, which was only for viewing purposes while the latest data was also not provided for evaluation. Further, despite knowing the discouraging results of two drilled wells in the block, the Company relied on the old data provided by the operator without revalidation from outside consultants. The fact that technical, legal and financial consultants are

engaged by the company for due diligence of only producing/discovered assets of significant value and not for exploration blocks, is not correct as the Company had engaged outside consultants for evaluation of many of its previous exploration blocks.

The technical expert while confirming the audit observation opined that swap deal done by the Company was on the basis of visual assessment of seismic data and the calculations were based on old 2002 data, while the deal took place only in 2007. The Company's in-house assessment was based primarily on the operators approach instead of going through third party consultation. Further, the Company ought to have a differential approach for a totally unexplored area vis-a-vis areas already having unfruitful results.

3.8 Deferment of production due to overlooking of due diligence during evaluation

Mansarovar Energy Columbia Limited (MECL), a 50:50 JVC with Sinopec (National Oil Company of China) was formed by the Company to acquire E&P assets of Omimex de Columbia in Columbia for USD 875 million, of which OVL's share was USD 437.5 million.

Before acquisition, Denton Wilde and Sapte, the consultant appointed by the Company for due diligence pointed out that the loss of Ecopetrol (National Oil Company of Columbia) as a sole buyer of the produce of Omimex field might be detrimental to field production; the seller did not have any ownership right over a part of real estate as the complete title including rights and obligations attached with the assets transferred from the erstwhile owner had not been passed to them.

Despite being aware of these points of caution expressed by the consultant, the Company went ahead with the acquisition but failed to insert an appropriate clause in agreement for safeguarding its interest in the event of non-lifting of crude oil by Ecopetrol in view of Ecopetrol being a single buyer of the entire production from the Omimex field.

In the absence of appropriate clause in the agreement, MECL had to defer production of 2,10,000 barrels of crude oil (Company's share was 1,05,000 barrels being 50 per cent) during 2009 due to non-lifting of crude oil by Ecopetrol on account of non-functioning of its refinery. Ecopetrol also expressed its inability to lift the entire quantity of heavy crude oil from the Omimex field in 2010.

The Management stated (January 2010) that the observations of due dilligence report as brought out, had never caused any operational problem in the field and the Company did not face any production restriction due to the same.

The Ministry stated (October 2010) that daily production of the field was affected due to an accident in the refinery, restrictions on the lifting of the product from the Ecopetrol refinery due to fall in the water level of the river.

We do not agree with the Ministry/Management's viewpoint as the Company did not safeguard its interests despite a caution from the consultant that any loss of Ecopetrol Refinery as a buyer of the field production would be a significant detriment to the Company.

Our technical expert felt that the Company had never faced any operational problem in the field nor faced any production restriction but the same does not rule out the possibility. Production due to non lifting of crude by Ecopetrol was a loss to the Company on account of non/delayed realisation of revenue.

In conclusion, certain inadequacies were noticed in due diligence process for evaluation of investment opportunities by the Company. As a result, the Company incurred loss of ₹ 1108 crore. These inadequacies could be attributed to absence of documented policy/procedures for evaluation of investment opportunities and non compliance of basic tenets of the standard guidelines and practices of Petroleum Resources Management System for mitigating the risks.

Recommendation # 1

The Company should formulate a policy and prepare standard guidelines in line with practices of Petroleum Resources Management System for evaluation of investment opportunities for acquisition of producing, discovered and exploration assets so as to mitigate the risks.