

Chapter 2 Planning and Execution of Capital Projects

The objectives of undertaking the capital projects, as envisaged in the year 2006, were to upgrade the refining capacity from the existing 11.82 MMTPA to 15 MMTPA, process cheaper crudes, upgrade low value products to high value products, maximise distillate yields, produce pet coke, upgrade entire diesel into BS III/IV and produce Propylene.

Poly Propylene Unit (PPU), with a capacity of 0.44 MMTPA, was planned (2009) as an additional package to Phase III refinery project with the objective of producing Polypropylene, a value added petrochemical product, by converting the polymer grade Propylene to be produced in Petrochemical Fluidized Catalytic Cracking unit (PFCCU) coming up as a part of Phase III project.

The Company also decided (2010) to set up Single Point Mooring (SPM) facility at an estimated cost of ₹ 1,044 crore, to ensure smooth discharge of imported crude, through larger vessels at the nearby Mangalore Port, with the objective of savings in freight and demurrage.

2.1. Deficiencies in planning

It was observed in audit that the Company planned to undertake capital projects without considering the requirements from a long term perspective, which necessitated revisions at later dates. The inadequacies in the original plan necessitated its revision which resulted in delays in implementation, synchronisation with other units and cost escalation. Further, the sequence of project cycle was disturbed, resulting in inordinate delay in commissioning.

2.1.1 Changes at the time of project conceptualization resulted in time and cost overrun

The Board approved (February 2006) a proposal to expand refining capacity from 11.82 MMTPA to 15 MMTPA at an estimated cost of ₹ 7,943 crore. The project, inter-alia, included revamping of the existing Crude Distillation Unit (CDU) I and II units and setting up of Lube Oil Base Stock⁹ (LOBS) unit. However, based on the feedback from Process Licensors, the Company changed the scope of the project in the year 2008 and opted for setting up of new CDU, instead of revamping the existing CDUs. It decided to set up Heavy Coker Gas Oil Hydrotreating Unit (CHTU), as a feed preparation unit for PFCCU, by reducing the scope of revamping of existing Hydro Cracker Units (HCUs). The LOBS was

⁹ *Unit which produces lubricants*

also dropped for the reason that production of desired quality of LOBS from Mumbai High and Arab Heavy crudes was not possible, as also due to marketing constraints.

The requirement of units at the initial stage of conceptualization was firmed up without obtaining the feedback from the process licensors which led to revisions in the year 2008 and consequent time and cost overrun. Apart from increase in the cost by ₹ 1,960 crore due to change in the scope, there was an avoidable increase of ₹ 2,509 crore on account of escalation. The estimated cost, which was approved as ₹ 7,943 crore in the year 2006 increased to ₹ 12,412 crore in the year 2008. The scheduled mechanical completion date was also extended from June 2010 to October 2011.

The Company stated (November 2016) that the revision in schedule and scope was necessitated due to the delay in obtaining additional land, change in capacity of units/introduction of new units based on licensor feedback etc., which resulted in increase in cost also.

During the Exit Conference (June 2017) with Ministry, the Company stated that while taking up of a capital project, to save time and cost, Company relied upon project costing based on data available with Project Management Consultant instead of Detailed Feasibility Report. In such systems, modifications would always be required at a later date. Ministry added that BS-IV was a time bound project and that the Ministry had given its commitment to the Hon'ble Supreme Court for launching it in a time bound manner. Hence, MRPL was supposed to ensure the completion of project considering Ministry's commitment

The reply of the Company/Ministry is to be viewed against the fact that the licensor feedback could have been obtained at the time of conceptualisation of the project in the year 2006 itself. This would have avoided the revisions in the year 2008 and the consequent time overrun as well as significant increase in the cost.

2.1.2 Delay in taking decision to establish PPU

The Financial Feasibility Reports, which were prepared by Axis Bank (earlier UTI Bank) in the year 2006 and 2008 envisaged sale of Propylene produced in PFCCU. In July 2008, EIL, which developed the Detailed Project Feasibility Report for a Standalone Poly Propylene Unit (PPU), estimated a cost of ₹ 3,181 crore for such unit by using Propylene produced by processing Naphtha. However, this was not taken up due to low Internal Rate of Return (IRR). Later in May 2009, realizing the problems in evacuation of Propylene, the Company decided to setup an integrated PPU for processing Propylene into Polypropylene, at an

estimated cost of ₹ 1,804 crore and got the approval of its Board. At this juncture, the Company realised that the Propylene produced from Vacuum Gas Oil (VGO) would be a cheaper feed for Poly Propylene as compared to the Propylene produced by using Naphtha.

Though the production of Propylene by processing the VGO in PFCCU was known to the Company at the time of evaluating the viability of the standalone PPU in August 2008, it did not consider the same at that point of time. Instead, it included the integrated PPU in the plant in May 2009 which delayed the whole process of acquisition of land, obtaining clearances etc. Though the PFCCU, the feed unit for PPU got commissioned in August 2014 and the required Captive Power Plant (CPP) was commissioned in September 2014, the production of Polypropylene, a value added product, could not be achieved as the unit was not ready up to May 2015 which impacted the GRM.

The Company stated (November 2016) that due to logistic constraints in sale of Propylene, it decided to switch over to production of Polypropylene, based on the detailed analysis of the viability.

In the Exit Conference (June 2017) with the Ministry, the Company while agreeing with the audit observation stated that initially it was decided to set up Naphtha cracker unit in the SEZ land adjacent to MRPL complex. However, it could not be established due to non-availability of land due to encroachment. Further, due to economic slowdown and logistic constraints, setting up of PPU was dropped initially. Later as export of propylene was not found viable, the Company decided to set up the polypropylene plant in the refinery complex.

The fact, however, remains that even at the time of original proposal in 2006 and revision of proposal in 2008, the situation/parameters which affected the decision making in 2009, existed. Had the Company considered this and planned the Integrated PPU at least, at the time of revision in 2008, the delay and consequent impact on production as brought out in Chapter 3 could have been avoided.

2.2. Project Financing

For execution of the Capital Projects, the Company decided (February 2006) a debt equity ratio of 2:1. The Company utilised ₹ 5,741 crore (up to May 2012) from internal accruals and availed the following domestic loans and external commercial borrowings (ECB):

Table 2.1: Details of Borrowings

Sl. No.	Source	Sanctioned Loan	Drawn	Drawn period	
				From	To
1	ONGC (₹ in crore)	5,000	4,800	October 2011	July 2013
2	Oil Industry Development Board (₹ in crore)	1,125	1,100	August 2011	March 2014
3	ECB – I (2012)	USD 250 Million	₹ 1,362 [@]	March 2012	September 2012
4	ECB – II (2013)	USD 400 Million	₹ 2,365 [#]	March 2013	March 2014
	Total		₹ 9,627		

[@] 1 USD = ₹ 54.4680, average rate for ECB I based on actual drawal;

[#] 1 USD = ₹ 59.1285, average rate for ECB II based on actual drawal;

The Company obtained the above loans in various tranches from October 2011 to March 2014 based on the projected requirements.

2.2.1 Availing ECB loan without mitigation of risk

After obtaining approval of its Board (October 2011), the Company availed (March 2012) USD 250 million as ECB from different foreign banks with SBI Hong Kong branch as the ECB Facility agent. The Company had the option to hedge the ECB loan against any currency fluctuations. While obtaining the approval of its Board to avail the loan, it had stated that the ECB loan was cheaper as compared to domestic loan even after considering the cost of hedging. However, at the same time it was mentioned to the Board that the Company would have the advantage of natural hedge for foreign currency borrowing because of continuous flow of dollar through export proceeds and its margins were dollar dominated to a large extent. The above ECB loan, was finally availed without hedging the same.

In May 2012, the Board opined that considering the exchange risk involved in foreign currency borrowing and the above borrowing of USD 250 million, further borrowing in foreign currency might not be prudent commercially and the Company may consider further borrowing in rupee to meet the remaining capex requirement.

However, in January 2013, approval for availing ECB of USD 250 million with green shoe option of another USD 250 million was accorded in a Board meeting. During this meeting also it was mentioned that the Company would have advantage of natural hedge for foreign currency borrowing as the Company was having continuous flow of dollars through export

proceeds and its margins were also dollar dominated to a large extent. Against this approval, the Company availed USD 400 million as ECB. This ECB was also not hedged, even though it was apprised to the Board that the cost of the ECB including the hedging cost would be lower than the domestic loan.

Audit observed that due to non-hedging of the ECB, the Company had already lost approximately ₹ 13.70 crore due to exchange rate variation (net of currency hedging cost) on loan repayments (up to September 2016) and may incur further losses in case the rupee does not strengthen against USD. Audit was of the view that the justification regarding availability of natural hedge ignored the fact that natural hedging would offset the currency fluctuations relating to import of crude and export of final products.

The Company replied (November 2016) that the issue of currency fluctuation risk was discussed by the Board and it was decided to not to hedge considering the loss suffered on hedging in the past, natural hedge available in the business of the Company and the associated hedging cost. Further, the ECB loan was naturally hedged against its revenue account cash flow. The Consultant had also opined to not to hedge.

In the Exit Conference (June 2017) with the Ministry, the Company reiterated that hedging was available naturally to the Company including repayment of loan. It further stated that cost of hedging was high and by availing of hedging the benefit of gains through cheap ECB loans would have been defeated. The Company affirmed that matter was discussed in Board but no decision was taken on hedging and that the decision was left to the Management.

The reply of the Company/Ministry is to be viewed in the light of the fact that the natural hedging would offset the currency fluctuations relating to import of crude and export of final products. In fact, while evaluating (May 2012) the proposal for capital and working capital financing, the Board noted that considering the exchange risk involved in foreign currency borrowing and existing borrowing of USD 250 million through ECB, further borrowing in foreign currency may not be prudent commercially. However, contrary to this, within a short span of 8 months, the Board approved another ECB in January 2013 which was availed without hedging.

2.2.2 Drawal of funds in excess of requirement

The Company availed ECB-I of USD 250 million in 2012. In January 2013, the Company estimated (January 2013) further requirement of ECB loan at USD 250 million for 2013-15, after considering domestic borrowings from ONGC and Oil Industrial Development Board

(OIDB). The Board, while approving (January 2013) the proposal, in addition to the above amount permitted the Company to avail an additional amount of USD 250 million as may be required for the project. When entering into agreement for ECB II in March 2013, the Company decided to avail of USD 400 million. Thus, the ECB availed during the period from March 2012 to March 2014 amounted to USD 650 million equivalent to ₹ 3727 crore.

The unutilised funds had been parked in an interest bearing designated bank account. However, in September 2015, the unutilised fund amounting to ₹ 1,111.35 crore had to be shifted to non interest bearing current account as per the directions of Reserve Bank of India. ECB balance lying unutilized as on 31 March 2016 and 30 September 2016 was ₹ 807.84 crore and ₹ 768.46 crore, respectively even though all the units under Capital Project had been already commissioned.

The Company stated (November 2016) that the final certified bills from the contractors got delayed due to formalities of project closure, reduced cash outflow due to invocation of Price Reduction Clause, etc. The prepayment of loan was not permissible before the average maturity period of 5 years as per ECB guidelines.

The fact remains that the Company failed to assess the ECB requirement correctly resulting in non utilisation of a significant amount, which had to be parked in a non interest bearing bank account, while interest on the same was being paid. As the Company was aware of the terms and conditions on prepayment, more prudence should have been exercised at the time of planning and drawal of funds for the project requirements.

Ministry did not furnish any reply (June 2017).

2.3. Award of contracts

For execution of Capital Projects, the Company entered into 1998 contracts valuing ₹ 11,279 crore during 2006 to 2015. Audit scrutinised a total of 87 contracts valuing ₹ 10,608 crore, where the value of individual contract exceeded ₹ 10 crore, in addition to various other small value contracts.

Audit observations based on the scrutiny are discussed in the succeeding paragraphs.

2.3.1 Entrustment of execution contract to Project Management Consultant

As per the Central Vigilance Commission (CVC) guidelines of December 2004, a firm providing consultancy services for preparation/implementation of a project would be disqualified from subsequently providing goods/works/ services related to the same project.

The Company appointed (June 2006) Engineers India Limited (EIL) as Project Management Consultant (PMC) at a cost of ₹ 256 crore for Phase III expansion. Later, during the period from November 2008 to July 2009, contrary to the guidelines of CVC, the Company awarded four more contracts to EIL for execution of PFCCU, Sulphur Recovery Unit¹⁰ (SRU), SRU licence and PPU valuing ₹ 3,337.80 crore, on nomination basis on the justification of early/timely completion of the work. The Company had decided (October 2008) to withdraw the consultancy work of the related four contracts and to reduce the PMC fees to that extent which was done in July 2012 i.e. after 45 months (October 2008 to July 2012).

The Company stated (November 2016) that delay in finalising the change order was due to the time taken for arriving at the mutually acceptable value of the services withdrawn and included in the PMC.

In the Exit Conference (June 2017) with the Ministry, the Company accepted the delay in issuing the change order by 45 months. It further stated that due to technical reasons the Company awarded the contract to EIL and on 17 November 2008 the decision was taken to eject EIL out of PMC contract for the contracts for which execution was awarded but the formal contract in this regard was signed in July 2012. The Company also stated that MRPL formed the Project Monitoring Cell with its own officials upon EIL being awarded the four contracts without waiting for issuance of a change order. It further mentioned that Management has now issued clear directions for project teams to sign a contract within a period of 30 days.

The reply may be viewed against the fact that as per the CVC guidelines, the execution contracts should not have been awarded to the Project Management Consultant.

2.3.2 Delay in finalising formal Contract Agreements

In respect of the 87 contracts reviewed in audit, it was observed that the Company issued a Letter of Acceptance (LoA) to the successful bidder pending finalisation of the terms and conditions and formulation of the final contract. A time limit of 10 days was specified in the LoAs for execution of the formal contract except for a few where the time limit was not mentioned. It was noted that in 84 contracts, there was delay in execution of formal contract ranging from 20 to 1002 days. These included contract for SPM which was signed after a lapse of 1002 days by which date the work had already been mechanically completed. Four other contracts having a value of ₹ 1,044 crore were signed after a delay of more than one year. In respect of one work valuing ₹ 18 crore, the contract was not executed at all.

¹⁰ *Unit recovers Sulphur from the feed*

The Company stated (November 2016) that the delay in execution of the contracts was due to large number of contracts and volume of pages to be handled by EIL. It added that this had no impact on the quality / delivery & project cost.

The reply of the Company is to be seen against the fact that the LoAs do not include specific conditions and stipulations which generally form part of formal contract document and as such, there was an inherent risk in the enforceability of the mutual rights and obligations in the absence of a valid contract.

During the Exit Conference (June 2017) with the Ministry, the Company informed (June 2017) that Management had now issued clear directions for project teams to sign contracts within a period of 30 days.

2.4. Execution of Phase III Expansion Project and PPU Project

The Company had planned various processing units to increase capacity and to produce value added products thereby increasing the Gross Refinery Margin as depicted in the following Table.

Table 2.2: Important processing units

Feed	Unit	Major Products
Crude	Crude/Vacuum Distillation Unit (CDU/VDU)	Naphtha, Kerosene, HSD, VGO, short residue
Vacuum Gas Oil (VGO)	Hydro Cracker Unit ¹¹ (HCU)	VGO, Light Naptha, Kerosene, HSD
Short residue	Delayed Coker Unit ¹² (DCU)	Naphtha, LPG, Coke
Heavy Coker Gas Oil (HCGO), VGO	Heavy Coker Hydrotreating Unit (CHTU)	Treated HCGO, Naptha, HSD
VGO, Treated HCGO	Petrochemical Fluidized Catalytic Cracking Unit (PFCCU)	Propylene, Motor Spirit
Propylene	Polypropylene Unit (PPU)	Polypropylene
High Speed Diesel (HSD)	Diesel Hydro Desulphurisation Treating Unit ¹³ (DHDT)	BS III/IV HSD

¹¹ Unit in heavier fractions of VGO are cracked into lighter and more valuable products

¹² Converts low value residue into valuable products

¹³ Removes Sulphur, Nitrogen and Metal impurities from the feed received from different units.

The output from one unit becomes the feed for other processing units, wherein value addition as proposed in the Phase III Expansion Project is carried out. Delay in commissioning of any of the primary units has a cascading effect on the subsequent secondary processing units and value added products.

In addition to the above units, the Company had proposed (2006) a Captive Power Plant (CPP) III to cater to the need of power and steam of all units in the Phase III.

A review of the plan and actual execution of the units revealed delays in commissioning due to delay in commissioning of CPP. Even the mechanically completed units could not be commissioned and integrated with the related existing/new secondary processing units due to such delay. These have been discussed in subsequent paragraphs.

2.4.1 Delay in commissioning of Captive Power Plant

Captive Power Plant (CPP) is a critical utility for a refinery for supply of steam and power and needs to be commissioned before commissioning of all other process units. The Company had planned a CPP in the year 2006 as a part of Phase III Expansion Project. The work of setting up of CPP was placed (February 2009) on BHEL (the contractor) on single tender basis to save time. The work was bifurcated in ten packages and was to be completed by January 2012.

There was a delay in execution of work by the contractor and various units of CPP III could be commissioned only in August/September 2014. However, in respect of three out of ten packages, the Performance Guarantee test was pending (November 2016) for want of shut down/ repair works. Due to delay in commissioning of CPP, various units (other than CDU/VDU) remained idle even after mechanical completion for a period ranging from 11 to 26 months.

The Company stated (November 2016) that as BHEL was a PSU, the work was awarded to them on single tender basis. The project got delayed due to engineering and supply related issues, poor store management, non-deployment of adequate staff and delayed execution etc. on the part of BHEL. This was reiterated (June 2017) by the Ministry also during the Exit Conference.

The reply is not acceptable considering the fact that in Phase III expansion project which had an outlay of ₹ 13,475 crore, CPP was the most critical utility and hence, various factors which affected the timely implementation of CPP should have been controlled through close monitoring and follow-up.

2.4.2 Impact of delay in commissioning of Captive Power Plant

As CPP III units were not ready by the scheduled date, the Phase III processing units that were mechanically completed could not be commissioned for want of steam and power. The impact of the delayed commissioning of the processing units on account of delay in commissioning of CPP is detailed in the table below:

Table 2.3: Impact of delay in commissioning of CPP on processing units

Unit	Date of Mechanical Completion	Date of Commissioning	Delay in months	Impact of CPP delay
CDU/VDU	27 October 2011	25 March 2012	5	<ul style="list-style-type: none"> • Delay in achieving envisaged throughput. • Non upgradation of VGO and short residue, delay in additional production and failure in converting the diesel into BS-III & IV. • Incurred additional expenditure of ₹ 23 crore for arranging steam and power from Phase I & II by laying additional line.
DHDT	10 January 2012	29 November 2012	11	<ul style="list-style-type: none"> • Idling of unit and resulting in non conversion of HSD into BS III/IV
CHTU	19 March 2012	10 May 2014	26	<ul style="list-style-type: none"> • Idling of unit, loss of production due to non conversion of VGO.
DCU	22 February 13	4 April 2014	13	<ul style="list-style-type: none"> • Idling of unit, non production of Light Coker Gas Oil/Heavy Coker Gas Oil and Naphtha resulting in Fuel Oil production which was a low value product.
PFCCU	26 December 2012	27 August 2014	20	<ul style="list-style-type: none"> • Idling of unit, non production of Propylene as envisaged. • In the absence of PFCCU, VGO which was the feed to the unit was sold instead of getting converted into value added product in PFCCU.

In response, the Company stated (November 2016) the following:

- a. CDU/VDU - The high pressure steam pipeline could be used in future in case of any requirement of such transfer of steam from Phase I & II to Phase III and vice versa.
- DCU/DHDT - In the absence of DCU, short residue was processed into marketable Fuel Oil.
- b. PFCCU/CHTU - The Company agreed that non-availability of steam and power did affect the commissioning of PFCC and CHTU. Non availability of CHTU did not have a bearing on VGO exports as it processes only HCGO from DCU for subsequent routing to PFCCU.

Audit, however, noticed that the Company could not achieve the objective of production of value added product till the commissioning of all the processing units. Further, laying of additional line for steam and power from Phase I and II, which was not envisaged/needed for the expansion scheme, resulted in additional cost of ₹ 23 crore. Non-synchronisation of CPP with DCU resulted in production of Fuel Oil, which is a low value product and which was against the objective of Phase III Project. The reply that VGO would not be processed in CHTU was also against the Financial Feasibility Report (FFR) of Phase III Expansion Project which clearly stated HCGO as well as VGO as the feed for CHTU.

During the Exit Conference (June 2017) with the Ministry, impact of delay in commissioning of CPP by BHEL on the commissioning of the processing units was agreed to by the Company/Ministry.

2.5 Execution of Single Point Mooring Project

The Company receives crude oil and despatches products through New Mangalore Port at its two dedicated oil berths which can handle smaller vessels (Aframax). The Company planned (2010) to install a Single Point Mooring (SPM) facility at an estimated cost of ₹ 1043.57 crore, 17 km away from the Port to handle the increased quantity of crude in larger vessels (VLCC).

The Company decided (December 2009) to tie up with Indian Strategic Petroleum Resource Limited (ISPRL), a Special Purpose Vehicle and a wholly owned subsidiary of OIIB for crude storage in cavern (0.3 MMT out of 1.5 MMT available capacity) considering mutual benefit. Construction of cavern and the pipeline from the Company's Booster Pumping Station to cavern at estimated cost of ₹ 1,100 crore was ISPRL's responsibility. Of this, the Company's share was estimated at ₹ 220 crore.

The remaining project cost of SPM facility i.e. ₹ 823.57 crore was towards SPM offshore facility, sub-sea pipeline, Booster Pumping Station on the shore and pipeline from the cavern of ISPRL to the refinery.

The Company estimated a saving of ₹ 254.17 crore per annum in freight (₹ 166.77 crore), demurrage charges (₹ 15.50 crore) and improvement in refinery margin (₹ 71.90 crore) by installation of SPM.

SPM facility was commissioned in August 2013 at a cost of ₹ 806.77 crore (excluding the share towards capital cost of cavern of ISPRL). ISPRL cavern facility was yet to be

commissioned (September 2016). The issues relating to execution of the SPM project are discussed below:

2.5.1 Deficiencies in SPM contract with EIL

The Company awarded (July 2010) the contract for execution of SPM to EIL on nomination basis to save time and to complete the project before May 2012 under Open Book Execution¹⁴ (OBE). The Company had anticipated that there would be better co-ordination and synergy during the project execution as EIL was the contractor for ISPRL also. The estimated cost of the work was ₹ 1,043.57 crore which included ₹ 600 crore towards Plant & Machinery. A fee of 8.5 percent of 'as built' Plant and Machinery cost was payable to EIL. As per the letter of award, the work was to be converted into Lump Sum Turn Key (LSTK) contract upon placement of orders for equipment, materials and works for 70 per cent of the estimated cost of the Plant & Machinery.

Audit scrutiny revealed that though the Contractor completed 70 per cent of ordering position by April 2011, the Company did not initiate steps to analyse cost and benefit of converting the contract into LSTK as per stipulations and EIL completed the work under the OBE method.

The Company stated (November 2016) that Project Approval and Execution Committee (PAEC), while awarding the contract, had decided to adopt the OBE terms and conditions similar to that of other contracts (PFCCU/PPU). Regarding conversion of OBE to LSTK, the proposal on conversion was acted upon immediately on receipt of the same from EIL.

During the Exit Conference (June 2017) with the Ministry, the Company stated that it did not push for LSTK as actual cost of LSTK was more than OBE. Ministry agreed with the reply of the Company.

The basis for the reply given by the Company that LSTK prices exceeded the OBE prices was the proposal from EIL received in April 2014 after the contract had been executed. Comparison of LSTK prices with OBE prices was therefore inappropriate.

2.5.2 Non finalisation of arrangement with ISPRL for crude storage

Even though the decision to share the cavern to be constructed by ISPRL was taken in December 2009, no agreement in this regard was entered. In October 2012, when the SPM was mechanically completed, the Company got a study conducted which indicated that

¹⁴ A contract which involves reimbursement of all the related costs to the contractor along-with a pre-decided margin/fee.

VLCC vessels could not be unloaded prior to commissioning of cavern due to logistical reasons and multiple crude grades. However, it was only in June 2014 that the Company entered into an MoU with ISPRL for sharing SPM and cavern facility on mutually agreed terms and conditions. Infrastructure Sharing Agreement (ISA) referred in the MoU which would have addressed the operation, commercial, financial and legal issues, was however, not yet finalised (November 2016).

Audit observed that though SPM facility was commissioned in August 2013, the Company was yet to reap the envisaged benefits as the linked cavern facility was not ready (November 2016). The Company took 48 months (Jul 2010 to June 2014) for signing the MoU with ISPRL and the related ISA was pending for more than two years.

The Company stated (November 2016) that the SPM was tied up with ISPRL cavern at the instance of Ministry of Environment & Forest (MoEF) while seeking the permission for construction of shore tanks and it was actively pursuing with ISPRL to conclude the agreement.

In the Exit Conference (June 2017) with the Ministry, the Company agreed with the audit observation. It was informed that ISPRL had decided not to share the storage facility with the Company even though efforts were being made by the Company in this regard. Ministry stated that the cavern of ISPRL was constructed for strategic purpose and MRPL may not be allowed to use the cavern. Further, the Company clarified that only the 1.5 KM pipeline which had been laid from the Cavern to the refinery would be idle in case MRPL was not allowed to draw crude from the storage and that this pipeline had also been used in the interim for supply of water.

The reply of the Company/Ministry was not acceptable as MoEF had advised the Company to reexamine the location of Crude Oil Storage Tanks by suggesting to locate these at a higher level to avoid construction of Storage Tanks on the sandy Beach Soil. It had suggested that the Company explore the possibility of sharing the Mangalore Crude Oil Cavern being built by ISPRL. However, the final decision in this regard was to be taken by the Company. It remains a fact that the expenditure of ₹ 806.77 crore on SPM was incurred without having specific terms and conditions for sharing the cavern for crude receipts. Hence, the main objective of SPM i.e. receiving crude in VLCC could not be met even after three years of commissioning.

2.5.3 Idling of Booster Pumping Station and pipeline

The Company commissioned (December 2013) Booster Pumping Station (BPS) at a cost of ₹ 188.69 crore and pipeline from cavern to refinery (August 2014) at a cost of ₹ 14.73 crore. Audit observed that on account of delay in commissioning cavern facility by ISPRL, the BPS and pipeline from cavern to refinery were lying idle (September 2016) since December 2013.

The Company stated (November 2016) that the BPS was necessary for operation of SPM, irrespective of whether ISPRL exists or not, as the station include various controlling units. Further the facilities were created to synchronise with the cavern facility scheduled for commissioning by December 2013.

The fact remains that the facilities constructed in December 2013 at a cost of ₹ 203.42 crore were not put to use as of September 2016.

Ministry did not furnish any reply (June 2017).

2.5.4 Scheduling and diversion of vessels

Expecting the defect-free commissioning of SPM, the Company ordered (from October 2012 to January 2013) four medium vessels (Suezmax) carrying crude to take berth in the SPM facility. However, these vessels could not discharge crude at SPM as the facility was not commissioned due to flange leakage in the facility. Audit observed that though leakage was noticed during test run in October 2012, corrective action could be completed only after three months (December 2012). Similar defects were noticed again during commissioning (January 2013). As leakages were being encountered, planning and ordering of crude in larger vessels instead of smaller vessel at the first instance, resulted in diversion of all the four vessels to Mumbai for lighterage¹⁵ and returning along with four daughter vessels to Mangalore Port for discharge. Consequently, extra expenditure of ₹ 12.34 crore towards diversion and lighterage and ₹ 6.39 crore towards demurrage had to be incurred. The facility was finally commissioned in August 2013

In reply (November 2016), the Company explained the reasons for failure of test run and the reasons for delay in rectification. It stated that the crude procurement was to be planned 2 to 3 months in advance and hence bigger shipments were planned expecting the defect-free commissioning in January 2013 and in fact the overall transportation cost incurred for these

¹⁵ *Transferring of cargo to smaller vessels for discharging the same at port with lesser draft.*

four vessels was less on comparison with that of transport of crude by deploying smaller vessels.

The reply is to be viewed against the fact that the Company has not made any analysis on the cost and benefit of small vessels against larger vessels. If the proposition was economical, the Company could have continued this system till the commissioning of SPM i.e. upto August 2013. Instead the Company continued to get crude in smaller vessels till the time of commissioning of SPM.

Ministry did not furnish any reply (June 2017).

2.5.5 Non-fulfilment of objective of the SPM

The Company estimated (2010) that post commissioning of SPM, the landed cost of crude would be cheaper by ₹ 166.77 crore per annum due to reduction in freight on transportation of crude in bigger vessels and savings in demurrage charges by ₹ 15.50 crore per annum. The Company also expected to increase its refinery margin by ₹ 71.90 crore per annum. Thus, the total benefit expected from SPM worked out to ₹ 254.17 crore per annum.

Audit observed that even after commissioning of SPM (August 2013) at a cost of ₹ 806.77 crore, the Company could not bring crude in VLCC as envisaged, due to the non readiness of connected storage facility and the objective of reduction in freight could not be achieved. As against the initially projected 54 shipments in a year through VLCC, the Company engaged 273 smaller ships in 2014-15; and five VLCC and 289 other ships in 2015-16. The demurrage, increased from ₹ 12.21 crore (2010-11) to ₹ 54.97 crore (2013-14) and to ₹ 81.70 crore (2015-16) as both the jetties and SPM are connected to same crude discharge line resulting in the ships waiting for discharge. The GRM of the Company declined from USD 5.60 per bbl in 2011-12 to USD (-) 0.64 per bbl in 2014-15 though it again moved up to USD 5.20 per bbl in 2015-16.

The Company replied (November 2016) that the throughput was increased to 15.69 MMT during 2015-16, number of ships handled at port was reduced resulting in reduction in congestion and the demurrage was controlled to actual level by having SPM.

The reply is to be viewed in view of the fact that the increase in the throughput was not reflected in GRM. Further, the reduction of congestion in port did not result in reduction of demurrage which increased by 6.7 times in 2015-16 as compared to 2010-11.

Ministry did not furnish any reply (June 2017)

