

Chapter – 2 Production of Iron Ore

This chapter highlights the shortfall in production in the existing mines and delays in development of new mines impacting adversely the production plans of the Company.

Corporate Plan Targets and Achievement

2.1 The Company formulated (May 2001) its Corporate Plan covering a period of nine years from 2001-02 to 2009-10. The Corporate Plan for the subsequent years has not been prepared so far (March 2012).

2.2 The Corporate Plan envisaged:

- To increase the production capability to 25 MTPA by 2006-07 and around 30 to 35 MTPA by 2011-12; and
- To maintain its share at 20 *per cent* in the Country's iron ore production. The share of the Company in iron ore production of the Country, in fact, slipped from 14 *per cent* in 2005-06 to 11 *per cent* in 2009-10. The decline in Company's share was due to increase in low grade ore production for export by the private operators. Its share, however, increased to 16 *per cent* in 2011-12 owing to ban on private mining in Karnataka.

NMDC had a production capacity of 32 MTPA by 2011-12 as against 28 MTPA envisaged in the Corporate Plan.

NMDC catered to 23 *per cent* of domestic demand in 2011-12 by selling substantial ore in the domestic market.

NMDC possesses about 5.5 *per cent* of Country's reserves. It needs to formulate a strategy for acquisition of new resources/mines.

During 2009-10 and 2010-11 the actual production of iron ore by the Company declined from 28.52 MT (2008-09) to 23.80 MT (2009-10) and 25.16 MT (2010-11). The decline in production was mainly due to the breakdown of slurry pipeline of ESSAR which created evacuation constraints as discussed in Chapter 3. However, excluding exports, the Company's share in domestic ore supply was about 23 *per cent* in 2011-12.

2.3 We observed that the Company had achieved a production capacity of 32 MTPA by 2007-08 and had proven iron ore reserves of 1,565 MT at 64% Fe (including the reserves of 11B and Kumaraswamy Deposits which are under development) as on 31 March 2011 out of a total of 28,526 MT³ proven iron ore reserves in the Country. The Company needs to work out its strategy on reserve accretion and acquisition of new mining areas in India and abroad to enhance its production while maintaining operations on a longer term.

³ This is as of 1 April 2010 as given in Working Group Report on Steel for the 12th Five Year Plan.

2.4 The Ministry of Steel (Ministry) in reply (July 2012) stated that it is conscious of the fact that it needs to augment its resource base on a continuous basis. The Indian Bureau of Mines has revised the cut off grade of iron ore to 45 per cent Fe, which will result into further augmentation of the resources. Beneficiation of low grade iron ore increases the Fe content and makes the low grade ore marketable. The Company signed Memorandum of Understanding/ Shareholding Joint Venture Agreement (SJVA) with Chhattisgarh Mineral Development Corporation, Director of Mines & Geology (DMG), Jharkhand Govt. and Jharkhand Mineral Development Corporation, Andhra Pradesh Mineral Development Corporation and DMG, Andhra Pradesh for exploration and exploitation of mineral deposits. The Company acquired 50 per cent stake in Legacy Iron Ore Limited, Australia whose iron ore resources comprise of a 60 per cent interest in Mt Bevan Iron Ore Tenement, Australia having resource of about 1.5 billion of 30.2 per cent magnetite iron ore. The Company is also scouting various other iron ore and coal properties in Brazil, Africa, Russia etc. and they are in various stages of due diligence.

2.5 It was noted in Audit that the Company has been making efforts to acquire mines abroad but no specific strategy (indicating quantum of reserves to be acquired, resources to be earmarked etc.) has been formulated. It was also noted that at present all the contracts entered into by the Company were for supply of iron ore of 64 per cent Fe and above.

Recommendation #1

The Company needs to formulate a strategy spelling out its plans for acquisition of new mines/ reserves.

2.6 Ministry noted (July 2012) the audit observation and stated that the Company would further concretize its plans for enhancement of its resource base and acquisition of new resources.

Shortfall in Actual Production vis-à-vis Installed Capacity

2.7 It was noticed in Audit that the Company has generally been setting its targets below its installed capacity, primarily due to the evacuation constraints (inadequate facilities to evacuate its production fully). The details of Annual production targets and Actual production of the Company for the last seven years ending March 2012 are given below:

Chart 1: Annual Production Planned vis-à-vis Actual Production

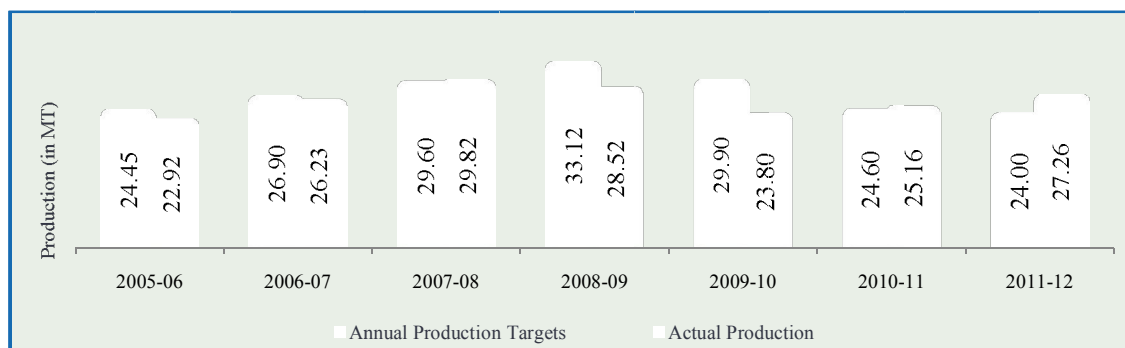


Table 1: Table indicating the installed capacity, annual production targets and actual production by the Company during the last seven years ending March 2012

(in MT)

Details	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Installed capacity – virtual*	24.22	25.00	32.00	32.00	32.00	32.00	32.00
Annual Production Targets ⁴	24.45	26.90	29.60	33.12	29.90	24.60	24.00
Actual Production	22.92	26.23	29.82	28.52	23.80	25.16	27.26
Percentage of actual production to annual production targets	94	98	101	86	80	102	114
Percentage of actual production to virtual installed capacity	95	105	93	89	74	79	85

* Though the installed capacity was officially revised by the Company only in 2009-10, audit has added the additional capacity of 3 MT from the year 2005-06 to arrive at the virtual installed capacity because the Company had introduced the third shift and fourth line at Donimalai in 2005-06 itself.

2.8 As would be seen from the above, despite the fact that production targets were invariably below the installed capacity, even then, in four out of the seven years ended March 2012, the Company could not achieve its own targets. In 2009-10, there was damage to the slurry pipeline of ESSAR Steel Limited which was unforeseen. .

Shortfall in Capacity Expansion

2.9 The Company proposed (January 1997) the development of Kumaraswamy Project as a replacement to Donimalai mine. In January 2003, the Company further proposed to develop Deposit 11B in Chhattisgarh in order to meet the projected shortfall in demand and supply of iron ore at 7.80 MT by 2006-07 in Bailadila sector. These projects, expected to add capacity of 14 MTPA, are still under implementation indicating enormous delays and deficient project management. The issues relating to development of these mines are discussed in the subsequent paragraphs.

NMDC decided to develop Kumaraswamy Deposit in 1997. This project, expected to add capacity of 7 MTPA, was still under implementation as of March 2012.

The implementation of the Kumaraswamy Project could take off only after February 2009 mainly due to delays in getting statutory clearances.

The initial project cost of ₹ 296.03 crore has gone up to ₹ 898.55 crore due to revision of capacity from 3 MTPA to 7 MTPA & creation of additional facilities (₹ 320.00 crore) and general price rise (₹ 282.52 crore).

⁴ As fixed in the Annual Corporate Meetings held by the CMD with functional directors and heads of projects.

Kumaraswamy Deposit

2.10 The Company's Donimalai Deposit in Karnataka has a capacity of 7 MTPA which were to get depleted by 2012-13. Therefore, the Board accorded (January 1997) approval to develop Kumaraswamy Deposit situated close to Donimalai- both in Bellary district in Karnataka- as a replacement to Donimalai Iron Ore Mine. The Kumaraswamy mine was to have an initial production capacity of 3 MTPA which was to be stepped up to 7 MTPA when reserves at Donimalai mine get exhausted. It was proposed to develop Kumaraswamy Deposit by sharing the facilities of Donimalai mine such as, screening plant, down below facilities and township.

2.11 Kumaraswamy Deposit was slated to be completed by October 2009 as per the consultancy contract awarded in July 2006 to MECON. The project is not yet complete (March 2012) and is scheduled for completion by January 2013. Delay in completion of Kumaraswamy project and change in scope of the project resulted in revision of project cost from ₹ 296.03 crore (April 2003) to ₹ 898.55 crore (December 2010). The reasons as to why the project could not be completed in time were analyzed in audit in detail. The findings are narrated below.

Delays in getting statutory clearances

2.12 Though the Board approved the project in January 1997, the Company could apply for the firm forest clearance in July 1999⁵ only. The forest clearance involved diversion of 341.20 ha of forest land. The time taken to apply was attributed to the finalization of the 'land usage pattern' for the mine which was required to be submitted along with the application for forest clearance.

2.13 The Company's application for forest clearance was required to be forwarded by the State Government to the Ministry of Environment and Forest (MoEF), Government of India for final approval. However, in the meantime, there was a letter (August 2001) from the MoEF to Government of Karnataka (GoK) asking it not to forward any new or renewal of proposals of mining lease for diversion of forest land in Bellary district till the Joint Team appointed by Ministry of Mines for suggesting policy guidelines for renewal or grant of new mining leases in Bellary – Hospet sector submits its report. As a result, GoK did not forward NMDC's application to MoEF. In September 2001, Additional Secretary of Department of Mines held a meeting and asked GoK to conduct rapid Regional Environmental Impact Assessment (EIA) study of Bellary – Hospet sector by 31st January 2002. The job was assigned to National Environmental Engineering Research Institute, Nagpur (NEERI).

⁵ Earlier the Company had applied (August 1998) for diversion of 265.15 ha of forest land but later withdrew it as the land use details were not firmly worked out. Subsequently, revised application for 278.35 ha within mining lease area and 64.725 ha outside mining lease area was submitted in February 1999. Subsequently, based on engineering survey details, revised area was worked out and a firm forest clearance application was submitted in July 1999 for 324.70 ha within mining lease area and 16.50 ha outside mining lease area, totaling to 341.20 ha.

2.14 In the meantime, the Company and the Ministry made efforts to persuade Government of Karnataka to forward NMDC's application to the MoEF. In reply to the letter from the Minister of State for Steel, the Minister for Environment & Forests stated (September 2002) that NMDC cannot be excluded from the ambit of Regional EIA study.

2.15 NEERI submitted its report on 29 September 2002. MoEF, thereafter in February 2003, allowed GoK to forward forest land diversion cases to it. Even then Government of Karnataka took two years to forward the application to MoEF which was finally sent to the latter in February 2005.

- Though NMDC requested Government of Karnataka immediately in February 2003 to forward its application to MoEF, the Under Secretary of Forest, Environment & Ecology, Department of GoK, in January 2004, addressed a letter to the Principal Chief Conservator of Forest informing him that GoK, after verification of the proposal, found that the consideration of the NMDC's proposal was not possible. No reason was provided in the letter.
- While the application of the Company was not forwarded to the Ministry of Environment and Forest, Government of India for inexplicable reasons, a notification was issued on 15 March 2003 by Government of Karnataka de-reserving 11620 square Km for private mining which otherwise was meant for state exploitation/ mining for public sector. The following excerpts from the Lokayukta's report of December 2008 are relevant.

“The Government in its orders vide notification No. CI 16 MMM 2003 and No. CI 33 MMM 1994 both dated 15.03.2003, dereserved for private, mining an area of 11,620 square km in the state, meant for State exploitation/ mining by the public sector and notified the surrender of an area of 6,832.48 hectares of prime iron ore bearing lands respectively, which has paved way for distribution of public assets to select private individuals/ entities without regard to their professional or technical or business background.

The entire exercise was undertaken in a manner so as to benefit only a select few individuals/ entities. The main objectives behind de-reservation i.e. to encourage mining based industries to create more employment opportunities in private sector, to attract private capital and professional management for optimal use of state mineral resources were given a go by and allotments were made to the applicants on considerations other than merit.”

- The Company further furnished (August 2004) the replies to the 12 questions/ points raised by Karnataka Government. These questions related to mining activities and consequential measures to be taken up by the Company.
- The Government of Karnataka finally forwarded NMDC's application to MoEF in February 2005.

2.16 The forest clearance was received from MoEF in July 2006. In the meantime, the environmental clearance had also been received (October 2004). Though the forest clearance

was in place in July 2006, the Company could not proceed with the implementation of its project until February 2009, i.e., till the time of receiving the tree cutting permission from the Department of Forests of Karnataka Government. The related developments are narrated below:

- Based on forest clearance of MoEF, the GoK issued their clearance in January 2007 to work in the forest area with a condition that the Company shall execute the agreement with the Forest Department.
- The Company tried to execute the agreement at the earliest but, according to the Ministry's reply to Audit, M/s Deccan Mining Syndicate Private Limited (DMSPL) intervened and communicated to Forest Authorities of Bellary that there were pending cases⁶ of NMDC in the courts and there should not be any execution of forest agreement with concerned authorities. The execution of forest agreement was kept pending by Forest Authorities, Bellary.
- The High Court disposed off (March 2008) the case in favor of NMDC. Thereafter, the Company's officials coordinated with forest officials for tree enumeration work and tree cutting permission. The permission was received in February 2009 from the Forest Department.

2.17 The foregoing details explain how the Company, after applying for the forest clearance in July 1999, could not take up implementation of the project until February 2009 due to delays in getting statutory clearances. These delays contributed significantly to the overall delay in the project and resultantly to the huge cost overrun of the project.

Appointment of Consultant

2.18 The Company had in the meanwhile initiated in December 2005 the process for selection of consultant for consultancy services for Engineering, Contract Procurement services, Project Management and Construction Management Services (EPC). The Company in July 2006 appointed MECON, by floating a limited tender enquiry, as EPC consultant at a cost of ₹ 7.70 crore, immediately after receiving the forest clearance. Though the original DPR approved by the Board in April 2003 envisaged a project cost of ₹ 296.03 crore, it became irrelevant in view of the long delay in getting the environmental and forest clearance. According to the consultancy contract (July 2006), the project was to be completed in 39 months, i.e., by October 2009. Even this timeframe became redundant due to delay in getting forest clearance.

⁶ DMSPL had filed a petition contending that the sketch enclosed with the renewal of mining lease (application by NMDC) encircled their mining lease area of 47 acres and also free area of 188 acres got included in the mining area of NMDC.

Implementation of the project

2.19 The agreement with MECON envisaged the following activities with timelines against each activity. The counting of timelines is done by Audit from August 2008 as the agreement with the Forest Department was signed in July 2008.

Table 2: Activity wise scheduled completion and actual completion

Activity	Time frame (in months)	To be completed by	Actual date of completion	Delay in months (up to March 2012)
Award of contracts	12	July 2009	Package 1 - August 2010 Package 2 - April 2011 Package 3 - November 2010 Package 5-A – July 2011 Package 5-B – February 2012 Package 5-C – March 2012 Package 4 and 6 – not yet awarded.	13 months 21 months 16 months 24 months 31 months 32 months Beyond 32 months
Execution of packages of the project	21	April 2011	Packages are still under implementation.	11 months
Performance Guarantee Test	6	October 2011	As the packages are still under implementation, no PG test was completed so far.	5 months

2.20 The implementation of the Project has already been delayed as it is expected to be completed only by January 2013, i.e., after a delay of 15 months from the intended date of completion. The specific issues relating to implementation are dealt with in the succeeding paragraphs.

Award of contract

2.21 The total project work has been divided into six packages. MECON was required to finalize specifications, tender documents and complete the process of award of contracts within 12 months, i.e., by July 2009. However, the award of contract was delayed in all six packages. As of March 2012, the contracts in respect of four packages could be awarded as shown below:

Table 3: Delays in award of contracts Package wise

Package number and activity	First floating of tenders	Award of contract	Delay with reference to July 2009 (in months)
1. Crushing Plant	August 2007	August 2010	13
2. Downhill conveyor	January 2010	April 2011	21
3. Electrical works	April 2008	November 2010	16
5-A. Civil and structural works including water supply	January 2011	July 2011	24
5-B. Service Centre	May 2011	February 2012	31
5-C. Electric Overhead Transport Cranes	July 2011	March 2012	32

The reasons for the delays in award of packages have been analyzed below.

Package 1: Crushing Plant

2.22 Crushing Plant package is the crucial package for the development of the mine. The Notice Inviting Tender (NIT) for the package was issued in August 2007 and after re-tendering, the contract was finally awarded in August 2010. In this regard, we observed the following:

- MECON submitted the draft tender documents to the Company in December 2006. However, these documents were not complete. MECON kept submitting the tender documents in piecemeal. It submitted prequalification criteria (PQ) in January 2007 and commercial (payment) terms in April 2007 and cost estimates in May 2007. Thus, MECON took abnormally long time in preparing the tender documents.
- The Company appointed a consultant to conduct the soil investigation in December 2006 and finally got it done in September 2007. As a result, there were changes in the methodology⁷ to be adopted for earth work excavation. This led to extension of the date for submission of tender documents to 7 January 2008.
- As the 'area layout' plan for crushing plant prepared by MECON needed revision, the last date for submission was further extended beyond 7 January 2008. MECON submitted the final 'area layout' plan in March 2008 and the Company approved the plan on 17 March 2008.
- The bidders (only two had come forward on 7 January 2008 to submit their offers) could have submitted the tenders then. But the Company decided to include FL Smidth make crusher (which was not included in the original tender) in the approved makes. This decision was based on the recommendation of the committee⁸ which visited Joda mines of TATA steel where this make was installed. As the tender process was underway, there was little justification to include one more make at the late stage particularly when the records of the Company did not provide any justification for inclusion of this make. This necessitated cancellation of original tenders in May 2008.
- Later in June 2008, the Company again asked for certain changes in the area layout plan. This should have been taken care of by the Company while approving the plan in March 2008. MECON based on the Company's observations, revised the tender documents and submitted the same to the Company in January 2009. The reasons for the delay are not on record.
- The new NIT was published in January 2009 with the due date for submission of the tender by 19 March 2009, which was extended to 20 April 2009. Five bidders

⁷ *In the initial tender only reinforced earth retaining walls/ soil nailing was specified for earth protection. Subsequent to soil investigation, it was decided that tenderer may be given the option to adopt any method he finds suitable/ cost effective for the project. This led to changes in tender specifications with regard to excavation and further time extension.*

⁸ *Committee consisted members of NMDC and MECON.*

participated but only two of them were found technically qualified. Both of them, however, did not meet the PQ criteria⁹ and hence the tender was abandoned in August 2009.

- The re-tendering was done in October 2009 by relaxing PQ criteria. Though the tenders were received in November 2009, the tardy processing by the Company in evaluation and seeking of clarification finally led to delay in award of work which was done in August 2010 to the lowest tenderer, FL Smidth Minerals Private Limited.

2.23 Thus, the award of Package 1 was delayed due to delay in preparation of tender documents by MECON, delay in providing the requisite information by the Company to MECON and frequent changes by the Company in the tender conditions. While it is true that the work could not have started without the tree cutting permission, it is also true that the contract could be awarded only in August 2010, though the tree cutting permission was available in February 2009.

2.24 Ministry stated (July 2012) that the time taken (total 9½ months from receipt of bids) for finalization of Package 1 is not unreasonable by considering the time taken from issue of revised tenders in October 2009 and award of work in August 2010. The fact is that, the Company had initiated the process in August 2007 and finally, the work could be awarded in August 2010. The Company took 37 months for finalization of award.

Package 2: Downhill Conveyor

2.25 In respect of Package 2, we observed that:

- As per the initial plan in 2003, the downhill conveyor was to be extended up to Donimalai screening plant from Kumaraswamy Iron Ore Project hill top. However, in December 2008, the Company decided to truncate the downhill conveyor to match with the new screening plant location and add another conveyor from that point to the existing Donimalai screening plant.
- The planning regarding whether to use the existing Donimalai screening plant or install a new one should have been done at the DPR stage itself in April 2003. Nonetheless, it was also possible to quickly decide on this issue after appointment of the consultant in July 2006. However, the decision to add another conveyor plant was delayed till December 2008.

⁹ PQ criteria inter-alia included that (i) the tenderer / collaborator should have engineered and constructed at least one crushing plant with a gyratory crusher in the last ten years. As L&T supplied crusher eleven years back, the PQ was modified to 15 years. (ii) Another PQ was that, in case of collaborator/ associate of the collaborator, they shall jointly and individually be responsible for the execution of the contract for which the necessary guarantees shall be furnished by them to the Company in the form of BG for their share.

F. L. Smidth did not agree to this criteria and informed that in addition to the BG to be submitted by F. L. Smidth, they will also submit additional BG which otherwise was to be submitted by their collaborator,

F.L. Smidth CEntry. The tender terms were relaxed and both the BGs were given by F. L. Smidth only.

- Even after taking the decision regarding screening plant in December 2008, MECON took eight months to submit the first draft of tender documents in August 2009. The final draft was approved by the Company in December 2009 and NIT was issued in January 2010. Tenders were opened in April 2010 but the Company and MECON took one year to award the contract. Considerable time was taken for bid evaluation, price negotiations and Board approval. Finally, the contract was awarded to ELECON in April 2011 with completion time of 21 months. This again indicates the poor project management.

2.26 *The Ministry attributed the delay in tendering activity to finalizing the land agreement with Bharat Mines & Minerals through whose land the conveyor corridor was to pass. This agreement was finalized in August 2009. The subsequent delay in processing was attributed to time taken in bid evaluation/ discussion with bidder's foreign associates.*

Package 3: Electrical Works

2.27 In respect of Package 3, we observed that the electrical works were mainly required to be done for Package I and II. As the award of work for these packages was delayed, the Company abandoned the contract procedure initiated in March 2008 and re-tendered the work in April 2010. The contract was awarded in November 2010 with a completion time of 15 months.

Package 4: Telecommunication works

2.28 In respect of Package 4, we observed that though the tender documents were prepared in July 2008, the tendering process was not undertaken due to delay in first two packages. The Company asked MECON (May 2011) to revise the tender cost in view of efflux of time. MECON submitted the revised tender documents in July 2011 and the tenders were floated in August 2011. The award of work was expected to be completed by May 2012. *The Ministry (July 2012) stated that this was a non-critical package of nine months duration and the successful bidder would have to work in facilities created under Package I and II and hence, the award of this package was being regulated accordingly.*

Package 5: Hill top facilities

2.29 In respect of Package 5, we observed that NIT was issued in March 2008 but since there was no response to the tender, the package was split into three sub-packages in July 2008. MECON took a long time to submit draft tender documents for these packages. The tender documents were submitted between June 2010 and October 2010. Apart from the abnormal delay on the part of MECON, the Company also delayed the approval of tender documents by six to eight months. The NITs for sub-packages were issued during January 2011 to July 2011. There was no justification for the delay in the process of award of work. Water supply sub-package was awarded in July 2011 and works are in progress. Service centre package and cranes package were awarded in February and March 2012 respectively.

Package 6: Approach Road

2.30 In respect of Package 6, we observed that MECON submitted the draft tender documents in November 2010. The Company asked (December 2010) MECON to redesign and revise the tender documents as the basis for design parameter was incorrectly considered. Soil investigation report was forwarded by the Company to MECON in March 2011. The revised documents were received from MECON in August 2011. The tender was floated by MECON with due date of tender opening in November 2011. The techno-commercial scrutiny is going on at NMDC and the award of contract is expected to be completed by May 2012.

2.31 *The Ministry stated (July 2012) that Package 5 and 6 were not directly related to commissioning of the project and award of work for Package 6 is under finalization and is likely to be awarded shortly.*

2.32 **As can be seen from above, the award of contracts, expected to be completed by July 2009, i.e., within 12 months from the date of signing the agreement with Forest Department, was actually completed in case of four packages after a delay of 13 months to 32 months. In respect of other two packages, the contracts were yet to be awarded by March 2012.**

Implementation of Packages

2.33 The execution of the packages was to be completed within 21 months from the award of the contracts. The details of progress in implementation of the packages is given below:

Table 4: Table indicating the packages in respect of which works have been awarded (As of 31 March 2012)

Package	1	2	3	5A	5B	5C
Date of award of work	August 2010	April 2011	November 2010	July 2011	February 2012	March 2012
Projected date of completion as per contract	May 2012 [Extension sought by supplier up to June 2013]	January 2013	February 2012 [Extension granted up to November 2012]	April 2012	November 2012	January 2013
Present status	Design & Engineering completed. Civil works in progress. Imported equipments inspection completed and supplies in progress. Physical Progress: 54%	Design & Engineering is in advanced stage. Excavation and road work are in progress. Physical Progress: 26%	Design & Engineering completed. Major equipments inspection & dispatch in progress. Physical Progress: 59%	Service Centre Package and Cranes Packages awarded in March 2012.		

2.34 The work is in progress and going by the pace of implementation of Packages 1, 2 and 3, the prospects of scheduled completion by January 2013 appear bleak. The implementation of Packages 1 and 3 is getting delayed beyond the scheduled completion date and the reasons are:

- Package 1: Though award was dated 30 August 2010, clarifications on commercial points were furnished by the Company on 14 October 2010 after a period of two months. As the deviations were noticed (March 2011) on the soil conditions in actual vis-à-vis as indicated in the tender documents, final decision was taken in a meeting with MECON, FL Smidth and the Company in August 2011. In December 2011, the design parameters of Primary Crushing House (PCH) Building/ foundation and scheme of Dumper platform were frozen. This resulted in delay in subsequent activities of material planning, procurement and construction activities at site. FL Smidth requested the Company to extend time till June 2013 for completion of PG test.
- Package 3: Due to carrying out changes in civil and structural drawings submitted by the Contractor as proposed by MECON, there was delay in finalization of drawings. There was also a lapse of six months (September 2011 to February 2012) on finalizing the vendors for procurement of steel by NMDC/ MECON. Further, according to the contractor, ban on mining activities by Hon'ble Supreme Court in August 2011 resulted in difficulties in procurement of sand, jelly etc. The same were transported from far off places and this affected progress at site.

Impact of delay on commissioning of the project

2.35 The delay in completion of Kumaraswamy project resulted in revision of project cost from ₹ 296.03 crore (April 2003) to ₹ 898.55 crore (December 2010) which was due to revision of capacity from 3 MTPA to 7 MTPA and due to creation of additional facilities (₹ 320.00 crore) and general price rise (₹ 282.52 crore). The delay and consequent increase in cost due to price rise are mainly attributable to delays in receiving the statutory clearances and subsequently due to poor project management by the Company. The project is now scheduled to be completed by January 2013.

11B Deposit

2.36 The Company assessed (January 2003) the shortfall between demand and supply of iron ore from Bailadila sector to be 7.80 MT by 2006-07. Therefore, the Board accorded (January 2003) in-principle approval to develop 11B Deposit at Bailadila in Chhattisgarh and to prepare Detailed Project Report (DPR) to meet the projected shortfall of iron ore. The Board approved (March 2004) an estimated expenditure of ₹ 15.57 crore for preparation of DPR, statutory clearances and pre-construction works. In order to take advantage of the booming market, the Board directed for commencement of pre-construction work in parallel to DPR preparation to save 10 months time out of scheduled 49 months for completion of the project. The Company had also initiated action for preparation of DPR in October 2003 by

NMDC decided to develop 11B Deposit mine in 2003. This project, expected to add capacity of 7 MTPA, was still under implementation as of March 2012.

Delays were noticed in 11B Deposit Project in Chhattisgarh. The initial project cost of ₹ 295.89 crore went up to ₹ 607.17 crore due to revision of capacity from 3 MTPA to 7 MTPA (₹ 139.17 crore) and general price rise (₹ 172.11 crore).

Slated to be completed by October 2008, the 11B Deposit Project is still in progress due to controllable delays in awarding contracts for development and also due to external constraints.

officials from various departments of the Company and prepared the report in July 2004. It was proposed to develop 11B Deposit with a capacity of 3.0 MTPA by utilizing the existing infrastructure such as screening plant, tertiary crushing plant, loading plant, administrative set up and other facilities in order to bring down the overall capital investment and operating cost of the project so that it would be most competitive.

Receipt of statutory clearances

2.37 The Detailed Project Report (DPR) to develop the 11B Deposit at an estimated cost of ₹ 295.89 crore was approved

(January 2005) by the Board. The project cost was revised (January 2008) to ₹ 468 crore and further (May 2008) to ₹ 607.17 crore. The increase in project cost was due to increase in design capacity from 3 MTPA to 7 MTPA (₹ 139.17 crore) and increase in prices (₹ 172.11 crore). The time lag in taking up the project was on account of the following:

- Though the Board approved the project in principle in January 2003, the Company applied for forest clearance in December 2003 only and the same was received in January 2005. The period of 10 months in submission of application for forest clearance could have been curtailed with better planning and management.
- The Company applied for No Objection Certificate (NOC) to the State Government in May 2004 and received the same in November 2005. Thereupon, it applied (December 2005) for Environmental Clearance (EC) from MoEF, which was received in September 2006.

Appointment of Consultant

2.38 Against a limited tender enquiry floated (March 2005), MECON was issued (July 2005) Letter of Intent (LOI) for consultancy services for Engineering, Contract procurement services, Project management and Construction management services.

Implementation of the project

2.39 As per the PERT chart, the project was scheduled to start by July 2005 and completed by October 2008. The same was revised to January 2007 and September 2011 respectively. With reference to the initial PERT chart, the status of activities, timeframe and progress is given below:

Table 5: Table indicating the milestones and achievement in respect of 11B Deposit

Activity	Time frame (in months)	To be completed by	Actual date of completion	Delay in months (up to March 2012)
Procurement (Award of contracts)	12 ¹⁰	July 2006	3 Major packages - August 2007 Others - July 2011	Major packages -13 months Others - 60 months
Execution of packages of the project	21	April 2008	Packages are still under implementation.	47 months
Performance Guarantee Test	6	October 2008	As the packages are still under implementation no PG test was completed so far.	41 months

2.40 The implementation of the project has already been delayed at least by 41 months (March 2012). The project is expected to be completed by November 2012, i.e., after a delay of 49 months. While a part of the delay is attributable to late receipt of Environment Clearance (EC), we noticed that the delays in implementation were also due to deficient planning and tardy project management and these delays were very much controllable. Delays were also attributable to external constraints. Specific issues involved in the implementation are discussed below.

Award of contract

2.41 The total project work has been divided into seven packages. MECON was required to finalize specifications, tender documents and complete the process of award within 12 months, i.e., by July 2006. However, the award of contract was delayed in all seven packages. As of March 2012, the contracts in respect of all packages have been fully awarded as shown below. The delay has been worked out with reference to November 2006, i.e., two months after the receipt of environment clearance. As the Company had appointed the consultant in July 2005 itself, the tendering could have been completed and orders kept ready to be issued immediately after receipt of EC.

¹⁰ The Board proposed (March 2004) 12 months time schedule for preconstruction work (award of contracts). The PERT chart for Package I also provided for 12 months for preconstruction activities.

Table 6: Table indicating the delays in award of contract for 11B Deposit

Package No.	Activity	First floating of tenders	Award of contract	Delay with reference to November 2006 (in months)	Name of the contractor
1	Crushing Plant & Stacking section	November 2006	August 2007	9	TRF Limited
2	Downhill conveyor	November 2006	May 2007	6	Sandvik Asia Limited
3	Earthwork and site preparation	February 2006	December 2006	1	Ratna Constructions
4	Electrical sub-station and Power distribution system	August 2007	March 2008	16	Siemens Limited
5A	Water supply, Reservoir and piping etc.	August 2009*	June 2010	43	Local contractors
			November 2010	48	
5B	Service centre buildings etc.	February 2010	November 2010	48	BCC Infracon
5C	Electrical Items (Transformers, wiring, Panel etc.)	May 2010	February 2011	51	Lalitha Engineering
5D	Supply and erection of cranes	June 2010	July 2011	56	Alpha Services Ltd.
6	Telecommunication system	July 2008	October 2008	23	Infonet Asia private Limited
7	Fire protection system	May 2008	January 2010	38	New Fire Engineers Pvt Ltd

* No party participated and hence the scope of work was further split as (1) Departmental (NMDC) purchase of pipes and valves; (2) Construction of RCC ground level water reservoirs (with supply of steel and cement by department); and (3) Erection of water pipe line from 11C to 11B.

2.42 Even after taking into consideration the date (September 2006) of receipt of EC, the process of award of contract should have been completed by September 2007 as the consultant had already been appointed in July 2005. We noticed that the Company had awarded first three Packages by September 2007, Package 4 and 6 were awarded by October 2008. However, Package numbers 5 and 7 were badly delayed as explained below.

- Though MECON submitted the tender documents for Package # 5 in November 2006 itself, it took a long time for the Company to approve these documents in January 2008. This was due to revisions made in the drawings. However, the Company could have managed the process better by setting the timeframes and strictly monitoring the adherence to the timeframes. The matter, however, was allowed to take its own course. Subsequently, the tenders issued in February 2008 were cancelled for want of response. The work was then split into four sub-packages (August 2008). Tardy processing saw

these getting awarded only by July 2011. This indicates poor project management by the Company.

- So far as Package # 7 is concerned, there was delay in preparation of tender documents which were submitted by MECON in February 2008. Though NIT was issued in May 2008, the process of award of contract was delayed up to January 2010 due to processing of tenders and revision in cost estimates. The delay was avoidable with proper monitoring.

2.43 *The Ministry (July 2012) stated that Package for Telecommunication (Package 6) and Fire detection and alarm system (Package 7) are not linked directly with commissioning. However, these packages cannot be executed unless fronts are made available by Package 1 and 2 contractors. Award of these Packages got delayed due to Maoist activity which resulted in no offers from bidders. Therefore, the Company split the original packages into rate contract jobs. The Ministry admitted that there were delays but stated that there was no impact on the overall project. While it is true that the Company faced external constraints, it is also true that there were delays in the activities which were within the control of the Company and the consultant.*

Implementation of packages

2.44 The details of progress in implementation of packages are given below:

Table 7: Table indicating the progress in implementation of packages

Package no and description of work	Date of award of contract	PDC as per contract	Physical progress in % (March 2012)	Contract cost (₹ in crore)	Payment (₹ in crore)
1. Crushing Plant and Stacking section	August 2007	May 2009	70	115.19	83.18
2. Downhill conveyor	May 2007	February 2009	75	115.71	82.32
3. Earthwork and site preparation	December 2006	November 2007	96	75.29	73.12
4. Electrical sub-station and Power distribution system	March 2008	March 2009	91	10.99	7.98
5A. Water Supply, Reservoir and Piping etc	November 2010	March 2011	86	1.41	0.63
5B. Service centre Buildings, etc	November 2010	November 2011	58	17.33	4.48
5C. Electrical Items (Transformers, Wiring, Panel etc)	February 2011	February 2012	51	2.36	0.55
5D. Supply and erection of cranes	July 2011	May 2012	45	1.54	0
6. Telecommunication system	October 2008	October 2009	51	1.78	1.11
7. Fire Protection System	January 2010	January 2012	68	7.36	4.76
Total				348.96[†]	258.13

[†] Total 11B project cost is ₹ 607.17 crore including ₹ 181.88 crore for purchase of mining equipment, ₹ 33 crore for township/ additional facilities; ₹ 23.55 crore for Environmental Management Plan; and balance for services/ Admn. Exps./ Contingencies etc.

2.45 As can be seen from above, Packages # 1, 2, 3, 4 and 6 which were scheduled to be completed between November 2007 and October 2009 were yet (March 2012) to be completed. Key points relating to delays are discussed below.

- Package # 1 (Crushing Plant & Stacking section) was delayed as the site for primary crusher was handed over to the contractor only in July 2008. This delay was due to delay in implementation of package # 3 (Earthwork and site preparation). In addition to this, law and order problems and delays on the part of the contractor (TRF Limited) were also responsible.
- Package # 2 (Downhill Conveyor) was also delayed as the site for Downhill Conveyor System was handed over to the contractor only in May 2009. The delay was due to delay in implementation of package # 3. In addition to this, non-availability of construction materials and delay in submission/ approval of drawings were also responsible.
- Package # 3 (Earthwork and site preparation) scheduled to be completed by November 2007, was yet (March 2012) to be completed. The delay was attributable mainly to increase in estimated earthwork, problems in soil due to bouldary nature of soil and introduction of grouted nails. Nonetheless, the time taken appears to be too long.
- Package # 4 (Electrical sub-station and power distribution system) was delayed due to delay in submission of drawings by the contractor and also due to delay in completion of package 1 and 2.
- Package # 6 was delayed as fronts were not ready for installation of telecommunication system.

2.46 There was delay in award of works relating to Package 5 and 7. Further, it was observed that there were delays in the implementation of Package 5 and 7 also.

- In respect of Package 5, electrical works were delayed as site was not ready for taking up electrical works and the civil works to most of the buildings were still under construction. Site was not ready for setting up of cranes. Approved drawings were not submitted to the contractor even by April 2012 (award of work: November 2010) by MECON in respect of location of fire station, roads and drains.
- Package 7 was delayed as the mechanical work could not be started since no front was made available to the contractor to take up the work as conveyor work was in progress. Clearance to take up the work could be given only after completion of construction of conveyor.

2.47 *The Ministry (July 2012) stated that contractors for Package 1 and 2 were unable to execute the project at a pace acceptable to the Company owing to problems in mobilization of resources and manpower due to Maoist activities.* However, apart from external factors, deficient project management was also responsible for delay.

Impact of delay on commissioning of the project

2.48 The delay in completion of 11B project resulted in revision of project cost from ₹ 295.89 crore (January 2005) to ₹ 607.17 crore (December 2010) which was due to revision of capacity from 3 MTPA to 7 MTPA (₹ 139.17 crore) and general price rise (₹ 172.11 crore). The project is now scheduled to be completed by November 2012, the chances of which appear bleak as Package 7 completion date was extended up to January 2013.

2.49 *The Ministry stated (July 2012) that re-discovery of additional reserves in Kirandul project due to extensive drilling, gave a fresh lease of life to the mine. This development necessitated re-visiting of the project plant and equipment capacities along with logistics. The Ministry contended that 11B was only envisaged as a replacement mine for Deposit 14 and was not intended to be in operation in addition to that mine.*

2.50 The reply of the Ministry is not convincing in view of the following:

- The contention of the Ministry that the Company had to re-visit the project plant and equipment capacities and logistics in view of the re-discovery of additional reserves in Kirandul is not seen in the records of the Company.
- There were delays due to external constraints which occurred during execution. However, there were delays on the part of the Management in finalizing the award of packages and in finalizing the drawing post award of contracts.
- Even if it is accepted that the Management had re-discovered additional reserves, the Management could have gone ahead with the development of the mine and could have regulated its production with the market conditions.

2.51 *The Ministry further stated (July 2012) that, even though in isolation, when compared with the time schedule mentioned in the consultancy contract with MECON, the award of work for the above package works is noticed to have been delayed, but actually there is no impact on the overall project considering the dependency of package work one over the other. It also stated that the relevant points brought out in the audit report have been noted by the Company and actions will be taken as part of the continual improvement efforts of NMDC.*

2.52 The Company agreed with the recommendation. It stated (December 2010) that two General Managers and one Deputy General Manager were posted to head the three branches of project division, i.e., engineering, contracts and projects. For each project, an officer of the grade of Joint General Manager/ Dy. General Manager has been appointed as project manager who is directly responsible for doing complete coordination between planning and implementation and monitoring set up. Director (Technical), other Directors and CMD have been taking monthly reviews of all the projects.

Recommendation # 2

The company needs to enhance its project management capability by focusing on project planning, implementation and monitoring. In this regard, the Company needs to specify the timeframes and milestones for all project activities and ensure their strict adherence through continuous monitoring and requisite remedial action.