GUIDELINES
FOR THE PREPARATION OF
FEASIBILITY REPORTS FOR

COAL PROJECTS

PROJECT APPRAISAL DIVISION
PLANNING COMMISSION
GOVERNMENT OF INDIA
NEW DELHI
APRIL, 1992
PREFACE

The quality of appraisal, investment decision and success of the projects depend largely on the quality and content of the Feasibility Report (FR). It is in this context that the Planning Commission had earlier issued guidelines for the preparation of FR in 1966 and later in January, 1975. The 1975 version of the guidelines relates to the industrial projects but the same has been in use in other sectors as well to the extent possible.

Despite the emphasis on proper feasibility study, a number of cases of time and cost over-run have been encountered in the projects almost in all sectors of the economy. The issue was also considered by the Committee on Public Undertakings (COPU) 1981-82 (Seventh Lok Sabha). In the light of the shortcomings observed in the quality of FR submitted by the project authorities, the Committee desired that on the basis of the experience gained and feed-back on implementation obtained, revised guidelines for preparation of FRs should be issued to ensure reliable project formulation. Following the above recommendations, Working Groups for formulation of revised sector-specific guidelines were set up by the Planning Commission for seven sectors/subsectors, namely, Coal, Power, Cement, Paper, Engineering, Metallurgical and Process Industries.

Based on the drafts developed by these Working Groups, comments received from concerned Ministries/Organisations and discussions held with them, these Guidelines have been prepared. In these Guidelines, the term Detailed Feasibility Report (DFR) has been used in place of FR, mainly to emphasise the need for detailed information to enable proper appraisal of the investment proposal. The Guidelines mainly outline the information required for proper formulation and appraisal of projects. Any procedures and criteria/parameters as may be specified by the Government from time to time have also to be taken into consideration while formulating and appraising projects.

While efforts have been made to incorporate various improvements in the guidelines, these cannot be taken as the final word on the subject as project formulation is a dynamic process and depends on the state of knowledge which gets enriched with time. Any suggestions to improve these guidelines are, therefore, welcome.

New Delhi.
April 30, 1992

(Dr. Uddesh Kohli)
Adviser (Project Appraisal)
<table>
<thead>
<tr>
<th>CHAPTER - 1</th>
<th>Introduction</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAPTER - 2</td>
<td>Proposal For Advance Action Plan</td>
<td>3 - 4</td>
</tr>
<tr>
<td>CHAPTER - 3</td>
<td>Studies and Investigations</td>
<td>5 - 7</td>
</tr>
<tr>
<td>CHAPTER - 4</td>
<td>Detailed Fessibility Report</td>
<td>8 - 74</td>
</tr>
<tr>
<td>CHAPTER - 5</td>
<td>Revised Cost Estimates</td>
<td>75 - 118</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

1.1 Every Five Year Plan lays down certain basic objectives and targets for growth, development, consumption, investment and resources to be mobilised. The macro or national targets are broken into sectoral investments and growth. The plans for each sector consist of programmes/projects and schemes. A complete system of project management must ensure the following aspects:

a) formulation/selection of the most sound and viable projects;

b) proper implementation of the projects selected; and

c) proper management of the completed projects.

1.2 The main stages of the project cycle can be considered in the following phases:

a) Preliminary establishment of the need to be achieved through the implementation of a project.

b) Project identification and formulation which involves examination of various alternatives or options to meet the desired needs/goals; and selection of one or more options for preparation of the Detailed Feasibility Report (DFR).

c) Preparation of a Detailed Feasibility Report (DFR) - DFR is a document which contains detailed information on the technical, market, organisational, managerial and environmental aspects and on financial and economic viabilities. In coal projects, this document is also referred to as Project Report (PR) or simply Feasibility Report (FR).

d) Appraisal of Detailed Feasibility Report (DFR) from the following aspects:

i) Technical Analysis to determine whether the specifications of technical parameters chosen are realistic and optimal;

ii) Commercial Analysis to determine demand/supply gap and whether the product specifications, marketing plan and delivery system are soundly conceived;

iii) Organisational aspects to determine whether the organisation has the managerial capability to implement and operate the project.

iv) Environmental aspects to ensure that aspects like rehabilitation, resettlement etc as may be required as per environmental guidelines have been fully covered in the project cost;

v) Financial Analysis to determine whether financial costs and returns are properly estimated and whether the project funding is ensured and whether the project is financially viable;

vi) Economic Analysis to determine whether a project is worthwhile from the point of view of economy as a whole;

e) Investment decision to be taken keeping in view the competing claims of other projects and in the context of the provisions available in the Five year and Annual Plans.

f) Implementation which involves implementation planning, preparation of a Detailed Project Report (DPR), detailed designs & drawings, specifications, tendering/contracting, getting various clearances, execution of various activities leading to commissioning of the project and monitoring throughout;
g) **Operation** when the project outputs- goods or services are actually generated and ex-post Evaluation to find out whether the objectives intended were realised and whether the project was properly designed and effectively carried out.

1.3 **Detailed Feasibility Report (DFR)** is the basic document which provides information needed for the purpose of appraisal of the project irrespective of whether it is a proposal for setting up of a new plant/facility or expansion and / modernisation of an existing plant/facility. The quality of appraisal / investment decision largely depends upon the quality of DFR. The purpose of these Guidelines is to specify the information that is required on all the important aspects / parameters of the projects and the way in which the data should be presented.

**INVESTMENT APPROVAL PROCEDURE :**

1.4 All Central public sector projects above a specified cost level require approval by Government prior to consideration by the Cabinet. Projects in all sectors (except Railways, Atomic Energy, Space, Non conventional Energy, Science and Technology and Electronics) have to be considered by the Public Investment Board (PIB).

1.5 The steps required to be undertaken for investment approval are as follows;

i) **Advance Action Plan :** Unlike Stage-I approval of the other projects, in case of coal sector, Advance Action Plans are to be sanctioned by the Ministry of Coal. With a view to expedite the land acquisition, rehabilitation, collection of environmental data etc. and also to firm-up other project parameters, Ministry of Coal has been delegated financial powers to sanction such Advance Action Plans.

ii) **Preparation and circulation of DFR.**

iii) **Inter-Ministerial Group (IMG) or pre-PIB meetings convened by the Financial Adviser in the Administrative Ministry/Department.**

iv) **Obtaining clearances from Ministry of Environment and Forests, Central Electricity Authority (if any captive power plant is included), and other concerned agencies.**

v) **Circulation of final PIB memo by the Administrative Ministry/Department.**

vi) **Preparation of appraisal note by the Project Appraisal Division (PAD).**

vii) **Consideration by PIB and its recommendations to Cabinet (CCEA).**

viii) **Preparation and circulation of Note for Cabinet (CCEA).**

ix) **Consideration and investment approval by Cabinet (CCEA).**

x) **Issue of sanction letter by the Administrative Ministry/Department.**

1.6 Chapter 2 of the Guidelines describes the procedure for the Advance Action clearance. The studies and investigations required to be carried out in respect of the coal sector for preparation of Detailed Feasibility Report (DFR) are given in Chapter 3. Chapter 4 deals with the presentation of DFR while Chapter 5 describes the information required for submission of the Revised Cost Estimates (RCE).
CHAPTER 2
ADVANCE ACTION PLAN

2.1 With a view to expedite project-related preliminary activities required for speedy processing & implementation of coal projects, the Project authorities should prepare the Advance Action Plan (AAP) which will comprise inter-alia the following essential activities:

i) Carrying out of surveys for various types of lands including forest land, alignment of coal handling plant, railway sidings, approach roads, bridges/ culverts, hydrological studies;

ii) Acquisition of land including forest land and payment of compensation to the land owners;

iii) Rehabilitation of land evictees including the cost of resettlement colony;

iv) Collection of environmental data and preparation and approval of Environmental Management Plan;

v) Construction of access roads, minor bridges, culverts, power lines, water lines, temporary sheds for the site office and other related activities;

vi) Purchase of minimum numbers of essential vehicles, like trucks, pick-up vans and HEMM items like dozers required for completing 'Advance Action' work.

2.2 The AAP would be completed in 24 to 30 months from the date of sanction. The Ministry of Finance vide their O.M. No. 16(10)/PF-II/88 dated April 7, 1989 have delegated powers to the Deptt. of Coal for sanctioning Advance Action Plan upto Rs. 10.00 crores for coal projects costing Rs. 50.00 crores or more.

2.3 Advance Action Plans may be prepared as per the guidelines issued by the Ministry of Coal vide their letter No. 43011/22/86-CPA dt. 7th June, 1989. Within this period, environment clearance should be obtained and the Detailed Feasibility Report (DFR) should be prepared and submitted to the Government for investment approval of the project. The guidelines as referred to above are placed at Annexure-I.

2.4 The project authorities should incorporate in the Detailed Feasibility Report (DFR), the broad contents of the AAP indicating the present status and also the difficulties being encountered in its timely completion. The progress made may be indicated activity-wise in terms of financial and physical achievements with reasons for shortfalls, if any, in the Detailed Feasibility Report (DFR) to be circulated to the appraising agencies. Sanction letter regarding AAP should be given in an Annexure to the DFR.
Guidelines Issued by the Department of Coal Vide their LR NO:43011/22/86-CPA dated, 7th June,1989, for Preparation of Advance Action Plans for Coal Projects

i) Advance Action proposal may be prepared in the form of a conceptual note, indicating inter-alia broad parameters of the project like capacity, likely investment, cost of production and profitability etc. Other essential parameters generally covered in a feasibility report should also be briefly touched upon in the Advance Action proposal. The proposal should bring out clearly the sector whose demand would be met by production from the proposed mine, alternative project considered to meet the demand, special problems likely to be encountered like land acquisition problems, forest areas involved etc.

ii) Advance Action proposal should be based on a firm geological report indicating the coal reserves, detailed geometry of the deposit, quality of coal etc.

iii) The coal company will have to nominate a project officer, who will be responsible for implementation of Advance Action Plan and will also be associated with CMPDI in preparation of the project report for the mine.

iv) Applications for acquisition of various types of lands will be submitted to the appropriate agencies with copies to the Department of Coal.

v) The progress of land acquisition will be reported to the Department of Coal once in every quarter indicating inter-alia any help/intervention that may be required for expediting this activity. The time allowed for completing all the activities provided in the Advance Action Plan will be 30 months from the date of sanction of the Advance Action Plan. Within this period, the feasibility/project report will be formulated and got approved from the Government. Environmental clearance will also be obtained during this period.
CHAPTER 3

STUDIES AND INVESTIGATIONS

3.1 The reliability of a Detailed Feasibility Report (DFR) as an instrument of investment decision largely depends upon the thoroughness of the studies and investigations carried out to specify the project parameters. The purpose of this chapter is to outline the specific studies and investigations undertaken prior to the preparation of the DFR with a view to enhance the confidence in the reliability of DFR and ensure that there are no major changes in the project design (mine size, mining technique, configuration of equipment, etc.), capital cost and construction period.

3.2 The selection of a project for preparation of the DFR involves a choice from several options with regard to the location, size/capacity, and other parameters of project design and linkages. The optimisation exercises in respect of project choice would have to be based on a 'System Approach' taking into account the overall chain comprising the production, transport and consuming centres. Justification for selection of a project from the production angle should be derived from a critical analysis of a 'Shelf of projects', such a shelf being prepared from the Master Plan of the different important coal fields. Such a system of selection of projects would not only pinpoint the least cost options but also assist in prioritisation and sequential planning of production build up. The data to be incorporated in the reports at Master Plan stage could be evolved.

3.3 The studies and investigations required for the formulation of coal projects, pertain mainly to the following:

a) Geological Investigation
b) Mining Techniques and Configuration of Equipment.
c) Other Survey and Studies:
   i) Land Acquisition
   ii) Railway Siding and Line Capacity Survey
   iii) Coal Handling Plant
d) Infrastructural Facilities
e) Environmental Management Plan (EMP)

The studies/investigations required to be listed are given briefly under each of above items. The presentation of information based on these and other studies is discussed in Chapter 4.

3.4 GEOLOGICAL INVESTIGATIONS:

The nature of investigations carried out for deciphering the surface and sub-surface geology of the block should be clearly spelt out. Since the ultimate purpose is to evaluate the lay and disposition of the coal seams, their structural disposition, physical and chemical characteristics of the overburden strata as well as qualitative and quantitative parameters of the coal seams, hydro-geological features, etc., it is necessary that the precise manner in which each of the above and other related studies have been carried out and confidence levels developed is spelt out. Since the reserves proved have a direct bearing on the annual production capacity that can be sustained over a reasonable period, the delineation of mining block assumes importance. In relation to the ultimate exploitation of the coal seams either by open cast or underground mining, methods
chosen would have to be generated. Specific parameters that have a bearing on the choice of mining method have to be indicated. For example, the coal-overburden ratios, overburden volumes and its characteristics, etc. would influence the mine design and equipment configuration for production, conveying and disposal. In the area of underground mining, a large number of precise geo-mining and geo-engineering characteristics have to be established for introduction of longwall methods of mining.

3.5 SUITABILITY OF MINING TECHNIQUES AND CONFIGURATION OF EQUIPMENT:

The optimisation studies carried out to select the suitable mining techniques in consideration of geo-mining conditions should be brought out. As regards the mining techniques already in vogue, the envisaged productivity norms should be compared with actual performance under similar geo-mining conditions. In case, the sand is required for stowing, the investigations carried out regarding availability and transport of sand should be indicated. If alternative mode of stowing is considered, whether adequate laboratory or field studies have been done should be brought out. Based on the mining techniques to be adopted, the detailed alternative configurations of equipment should be studied.

3.6 OTHER SURVEYS AND STUDIES:

3.6.1 Land Acquisition:

The surveys conducted to enumerate the land ownership pattern, involvement of forest land, problems in land acquisition and rehabilitation of land oustees, should be listed. In case the structures like power transmission line, roads, railway line, etc. have to be shifted, whether the concerned agencies have been consulted and their consent obtained, is to be clarified.

3.6.2 Railway Siding:

The surveys for the railways siding & related facilities as undertaken by the railways need to be indicated. Besides, it will also be necessary to know the availability of line capacity for transport of coal.

3.6.3 Coal Handling Plant:

The need and nature of CHP has to be given. If an independent CHP is not envisaged, the details of CHP which would serve this project along with liability of capital cost, etc. be given. In case, an independent CHP is proposed to be set up, the capacity, cost and gestation period for its completion are to be given. On the other hand, if CHP is being planned for more than one project, the details of projects to be served by CHP, details of capacity, capital cost, etc. along with apportionment of cost to different projects is to be furnished.

3.6.4 Coal Beneficiation Plant (Washing):

If coal is to be beneficiated/washed as per the requirements of consumer, the full details such as capacity, cost, construction period, etc. of beneficiation plant proposed in the DFR, be given. The method of beneficiation along with flow sheets are to be explained. The studies/investigations carried out to beneficiate the ROM coal from the mine and to maintain the quality of beneficiated/washed coal may be given. The past experience of the Consultants who are being associated for the execution of the plants may also be indicated. It may also be mentioned whether the beneficiation/washing plant is being proposed as an integrated part of the project or as a separate unit.
3.7 INFRASTRUCTURAL FACILITIES:

The infrastructural facilities available in respect of accessibility, transport, (especially by rail), power, water, workshops, etc. should be examined so that the constraints, if any, relating to the needs could be brought out.

3.8 ENVIRONMENT MANAGEMENT PLAN (EMP):

The different measures of Environment protection to be taken up are to be indicated. The EMP is to be prepared as per norms laid down by the Ministry of Environment & Forest. Necessary clearance for the forest land is to be obtained from the concerned authorities and EMP from Ministry of Environment and Forests. The requirement of funds under EMP is to be specified and its phasing indicated.
CHAPTER 4
DETAILED FEASIBILITY REPORT

4.1 The studies and investigations suggested in Chapter 3 often generate several investment options which are worth considering. On the basis of the preliminary analysis of these options, a feasible option generally carried out after sanction of Advance Action Plan (AAP) is developed into a Detailed Feasibility Report (DFR) which is prepared for further processing and seeking Government approval, although brief particulars of these options studied but rejected, are also given in DFR. In this report a detailed description of the project parameters based on the studies and investigations, is to be given to enable the appraising agencies to evaluate the technical feasibility and financial & economic viability of the proposed project. The information about the project to be provided in DFR should be adequate and reliable.

4.2 The information required to be presented in DFR is indicated below:

   i) Demand-Supply Position and Other Information about the Sector, including Market Studies;
   ii) Policies;
   iii) Project in the Framework of Corporate and National Plan;
   iv) Alternatives;
   v) Technical Aspects:
      a) Location/Site
      b) Geological Investigations and Findings
      c) Production build-up
      d) Project size/capacity
      e) Technology and Method of Mining
      f) Power/Fuel consumption
      g) Plant and Machinery Requirement
      h) Manpower Requirements
      i) Coal Handling and Transportation arrangements
      j) Water and Power Supply
      k) Coal Beneficiation/Washing facilities

   vi) Organisational and managerial aspects
   vii) Environmental Aspects
   viii) Project Cost
      a) Capital cost requirement
      b) Operating requirements and costs
      c) Systems cost
   ix) Financial Analysis
   x) Economic Analysis
xi) Sensitivity Analysis

4.3 Salient features of the project under consideration may be given in format DFR-1.1. The details to be furnished under each of the above items are as follows:

4.4.0 DEMAND - SUPPLY POSITION AND OTHER INFORMATION ABOUT THE SECTOR INCLUDING MARKET STUDIES:

4.4.1 General introduction/functioning of the sector with particular reference to the output which is to be produced through the project under consideration.

4.4.2 The details of coal users such as steel plants, power, cement, industries, railways, household consumption etc.

4.4.3 Demand and Availability:

The demand and availability analysis (DAA) forms an essential part of the DFR, as it helps to establish the need for the project and provides justification for investment decision making. A quantitative and qualitative analysis of demand and availability following a three tier system described below may help to provide a better view of the demand and availability for which necessary information may be furnished in the format DFR-1.3.

i) Quantitative Analysis:

a) The company level total demand and availability from the existing projects, projects sanctioned and the projects to be formulated (according to latest demand estimated by National agencies).

b) The company level total demand and availability has to be divided into the coalfield level demand and availability in the same fashion as for the company-level, for each coalfield.

c) The concerned coalfield level demand and availability estimates be divided into project level including the proposed project. The demand and availability will be presented in the same way as for the company/coalfield level.

d) It should also be indicated why it is not possible to meet the demand by adjusting the production from the existing/sanctioned projects.

ii) Qualitative Analysis:

a) The company-level and coalfield level demand and availability analysis for a particular grade of coal e.g. power grade, coking coal (prime, medium or blendable), high grade coal etc. be given.

b) The consumer level demand and availability of the desired grade of coal from all sources including the proposed project need be indicated.

ii) Justification for the Project:

a) Analysis of alternatives considered such as meeting the demand by expanding the existing mines or any other project already sanctioned or under examination, opening of new mine in some other coalfield in terms
of their geominning parameters, capital costs and transportation arrangements and costs.

b) Confirmation of the reserves, quality, quantity and the expected UHV of the coal so as to meet the requirement indicated in the DAA.

4.4.4 Linkages:

In case the project is linked to specific consumer(s), the information as required below, may be furnished:

a) Name of the consumer(s),
b) Quantity and phasing of coal requirement,
c) Grade/quality parameters of coal required,
d) Mode of transportation,
e) Willingness to pay the extra cost of beneficiation, if involved.

4.4.5 Market Studies:

The details of the market studies carried out by the enterprise for estimating the demand over time-frame, likely supply from existing capacity and the steps in the offing to meet the demand supply gap in quantitative and qualitative terms. The survey would acquire additional significance for projects for the production of particular grade of coal. The market analysis should deal with issues like the effect of the choice of a particular grade and the impact of concessions on the profitability, location of the market areas, cost of transportation, enlisting of consumers, etc. It should specifically be indicated whether it would lead to import substitution or exports, level of imports/exports and international prices during the last 3 years and those projected in future (where applicable).

4.5.0 POLICIES:

4.5.1 The development of the coal industry and how the national policies have kept pace with the changing requirements.

4.5.2 Whether the relevant grades of coal can be imported? If so, whether under an open general licence, import trade control policy or restricted import policy, if any.

4.5.3 What are the customs duties payable on the imported product under consideration? Is there any countervailing customs duty? What is the excise duty on the indigenously produced product? What is the level of Central Sales Tax and the range of the local sales tax in the various states? What are the rates for Royalty, Cess etc.? How much will be the product cost to the ultimate users?

4.5.4 Narrate the pricing policy adopted by the public enterprise for this product. Are there any statutory regulations? Is there any attempt to match the local price with that of the landed cost of the imported product? Is there any Bureau of Industrial Costs and Prices (BICP) formula regulating its selling price? Is there any institutional arrangement for determining the selling price or are the prices allowed to find their level in keeping with the free market forces?

4.5.5 Is there any Government Policy/view on the choice of technology? If so, details may be furnished in this regard. How far the project under consideration meets these requirements?

4.5.6 Is there any government policy/view for selecting the project in the specific coal field? If so, to what extent the project under consideration complies with these requirements.
4.5.7 Government's policy on role of Public Sector in this field.

4.6.0 PROJECT IN THE FRAMEWORK OF CORPORATE AND NATIONAL PLAN:

4.6.1 Background: A brief background para on the project forming part of the Corporate Plan of the enterprise and how it dovetails into the National Plan.

4.6.2 Objectives and Inter-se Priorities: What are the various projects under consideration at present in the enterprise and their objectives? What are the other projects considered in the sector? A summary of the salient features of these projects may be furnished. How will these projects be ranked in terms of inter-se priorities, should there be any resource constraints?

4.6.3 Timing of Investment: Is it the opportune time to start a project of this nature? This would need to be examined in the context of the situation prevailing in the Sector, demand-supply analysis and other relevant factors.

4.6.4 Plan Provision: The total Five Year and Annual Plan provision for the sector, the enterprise, the likely sources of funds and commitments already entered into and whether the available uncommitted segment will be adequate for funding the project to the extent of its requirements. The Five Year and Annual Plan provisions for the project should also be specified.

4.6.5 External Aid: If the project is to be externally aided, the extent and nature of assistance and the details of the aid/assisting agency may be indicated. Whether the project has already been posed to the external agency? If so, with what commitments? What will be the terms and conditions of the aid/assistance?

4.6.6 Track Record of Public Enterprise: How has been the track record of the public enterprise in implementing the projects? In this connection the following information may be furnished for assessing the performance of the public enterprises in the field.

a) Existing Mines (in production);
b) Projects under implementation;
c) The benefits (original projections vs actual attainments) achieved from the projects implemented by the enterprise in the past.
d) Problems faced during implementation; and
e) Remedial measures taken or proposed to be taken for overcoming the shortfalls/problems.

4.6.7 The information required to deal with the items listed in paras 4.6.4 to 4.6.5 may be indicated after obtaining necessary information from the Administrative Ministry.

4.7.0 EXAMINATION OF ALTERNATIVES:

4.7.1 While an analysis of preliminary alternatives would have been made at the time of Advance Action Plan, a detailed analysis of alternatives studied at the time of DFR needs to be discussed here.

4.7.2 The salient features of such alternatives may be furnished and the basis for the choice of a particular alternative finally chosen may be indicated. Some of the relevant aspects are the availability of reserves, choice of technology, mine size, choice of location, choice of equipments, availability of infrastructure, technical manpower and the like. The salient features of the alternatives may be given in the text of DFR but the information on results of analysis is to be presented in format DFR-1.4 and 1.5.
4.8.0 TECHNICAL ASPECTS:

(a) Location:

4.8.1 Coal project being location specific, the clearance of the site and land acquisition involved, should have been considered in Advance Action Plan itself and necessary environmental and other clearances for site obtained.

(b) Geological Investigations & Findings:

4.8.2 The geology of the concerned mine area should be given as follows:

i) General information on coalfield.

ii) Geological structure of the coalfield.

iii) Hydro-geological condition of the coalfield.

iv) Characteristics of the coal throughout the seam section, geometry, roof & floor conditions for establishing physico-mechanical properties. In case of high capacity deep underground mine where long wall support face is proposed to be introduced, the physico- mechanical properties of the rocks 30 metres above the seam as well as 30 metres below the seam in several representative boreholes suitably spread in the mine- take, should be given as per DFR-1.2.

v) Seam characteristics: Occurrence of the seams and their sequence, average thickness of seams and partings, dirt bands, roof & floor characteristics of each seam.

vi) Reserves: The total reserves in the proved, indicated and inferred categories for each seam, total extractable and mineable reserves.

vii) Quality Characteristics of Coal:

- Seamwise percentage of ash, moisture, sulphur, V.M. and other physical contents, coaking index, gross CV and UHV.

- In case of coking coal, the types and specifications of coal as per norms.

- The average grade of coal with ash and other specifications to be supplied to the consumer as compared with the specifications indicated by the consumer (if any).

- Whether coal preparation/washing is required to maintain the quality of coal?

viii) Status of prospecting and reliability of geological data. Is the exploration considered sufficient for designing the mine? Whether further exploration is required to establish geo-mining parameters? The degree of confidence in the available geomining data as per the prevalent norms should be given.

ix) Any other geological problem anticipated in the area which may affect the implementation of the project.

x) Other mineral of economic importance and their disposal.

(c) Production Build-up:

4.8.3 The production build-up may be assumed taking into account a realistic and attainable level of capacity utilisation based on the marketing and production problems. It should also identify the type of problems that could arise during production build-up particularly, with respect to possible equipment failures, technological constraints and manpower problems etc. It should
bring out the experience of other similar projects established in the country vis-a-vis their anticipations. The data/information on the following lines should be given:

i) Year-wise production programme from each district/face/seam/pit during the initial and final phase.

ii) Estimation of productivity at different points like surface, underground and overall.

iii) In case of opencast project, the coal production and OB removal programme during economic life.

iv) Output per man shift (OMS) envisaged and basis of its estimation.

(d) Project Size/Capacity :

4.8.4 The basis of the size/capacity of the project proposed should be scientifically established. It should be based on the optimum exploitation of extractable reserves, demand supply analysis and availability of infrastructure facilities. The capacity determined may be compared with international capacities norms and with minimum scale of economies?

(e) Technology and Method of Mining :

4.8.5 The project authorities would have shortlisted all the available technologies at Advance Action Stage. They would have collected sufficient information about various alternative technologies to allow a comparative techno-economic analysis. The DFR should contain a detailed analysis of various alternative technologies (based on the method suggested in Chapter 3 to arrive at the technology appropriate for the project in question. If the project is going to utilise an indigenous technology, the details of the institution which developed the technology, the organisation that has made commercial application of that technology and the experience of other users of that technology should be presented.

4.8.6 In case, the technology is to be imported, the reasons for selecting that technology vis-a-vis other competing technologies will have to be indicated. The DFR should also describe the vintage of technology and anticipated development in the field which might make the technology obsolete in the near future. The commercial standing of the foreign collaborator, the market share controlled by them both in their own country and world wide, their track record in transferring the technology to other countries, should also be indicated. The assessment of the foreign collaborator could also be obtained from a third country and mentioned in the DFR. If the same technology has been imported by some other project that should be mentioned alongwith the experience of that project. If the selected technology is closely held and/or response from the foreign collaborator is not coming, the details thereof should be highlighted. A summary of the technology agreement signed and the scope of this agreement should be clearly indicated in the DFR.

4.8.7 The emphasis should be on selection of clean and state-of-art technology rather than choosing cheaper technology involving significant pollution abatement cost. The analysis of alternative technologies should also study their impact in terms of international protocols.

4.8.8 Method of Mining :

i) Justification of choice for opencast vis-a-vis underground mining (indicating minimum & maximum depth of mining operation).

ii) The proposed mine boundaries of the area under consideration and justification for fixing the boundaries in terms of conservation, mineability and other constraints.
iii) In case of opencast mining, the choice of site & mode of entry/box cut etc. whereas for underground mining, the mode of entry, choice of place of shaft, shaft and winding systems/ incline have to be indicated.

iv) Underground Mining:

- For underground method of mining, the degree of mechanisation according to chosen method of mining, mechanisation of long wall faces, number of long wall faces and their performance parameters, other preliminary job, roof control, initial development, headings, mechanisation of development as per prevailing mine conditions.

- Output calculations giving the details of the norms of equipment based on actual performance as compared to those supplied by the equipment manufacturer.

- Underground transport system, vertical transport, pit top and pit bottom arrangements specifying compatibility of the equipment with the daily production.

- Ventilation system, gas and spontaneous heating.

- Drainage system and pumping capacity.

- Maximum and minimum depth of mining operations

- Orientation and amplitude of geological disturbances.

v) Opencast Mining:

- The volume and the type of Over burden (OB) to be handled along with the phasing of OB removal.

- Estimated stripping ratio in initial years, and after attaining of the peak capacity.

- The method of removing OB and winning of coal.

- The HEMM configuration and justification for the capacity and nos. of dragline, shovels, dumpers etc.

- Arrangements for transport of coal.

- Arrangements for maintaining the quality of coal.

vi) Safety Measures:

This aspect should contain possible dangers of inundation from surface water, danger from underground water sources, fire, spontaneous heating gas and explosion and specific precautionary measures proposed to be taken in open cast and underground mines as the case may be with the approval of concerned authority. The details of any new method not tried in India, should also be incorporated in the DFR.

(f) Power/Fuel Consumption:

4.8.9 In case of projects which are of power/energy intensive nature, it is necessary to bear in mind that the scheme is designed and handled with utmost care from the point of view of energy economy. In view of this, it is necessary to specify the energy audit system to be followed in the project. The DFR should deal explicitly with the question of energy economy and how the energy consumption would compare with other mines in India/abroad. A write-up on demand-supply position, power load, main electrical equipment, power supply to township, alternative manage-
ment of power supply during initial period, may be given in the DFR. If a captive power plant is proposed, details thereof may be furnished.

(g) Plant and Machinery:

4.8.10 The DFR should contain a complete list of capital equipment (by type and size) of the main units of the proposed project, requirements of buildings and structures by type and size and a broad mine layout. It should give justification for the choice of size and specifications proposed for important items of equipment and plant structures.

4.8.11 The DFR should also indicate the possible source of supply of capital equipment, construction services, engineering services etc. This is particularly important in the case of imported items. For imported items which are of high value or are critical to operation of mine, alternative sources of supplies should be indicated in order of preference.

4.8.12 The level of township satisfaction which has been assumed in the project cost may be indicated together with the details of the various types of houses which are proposed to be constructed as laid down by the Bureau of Public Enterprise (BPE). The precise location of the project and township and the distance between them may also be indicated. If the project authorities are planning to seek a separate sanction for the township at a later date, the years in which they may come up for such a sanction together with the likely requirement of funds in those years may have to be foreseen at the investment decision making stage itself as per the instructions in vogue.

4.8.13 Choice of equipment: The DFR should also deal with the analysis underlying the choice of equipment and specifications of the construction requirements. The type of questions that should be dealt with here are as follows:

i) How has the capacity of the plant as a whole been determined? Will the plant be worked on a single, double or triple shifts?

ii) Which plants/sections of the project could be made labour intensive?

iii) What is the extent of in-built capacity for expansion?

iv) Have standby units been provided for? What assumptions have been made about maintenance, shutdowns and idle time for different items of equipment?

v) If the different items of equipment are not fully balanced, which are the items with substantial amount of excess capacity and what is the reason for such excess capacity?

vi) On what basis have the construction specifications for factory buildings and other on-site facilities been determined?

vii) How has the economic life of the project been established?

viii) What is the housing satisfaction standard adopted for the purpose of township planning? What are the township densities which have been adopted?

ix) Has the possibility of the purchase of second-hand equipment been considered?

4.8.14 Construction methodology and technology: The DFR should outline the construction methodology and technology to be used, including capital vs labour intensive options considered, construction equipment to be used, use of new materials planned, innovations in methodology, quality assurance, construction labour, improvements planned, present construction methodologies/technologies and their likely input/benefit on project construction, time and cost.
(h) **Manpower Requirements:**

4.8.15 The DFR should indicate the unitwise and category-wise requirement of personnel for the project and plan for induction of different categories of personnel. It should also indicate the arrangement proposed for training in-plant and outside. If the project involves redundancies, it should indicate plans for redeployment of the staff rendered surplus. The DFR should indicate the steps envisaged for avoiding retrenchment or redeployment of construction staff after completion of construction, wherever necessary.

4.8.16 The DFR should also indicate the organisational structure envisaged for the project after it goes into production and the time schedule for filling up of key posts, particularly that of the Chief Executive. It should also indicate the arrangements contemplated for ensuring continuity in top management and utilisation of manpower optimally and efficiently.

(i) **Coal Handling and Transportation Arrangements:**

4.8.17 The projected requirement of the various transportation facilities typewise such as rail, road etc. may be specified in the DFR along with the problems, if any, in meeting the projected requirements. In particular the DFR must specify:

i) Details of Coal Handling Plant (CHP) including location, capacity, cost, number of shifts per day, weighing arrangements, main equipments, etc.

ii) Qualitative and quantitative indices of washing/beneficiation plant, if any.

iii) Arrangements for outward movement of coal from pit head to CHP.

iv) Types and modes of transportation i.e. rail, road, rope-way etc. along with the railway siding, loading, route and their status etc.

v) Broad layout of siding-loading points, off take points, nearest yard for loading of wagons.

4.8.18 If the project is expected to generate substantial demand for tele-communication requirements such as, telephone/telex exchanges etc. arising from the largeness of the project, this may have to be indicated in the DFR and associated cost should be treated as a part of the capital cost.

(j) **Water and Power Supply:**

4.8.19 Utilities such as water, power, separately for meeting construction requirements and for operating the plant, including quantities, sources, transmission / transportations, commitments obtained etc.

(k) **Coal Beneficiation/Washing Facilities:**

4.8.20 Coal beneficiation/Washing facilities are currently being provided in case of coking coal to meet the demand of steel plants indigenously to save foreign exchange. Even in case of non-coking coal, mine-cum-beneficiation plants are being taken up in view of quality consideration, economy in the coal transportation over a long distance and as a measure of environment and pollution control. Beneficiation/washing of non-coking coal is also found to be economically and operationally more viable if it is to be despatched over 1000 kms. In view of these considerations if a beneficiation/washing plant is proposed, the following information may be furnished.

- Nature of Beneficiation/washing plant. Whether it is proposed as an integrated mine-cum-beneficiation plant or a separate unit and the reasons thereof.
- Studies/investigations carried out to beneficiate ROM Coal to judge the suitability for beneficiation and to maintain the quality of beneficiated coal
- Sources of technology and the name of the consultants with full terms and conditions and performance guarantees
- Whether the proposed technology is already in use in some other project, if so the past performance, and if not, how it differs from them
- Capacity, capital and operating costs, construction period etc. including the foreign exchange costs involved.

4.9.0 ORGANISATIONAL AND MANAGERIAL ASPECTS:

(A) Implementation Plan:

4.9.1 The DFR should indicate the activity-wise phasing of construction preferably in the form of a bar chart or a network (PERT/CPM) diagram. The DFR should also contain a copy of the Master Control Network (PERT/CPM based) or if not possible, a bar chart. The physical phasing given in the bar chart/network should be consistent with the phasing of expenditure given in the section on the capital costs. Quantitative information on the phasing of material and labour requirement during the construction period should be specified. The DFR should also indicate the timing of deliveries of imported and indigenous equipment.

4.9.2 As the completion and commissioning of the project is dependent on the availability of infrastructural facilities like water and power supply and railway siding, completion of which is handled by other agencies, the phasing of construction activities of these inter-related facilities or linked projects should also be given so as to present an integral view of all the linkages.

4.9.3 The DFR should also deal with the types of problems that may affect the phasing of the construction. These may include the difficulties involved in procurement of construction material and power and other utilities and availability of construction manpower. Other difficulties may arise in the movement of oversized consignments and special requirement of skill for onsite fabrication. A detailed resource-based implementation plan should integrate project activity work quantities, time, sequencing and matching requirement for manpower, materials, equipments, utilities etc. with constraints of availability in each time period.

(B) State of Preparedness

4.9.4 The following information may have to be furnished by the project authorities to illustrate their preparedness for the implementation of the project under consideration:

i) Studies and Investigations

4.9.5 How far the required studies and investigations have been completed leading to, in general, a better prepared project?

ii) Mode of Implementation

4.9.6 Whether the project will be implemented departmentally through a number of contractors/packages or through a turn-key contractor? If so, whether the turnkey packages have been chosen as homogeneous parts for facilitating easy supervision, monitoring, fixing responsibility for non-attainment of performance, targets and even carrying out a disaggregated cost-benefit analysis wherever possible/required. Whether consultants are to be engaged for supervision and/or monitoring of implementation?
4.9.7 If the project is to be implemented by the departmental personnel, whether adequate number of key personnel of required experience and calibre are available. If fresh recruitment is to be resorted to, whether it will be possible to get such requisite manpower within the stipulated time. Whether the present recruitment rules and procedures would permit the same?

4.9.8 If the project is to be implemented by hiring the services of a turnkey contractor, the standing of the contractor, his track record in the implementation of similar projects, major works on hand, capability to mobilise the requisite resources at a required time so that the project does not slip may be explained.

iii) Technology Transfer

4.9.9 Whether the technology tie up has been established with a foreign collaborator and if so, what is the status of transfer of the required technology? Will the project require the services of expatriate specialists during the construction period? If so, their requirements may be quantified in man-months, categorywise.

4.9.10 What is the progress in the acquisition of basic engineering and performing detailed engineering work in connection with the project?

4.9.11 How far the material resources have been estimated and the tender documents made ready so that the notice inviting tenders could be released as soon as the investment decision is taken?

iv) Infrastructural Backup

4.9.12 Whether the following infrastructural facilities have been acquired/tied up?

a) Acquisition of land and problems associated therewith;

b) Whether the project site is well connected by the road/highway of the required width? If not, what steps are being taken to acquire/augment this facility;

c) Whether there is a need for a railway siding during the construction stage, for easy movement of plant and equipment upto the site by rail? If so, what steps have been taken to ensure that the siding will be available in time;

d) Will the requirements of water during construction period be met? Does it involve any laying of pipe-line to bring the required quantity of water from a near by river/stream etc? Will it be adequate to run the plant/meet the requirement of township after the plant is commissioned?

e) Whether the temporary power connection has been obtained from the SEB concerned for the purpose of erection of plant and equipment, construction etc? How will the requirement of power be met after commissioning? Has the concerned Electricity Board given the commitment? How much of captive generation is planned for sustaining the demand from the category I loads and insulate the critical equipment from the qualitative and quantitative shortfalls?

f) Whether any temporary housing/warehousing have been provided wherever circumstances warrant the same?

g) In the case of large mining projects the requirements of tele-communication may have to be assessed i.e. for setting up of a telephone exchange/telex/FAX facilities etc. If the demand will be of a sizeable nature, the cost of such facilities may have to be included within the capital cost structure of the project under consideration as advised by the Telecommunication Department.
(C) Market Plan

4.9.13. Details of market plan may be given including any promotional efforts needed, demonstration facilities required, distance of major demand centres, infrastructural (such as transport) arrangements, marketing organisation (whether own or contract, license basis).

(D) Other Clearances Required For Project Implementation

4.9.14 A list of clearances that may be required for implementing a project and the agencies empowered to accord the clearance should be given with detailed time planning for the same.

4.10.0 ENVIRONMENTAL ASPECTS:

4.10.1 The project will have to be cleared from the ecological and environmental point of view by the Ministry of Environment and Forests of the Government of India as well as the Environmental Control Boards of the respective State Governments. In view of this, the individual requirements of these organisations will have to be foreseen and complied with. The environmental impact of the project and the measures envisaged to prevent environmental deterioration and hazards should be fully discussed in the DFR together with the cost implication. The environmental approval should be obtained before the DFR is submitted for approval and relevant costs of environment related aspects separately mentioned in the cost estimates.

4.10.2 Environmental Management Plan (EMP) should also deal with the aspects of environment, land reclamation, subsidence, water pollution, rehabilitation, etc: Thus, the EMP would provide base line data on the following items:

a) Alternate sites examined from environmental angle, surroundings of the site, distances from the sensitive areas such as forests, monuments, sanctuaries etc. Site condition, if low lying how it is proposed to be filled, source of fill material.

b) Air quality emission from the plant & its impact.

c) Noise quality, addition from the plant.

d) Water Balance: availability, demand, competing users.

e) Water quality before and after effluent is discharged.

f) Solid wastes disposal & management.

g) Recycling of waste/water.

h) Storage, quantity.

i) Risk analysis, impact zones & disaster management.

j) Transportation requirement, existing density, projected density Impact due to project.

k) Existing flora & fauna, human settlements.

l) Green belt Development/afforestation details including the agency that will implement the same.

m) Rehabilitation of oustees, if any, and facilities extended to them.

n) Cost to environment due to different options with particular reference to the sites.

O) Occupational health.

4.10.3 The open cast mining projects should contain the data & information on following aspects of the project activities specifically:

a) Area of excavation.
b) Area of dumps.
c) Drainage & safety distances of pithead establishments.
d) Quarry area created.
e) Void left.
f) Total OB removal.
g) External OB dump and its reclamation & afforestation after stabilisation.
h) Backfilled OB.
i) Rehandling of OB dumped inside.
j) Calender programme of excavation as per standard design.
k) Water pollution of irrigation sources nearby.

4.10.4 The underground mining project should provide information on the level of subsidence, surface pollution & safety control methods, details of stowing, surface structures, acquisition of surface land, etc. The data and information as required by the Ministry of Environment & Forests needs to be collected and incorporated into EMP for appraisal of Environmental Appraisal Committee (EAC) and final approval of the Ministry of Environment & Forests.

4.10.5 The EMP should invariably include details of forest land, compensatory afforestation and clearance of appropriate forest authorities under whose jurisdiction the project area falls.

4.10.6 The scope and coverage of the environment protection and pollution control should be assessed and an action plan should form part of project implementation plan. Yearwise activities and capital & operating costs in this regard should be given under the items -

i) Pollution control measures proposed and its costs,
ii) Pollution monitoring facilities proposed and its costs,
iii) Green belt development cost,
iv) Afforestation cost and
v) Rehabilitation cost

and under the item working expenses: i) maintenance of pollution control equipment and ii) Green belt development.

4.11.0 PROJECT COST

(a) Capital Cost Requirement:

4.11.1 For the purpose of appraisal, capital costs are essentially those costs which are incurred before the commencement of commercial production. Apart from the expenditure on fixed assets, costs incurred for items like labour training, test production etc. which may not appear to be expenditure on capital items, should, for the purpose of appraisal, be treated as capital costs. A summary of capital cost to be furnished is set out at DFR-2. The basis of the capital cost estimate is to be presented as per the format.

4.11.2 Amongst several available sets of alternatives, there may be a few only at DFR Stage based on substantial amount of basic data generated from the various detailed and in-depth studies.

4.11.3 In most cases, it may be necessary to prepare information on more than one alternative based on the different assumptions such as, maximum procurement of imported supplies with a
view to reducing the gestation period or maximum procurement of indigenous supplies with a view to curtailing foreign exchange requirements. In these cases, the time schedules will vary and accordingly the capital cost phasing (indigenous costs and foreign exchange costs should be shown separately) required to be given vide format DFR-1.4 and 1.5 will also have to be furnished separately for the different alternatives under consideration. The capital costs phasing should also correspond to the scope of the project as defined in paras on project description.

4.11.4 The capital cost estimates of the project will have to be prepared after carrying out the detailed studies/investigations as laid down in the Chapter 3 of these Guidelines. While the studies and investigations will give the broad project parameters, it is equally important to firm up the estimates with other critical details such as, scope of supplies from indigenous and imported sources, in-house/departmental construction vs. turnkey execution, proper estimation of the auxiliary/ancillary/ off-site facilities, administration, and supervision required during the construction period, contingencies and the like.

4.11.5 The project authorities should indicate in the Format, DFR-2 the degree of reliability of the capital cost estimates componentwise.

4.11.6 As per present PIB procedures, no built-in provisions for forward escalation in the capital cost estimates are allowed. Hence, the cost estimates should correspond to a fairly recent base date not more than six months old. The base date (month/year) should be clearly indicated. All CIF/FOB prices for traded/tradable products/raw materials etc. for economic analysis should be average of last three financial years in international currency, converted into rupees at current exchange rate.

4.11.7 The project authorities should also adhere to the norms approved by the PIB regarding the admissible level of contingencies.

4.11.8 Coal projects involve replacement and renewals in a particular segment before the end of the economic life of the project. Such costs should be duly indicated in the respective years in which they are expected to occur. Replacement cost should be distinguished from repair & maintenance costs.

4.11.9 The cost on account of environmental safeguards including pollution abatement, rehabilitation, afforestation etc. would need to be estimated with the help of concerned authorities and the cost involved may be shown in the capital cost estimates, as a separate item.(DFR-2.10)

4.11.10 Format DFR-2.12 has been designed with a view to collect information about the working capital requirements. Based on this, the margin money for the working capital required for the project and forming a part of the capital cost estimate will have to be determined for the purpose of sanction for the investment. While the entire requirement of working capital should also be reflected in the separate column the margin money (as a part of capital cost) and interest payments on borrowed working capital are taken as cash outflows for the purpose of viability analysis.

4.11.11 The information on the capitalised interest (on loan portion only) during construction should be furnished in detail (DFR-2.13) with the necessary back up calculations.

4.11.12 The DFR should also deal with the capital cost phasing of the project taking into account the various critical activities, requirements of resources, terms and conditions at which these resources could be mobilised, and arrive at the yearly requirements of funds for execution of the project.
4.11.13 In all cases, the primary data on the basis of which the estimates have been made should be given in subsidiary annexures indicating the physical units and the unit rates used. Where provisions have been made on a lump sum basis, the same should be clearly spelt out.

(b) Operating Requirement and Costs:

4.11.14 For the purpose of project appraisal, revenue expenditure which is incurred after the project commences commercial production may be treated as operating costs. A series of formats DFR-3 have been designed to collect information about the operating costs in the form required for the financial and economic appraisal.

4.11.15 In the summary table at Format DFR-3.1 the itemwise costs in terms of variable and fixed elements should be furnished. These operating costs should also correspond to the same reference base (quarter/year) to which the capital costs are related. No provision for forward escalations is admissible as per the current PIB procedure in the operating costs as well. The operating costs are to be estimated for 100% and 85% level of production in terms of fixed and variable costs separately over the entire project life.

4.11.16 The detailed computations of depreciation are also to be indicated. The formula and the method used for the depreciation will need to be specified in the DFR. Similarly, interest payments on the long terms loans and the short term loans may be furnished separately along with the basis of such calculations. The total cost of the production comprising the variable and fixed elements will be taken over further to Format DFR-4.2 for the purpose of making the profitability projections.

4.11.17 Each industry/enterprise may also develop a uniform code for the various costs. But, once they are formed it is desirable to adhere to the same in the various DFRs prepared by the enterprise.

4.11.18 The information at Format DFR-3.3 is required to be furnished for the stable level of capacity utilisation (which is to be specified at the top of the table) for a full year for the project. In the same manner calculations may also be required to be given yearwise for the project till the stable level of capacity utilisation is attained assuming an appropriate production build-up.

4.11.19 The basis on which the operating requirements and costs have been estimated should be presented in the DFR.

4.11.20 Format DFR-3.2 has been designed to collect data on labour requirements and labour costs. The coding of labour by category suggested in this table could be modified to suit the requirements of each enterprise. However, as far as possible, the modifications should take the form of an addition of sub-categories rather than a complete change in the classifications suggested here.

(c) Total System Costs:

4.11.21 This includes the costs which are incurred in the creation of the required complementary facilities by the other organisations which are not owned by the enterprise. But, nevertheless, these are required for the smooth construction/operation of the project. Some of these costs could be for the following facilities:
* Water supply
* Power supply
* Port facilities
* Railway lines/yards/rolling stock
* Projects for the supply of inputs having vertical linkage.

4.11.22 As regards the system-projects, the following details may be furnished:
* Name of the project/enterprise owning the project;
* Agency likely to provide/create new facilities;
* Basis of capital cost estimation with annual phasing of cost, foreign exchange requirements in the capital cost, date of completion of the project and contractual commitments, if already entered into.
* Whether these are already approved/yet to be approved/in regular production/in operation.

4.12.0 FINANCIAL ANALYSIS:

4.12.1 In financial analysis it is necessary to assess the financial health of the organisation with and without project, manner of funding and financial viability. The first is analysed with the help of projected profit and loss/balance sheet statements with and without project (DFR 4.1 and 4.2).

4.12.2 The second part of financial analysis is to indicate yearwise capital funds planning i.e. sources of fund to meet the yearwise requirements, separately for Indian cost and foreign exchange subdivided into internal resources, market borrowings, suppliers credit, multilateral/bilateral funding, other sources and budgetary support. The sources of funds, along with amounts, (terms of interest, repayment period etc.) should be clearly indicated (DFR-4.3).

4.12.3 The purpose of third part of financial viability/analysis is to assess the financial soundness of a project. There are different indicators for assessing the financial soundness of a project such as, Net Present Value (NPV), Internal Rate of Return (IRR), Break even Point (BEP), Pay back period, capital output ratio etc. These are complementary, rather than alternatives. Each indicator has its own merits and demerits. For a proper idea of the financial soundness of the project, it is necessary to assess it from different aspects. Besides, the above indicators, it would be necessary to work out the ability of the enterprise to meet year by year cash liabilities in order to assess budgetary implications as a result of the implementation of the project and the financial position of the Undertaking With and Without the project (DFR-4.4).

4.12.4 Financial analysis is to be carried out to assess the commercial profitability of the proposed project which is more relevant to the coal company. This is to work out the indices of profitability such as the cost of production, component analysis, IRR and break-even (B/E) analysis in the following manner.

4.12.5 Cost of Production: The cost of production includes the capital cost, operating cost (minus depreciation and interest on loan capital) and replacement cost component. The discounted value of the capital cost, operating costs, replacement cost and the production for each year during the economic life of the project are worked out at the rate of discount specified by the Government and the cost of production is calculated as follows:
Cost of Production \(=\) \(\frac{\text{Sum of discounted values of capital cost,}}{\text{operating cost and replacement cost}}\)

\(=\) \(\frac{\text{Sum of discounted quantity of the production.}}{\text{}}\)

The cost of production is to be worked at 100% and 85% level of production.

4.12.6 **Component Analysis:** The component analysis is attempted to analyse the % cost of the various factors of production in the unit cost of production. The components analysed are capital cost, replacement cost, wages, power, stores and others (including admin. charges, interest on working capital and other miscellaneous expenses). The percentage distribution of factors of production is also to be worked out.

4.12.7 **IRR:** The internal rate of return is to be calculated to indicate the anticipated rate of return from the project in totality. In calculating the financial IRR, the capital cost, replacement and operating cost are to be taken together as cash outflow and sales realisation at the administered selling prices as cash inflow. The net cash flow should be discounted so that the net present value becomes zero. The rate at which the NPV is zero gives the IRR. The IRR is also to be worked out at 100% and 85% capacity utilisation.

4.12.8 **Breakeven Analysis:** The B/E analysis is yet another measure of financial viability. The point where the inflow and outflow are equal, the project breaks even. It is calculated as below:

\[
\text{B.E. Point} = \frac{\text{Fixed cost}}{\text{Sales revenue-variable cost}} \times 100
\]

4.13.0 **ECONOMIC ANALYSIS:**

4.13.1 The purpose of economic analysis is to determine whether the project is worthwhile from the point of view of entire economy. Most of the basic data required for economic analysis are covered elsewhere in the guidelines in the sections on capital requirements and costs and operating requirements and costs. In addition, data would be required on the level of import and export alongwith the average import/export prices and also data on the impact of the project on foreign trade.

4.13.2 Normally, the following analysis should be carried out:

i) Economic cost of production and IRR with and without premium on foreign exchange and other shadow prices.(As may be prescribed by the Govt.)

ii) Net Present Value (with and without premium on foreign exchange and other shadow prices) where selection is to be made from the mutually exclusive projects or the least cost option is to be selected. The discount rate is to be used as prescribed by PIB.

iii) Domestic Resource Cost i.e., the rupee cost of earning/saving foreign exchange. No premium on foreign exchange rate is used in this calculation.

iv) Net foreign exchange earned or saved over the entire life of the project.

4.13.3 The analysis given above are relevant in case of coking coal and those non-coking coal projects where relevant cif/fob prices are available, projects for washeries planned to beneficiate coal. In case of other non-coking coal production, only the economic cost of production is to be estimated (DFR-4.5)
4.13.4 The meaningful economic analysis should take account of indirect costs and benefits - quantifiable as well as non quantifiable. Several costs which were earlier external to the project are being internalised, e.g. the cost of rehabilitation of the population to be shifted from the site, cost on the anti- pollution measures etc. form part of the capital cost of the project. In case there are any costs or benefits which are not quantifiable, these should be clearly discussed. Even if the costs of anti pollution measures have been internalised it should clearly discuss the consequences such as, emission of pollutants into the atmosphere, disposal of toxic wastes into the water courses, the number of people (occupation wise) to be shifted from the project site and to be rehabilitated elsewhere. There are many other indirect consequences, costs as well as benefits, which should be discussed. These may include property damage, loss of amenities, damage to the landscape etc. The major components of environmental cost are damage cost and abatement cost. The damage costs are those which society faces because of actual damage to the environment and largely paid by the public. The abatement costs are those for controlling the causes of environmental damage which are internalised, but could in the long run be passed on to others through higher prices, government subsidies or tax incentives. There may be genuine difficulty in estimating these costs, especially the damage cost. The impact assessment if carried out properly would enable the decision makers to make analysis as rational as possible. Atleas, the various causes and effects should be itemised as distinctly as possible and presented in form of impact matrices.

4.13.5 In economic analysis, it is absolutely essential to avoid double counting and undue credit should not be taken for the benefits which would accrue to the society even without the project. One indirect benefit often advanced to justify the project is the growth of ancilliary industries. This may refer either to output using industries or input supplying industries. The benefits accruing from a growth in output using industries could have been secured by imports even without the project, though, it is possible that the easy and cheaper availability gives additional impetus. Similarly, the input supplying industry could have exported their output. The availability effects will be of consequence mainly in respect of non-traded goods like coal. The benefits from traded inputs are in most cases reflected in the project prices and in transport costs.

4.13.6 The credit, however, should be taken where an existing industry supplying an input has excess capacity and increase in the demand for that input results in decline in cost which will, of course, accrue to the main project. But this will benefit to the supplying industry as well. Such benefits should be listed as far as possible. It is, therefore, essential to know which supplying industry has excess capacity or not.

4.13.7 The computations of economic analysis are to be made by valuing the output of the project at their true resource cost of production. The financial cost of production and administered selling prices of coal do not reflect their true resource cost to the country.

4.13.8 In the computation of economic analysis, the element of taxes and duties which are essentially the transfer payments, are to be removed from the capital cost, replacement cost and operating cost. The foreign exchange element which is scarce, is to be assigned a premium as may be specified by the Government from time to time. The premium on foreign exchange can be considered at a higher percentage, if the foreign exchange component is so sensitive to the project.

4.13.9 Like financial analysis, in economic analysis also cost of production (per tonne of coal) and IRR (%) in economic terms are to be calculated. In the computation of IRR in economic terms value of output is to be based on the CIF/FOB prices of that grade/quality of coal which is to be produced by the colliery. Since the CIF/FOB prices of coking coal (indigenous grade) are not
produced by the colliery. Since the CIF/FOB prices of coking coal (indigenous grade) are not readily available, the coal company should attempt a technological comparison of the coal produced with the imported coal in terms of quality of coal especially of ash contents and on that basis corresponding CIF/FOB prices of indigenous coking coal is to be worked out and used for the calculation of economic IRR. It may not be relevant to compare the economic cost of production with the administered selling price. It can be compared with the economic cost of production for similar projects.

4.14.0 SENSITIVITY ANALYSIS:

The coal projects face certain uncertainties on account of deviations in the geological conditions, delays in land acquisition, delay in availability of plant & equipment, poor performance of the mining machinery, poor off take by the consumer, non-availability of transport & other natural factors cause cost and time overruns. Due to random nature of these factors, these could hardly be forecast. However, the uncertainties on account of geological conditions, availability of plant & equipment, performance of equipment, transport of coal could be reduced with proper monitoring and taking timely action. (The DFRs should indicate the grey areas and their likely impact on implementation of the project analysing the cost and time elements to the extent possible.). The uncertainties and risk, if faced by the project, would result in the escalation of costs, lower capacity utilization, longer gestation period. Such uncertainties and risks are analysed through sensitivity analysis as part of the financial and economic analysis. Therefore, the cost of production/IRR should be worked out assuming the possible increase in the capital costs, operating cost, construction period and reduction in the capacity utilization.

4.14.1 The following cases, may be presented in the sensitivity analysis (DFR-4.6).

   i) Capital cost escalations by 10%, 20%, 30%

   ii) Operating costs increase by 10%, 20%, and 30%

   iii) Production at 60%, 75%, 85% & 100% level of capacity utilization.

4.15.0 PROJECT COMPLETION:

Project may be treated as completed when it achieves 85% level of production and all its major infrastructural facilities like railway siding, CHP, procurement of HEMM have been completed. In this connection, Deptt. of Coal's Circular of 20.4.1980 should be referred.
SUMMARISED DATA

Unit of measurement:
Base date (Month & year):

Sl. No. | Particulars
---|---
1. | Name of project/Location/Company
2. | Total Geological Reserves (Mill. tonne)
   | Seam Wise-Geological and Net Extractable Reserves.
   | i)  
   | ii) 
   | iii) 
   | iv) 
   | Total
3. | Quality of coal
   | Seam Wise-UHV-K. Cal/Kg Ash(%) Moisture(%) 
   | i)  
   | ii) 
   | iii) 
   | iv) 
   | Total
4. | Grade of Coal (Overall)
5. | Average Stripping Ratio @ m3/tonne
6. | Method of Mining @
   | Opencast - Shovel
   | Dumper/Dragline/both
   | Underground - Bord
   | and Pillar/Longwall/Both/
   | Other (Specify)

(contd.)
7. Mine Development Item @
   i) Shaft No... Depth...
   ii) Incline-No... Length...
   iii) Main Drivage-before starting the production Length...
   iv) Development in coal before coming to full production
   v) Broad Equipment (of major, high cost equipment) specifications

   Equipment No. Size
   Dragline
   Longwall Face
   Any other (specify)

8. Target output (mtpa)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Qty. at 100%</th>
<th>Qty. at 85%</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Main customers

10. Life (years)
   i) at 100%
   ii) at 85%

11. Initial capital outlay (Rs. lakhs)
   i) Total
   ii) Equity
   iii) Loan (contd.)
12. Capital Outlay (Rs./tonne)
13. Capital cost for P&M
   i) Total cost (Rs. lakhs)
   ii) Cost per tonne (Rs)
14. Capital cost for EMP (Rs.lakhs)
15. Operating cost for EMP (Rs./tonne)
16. Capital requirement for township i.e building, roads and water supply
   i) total (Rs.lakhs)
   ii) per tonne (Rs.)
17. Foreign Exchange (Rs.lakhs)
18. Manpower (Nos)
19. OMS (Tonnes)
   i) At 100%
   ii) At 85%
20. Accounting Cost of production (Rs./tonne)
   i) At 100%
   ii) At 85%
21. Current selling price (Rs./tonne)
22. Financial Cost of production(Rs./per tonne)
at a discount rate specified by Government.
   i) At 100%
   ii) At 85%
23. IRR (%) Computations
   a) Financial
      i) At 100%
      ii) At 85%
   b) Economic
      i) At 100%
      ii) At 85%
(contd.)
24. Economic Cost of Production at a
   discount rate specified by the Government
   i) At 100%
   ii) At 85%

25. Year of opening of revenue account

26. Completion schedule
   i) Construction period (Years)
   ii) Year of achieving target production

@ Only those applicable to the project are to be given
GEOMINING INVESTIGATIONS AND STUDIES

A. DATA ON DRILLING

1) Total coal bearing areas (sq.km) ..........
2) Total number of boreholes required for adequate reliability (standard norms ........
of 200 metres being the zones of influence of each borehole).
3) Total number of boreholes drilled ........
4) Additional boreholes drilled ........
5) Faults, nature of Block ........
6) Total number of deciphered faults ........
7) Probe of starts at the site of shift sinking/stone drivage ........
8) Kind of geophysical input, if any ........
9) Additional boreholes drilled in case of open cast project to determine outcrop and quality
   of strats at the base-cut zone ........

B. RESERVES

1) Estimated coal reserves (million tonnes) ........
2) Number of boreholes on which reserves are based ........
3) Number of bands in the seam ........
4) Aggregate thickness (metres)
5) Out of total reserves-
   i) Proven category (million tonnes) ........
   ii) indicated category (million tonnes) ....
   iii) inferred category (million tonnes) ....
6) Life of the mine (years) ....
   (to be worked out taking 70% proven reserves and 30% indicated reserves)

C. QUALITATIVE STUDIES

1) Nature of qualitative studies carried out ........
   (e.g. bulk sample test, washability test, number of boreholes etc.)

(contd.)
2) Grade of Coal ……
   (As determined by CFRI)
3) Determination of grade either by ……..
   boreholes samples or samples of coal seams or both.
4) Precautions taken to maintain selling grade of coal during mining to be specified
D. Degree of reliability of quantitative and qualitative data ……..
E. HYDROGEOLOGICAL STUDY
1) Number of special large diameter boreholes drilled at shaft site/incline site/basecut site ……..
2) Strata behaviour in this locality to be confirmed for proper execution ……..
3) In case of equiferous zones, quantity of water to be discharged per minute (litres) ……..
4) Precautions to be observed in regard to the findings under item 3 above ……..
F. PHYSICO-MECHANICAL PROPERTIES OF ROCKS
1) Number of representative boreholes spread in -
   a) 30 metres above the seam ……..
   b) 30 metres below the seam ……..
2) Confirmation about cavability of rocks and support characteristics ……..
G. INDICES OF COAL
1) Whether cutability and shearability indices of coal have been determined ……..
2) If so, whether specifications of the shearer have been decided accordingly………
H. CONFORMATION ABOUT MINING TECHNOLOGY
1) whether production parameters of equipment and the mining technology adopted are based on adequate investigations ……..
2) whether the above assessment conforms the norms and standard laid down by CEMPADI………

32
ANALYSIS OF DEMAND AND SUPPLY
(Coalfield Area.............)

Unit of measurement:
Base date:(Month & Year):

Grade of Coal ............

<table>
<thead>
<tr>
<th></th>
<th>Year1</th>
<th>Year2</th>
<th>Year 3</th>
<th>Year4</th>
</tr>
</thead>
</table>

1. Demand
   Consumers
   a)
   b)
   c)
   Total

2. Capacity available (minewise)
   a) Existing capacity
      i) 
      ii) 
      iii) 
   b) Capacity under implementation
      i) 
      ii) 
      iii) 
      Total (a+b) 

3. Gap between demand and supply

  (contd.)
4. Capacity creation proposals
   for other projects (minewise)
   a) project sanctioned
      i)
      ii)
      iii)
   b) Project under formulation

---

Note: The details of the quality of coal like ROM/washed Grade, ash content, etc. specified by the consumer may be indicated.
ITEMWISE BREAK UP OF CAPITAL COST, OPERATION & MAINTENANCE COST AND VALUE OF OUTPUT

(separate statement for each alternative)

Base date (month & Year):
Exchange rate *:
(Rs. in lakhs)

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Qty.</th>
<th>Market Price</th>
<th>Financial Cost</th>
<th>Economic Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IC FC Taxes &amp; Duties in IC</td>
<td>IC FC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IC FC</td>
<td></td>
</tr>
</tbody>
</table>

A. Capital Cost
1. Land
2. Cost of Buildings
3. Knowhow and Engineering
4. Plant and Equipment
5. C.H.P
6. Railway siding
7. Prospecting and Boring
8. Furniture and Fittings
9. Vehicles
10. Environment related cost
11. Development
12. Margin money for Working Capital
13. Capitalised interest during construction
14. Revenue expenditure capitalised
15. Others (Specify)

Total (1 - 15)

(contd.)
B. Operation & Maintenance at full production @

1. Salaries & Wages
   01
   02

2. Fuels (Power and Diesel)
   01
   02

3. Stores
   01
   02

4. Administrative Expenses
   01
   02

5. Repair & Maintenance

6. Selling Expenses

7. Other expenses

Total: (1to7)
C. **Value of Output at full production**

<table>
<thead>
<tr>
<th>Name of product</th>
<th>Unit</th>
<th>Qty.</th>
<th>Market</th>
<th>Value of Output</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Financial</td>
</tr>
<tr>
<td>01</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total:**

* In case a number of Foreign Currencies are involved the amount and the exchange rate assumed may be specified separately.

@ In case project involves more than one product, the O & M cost would need to be furnished separately for each major product.

** For all traded and tradable items, the economic cost would be fob / cif prices and internal transportation cost. For non-traded / tradable item, this will be social opportunity cost/economic cost of production/market price excluding taxes, duties and subsidies and any other transfer payments.

Note: IC indicates the indigenous component and

FC the Foreign component.
CASHFLOW STATEMENT FOR CALCULATION OF INTERNAL RATE OF RETURN
(Separate statements for different alternatives)

Alternative ...............  Base date (month & Year) :
Exchange rate :  (Rs. crores)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CASH OUT FLOW</th>
<th>CASH INFLOW/Value of output</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capital Cost</td>
<td>O &amp; M cost</td>
</tr>
<tr>
<td></td>
<td>Taxes and</td>
<td>Taxes and</td>
</tr>
<tr>
<td></td>
<td>duties in IC</td>
<td>duties in IC</td>
</tr>
<tr>
<td></td>
<td>IC FC</td>
<td>IC FC</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total

NPV  , Financial IRR  , Economic IRR
DRC

Cost of Production (Rs./tonne):

@ 100% capacity utilisation :

@ 85% capacity utilisation :

Note:

(i) Interest during construction (IDC) will be excluded from cols 2 and 3. Depreciation will be excluded from col.5. Interest on working capital will however, be included in col.5.

(ii) Recovery of salvage value is to be shown in N+1 year. Replacement cost of capital nature, if any, not included in the annual O&M cost should be shown in the capital cost column against the appropriate years.

(iii) For economic analysis the capital and operation and maintenance costs should be taken at their economic values as given in DFR 1.4 after using premium/shadow prices for F.E. labour etc. as may be specified by PIB time to time.
# SUMMARY OF CAPITAL COST

Base date (month & year):
Exchange rate*:
(Rs. crores)

<table>
<thead>
<tr>
<th>Statement No.</th>
<th>Item</th>
<th>Capital Cost</th>
<th>Basis of reliability within (+/-) %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>IC</td>
<td>FC</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

2.1 Land
2.2 Cost of Buildings
2.3 Know-how & Engineering
2.4 Plant & Equipment
2.5 C.H.P
2.6 Railway siding
2.7 Prospecting and Boring
2.8 Furniture and Fitting
2.9 Vehicles
2.10 Environment Related Cost
2.11 Development
2.12 Margin Money for Working Capital (As per norms)
2.13 Capitalised Interest During Construction
2.14 Revenue Expenditure Capitalised
2.15 Others (to be specified)

---

Total Project Cost (2.1 to 2.15)

(Contd.)
* In case the number of foreign currencies involved are more than one, the amount and exchange rate for each of the currencies may be indicated in the footnote.

@ TQ - Tender Quotation
BQ - Budgetary Quotation
IH - In-House Cost Data
CD - Consultants Data

Note:

The details of items not sought vide DFRs may be furnished as per norms laid down by CMPDIL, separately.
# DETAILS OF LAND COSTS

Base date (month & year):

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Land required for</th>
<th>Type of land**</th>
<th>Area (ha.)</th>
<th>Rate (Rs/ha)</th>
<th>Cost of land (Rs. lakhs)</th>
<th>Current status of acquisition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Mining Area

2. Environmental purpose

3. Service Buildings

4. Residential Buildings

5. Coal Handling Plant *

6. Railway siding *

7. Caving and stowing

8. Other Purposes (specify)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Land required for</th>
<th>Type of land**</th>
<th>Area (ha.)</th>
<th>Rate (Rs/ha)</th>
<th>Cost of land (Rs. lakhs)</th>
<th>Current status of acquisition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The cost of land if included in these items separately, the same may be specified.

** Type of land - Forest, govt., Tenancy, others may be indicated here. A summary may be given at the bottom of the table, giving total area in ha, divided into each type.
DETAILS OF COST OF BUILDINGS

Base date (month & year):

Exchange Rate:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Item</th>
<th>Unit</th>
<th>Qty.</th>
<th>Rate (Rs)</th>
<th>Amount (Rs. lakhs)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IC</td>
<td>FC</td>
</tr>
</tbody>
</table>

1

A. Design, Engineering & Consultancy

B. Civil & Structural Works for the Plant

1.1 Preliminary survey, soil investigations etc.

1.2 Land Development
   i) Excavation
   ii) Levelling
   iii) Internal roads and paths
   iv) Others (to be specified)

1.3 Main & Auxiliary Plant
   a) Main plant structures:
      i) Pit Office
      ii) Stores
      iii) Other Buildings at mine
   b) Residential Buildings (typewise)
      i)
      ii)
      iii) (contd.)
c) Auxiliary structures
   i) Workshop at mine
   ii) Hospital
   iii) Schools
   iv) Play ground etc.
   v) ..........  

d) Miscellaneous structures
   i) Administrative buildings
   ii) Others (to be specified)

C. Supervision

D. Contingency

Total (A-D):
DETAILS OF KNOWHOW, ENGINEERING AND CONSULTANCY *

Base date (month & year):
Exchange Rate:
(Rs. Lakhs)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Particulars</th>
<th>Cost</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>IC</td>
<td>FC</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

a) Know how

b) Engineering

c) Consultancy **

d) Training

Total:

* Separate tables for different facilities along with a summary table
** In-house expenditure should be shown under 'Project Management'.
BREAK UP OF PLANT AND EQUIPMENT COST

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Item</th>
<th>Cost of Equipment/</th>
<th>Inland</th>
<th>Erection</th>
<th>Others (to be specified)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>supplies</td>
<td>Transport &amp; Insurance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>cif</td>
<td>Custom Duties &amp; Indigenous cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&amp; Other Taxes</td>
<td>Tax element</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FC</td>
<td>IC</td>
<td>IC</td>
<td>IC</td>
<td>IC</td>
<td>IC</td>
</tr>
<tr>
<td>1 &amp; 2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

A. Main Equipment(coal*)

1.
2.
3.
Sub Total

B. Main Equipment(OB) if an OCP

1.
2.
3.
Sub total

C. Auxiliary Plants & Facilities

1.
2.
3.
Sub-total

D. Other Facilities

(contd.)
1.

2.

3.

Sub-total

E. Initial Spares

F. Contingencies

G. Grand Total (A-F)

Note: *Size and number of equipment may be furnished separately for each item of HEMM and total for other equipments
# DETAILS OF COST OF CHP

(Capacity......)

Base Date (month & year):
Exchange rate:

(Rs. Lakhs)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Items</th>
<th>No./Unit</th>
<th>IC</th>
<th>FC</th>
<th>Taxes &amp; duties in IC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A. Plant & Machinery

1. Mechanical (excluding Belting & Tipping trucks)
2. Belting (with size)
3. Electricals
   Sub total - A

B. Erection and Installation

C. Civil Structures

D. Supervision and Monitoring

E. Tipping Trucks

F. Others (specify)

   Total
DETAILS OF COST OF RAILWAY SIDING

Base Date (Month & Year):

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Particulars</th>
<th>Unit</th>
<th>Quantity</th>
<th>Rate</th>
<th>Total Cost</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Earth work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Track</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Surveying</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Others (Specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total

(Rs. Lakhs)
### DETAILS OF COST OF PROSPECTING & BORING

**Base Date (Month & year):**

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Particulars</th>
<th>Total meterage</th>
<th>Rate of drilling (Rs/metre)</th>
<th>Total Cost of drilling (Rs/lakhs)</th>
<th>Years of Drilling</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

**A. Upto preparation of FR**

1) Meterage already drilled

2) ........

3) ........

4) ........

**B. Upto Target year**

1) Meterage (Planned)

2) ........

3) ........

4) ........

**C. After Target year**

1) Meterage (Planned) during project execution

2) .......

3) .......

4) .......

---

Total:

---
**DETAILS OF COST OF FURNITURE AND FITTINGS**

Base date (Month & Year):

(Rs. Lakhs)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Particulars</th>
<th>Cost of existing furniture</th>
<th>Cost of Addl. equipment</th>
<th>Total Cost (3+4)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1.

2.

3.

**Total**

---

50
# DETAILS OF COST OF VEHICLES

**Base Date (Month & year):**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Particulars</th>
<th>Unit</th>
<th>Quantity</th>
<th>Rate</th>
<th>Cost</th>
<th>Life in yrs.</th>
<th>Annual depreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cars</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Jeeps and Trailors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Diesel Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Water sprinklers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Ambulance van</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Explosive van</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Cash van</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Canteen van</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>School bus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Motor cycle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Tractor with fuel tanker</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Others (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DFR - 2.9

51
ENVIRONMENT RELATED COSTS

Base Date (Month & year):

Exchange Rate:

(Rs. Lakhs)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Item</th>
<th>Amount</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>IC</td>
<td>FC</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Rehabilitation of displaced persons*
2. Compensation
3. Pollution abatement cost
4. Effluent treatment
5. Subsistence allowance
6. Compensatory afforestation
7. Green belt development
8. Pollution and Monitoring facilities
9. Others (specify)

Total

* No. of families/persons affected, compensation, basis and details to be given in the footnote.
DETAILS OF COST OF DEVELOPMENT

Base Date (Month & Year)

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Particulars</th>
<th>Unit</th>
<th>Quantity</th>
<th>Rate</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A. Upto the preparation of FR

| 1      |                     |      |          |      |            |
| 2      |                     |      |          |      |            |
| 3      | .                   |      |          |      |            |
| Sub-total |                   |      |          |      |            |

B. Upto the Target year

| 1      |                     |      |          |      |            |
| 2      |                     |      |          |      |            |
| 3      | .                   |      |          |      |            |
| Sub-total |                   |      |          |      |            |

C. After target year

| 1      |                     |      |          |      |            |
| 2      |                     |      |          |      |            |
| 3      | .                   |      |          |      |            |
| Sub-total |                   |      |          |      |            |

Total (A+B+C)
## DETAILS OF COST OF DEVELOPMENT

### II. Roads and Culverts

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Particulars</th>
<th>Unit</th>
<th>Qty</th>
<th>Rate</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1. Grade 'A' roads
   
   (Specification)
   
   i)
   
   ii)
   
   iii)

2. Grade 'B' roads
   
   i)
   
   ii)
   
   iii)

3. Culverts
   
   i)
   
   ii)
   
   iii)

4. Pucca Drains
   
   (Specification)

5. Approach roads and culverts

6. Service roads and culverts

7. Others (specify)

---

Total
### DETAILS OF COST OF DEVELOPMENT

(Rs. lakhs)

#### III. Water supply scheme

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Particulars</th>
<th>Unit</th>
<th>Quantity</th>
<th>Rate</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total**

55
DETAILS OF COST OF DEVELOPMENT

(Rs. lakhs)

IV. Pilot Schemes and Scientific Research

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Particulars</th>
<th>Existing Cost</th>
<th>Addl. Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total
### DETAILS OF COST OF DEVELOPMENT

#### V. Cost of FR preparation (Rs. lakhs)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Particulars</th>
<th>Existing Cost</th>
<th>Addl. Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ASSESSMENT OF WORKING CAPITAL

Base date (month & year)

Exchange Rate:

(Rs. lakhs)

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Item</th>
<th>Norms of Inventory</th>
<th>Unit rate</th>
<th>Total value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1. Boughtout component
   a) Imported
   b) Indigenous

2. Work in progress

3. Coal in stock

4. Debtors

5. Cash and Bank balance

6. Total current assets (1-5)

7. Creditors

8. Advance from customers

9. Total current liabilities (7-8)

10. Working Capital gap (6-9)

11. Margin Money (as per norms)

12. Gap for bank finance

13. Annual interest on bank financed amount (excl. margin money)

Note: 1. This is required to be furnished yearwise till stable level of production is achieved.

2. Incremental working capital requirements on annual basis may be shown in a footnote.
CAPITALISED INTEREST DURING CONSTRUCTION (IDC)
(Content flexible depending upon specific requirements of the project).

Base date (month & year):
Exchange Rate:

(Rs. lakhs)

<table>
<thead>
<tr>
<th>Year</th>
<th>Source</th>
<th>Loan</th>
<th>Rate of Interest</th>
<th>Period</th>
<th>Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total

5—2/PC/ND/92
A - DETAILS OF REVENUE EXPENDITURE CAPITALISED

Base date (month & year):

Exchange Rate:

(Rs. lakhs)

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Items</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Year 1</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

A. Revenue Expenditure Capitalised

1. ........

2. ........

3. ........

Total (A) ........................................................................................................

B. Credit for Production during commissioning period

C. Net Revenue Expenditure Capitalised (A - B)

........................................................................................................
### B - CATEGORYWISE MANPOWER DURING CONSTRUCTION

<table>
<thead>
<tr>
<th>Year</th>
<th>Managerial/Admin.</th>
<th>Technical</th>
<th>Skilled</th>
<th>Semi-Skilled</th>
<th>Un-skilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1.

2.

3.

Till Commissioning

Total
OPERATING COST REQUIREMENTS

Base date (Month & year):
(Rs./tunne)

<table>
<thead>
<tr>
<th>Items</th>
<th>At 100% capacity</th>
<th>At 85% capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fixed</td>
<td>Variable</td>
</tr>
<tr>
<td>1. Salaries &amp; Wages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Unskilled labour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii) Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Power</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Stores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Administrative Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Interest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Loan capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Working capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Depreciation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Misc. Expenses</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total:

Note:

a) Details of the following included in the operating cost to be given separately:
   i) Element of taxes & duties, etc.
   ii) Element of foreign exchange involved.
   iii) Element of Royalty & cess to be paid.
   iv) Element of wages to be provided to the unskilled labourer.

b) The details of the computation of the items of cost of production (1 to 7) may be furnished separately.
# REQUIREMENT OF LABOUR AND COST

(At a stable level of capacity utilisation for a full year)

Base date (month & year):

Exchange rate:

(Rs. lakhs)

<table>
<thead>
<tr>
<th>Category of Labour</th>
<th>No. of workers</th>
<th>Total wage cost</th>
<th>Cost of P.F/ESIS gratuity scheme</th>
<th>Average Earning per worker (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. Production Workers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01. Unskilled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02. Semi-skilled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03. Technical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04. Managerial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Total

2. Workers at administration and sales

|                          |                |                 |                                 |                                  |
| 01. Unskilled            |                |                 |                                 |                                  |
| 02. Clerical             |                |                 |                                 |                                  |
| 03. Junior Managerial    |                |                 |                                 |                                  |
| 04. Senior Managerial    |                |                 |                                 |                                  |

2. Total

Grand Total (1 + 2)
ESTIMATION OF SALES REVENUE AT 100% CAPACITY

Base date (month & year):
Exchange Rate:

<table>
<thead>
<tr>
<th>Products</th>
<th>Unit</th>
<th>Quantity</th>
<th>Unit Rate (Rs.)</th>
<th>Financial (Rs.Cr.)</th>
<th>Economic* (Rs.Cr.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

ROM Coal
Beneficiated
Washed Coal.
Middlings
Rejects

Total

* i) For traded and tradable product, the sales revenue in economic terms would need to be calculated on the basis of CIF/FOB values of the product.

ii) The details of computation of sales revenue in economic terms may be furnished if it is based on computed value of coal and not on CIF/FOB prices.
# OVER BURDEN REMOVAL AND PRODUCTION BUILDUP

<table>
<thead>
<tr>
<th>Year</th>
<th>OB removal* (cubic mtr.)</th>
<th>ROM coal</th>
<th>Beneficiated/ Washed coal*</th>
<th>Middlings</th>
<th>Rejects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total

* Wherever they are relevant
PROJECTED BALANCE SHEET

(Rs. lakhs)

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3 ......</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

I. Assets

01 Gross block

Less 02 Depreciation and amortisation

03 Net block

04 Capital work in progress

05 Unallocated expenditure during construction

06 Other items in the nature of assets

07 Total net fixed assets

(03 - 06)

08 Investments

09 Working Capital/Net Current assets

10 Inventories

101 Raw materials

102 Spare Parts

103 Work in progress

104 Finished goods

105 Other stores

11 Sundry debtors

12 Loans and advances

(contd.)
## PROJECTED BALANCE SHEET

(Rs. lakhs)

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Less 16 Current liabilities

and provision

17 Net current assets/

working capital

18 Deferred revenue/

preliminary expenditure

19 Accumulated deficit

---

Grand Total:

Authorised share capital

### II. Liabilities

01 Paid up share capital

011 From Central Government

012 From others

02 Loans

021 Loans from central Government

022 Loans From foreign parties

023 Working capital loans

from central Government

(contd.)
024 Loans from others
03 Cash credit/advances
04 Reserve and surplus
   041 Development rebate/
       Investment allowance reserve
042 General and other reserves
043 Specific reserves
05 Balance from profit/loss

Grand Total:

Note: The above data may be furnished till one year after production is stabilised.
PROJECTED PROFIT AND LOSS STATEMENT

(Rs. lakhs)

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

I. Income
   01 Gross sales/operating income
   Less 02 Commission, rebate and discount
   Less 03 Excise duty
   04 Net sales/operating income
   05 Other income/Misc. receipts

Total (04 and 05):

II. Expenses
   06 Purchase of finished goods
   07 Consumption of raw materials, stores and spares
   08 Salaries, wages and welfare benefits
   09 Repairs & maintenance
   10 Power and fuel
   11 Misc. expenditure
   12 Prior period adjustment
   13 Accretion/decretion in a stock of finished goods
   14 Work in progress
# PROJECTED PROFIT AND LOSS STATEMENT

(Rs. lakhs)

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Total (06 - 14):

III. Gross margin (I-II)
Less 15 Depreciation
Less 16 Deferred revenue/
    preliminary expenditure

IV. Gross profit/loss (III-15-16)
17 Interest
    171 On central Govt. loans
    172 On foreign loans
    173 On other loans
    174 On cash credit
    175 On supplier's credit
    176 On bonds & others (specify)
Less 177 Interest capitalised

18 Net chargeable interest

V. Profit/loss before tax (IV-18)
Less 19 Tax provision

VI. Net profit/loss (V-19)
Less 20 Dividend payment

VII. Retained profit/loss (VI-20)

Note: The above data may be furnished till one year after production is stabilised.
SOURCES OF FINANCING OF THE PROJECT

(Rs. lakhs)

Yearly phasing during implementation

<table>
<thead>
<tr>
<th>Item</th>
<th>Total</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Capital cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) IC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) FC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Internal resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Institutional loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Market borrowings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Supplier's credit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Public equity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Budgetary support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Collaborators contribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Other sources (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total (2 - 9) :

Foreign

10. Multilateral loans (specify)
11. Bilateral loans (specify)
12. Direct commercial borrowings
13. Supplier's credit
14. Collaborators contribution
15. Others (specify)

Total (10 - 15) :
CASHFLOW STATEMENT FOR CALCULATION OF INTERNAL RATE OF RETURN

Base date (month & Year):

Exchange rate:

(Rs. Crores)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CASH OUTFLOW</th>
<th>CASH INFLOW/ Value of output</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capital Cost</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IC</td>
<td>FC</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

1.
2.
3.

N

Total

NPV ____________, Financial IRR ____________

Financial Cost of production (Rs./tonne):

@ 100% capacity utilisation: ____________

@ 85% capacity utilisation: ____________

Note:

i) Interest during construction (IDC) will be excluded from cols. 2 & 3. Depreciation will be excluded from col. 5. Interest on Working Capital will, however, be included in col. 5.

ii) Recovery of salvage value is to be shown in N+1 year. Replacement cost of capital nature, if any, not included in the annual O&M cost should be shown in the capital cost column against the appropriate years.

iii) For the alternative proposed, cashflow statements would need to be prepared for "with" and "without" project situations, for working out cost of production (Financial and Economic) on incremental basis.
CASHFLOW STATEMENT FOR ECONOMIC ANALYSIS

Base date (Month & Year):
(Rs. crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash outflow *</th>
<th>Cash inflow *</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(at economic prices)</td>
<td>(at economic prices)</td>
</tr>
<tr>
<td></td>
<td>Traded/ trade-</td>
<td>Other commo-</td>
</tr>
<tr>
<td></td>
<td>able items</td>
<td>dities</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total:

Premium/
shadow prices
used above

NPV: ——————————— Economic IRR: ———————————

Economic Cost of Production (Rs./tonne):

@ 100% capacity utilisation: ____________

@ 85% capacity utilisation: ____________

* For economic analysis the capital and operation and maintenance cost should be taken at their economic values (as given in DFR 1.4) after using premium/shadow prices for foreign exchange, labour, etc. as may be specified by PIB from time to time.
## SENSITIVITY ANALYSIS

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Case</th>
<th>Internal Rate of Return (IRR)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Financial</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With Premium</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Capital cost</td>
<td>+ 10%</td>
</tr>
<tr>
<td>3</td>
<td>Capital cost</td>
<td>+ 20%</td>
</tr>
<tr>
<td>4</td>
<td>Capital cost</td>
<td>+ 30%</td>
</tr>
<tr>
<td>5</td>
<td>Operating cost</td>
<td>+ 10%</td>
</tr>
<tr>
<td>6</td>
<td>Operating cost</td>
<td>+ 20%</td>
</tr>
<tr>
<td>7</td>
<td>Sales Revenue</td>
<td>- 10%</td>
</tr>
<tr>
<td>8</td>
<td>Sales Revenue</td>
<td>- 20%</td>
</tr>
<tr>
<td>9</td>
<td>Different combinations</td>
<td></td>
</tr>
</tbody>
</table>

1. Base case
2. Capital cost + 10%
3. Capital cost + 20%
4. Capital cost + 30%
5. Operating cost + 10%
6. Operating cost + 20%
7. Sales Revenue - 10%
8. Sales Revenue - 20%
9. Different combinations
CHAPTER 5

REVISED COST ESTIMATES (RCE)

5.1.1 All projects, requiring Government approval, have to be reappraised and require Government approval again if the increase in Capital Cost exceeds a specified percentage. These revised cost estimates have to be submitted well before incurring the additional expenditure or making commitments. Necessary procedures and instructions required for RCE are laid down by the Government from time to time. This chapter outlines the information to be given in RCE proposals which have to be submitted for this purpose. In many cases, when the Detailed Project Report is prepared after the investment approval, the revised costs become known and often a proposal for revised approval, based on DPR, is submitted. This is also treated as RCE.

5.1.2 The proposal of revised cost estimates (RCE) should be in the nature of a memorandum on 'exceptions'. The primary aim of subjecting RCE to techno-economic appraisal is to focus on the changes which have taken place since the original approval of the proposal and reasons thereof. As far as possible, repetitions of information on the need and justification, technology, location and other parameters should be avoided, if there is no change vis-a-vis the latest sanctioned project. The formats to be used for data presentation in RCE (RCE 1 to 4) have been designed on the similar lines as DFR formats.

5.1.3 The information to be presented in RCE cases will compare the revised status with the sanctioned project. In case of first Revised Cost Estimate, the comparison is with the original project sanctioned. In case of second RCE, the comparison will be with the first RCE sanctioned and so on. The RCE formats have been designed on the same lines as DFR formats so as to enable a comparison of the RCE with the DFR estimates as per sanctioned project.

5.1.4 The comparative picture should cover all the important techno-economic parameters such as, the project cost, capacity, completion time, O&M expenditure, financial/economic benefits, financial and economic viabilities as given earlier vis-a-vis those now proposed. In case there are major variations in the parameters like technology, location, size of the plant, funding pattern or in the need and justification of the project from the latest sanctioned project, the project authorities should clearly indicate such change together with the reasons/justifications underlying the proposed changes.

5.1.5 Project Status: It is necessary to indicate the latest physical and financial progress achieved. The date upto which the progress is reported should be clearly indicated. Major milestones achieved should also be recorded in the form of a calender of events. While indicating the financial progress, the project authorities should not simply furnish the latest expenditure incurred on the project, it should also indicate the expenditure committed till the date of report. Apart from achievement of major milestones, the physical progress may give the achievement in percentage terms for each of the components/contracts of the project separately. The details to be furnished are indicated in the Format RCE-4.1

5.1.6 Cost Over-run: It is also necessary to indicate the basis on which the sanctioned estimates were framed and how the circumstances changed that basis. Similarly, project authorities should also give the basis underlying the revised estimates proposed. The degree of reliability of the revised estimates must also be indicated together with the reference level of prices.

75
5.1.7 The cost over-run should be subjected to the standardised variance analysis to segregate the effect of:

a) cost increases due to fiscal reasons within approved project schedule.

b) cost increases due to fiscal reasons beyond approved project schedule.

c) cost increases due to other reasons.

The itemwise cost variance analysis should be presented in the Format RCE 4.3. Detailed reasons/justifications for each variation in the cost proposed should be furnished. The variation in cost due to increase in quantities and/or unit rates should be indicated separately in the format RCE-4.3.

5.1.8 The variation in the annual operation and maintenance cost and the working capital requirement, if any, should also be indicated together with the justification/reasons underlying the change.

5.1.9 Funding: The arrangement for funding of RCE as compared to sanctioned project both for indigenous cost (IC) and FE, should be outlined.

5.1.10 Time Over-run: In analysing the total time over-run the starting point should be taken as the change from the zero date (i.e. the date of sanction). Similarly, the project commissioning should be taken as the final event. If the time over-run is on account of elongation of activities on the critical path, then the list of all such critical activities and reasons for inability to assess accurately their time duration in the sanctioned proposal should be clearly explained. It is also important that the reasons for the inability to adhere to the sanctioned commissioning schedule are clearly brought out in the Format RCE-4.1. The project authorities should also highlight the steps being envisaged to crash some of the critical activities so as to commission the project in the original time profile. A schedule of major milestones on a comparative basis should be provided. The cost over-run as a result of time over-run should be estimated and indicated separately.

5.1.11 Viability Analysis of the Revised Proposal: The project authorities should also furnish the financial and economic viabilities of the revised cost proposal together with the cashflow statements in support of the above calculations as per format RCE-4.5.
**SUMMARISED DATA**

Unit of measurement:

Base date (month & year):

<table>
<thead>
<tr>
<th>SI No.</th>
<th>Particulars</th>
<th>Latest sanction</th>
<th>RCE</th>
<th>Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Name of project/Location/Company

2. Geological Reserves (Mill. tonne)
   Seam-Wise Geological and Net Extractable
   i)
   ii)
   iii)
   iv)
   Total

3. Quality of coal
   Seam-Wise UHV-K. Cal/Kg Ash(%) Moisture(%)  
   i)
   ii)
   iii)
   iv)
   Total

4. Grade of Coal (Overall)

5. Average Stripping Ratio @ m3/tonne

6. Method of Mining @
   Opencast - Shovel
   Dumper/Dragline/both
   Underground - Bord

(contd.)
and Pillar/Longwall/Both/
Other (Specify)

7. Mine Development Item @
   i) Shaft No....Depth...
   ii) Incline-No....Length...
   iii) Main Drivage-before
       starting the production
       Length...
   iv) Development in coal
       before coming to full
       production
   v) Broad Equipment (of major, high
       cost equipment) specifications

   Equipment   No.   Size
Dragline
Longwall Face
Any other (specify)

8. Target output (mtpa)

   Grade   Qty. at 100%  Qty at 85%
   -------  -------------  ------------
   i)       
   ii)      
   iii)     
      Total

9. Main customers

10. Life (years)
    i) at 100%
    ii) at 85%
( contd. )
11. Initial capital outlay (Rs.lakhs)
   i) Total
   ii) Equity
   iii) Loan
12. Capital Outlay (Rs./tonne)
13. Capital cost for P&M
   i) Total cost (Rs. lakhs)
   ii) Cost per tonne (Rs)
14. Capital cost for EMP (Rs.lakhs)
15. Operating cost for EMP (Rs./tonne)
16. Capital requirement for township i.e building, roads and water supply
   i) total (Rs.lakhs)
   ii) per tonne (Rs.)
17. Foreign Exchange (Rs.lakhs)
18. Manpower (Nos)
19. OMS (Tonnes)
   i) At 100%
   ii) At 85%
20. Cost of production (Rs./tonne)
   i) At 100%
   ii) At 85%
21. Current selling price (Rs./tonne)
22. Cost of production(Rs./per tonne)
   at a discount rate specified by the Government.
   i) At 100%
   ii) At 85%

(contd.)
23. **IRR (%) Computations**
   
a) **Financial**
   
i) At 100%
   
ii) At 85%
   
b) **Economic**
   
i) At 100%
   
ii) At 85%
   
24. **Year of opening of revenue account**
25. **Completion schedule**
   
i) **Construction period (Years)**
   
ii) **Year of achieving target production**

Only those applicable to the project are to be given

GEOMINING INVESTIGATIONS AND STUDIES

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Particulars</th>
<th>LS</th>
<th>RCE</th>
<th>VARIATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

A. DATA ON DRILLING

1) Total coal bearing areas (sq.km)
2) Total number of boreholes required for
   adequate reliability (standard norms .......
   of 200 metres being the zones of influence
   of each borehole).
3) Total number of boreholes drilled ........
4) Additional boreholes drilled ........
5) Faults, nature of Block ........
6) Total number of deciphered faults .......
7) Probe of starts at the site of shift
   sinking/stone drivage ........
8) Kind of geophysical input, if any .......
9) Additional boreholes drilled in case
   of open cast project to determine
   outcrop and quality of strats at the
   base-cut zone ........

B. RESERVES

1) Estimated coal reserves (million tonnes) ........
2) Number of boreholes on which reserves are based ........
3) Number of bands in the seam ........
4) Aggregate thickness (metres)
5) Out of total reserves-
   i) Proven category (million tonnes) ........
ii) indicated category (million tonnes)…..
iii) inferred category (million tonnes)…..

6) Life of the mine (years)…..
   (to be worked out taking 70% of
   proven reserves and 30% indicated reserves)

C. QUALITATIVE STUDIES

1) Nature of qualitative studies carried out ……..
   (e.g. bulk sample test, washability test,
   number of boreholes etc.)

2) Grade of Coal ……..
   (As determined by CFRI)

3) Determination of grade either by ……..
   boreholes samples or samples of
   coal seams or both.

4) Precautions taken to maintain selling grade of coal
   during mining to be specified

D. Degree of reliability of quantitative and
   qualitative data ……..

E. HYDROGEOLOGICAL STUDY

1) Number of special large diameter
   boreholes drilled at shaft site/
   incline site/basecut site ……..

2) Strata behaviour in this locality
   to be confirmed for proper execution

3) In case of equiferous zones,
   quantity of water to be discharged
   per minute (litres) ……..

4) Precautions to be observed in
   regard to the findings under item
   3 above ……..
F. PHYSICO - MECHANICAL PROPERTIES OF ROCKS

1) Number of representative boreholes spread in -
   a) 30 metres above the seam ........
   b) 30 metres below the seam ........

2) Confirmation about cavability of rocks
   and support characteristics ........

G. INDICES OF COAL

1) Whether cutability and shearability indices
   of coal have been determined ........

2) If so, whether specifications of the
   shearer have been decided accordingly ........

H. CONFORMATION ABOUT MINING TECHNOLOGY

1) whether production parameters of equipment
   and the mining technology adopted are based on
   adequate investigations ........

2) whether the above assessment conform the norms
   and standard laid down by CEMPADI ........
ANALYSIS OF DEMAND AND SUPPLY
(Coal Field Area............)

Unit of measurement:

Base date (Month & Year):

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Particulars</th>
<th>Year1 LS</th>
<th>Year1 RCE</th>
<th>Year2 LS</th>
<th>Year2 RCE</th>
<th>Year3 LS</th>
<th>Year3 RCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

1. Demand
   Consumers
   a)
   b)
   c)
   Total

2. Capacity available (minewise)
   a) Existing capacity
      i)
      ii)
      iii)
   b) Capacity under implementation
      i)
      ii)
      iii)
   Total (a+b)

3. Gap between demand and supply

(contd.)
4. Capacity creation proposals
   for other projects (minewise)

   a) Project sanctioned
      i)
      ii)
      iii)

   b) Project under formulation

Note: The details of the quality of coal like ROM/washed Grade, ash content, etc. specified by the consumer may be indicated.

LS : Latest Sanctioned,
RCE : Revised Cost Estimates
**SUMMARY OF CAPITAL COST**

Base date (month & year):

Exchange rate* :

(Rs. crores)

<table>
<thead>
<tr>
<th>Statement No.</th>
<th>Item</th>
<th>Capital Cost</th>
<th>@</th>
<th>Degree of reliability within (+/-)....%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LS</td>
<td>RCE</td>
<td>Inc</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

2.1 Land  
2.2 Cost of Buildings  
2.3 Know-how & Engineering  
2.4 Plant & Equipment  
2.5 C.H.P  
2.6 Railway siding  
2.7 Prospecting and Boring  
2.8 Furniture and Fittings  
2.9 Vehicles  
2.10 Environment Related Cost  
2.11 Development  
2.12 Margin Money for Working Capital (As per norms)  
2.13 Capitalised Interest During Construction  
2.14 Revenue Expenditure Capitalised  
2.15 Others (to be specified)

---

**Total Project Cost (2.1 to 2.15)**

---

LS: Latest sanctioned  RCE: Revised Cost Estimate

*In case the number of foreign currencies involved are more than one, the amount and exchange rate for each of the currencies may be indicated in the footnote.

©  Tender Quotation  
BQ - Budgetary Quotation  
IH - In-House Cost Data  
CD - Consultants Data

**Note:** The details of items not sought vide DFRs may be furnished as per norms laid down by CMPDIL, separately.
# DETAILS OF LAND COSTS

**Base date (month & year):**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Land required for land</th>
<th>Type of land</th>
<th>Area (ha.)</th>
<th>Rate (Rs/ha)</th>
<th>Cost of land (Rs. lakhs)</th>
<th>Current status of acquisition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LS</th>
<th>RCE</th>
<th>LS</th>
<th>RCE</th>
<th>LS</th>
<th>RCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1. Mining Area
2. Environmental purpose
3. Service Buildings
4. Residential Buildings
5. Coal Handling Plant *
6. Railway siding *
7. Caving and stowing
8. **Other Purposes (specify)**
   Total

**LS** - Latest Sancti.ond,  **RCE** - Revised Cost Estimate

* The cost of land 'if included in these items separately, the same may be specified.
DETAILS OF COST OF BUILDINGS

Base date (month & year):
Exchange Rate:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Item</th>
<th>Unit</th>
<th>Qty</th>
<th>Rate (Rs)</th>
<th>Amount (Rs.lakhs)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LS RCE</td>
<td>LS RCE IC FC IC FC</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>Design, Engineering &amp; Consultancy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B.</td>
<td>Civil &amp; Structural Works for the Plant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Preliminary survey, soil investigations etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>Land Development*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Excavation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Levelling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii) Internal roads and paths</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iv) Others (to be specified)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>Main &amp; Auxiliary Plant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>Main plant structures:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Pit Office</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Stores</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii) Other Buildings at mine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>Residential Buildings (typewise)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) ....</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) ....</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii) ....</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(contd.)
DETAILS OF COST OF BUILDINGS

Base date (month & year):
Exchange Rate:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Item</th>
<th>Unit</th>
<th>Qty</th>
<th>Rate (Rs)</th>
<th>Amount (Rs.lakhs)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LS RCE</td>
<td>LS RCE IC FC IC FC</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  c) Auxiliary structures
     i) Workshop at mine
     ii) Hospital
     iii) Schools
     iv) Play ground etc.
     v) ........

d) Miscellaneous structures:-
     i) Administrative buildings
     ii) Others (to be specified)

C. Supervision

D. Contingency

Total (A-D):

@mailer_exclusion@

Excluding internal roads and paths already covered under land development.
**DETAILS OF KNOWHOW, ENGINEERING AND CONSULTANCY**

Base date (month & year):
Exchange Rate:
(Rs. Lakhs)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Particulars</th>
<th>LS (IC)</th>
<th>LS (FC)</th>
<th>LS (TOTAL)</th>
<th>RCE (IC)</th>
<th>RCE (FC)</th>
<th>RCE (TOTAL)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Know how</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Consultancy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total:

* Separate tables for different facilities alongwith a summary table

** In-house expenditure should be shown under `Project Management`.

90
BREAK UP OF PLANT AND EQUIPMENT COST  
(Separate statement for LS and RCE)

LS/RCE

Base date (month & year):
Exchange Rate:

(Rs. Lakhs)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Item</th>
<th>Cost of Equipment/ supplies</th>
<th>Inland Transport &amp; Insurance</th>
<th>Erection charges</th>
<th>Others (to be specified)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>cif Custom Duties &amp; Indigen- ous cost</td>
<td>Other Taxes &amp; Tax element</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC</td>
<td>IC</td>
<td>IC</td>
<td>IC</td>
<td>IC</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

A. Main Equipment(coal*)

1.
2.
3.

Sub Total

B. Main Equipment(OB) if an OCP

1.
2.
3.

Sub total

C. Auxiliary Plants & Facilities

1.
2.
3.

Sub-total

(Contd.)
D. Other Facilities

1.

2.

3.

Sub-total

E. Initial Spares

F. Contingencies

G. Grand Total (A-F)

Note: Size and number of equipment may be furnished separately for each item of HEMM and total for other equipments
## DETAILS OF COST OF CHP

**(Capacity.......)**

**Base Date (month & year):**

**Exchange rate:**

**(Rs. Lakhs)**

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Items</th>
<th>Unit</th>
<th>Qty</th>
<th>LS LS</th>
<th>RCE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IC IC</td>
<td>FC FC</td>
<td>Taxes Total &amp; duties in IC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Plant &amp; Machinery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Mechanical (excluding Belting &amp; Tipping trucks)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Belting (with size)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Electricals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub total - A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>B.</strong> Erection and Installation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>C.</strong> Civil Structures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>D.</strong> Supervision and Monitoring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>E.</strong> Tipping Trucks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>F.</strong> Others (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Total*
## DETAILS OF COST OF RAILWAY SIDING

**Base Date (Month & Year):**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Particulars</th>
<th>Unit</th>
<th>Qty</th>
<th>Rate</th>
<th>Total Cost</th>
<th>LS</th>
<th>Qty</th>
<th>Rate</th>
<th>Total Cost</th>
<th>RCE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Earth work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Track</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Surveying</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Other (Specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DETAILS OF COST OF PROSPECTING & BORING

(separate statement for LS and RCE)

**LS/RCE**

Base Date (Month & year):

(Rs. Lakhs)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Particulars</th>
<th>Total meterage</th>
<th>Rate of drilling (Rs/metre)</th>
<th>Total Cost of drilling (Rs/lakhs)</th>
<th>Years of Drilling</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A. Upto preparation of FR

1) Meterage already drilled

2) ........

3) ........

4) ........

B. Upto Target year

1. Meterage (Planned)

2. .......

3. .......

4. .......

C. After Target year

1. Meterage (Planned)

    during project execution

2. .......

3. .......

4. .......

---

Total
<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Particulars</th>
<th>LS</th>
<th></th>
<th></th>
<th>LS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Existing</td>
<td>Addl</td>
<td>Total</td>
<td>Existing</td>
<td>Addl</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

1.

2.

3.

4.

5.

6.

7.

Total

---

96
# DETAILS OF COST OF VEHICLES

Base Date (Month & year):

(Rs. Lakhs)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Particulars</th>
<th>No.</th>
<th>Unit price</th>
<th>Amount</th>
<th>life in years</th>
<th>Annual depreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LS</td>
<td>RCE</td>
<td>LS</td>
<td>RCE</td>
<td>LS</td>
</tr>
<tr>
<td>1</td>
<td>Cars</td>
<td>2</td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Jeeps and Trailors</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Diesel Truck</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Water sprinklers</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Ambulance van</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Explosive van</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Cash van</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Canteen van</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>School bus</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Motor cycle</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Tractor with fuel tanker</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Others (specify)</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Total
ENVIRONMENT RELATED COSTS

Base Date (Month & year):
Exchange Rate:
(Rs. Lakhs)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Item</th>
<th>LS IC</th>
<th>LS FC</th>
<th>LS TOTAL</th>
<th>RCE IC</th>
<th>RCE FC</th>
<th>RCE TOTAL</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rehabilitation</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>of displaced</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>persons*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Compensation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Pollution abatement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Effluent treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Subsistence allowance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Compensatory afforestation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Green belt development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Pollution and Monitoring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Others (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total  |                             |       |       |          |        |        |           |       |

* Number of families/persons affected, compensation, basis and other details to be given in the footnote.
**DETAILS OF COST OF DEVELOPMENT**

**Base Date (month & year):**

(Rs. lakhs)

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Particulars</th>
<th>Unit</th>
<th>Quantity</th>
<th>Rate LS</th>
<th>Rate RCE</th>
<th>Total Cost LS</th>
<th>Total Cost RCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>A. Upto the preparation of FR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub-total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Upto the Target year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub-total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. After target year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub-total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total A+B+C

---

99
DETAILS OF COST OF DEVELOPMENT

Base Date (month & year):

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Particulars</th>
<th>Unit</th>
<th>Quantity</th>
<th>Rate</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>LS</td>
<td>RCE</td>
<td>LS</td>
</tr>
<tr>
<td>1</td>
<td>Grade 'A' roads</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Specification)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Grade 'B' roads</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Culverts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pucca Drains</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Specification)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Approach road and culverts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Service road and culverts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Others (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total
### DETAILS OF COST OF DEVELOPMENT

**Base Date (month & year):**

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Particulars</th>
<th>Unit</th>
<th>Qty.</th>
<th>Rate</th>
<th>Amount (Rs.lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total**
**DETAILS OF COST OF DEVELOPMENT**

Base Date (month & year):

<table>
<thead>
<tr>
<th>IV. Pilot Schemes and Scientific Research</th>
<th>(Rs. lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sl.No.</td>
<td>Particulars</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total
### DETAILS OF COST OF DEVELOPMENT

**Base Date (month & year):**

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Particulars</th>
<th>Existing cost (LS)</th>
<th>Existing cost (RCE)</th>
<th>Addl. Cost (LS)</th>
<th>Addl. Cost (RCE)</th>
<th>Total Cost (LS)</th>
<th>Total Cost (RCE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

103
ASSESSMENT OF ON WORKING CAPITAL

Base date (month & year):
Exchange Rate:
(Rs. lakhs)

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Item</th>
<th>Norms of Inventory</th>
<th>Unit rate</th>
<th>Total value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LS RCE</td>
<td>LS RCE</td>
<td>LS RCE</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Boughtout items</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Imported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Indigenous</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Work in progress</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Coal in stock</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Debtors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Cash and Bank balance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Total current assets (1-5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Creditors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Advance from customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Total current liabilities (7-8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Working Capital gap (6-9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Margin Money (as per norms)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Gap for bank finance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Annual interest on bank financed amount (excl. margin money)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: 1. This is required to be furnished yearwise till one year after stable level of production is achieved.

2. Incremental working capital requirements on annual basis may be shown in a footnote.
**CAPITALISED INTEREST DURING CONSTRUCTION (IDC)**

Base date (month & year): 
Exchange Rate: 
(Rs. lakhs)

<table>
<thead>
<tr>
<th>Year</th>
<th>Source</th>
<th>Loan</th>
<th>Rate of Interest</th>
<th>Period</th>
<th>Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Currency</td>
<td>Amount</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LS</td>
<td>RCE</td>
<td>LS</td>
<td>RCE</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total**

105
A - DETAILS OF REVENUE EXPENDITURE CAPITALISED

Base date (month & year):
Exchange Rate:
(Rs. lakhs)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Items</th>
<th>LS (Amount)</th>
<th>RCE (Amount)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Years 1 2 3 Total</td>
<td>1 2 3 Total</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 2 3 4</td>
<td>4</td>
</tr>
</tbody>
</table>

A. Revenue Expenditure
   Capitalised
   1. ........
   2. ........
   3. ........

   Total (A)

B. Credit for Production
   during commissioning
   period

C. Net Revenue Expenditure
   Capitalised (A - B)

----------------------------------------
### B - CATEGORY WISE MANPOWER DURING CONSTRUCTION

(Separate statements for LS and RCE)

<table>
<thead>
<tr>
<th>Year</th>
<th>Managerial/Admin.</th>
<th>Technical</th>
<th>Skilled</th>
<th>Semi-Skilled</th>
<th>Un-Skilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1.

2.

3.

---

Till Commissioning

---

Total:
OPERATING COST REQUIREMENTS
(Separate statement for LS and RCE)

LS/RCE

Base date (Month & year):
(Rs./tonne)

<table>
<thead>
<tr>
<th>Items</th>
<th>At 100% capacity</th>
<th>At 85% capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fixed</td>
<td>Variable</td>
</tr>
<tr>
<td>1</td>
<td>Salaries &amp; Wages</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Unskilled labour</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Others</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Power</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Stores</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Administrative Expenses</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Interest</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Loan capital</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Working capital</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Depreciation</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Misc. Expenses</td>
<td></td>
</tr>
</tbody>
</table>

Total:

Note: (a) Details of the following included in the operating cost to be given separately:

(i) Element of taxes & duties, etc.
(ii) Element of foreign exchange involved.
(iii) Element of Royalty & cess to be paid.
(iv) Element of wages to be provided to the unskilled labourer.

(b) The details of the computation of the items of cost of production (I to 7) may be furnished separately.
## REQUIREMENT OF LABOUR AND COST

*(At a stable level of capacity utilisation for a full year)*

Base date (month & year):

Exchange rate:

*(Rs. lakhs)*

<table>
<thead>
<tr>
<th>Category of Labour</th>
<th>No. of workers</th>
<th>Total wage cost</th>
<th>Cost of P.F/ESIS gratuity scheme</th>
<th>Average Earning per worker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LS</td>
<td>RCE</td>
<td>LS</td>
<td>RCE</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Production Workers
   - 01. Unskilled
   - 02. Semi-skilled
   - 03. Technical
   - 04. Managerial

Total

2. Workers at administration and sales
   - 01. Unskilled
   - 02. Clerical
   - 03. Junior Managerial
   - 04. Senior Managerial

Total

Grand Total *(1+2)*
ESTIMATION OF SALES REVENUE AT 100% CAPACITY

Base date (month & year):

Exchange Rate:

<table>
<thead>
<tr>
<th>Products</th>
<th>Unit Quantity</th>
<th>Unit Rate (Rs.)</th>
<th>Financial (Rs. Cr.)</th>
<th>Economic* (Rs. Cr.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LS</td>
<td>RCE</td>
<td>LS</td>
<td>RCE</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Raw Coal
Beneficiated
Washed Coal.
Middlings
Rejects

Total

* i) For traded and tradable product the sales revenue would need to be calculated on the basis of CIF/FOB values of the product.

ii) The details of computation of economic selling price may be furnished if it is based on computed value of coal and not on CIF/FOB prices.
OVER BURDEN REMOVAL AND PRODUCTION BUILD UP

<table>
<thead>
<tr>
<th>Year</th>
<th>OB removal* (cubic mtr.)</th>
<th>ROM coal</th>
<th>Beneficiated/ Washed coal*</th>
<th>Middlings</th>
<th>Rejects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LS</td>
<td>RCE</td>
<td>LS</td>
<td>RCE</td>
<td>LS</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total

Note:

* Wherever they are relevant
PRESENT STATUS OF THE PROJECT
(Progress upto .......month & year)

<table>
<thead>
<tr>
<th>Sl. No. of work/ award</th>
<th>Date of completion (month &amp; Year)</th>
<th>Target date of completion</th>
<th>Reasons for delay</th>
<th>Progress achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Phys-ICAL@ Financial *</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IC FC Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LS RCE</th>
</tr>
</thead>
</table>

1. 2. 3. ...

LS: Latest Sanctioned.

RCE: Revised Cost Estimate

@ In terms of percentage.

* Actual expenditure incurred upto the month and year progress is to be reported in Rs. Crores.

# Exchange rates assumed would need to be specified.

Note: Commissioning refers to start of commercial operation.
DETAILS OF YEARWISE EXPENDITURE TILL...(month/year)
(Separate Statement for LS and RCE)

LS/RCE

Base date (month & year):
Exchange rate* :

(Rs. lakhs)

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Latest Sanctioned cost</th>
<th>year</th>
<th>year</th>
<th>year</th>
<th>Balance Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IC</td>
<td>FC</td>
<td>IC</td>
<td>FC</td>
<td>IC</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. Weighted average exchange rate @

* In case the number of foreign currencies involved are more than one, the amount and exchange rate for each of the currencies are to be indicated.

@ In item 16, weighted average exchange rate for each year in the past should be given.
ITEMWISE COST VARIANCE ANALYSIS

Base date (month/year) :

Exchange rate :

(Rs. lakhs)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Items</th>
<th>Latest sanctioned cost</th>
<th>RCE proposed</th>
<th>Variation</th>
<th>Variation due to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Escalation rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Exchange rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Variation rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Change in custom</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>duty due</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>to exchange rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Variation rate</td>
</tr>
</tbody>
</table>

1. Cost overrun for fiscal reasons within approved time schedule:
1.
2.

IDC

Margin money

Total (A)

B. Cost overrun for fiscal reasons beyond approved time schedule
1.
2.

IDC

Margin money

Total (B)
ITEMWISE COST VARIANCE ANALYSIS

Base date (month/year):
Exchange rate:
(Rs. lakhs)

C. Cost overrun due to other reasons

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Items</th>
<th>Latest sanctioned</th>
<th>RCE proposed</th>
<th>Variation in cost</th>
<th>Variation due to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Change in scope</td>
<td>Under/over-estimation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Approved items</td>
<td>Additional items</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
</tbody>
</table>

1.
2.
3.
.
.
IDC
Margin Money

Total (C)

LS: Latest Sanctioned, RCE: Revised Cost Estimates
Yearwise Index used for LS and RCE to be given in the footnote.

* Statutory duties

<table>
<thead>
<tr>
<th>Latest Sanctioned</th>
<th>Revised Cost Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>Amount</td>
</tr>
</tbody>
</table>

Excise duty
Customs duty
Sales Tax
Others (specify)
CASHFLOW STATEMENT FOR CALCULATION OF INTERNAL RATE OF RETURN
(Separate statement for LS and RCE)

Base date (month & Year):
Exchange rate:
(Rs. Crores)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CASH OUTFLOW</th>
<th>CASH INFLOW/Value of output</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capital Cost</td>
<td>O &amp; M cost</td>
</tr>
<tr>
<td></td>
<td>IC FC Taxes and duties in IC</td>
<td>IC FC Taxes and duties in IC</td>
</tr>
<tr>
<td>1</td>
<td>2 3 4 5 6 7 8 9 10</td>
<td>11 12 13</td>
</tr>
</tbody>
</table>

1.
2.
3.

N

Total

NPV ________, Financial IRR ________

Financial cost of production (Rs./tonne):

@ 100% capacity utilisation:

@ 85% capacity utilisation:

Note:

i) Interest during construction (IDC) will be excluded from cols.2 & 3. Depreciation will be excluded from col.5. Interest on Working Capital will, however, be included in col. 5.

ii) Recovery of salvage value is to be shown in N+1 year. Replacement cost of capital nature, if any, not included in the annual O&M cost should be shown in the capital cost column against the appropriate years.
**CASHFLOW STATEMENT FOR ECONOMIC ANALYSIS**
(Separate statements for LS/RCE)

(Rs. crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash outflow * (@ economic prices)</th>
<th>Cash inflow * (@ economic prices)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Traded/</td>
<td>Other commo</td>
</tr>
<tr>
<td></td>
<td>trade-</td>
<td>able</td>
</tr>
<tr>
<td></td>
<td>able</td>
<td>items</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

1.
2.
3.
4.
5.

N

Total:

Premium/
shadow prices
used above

NPV: Economic IRR:

Economic Cost of Production (Rs/tonne):

@ 100% capacity utilisation:

@ 85% capacity utilisation:

* For economic analysis the capital and operation and maintenance cost should be taken at their economic values (as given in DFR 1.4) after using premium/shadow prices for foreign exchange, labour, etc. as may be specified by PIB from time to time.
## SENSITIVITY ANALYSIS
*(separate statement for LS/RCE)*

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Case</th>
<th>Internal Rate of Return (IRR)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Financial</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Base case</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Capital cost + 10%</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Capital cost + 20%</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Capital cost + 30%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Operating cost + 10%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Operating cost + 20%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Sales Revenue - 10%</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Sales Revenue - 20%</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Different combinations</td>
<td></td>
</tr>
</tbody>
</table>

1. Base case
2. Capital cost + 10%
3. Capital cost + 20%
4. Capital cost + 30%
5. Operating cost + 10%
6. Operating cost + 20%
7. Sales Revenue - 10%
8. Sales Revenue - 20%
9. Different combinations