

Annex 2. Guidelines and formats for Final Mines Feasibility Study (Section 28)

Part I Guidelines for preparing the Project Feasibility Study

The report shall include at least the information listed below:

1. Salient features

It shall be the summary of the project and includes,

- background of promoter
- location of mine
- leasehold area
- total geological and mineable reserve
- summary of the report

2. Market Analysis

- size of market and specifications
- competition in the market
- import substitution/ export potential
- value added processing potential
- quality control of products
- legal and regulatory considerations

3. Geology and reserve

- Brief description of the exploration programme to determine the reserve and quality of the mineral and the geology,
- Geological plans and sections showing necessary geological features.
- Detailed findings of the exploration, geological parameters, reserves, quality of mineral etc.

4. Mine Development Planning

Showing;

- Determination of pit boundary and the area required for establishment of infra-structural facilities,
- Access road to the mine area and the mining benches.
- Pre-production development works including jungle & bush clearance, initial cut and bench preparation to expose the deposit,
- Establishment of infrastructure which include plant and machinery, office and residential buildings
- Provision of ancillary facilities such as power, water, transport facility with and beyond the mine etc.

5. Mine Design parameters

Giving justifications for the selection of chosen parameters for,

- Bench dimensions,
- blast hole drilling,
- blasting,
- haul road and ramp,

- waste dump,
- final pit configuration etc.

6. Mine production planning.

- Year-wise and bench-wise working and production plan giving details of quantity, quality and specification of mineral/rejects/sub-grade mineral and all the consumables.
- Description of the method of operation

7. Mine plan drawings,

which include;

- Location map in an appropriate scale showing pre-mining landuse in and around the mining lease area and demarcation line of private and government land within the lease-hold boundary
- Layout plans (in a scale not less than 1:5000) showing lease boundary, pit boundary, infrastructure set-up, access road, locations of top soil/reject rocks/sub-grade dumps, explosives magazine, public facilities such as school, hospital etc. and the index map showing the location of the proposed mine in the region
- Pre-mining cross-sections at suitable intervals not exceeding 100 meters, along the actual slope of topography with clear plotting of different litho-types,
- Pre-production development plan.
- Bench-wise slice plans clearly demarcating different litho-types and grade of mineral in different mining benches,
- Year-wise configuration of the mining pit shown on plans and all X-sections clearly marking the litho-types for five years, for the end of lease period and for end of the mine life,
- Year-wise configuration of the waste disposal site for five years, for the end of lease period and for end of the mine life,
- Ultimate pit configuration on plan and different X-sections

8. Waste Disposal planning

- Select most suitable site giving justification and due consideration to the cost involved.
- Describe in detail the treatment of waste & tailings, configuration of waste dump and its stability.

9. Manpower

- Details of manpower requirement in executive, supervisory, technical and workers category stating their duties, including organisation charts
- Type of contract work and the contract workers proposed to be involved

10. Project implementation schedule

It includes the implementation schedule of various activities in the mine starting from project concept to signing of lease agreement to the production stage.

11. Capital cost

It includes pre-production and preliminary costs, cost of equipment and machinery, infrastructure and mine development costs, utilities costs, working capital etc.

12. Production cost:

It shall include cost for unit operations such as;

- transport,
- fuel water and power,
- labour, health, safety and sanitation
- service, marketing and promotion
- land compensation, acquisition
- government levies
- waste disposal, environment management and restoration activities
- financing, depreciation cost
- Other cost

13. Financial Analysis:

- Revenue from sales
- Profitability statement
- cash-flow analysis
- rate of return
- payback analysis
- break-even analysis