

Scope of Services

Preparation of Detailed Project Reports (DPR) for Tete East (7521C) coal block of M/s ICVL located in the Tete Province in Mozambique.

The Scope would broadly include three separate DPRs for Tete East (7521C):

- Preparation of a DPR for Development of a mine with a likely rated output of ~5.5 Mt/annum feeding ROM coal to a Coal Handling and Processing Plant (CHPP).
- Preparation of a DPR for CHPP to receive and process ~5.5 Mt/annum of ROM coal and handle, process, transport and load clean coal (CC) and thermal coal (TC) at Benga railway siding.
- Preparation of a DPR for Coal Chain Logistics which would include the modifications of the Benga railway Siding and modelling of the rolling stock for rail transportation to Beira Port.

Mine and the related infrastructure is required to be planned and designed for capacity of 5.5 MTPA as option-1 and to be planned and designed for ROM coal to be transported from Tete East project to Benga module II as option-2, keeping in consideration the future expansion for Benga CHPP. (option -1 and option -2 are described at B.O)

Based on the review and assessment of available inputs and the agreed parameters, the formulated DPRs will have firmed up capital investment and operating cost assessed for ROM coal at the pit head and clean coal at CHPP end/Loading point at Beira siding and logistic cost for rail transportation to Beira Port.

The work would broadly include;

Review and assessment of the available inputs related to Mining, CHPP and Coal Chain Logistics which would cover the following;

A.0 MINING

- General assessment of present status of the project based on the drawings, data and documents made available by ICVL, site visit, visual observations, discussions with ICVL and review of all data available.
- Review the available data /documents /drawings /calculation sheets coal reserves of the tenement area of the project and, based on the same, indicate the reserves and grades of coal available within the project area.
- Review, validate the available geological resource models, statements and data.
- Review geotechnical and geo-hydrological reports and supporting information.
- Preliminary delineation of open-pit boundaries and assessment of likely mineable reserves and likely waste quantities for the defined open-pit boundaries. A tentative production schedule and mining strategy shall be established along with likely technology selection, requirement of mining & other equipment, services and infrastructure.

- Review hydrogeological and hydrology models and water balance.
- Review, validate and verify available geological resource models, statements and data.
- ICVL is drilling 6 bore holes which will be completed in the month of March to comply the resources with JORC 2012 and the Geology report is to be prepared, to ensure optimization, assessing technical compliance.
- Preparation of the three-dimensional geological model of the Tete East Project area, estimate the coal resource and update the CPR comply to JORC 2012.

The DPR for development of the mine and supplying ROM coal to the CHPP would broadly incorporate the following;

- i. Introduction
- ii. Project Site Information
- iii. Deposit Appraisal
- iv. Review and delineation of open pit boundary.
- v. Assessment of Mineable Reserves
- vi. Assessment of Waste Quantity and Stripping Ratio.
- vii. Mining Strategy & Method of Mining
- viii. Production Scheduling
- ix. Equipment provisioning
- x. Waste Disposal Planning
- xi. Ancillary Equipment Requirement
- xii. Water management
- xiii. Mine facility and infrastructure
- xiv. Coal Handling and Preparation Plant (also through a separate DPR)
- xv. Power Supply Arrangements
- xvi. Safety, Health and Environment
- xvii. Assessment of Manpower
- xviii. Mine Economics (Details of Head-wise Capital Investment, Cost of production with elemental breakup, cash-flow and sensitivity analysis on first principle approach)

B.0 CHPP

The DPR for CHPP is to be designed as per the following options: -

Option -1 (As a new construction at TETE east concession area)

Washery	Modules	Throughput rated capacity
CHPP – 1	Module I	5.3 MTPA of ROM Coal

Option -2

ROM coal shall be transported from Tete East project to Benga module II CHPP

ROM	Modules	Throughput rated capacity
Feeder Breaker	Over land conveyor up to CHPP module II of Benga CHPP	5.3 MTPA of ROM Coal

The scope would broadly include:

- Site visit and data collection
- Study of preliminary data collected and identification of additional data and collection of the same, if required.
- Review of existing data and selection of a suitable beneficiation process / technology for recovery of beneficiated coal at a desired ash level based on the test results.
- Selection of equipment for plant & machinery including civil items as per technological requirement.
- Preparation of drawings for plant layout, process flowsheet, quantity flowsheet, equipment flowsheet, electrical single line diagram, bar-chart, washability curves.
- Estimation of capital investment for plant & machinery, civil items, water, power, manpower requirement etc.
- Estimation of operating cost per tonne of raw coal input & output and financial analysis.

The DPR for supplying ROM coal to the CHPP, washing the coal and transportation of CC and TC to Benga Siding (road/alternate mode) would broadly incorporate the following;

- i. Introduction
- ii. Raw Coal Characteristics
- iii. Capacity and operating conditions of the washery
- iv. Marketability
- v. Process flowsheet and balance of products
- vi. Treatment of coal in different sections
- vii. Stores, Repairs and other facilities
- viii. Water supply arrangement
- ix. Civil structure (Buildings, Installation and other civil works)
- x. Power supply distribution, Automation Instrumentation and Communications.
- xi. Manpower
- xii. Economics

C.0 COAL CHAIN LOGISTICS

All rail related scope will be limited to the following items:

- Modifications to the Benga siding
- Modeling of rolling stocks.

The details of Mine economics would include Head-wise details of Estimated/Assessed Capital Investment and Cost of Production and Financial analysis.

Eligibility Criteria

- a) The bidder should have technical capability and proven experience of minimum 5 projects in last 5 years for formulation of Feasibility Reports/Project Reports/DPR for Coal Mining Projects of capacity not less than 5 MTPA.
- b) The bidder should have technical capability and proven experience of minimum 5 projects in last 5 years for formulation of Feasibility Reports/Project Reports/DPR for washery projects of 3 MTPA capacity or more on BOO/ BOM basis.
- c) The bidder should have technical capability and proven experience of minimum 5 years projects in last 5 years for formulation of Feasibility Reports/Project Reports/DPRs for CHP projects of 5 MTPA capacity on BOO/BOM basis.
- d) The bidder should have on-roll technical professionals with relevant experience in Mine Planning, CHP design and Washery design (CPP), for at least last 5 years.
- e) The bidder should have average turnover of at least 20 million USD for last 3 years.

The bidder may/will have to present the deliverables to the Board of ICVL and other promoting companies.