REQUEST FOR PROPOSAL (“RFP”) FOR SELECTION OF AN OWNER’S MINING CONSULTANT FOR DEVELOPMENT OF COAL BLOCKS OF THE ORISSA POWER GENERATION CORPORATION LTD.

1. BACKGROUND

Orissa Power Generation Corporation Ltd. (“OPGC”) is a Public Private Partnership of Government of Orissa and AES Corporation, USA. OPGC owns and operates Ib Thermal Power Station (with current capacity of 2x210 MW coal based units) located at Banharpalli, Jharsuguda District, in the State of Orissa, India. OPGC is a profit making company and ranks among the top 15 generating companies in the country. OPGC has been allotted two coal blocks by the Ministry of Coal, Government of India, for its captive use of power generation. The two coal blocks, Manoharpur and Dip Side of Manoharpur, are located in the Ib Valley coal fields in Sundargarh District of Orissa. The captive coal blocks shall be used by OPGC to support its expansion project (2,400 MW, in two phases of 2x600 MW each, of coal-fired thermal power) at Ib Thermal Power Station.

2. COAL BLOCKS FEATURES:

<table>
<thead>
<tr>
<th>Manoharpur Coal Block</th>
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<td><strong>Sl.No.</strong></td>
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</table>
| 1. | Coal Block | • Fully explored. Geological Report (GR) available  
| | | • Location: IB-Valley coal field, Sundergarh District, Orissa, India  
| | | • Area: 6.51 sq.km  
| | | • Geological Reserve: 181.68 MMT  
| | | • Dip: 6 to 8 degree  
| | | • Strike: 3 Km |
| 2. | Status of Coal Block | • Mine Plan  
| | | • Statutory Mine Plan approved by Ministry of Coal (MOC), Government of India  
| | | • Mining Lease  
| | | • In process  
| | | • Environment Clearance  
| | | • Terms Of Reference for Environment Impact Study obtained from Ministry of Environment and Forest (MoEF)  
| | | • Draft EIA / EMP report under preparation  
| | | • Forest Clearance  
| | | • In process  
| | | • Land Acquisition  
| | | • In process  
| | | • Socio-economic survey completed |
### Dip Side Manoharpur Coal Block

#### 1. Coal Block
- Situated at the adjoining west of Manoharpur Coal block
- Regionally explored; Detailed exploration and Geological Report to be prepared
- Area: 6.95 sq.km.
- Geological Reserve: 350 MMT (Indicative)

#### 2. Status of Coal Block
- Prospecting License: In process
- Exploration: CMPDIL, Ranchi is being appointed to carry out the detailed exploration and preparation of GR
- Environment clearance for exploration is in place
- Forest clearance for exploration: Process initiated. Application submitted to CCF Nodal has been forwarded to DFO Sundargarh

### 3. REQUEST FOR PROPOSAL
OPGC requires the services of a reputed Owner's Mining Consultant (the “Consultant”) for completion of a mining project report (“MPR”) and other assistance, as per Section 4 below. To meet this objective, OPGC invites all interested parties (“Bidders”) to participate in this RFP through the process described below.

### 4. SCOPE OF SERVICES

The scope of services of the Consultant is detailed in Annex A.

### 5. ELIGIBILITY CRITERIA

A. The Bidder shall have a qualified team of Open Cast Mine Planning & Design Personnel.
B. The Bidder shall possess national / international experience of successful planning and design consultancy of similar opencast coal / lignite mining projects as per the services described in Annex A.
C. The Bidder shall have a consistent yearly financial performance in the preceding three years, a turnover of at least US$10 million.
D. The Bidder must have prepared in the last five years at least 2 (two) detailed project reports for opencast coal / lignite mines of capacity not less than 15 Million Cum. of Composite volume (Overburden and coal / lignite together) of
which one project shall be outside India, with benchmark operational results. At least one such project shall be in operation or under implementation.

6. BID PROCESS

Bidders are required to submit their bids in two parts: (i) Technical Bid and (ii) Commercial / Price Bid.

(i) The Technical Bid shall include the following:

a) List of coal or lignite mines where, in the last five years, the Bidder has been involved as a consultant, along with the information requested in the table below:

<table>
<thead>
<tr>
<th>Mine #1 (Name)</th>
<th>Mines #2, #3, etc.</th>
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<tbody>
<tr>
<td>Owner</td>
<td></td>
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<tr>
<td>Location</td>
<td></td>
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<tr>
<td>Scope of Services Provided by Bidder</td>
<td></td>
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<tr>
<td>Present Status of Mine Implementation</td>
<td></td>
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</tbody>
</table>

b) Statements of satisfactory completion from clients / owners of any mines indicated in 6(a) which are in operation or under implementation.

c) An organizational chart of the project team and for each key professional, the information requested in the table below:

<table>
<thead>
<tr>
<th></th>
<th>Professional #1 (Name)</th>
<th>Professionals #2, #3, etc.</th>
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<tbody>
<tr>
<td>Title</td>
<td></td>
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<tr>
<td>Experience / Work History</td>
<td></td>
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<tr>
<td>Educational Qualifications</td>
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<tr>
<td>Expected Nature of Involvement</td>
<td>Specific roles / activities</td>
<td>Specific roles / activities</td>
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<tr>
<td></td>
<td>Full time / part time</td>
<td>Full time / part time</td>
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<tr>
<td>Employment Status</td>
<td>Bidder employee or externally hired resource?</td>
<td>Bidder employee or externally hired resource?</td>
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<tr>
<td>Primary Location</td>
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</table>

d) Audited financial statements for last three years.
e) List of tools / software that the bidder has experience with and that would be utilized for the services described above (the Bidder shall make use of standard mine planning software like Vulcan, Xpac, Datamine, Surpac, Minex, etc.).

f) Flow chart / timeline indicating the methodology to be utilized to complete Modules 1-3 in Annex A.

g) Description of any current work or business presence (e.g., offices) of the Bidder within India.

h) A listing and detailed explanation of any instance of litigation in which any party is involved.

(ii) The **Commercial / Price Bid** shall include the following:

   a) Proposed pricing for each of the modules (1-4) listed in Annex A, in the format provided in Annex B:

OPGC reserves the right to accept/reject, at its sole discretion, any or all bids or cancel the bidding process without assigning any reason whatsoever and no further correspondence or explanation shall be entertained in this regard.

7. EVALUATION CRITERIA

The submitted proposals will be evaluated based on various criteria including but not limited to: (a) the Bidder's relevant experience, (b) the qualifications and experience of the key staff proposed, (c) the tools & software proposed to be utilized by the Bidder, and (d) pricing / commercial terms.

8. BID SCHEDULE

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Publication of Notice Inviting Tenders and RFP</td>
<td>January 29, 2009</td>
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<tr>
<td>Deadline for Submission of Bidder Proposals</td>
<td>February 20, 2009 @1:00pm</td>
</tr>
<tr>
<td>Opening of Technical Bids</td>
<td>February 20, 2009 @3:00pm</td>
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</table>

9. CONTACT ADDRESS

For any clarification, the Bidders may contact Manager (Mechanical) in the following address:

Orissa Power Generation Corporation Ltd.
7th Floor, Zone-A, Fortune Towers, Chandrasekharapur,
Bhubaneshwar - 751023
Tel-91-674-2303764, Fax-91-674-2303755/56,
E-Mail: projectcellopgc@opgc.co.in
ANNEX A: SCOPE OF SERVICES

MODULE 1: Geological Model
Time Frame for Completion: 4 weeks from engagement

- Data management procedures
- Preparation of geological models based on the geological report ("GR")
- Estimation / validation of seam wise reserve, overburden & interburden, and stripping ratio ("SR")
- Submission of the geological model in both electronic and hard copy formats

NOTE: OPGC shall issue separate Notices to Proceed for Modules 2 – 4, based on satisfactory completion of previous modules as well as timing / process of the broader expansion project.

MODULE 2: Mine Model & Related Infrastructure & Coal Handling & Processing Plant
Time Frame for Completion: 10 weeks

- Mine Design / Layout
  - Pit layout design and optimization
  - Boxcut design and location
  - Haul road layout and design
  - Development of mine cross-sections
  - Layout & design of spoil dump (Ex-pit and In-pit)

- Mining Method and Mine Development Strategy
  - Criteria for selection of mining method and system
  - Discussion of appropriate mining methods and equipment options
  - Recommendation of mining method and equipment configuration
  - Scheduling of equipment erection program and deployment (equipment phasing)
  - Preparation of equipment productivity sheet for overburden removal and coal production
  - Scheduling of coal and overburden / interburden removal program
  - Scheduling of coal grade and quality to obtain a consistent quality of coal during entire life of the mine
  - Dump locations and capacity
  - Scheduling of external and internal dumping program
  - Preparation of haul distance summary for overburden removal and coal transportation
  - Mine services
  - Operational safety considerations

Notes
- All the above activities must be in compliance with the provisions of Mines Act 1952, Mines Rule 1955, Coal Mines Regulation 1957, and other statutory obligations as applicable in India
- Key geotechnical data should be considered while designing and planning the mine
Estimate of land requirement for the mine
- Coal bearing land
- Waste dump area (ex-pit and in-pit)
- Mine supporting infrastructures like Coal Handling Processing Plant ("CHPP"), workshop facilities, washery, effluent treatment plant, sewerage treatment plant (if required), service building and colony for manpower, rejects-based power plant, etc.
- Scheduling of land requirement
- Location of all these infrastructures
- Resettlement & rehabilitation schedule

Coal Handling Processing Plant
- Process design & coal flow
- Description of Coal Handling & Processing Plant (CHPP)

Ash Unloading and Disposal in Mine’s Dumps (Ex-pit & In-pit)
- Feasibility analysis and assessment of methods / quantities of ash transport to mine
- System of ash backfilling in conjunction with mine OB dumping, etc. Ash would be transported from ash stockyard (nearby mine) to OB dumps for random mixing
- Quantity scheduling of ash in synchronization with OB volume and ash output from power plant

Civil Construction
- Descriptions / key aspects of service and residential buildings, roads and culverts, warehouses, workshop, fuel and lubricants storage, road network, effluent treatment facility, power distribution facilities, etc.

Mine Power Supply and Electrical Distribution System
- Description of electrical sub-stations
- Metering arrangement
- Distribution & utilization voltages
- Scheme of power factor improvement and protection system
- Power supply scheme for the quarry including illumination of various working zone
- Power supply scheme to CHPP
- Power supply scheme to colony
- Power requirement
- Scheme for mine communication system

Water Management Plan / Pumping & Drainage Scheme for the Mine
- Assessment of mine water
- Mine dewatering (pit dewatering and in-pit dewatering) scheme
- Assessment of pumping capacity required
- Surface water management plan

Environment / Health / Safety / Social Management Plan
- Description of environmental issues
- Waste dumps and top soil management – encapsulation / progressive land reclamation
- Disposal plan for hazardous material generated from the mine
- Description of safety issues
• Infrastructure requirement for environmental management
• Mine closure plan and environmental conservation measures as per Mines and Minerals (Regulation and Development) Act 1957, Mineral Conservation & Development Rules 1988, and any recent notifications by Ministry of Coal (“MoC”), Government of India

➢ Personnel Planning
  • Personnel numbers and skill requirements
  • Approach
  • Personnel organization
  • Recruitment and training plan

MODULE 3: Cost Economics
Time Frame for Completion: 6 weeks

➢ Estimation of life-of-mine capital expenditure schedules
  • Land procurement costs
  • Initial capital for mining equipment, mine infrastructure, and CHPP
  • Additional capital for equipment used for ash dumping
  • Replacement capital for the replacement of mining equipment at optimal machine life
  • Methodology for capital cost estimation
  • Source of information utilized to estimate capital costs

➢ Estimation of life-of-mine operating cost schedules
  • Equipment operating cost including fuel, explosives, electricity, parts and supplies, wear items, lubricants, etc.
  • Labor: salaried and non-salaried, manpower productivity, etc.
  • Expenses for contract services
  • Mine support cost (pit pumping, road surfacing, dewatering, etc.)
  • Cost for ash dumping in mine’s dump
  • Operational overheads (facilities maintenance, office expenses, employee training, permitting and monitoring costs, etc.)
  • Royalties, taxes, etc.
  • Accruals for mine closure and final reclamation
  • Rehabilitation and resettlement costs
  • Source of information utilized to estimate operating costs
  • Potential for improvement / additional operating efficiencies

➢ Cash Flow Financial Analysis
  • IRR, NPV, Sensitivity Analysis, etc

MODULE 4: Assistance with RFP Preparation, Evaluation, and Coal Mining Partner Selection
Time Frame for Completion: to be determined

➢ A: Technical assistance with selection process of OPGC’s Coal Mining Partner
  • Assistance in preparing technical components of the Request for Qualifications and the Request for Proposals
• Evaluation, observations, and comments related to technical submissions and mining plans submitted by potential Coal Mining Partners as part of their bids

> **B**: The nature and content of additional work may be detailed in the future, but can include aspects of the following:
  • Upon selection of a preferred Coal Mining Partner, additional work required for finalization of a target price for the coal mining operation
  • Any other additional work requested by OPGC and agreed to by the Consultant

**GENERAL CONSIDERATIONS**

> The MPR work shall be completed to a level of detail that yields a cost estimate accuracy of +/- 10%, with the exception of work related to the Coal Handling and Processing Plant, which should be done at the best possible accuracy level given that washability data for the Manoharpur block is not currently available.

> The above components of the MPR should take into account:
  • Client base case requirement of 8 MTPA of peak production
  • Future development, construction, and operation of the adjacent Dip side Manoharpur mine
  • Capability to increase production from 8 MTPA to 15 MTPA in the future, when second 1,200 MW phase of expansion reaches commercial operation

> The MPR should be consistent with the statutory Mine Plan that has been previously prepared and approved by Ministry of Coal. However, in instances where the Bidder feels optimization is possible, suggestions and recommendations are welcome after appropriate discussion with OPGC.

> The deliverables above be prepared in accordance with the provisions of the Mines and Minerals (Regulation and Development) Act, 1957 and the Mineral Concession Rules, 1960, Coal Mines Regulations, 1957, and other statutes applicable to Coal Mines in India.

> The systematic or progressive mine closure plan shall be prepared as per Mineral Conservation & Development Rule, 1988 and any recent notifications by MoC.

> In completing the Scope of Services above, the Consultant shall perform all necessary design and engineering work to determine accurate and credible cost economics for the mining operation. In areas where a conceptual design is deemed sufficient for these purposes, detailed engineering shall not be required.

**TERMS AND CONDITIONS**

> For Modules 1 – 3, the consultant shall deliver a presentation to OPGC management and incorporate OPGC’s suggestions and comments prior to final delivery of work.

> The deliverables shall be provided to OPGC in the form of both text and plates, as required and requested by the client.
Payment terms shall be as follows:

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Particulars</th>
<th>Percentage Payment</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Mobilization Fees</td>
</tr>
<tr>
<td>1</td>
<td>Module – 1</td>
<td>10</td>
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<tr>
<td>2</td>
<td>Module – 2</td>
<td>10</td>
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<tr>
<td>3</td>
<td>Module – 3</td>
<td>10</td>
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<th>Sl. No</th>
<th>Particulars</th>
<th>Percentage Payment</th>
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<tbody>
<tr>
<td>4</td>
<td>Module – 4 (A &amp; B)</td>
<td>20</td>
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</table>

Note-Mobilization Fees/Advances shall be released against Bank Guarantee.
ANNEX B: FORMAT FOR COMMERCIAL / PRICE BID

<table>
<thead>
<tr>
<th>Module</th>
<th>Services</th>
<th>Charge</th>
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<tbody>
<tr>
<td>1</td>
<td>Geological Model</td>
<td>flat fee basis</td>
</tr>
<tr>
<td>2</td>
<td>Mine Model &amp; Related Infrastructure &amp; Coal Handling and Processing Plant</td>
<td>flat fee basis</td>
</tr>
<tr>
<td>3</td>
<td>Cost Economics</td>
<td>flat fee basis</td>
</tr>
<tr>
<td>4A</td>
<td>Assistance with RFP preparation and evaluation</td>
<td>flat fee basis</td>
</tr>
<tr>
<td>4B</td>
<td>Further assistance with coal mining partner selection</td>
<td>variable cost basis, e.g. INR or $ / man-hour</td>
</tr>
</tbody>
</table>

Note- 1. Fees to be quoted shall inclusive of all expenses and exclusive of Service Tax as applicable.
2. Reimbursement on account of traveling, boarding and local conveyances related to this assignment shall be specified separately.
3. FX rate of INR 50: US$ 1 shall be taken as conversion for evaluation only and the payment will be made as per the prevailing conversion rate.