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# **SUBHADRA OCP**

## **[WEST OF GOPALPRASAD WEST & UTKAL-A BLOCK]**

### **(CAPACITY 25.0 MTY)**

### **(COST BASE AUGUST 2020)**

# **MDO VARIANT**

**TALCHER COALFIELDS  
MAHANADI COALFIELDS LIMITED**



**AUGUST 2021**

**PREPARED BY**

**CENTRAL MINE PLANNING & DESIGN INSTITUTE LIMITED**  
*(A Subsidiary of Coal India Ltd.)*  
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| 5                                  | Statement showing cash flow @ 100% capacity  | D.1             |
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**SUBHADRA OCP**  
**(WEST OF GOPALPRASAD WEST & UTKAL-A BLOCK) (25.0 MTY)**  
**MDO VARIANT**  
**(Cost Base Aug 2020)**

## **1.0 BACKGROUND**

Project Report of Subhadra OCP, 25 Mty, Talcher coalfield was prepared in two variants i.e. Departmental and Outsourcing. This PR was approved by MCL Board in outsourcing variant and sent to CIL for final approval. While approving, MCL Board authorized CMD, MCL to approve any minor deviations like change in type/capacity of machines, method of coal handling/evacuation. The Board further directed to initiate necessary activity for floating of MDO contract before final approval by CIL Board.

A Committee was constituted by MCL vide letter No MCL/SBP/GM(CMC)/2020/370 dated 25.07.2020 for customization of tender document and preparation of estimated rate of mining charge in Rs/te for selection of Mine Operator of Subhadra OCP. The Committee in their meeting held on 15.12.2020 proposed that the job related to preparation of estimate etc. may be prepared by CMPDI & same was approved by CMD, MCL dated 13.12.2020. Accordingly CMPDI was entrusted with the job of preparation of MDO variant of the PR and customization of tender document of Subhadra OCP for selection of Mine Operator vide N/S no E-389005 dated 19.12.2020.

Accordingly in this report, MDO Variant of the PR has been prepared

## **2.0 APPROVAL OF THE PROJECT REPORT**

The PR of Subhadra OCP, 25 Mty was approved by 227<sup>th</sup> MCL Board held 30.10.2020 in outsourcing variant with a total capital investment of Rs 2407.07 Crores. The PR was put up before 108<sup>th</sup> ESC of CIL Board held on 06.01.2021. The ESC directed that since Utkal-A is a CMSP block, upfront amount etc. as applicable should be included in the PR. Accordingly, upfront amount (Rs.164,98,13,057/-) and reserve price(Rs 138.60/Te) as communicated by CMPDI HQ was considered and Capital investment and financial evaluation of the project was revised for both departmental and outsourcing variant. The head wise capital investment (cost base Aug 2020) in departmental and outsourcing variant as put up before ESC of CIL Board dated 18.02.2021 is as below:

(Rs. In Lakhs)

| <b>Sl.No</b> | <b>Head</b>                   | <b>Departmental Variant</b> | <b>Outsourcing Variant</b> |
|--------------|-------------------------------|-----------------------------|----------------------------|
| 1            | Land                          | 97810.19                    | 97810.19                   |
|              | R&R                           | 40546.04                    | 40546.04                   |
| 2            | <b>Building</b>               |                             |                            |
|              | Service Building              | 11309.90                    | 3692.09                    |
|              | Res Building                  | 40800.59                    | 8847.94                    |
| 3            | <b>P&amp;M</b>                |                             |                            |
|              | HEMM                          | 126223.68                   | 1711.06                    |
|              | Other than HEMM               | 66788.69                    | 48785.75                   |
| 4            | F&F                           | 202.04                      | 155.04                     |
| 5            | Railway siding                | 9071.48                     | 9071.48                    |
| 6            | Vehicle                       | 314.22                      | 314.22                     |
| 7            | Prospecting and Boring        | 2031.92                     | 2031.92                    |
| 8            | <b>Development</b>            |                             |                            |
|              | Capital outlay in mine        | 7116.53                     | 7116.53                    |
|              | Upfront amount                | 16498.01                    | 16498.01                   |
|              | Roads and culverts            | 9789.11                     | 8672.89                    |
|              | Water supply                  | 2599.76                     | 938.99                     |
|              | Scientific study              | 524.03                      | 524.03                     |
|              | PR and other preparation cost | 1905.24                     | 1905.24                    |
| 9            | Revenue Exp. Capitalized      | 17413.81                    | 13747.60                   |
|              | <b>TOTAL</b>                  | <b>452945.23</b>            | <b>262369.01</b>           |

The PR of Subhadra OCP (25 Mty) was discussed in the 109th meeting of ESC of CIL Board held on 18.02.2021. The committee advised to calculate the Financial Impact on the project if Employment is to be provided against the possession of 686.44 Ha Tenancy land and place the same in Board meeting for its consideration.

With this observation and as recommended by MCL Board ,the Empowered Sub - Committee of CIL Board recommended to CIL Board, PR of Subhadra OCP (25 Mty) for a total capital Investment of Rs. 2623.69 crores ( existing – Rs. 126.35 crores + additional Rs. 2497.34 crores) for outsourcing option along the following:

- i) Minor deviations like change in type / capacity of machines, method of coal handling/evacuation can be approved by CMD, MCL.
- ii) Any future requirement that may arise during the execution of the project, for which there is no capital provision mentioned in the Project Report, will be done through outsourcing only.

- iii) To initiate necessary activity for floating of MDO tender before final approval by CIL Board.

The report was discussed in 420<sup>th</sup> CIL Board meeting. Following aspects were discussed:

- Impact on IRR after giving additional employment to PAF as submitted by MCL : IRR of the project will be 27.96 % at 85% of production after giving employment to additional employment to PAF against IRR of 29.75% without considering employment to each PAF
- Evacuation facility: Coal is proposed to be evacuated through proposed Phase-II of MCRL Railway Line (Balram-Putgadia-Jharpada-Tentuloi – 55 Km). The expected date of completion of Phase-II of MCRL Railway line is 31<sup>st</sup> December, 2024. In the initial years of the project, coal is proposed to be transported to nearby JSPL plant through pipe conveyor as per the consent given by JSPL for taking 6.50 Mty of coal. Further, an amount of Rs.90.71 cores is provisioned for construction of railway siding for a length of 8 km including ancillary works.

In view of the above and as recommended by the Empowered Sub-Committee Meeting of CIL Board, Board accorded its approval to Project Report of Subhadra OCP (25 Mty) for a total capital investment of Rs.2623.69 crores (Existing – Rs.126.35 Crs + Additional – Rs.2497.34 Crs) for Outsourcing Option and the project would be implemented through MDO mode along with the following as brought out in the agenda note:

- i) Minor deviations like Change in type/capacity of machines, method of coal handling/evacuation can be approved by CMD, MCL and
- ii) Any further requirement that may arise during the execution for the project, for which there is no capital provision mentioned in the Project Report, will be done through outsourcing only.

### **3.0 MDO VARIANT OF PR:**

MDO Variant of PR as asked by MCL was submitted to MCL on 28<sup>th</sup> February 2021. The report was discussed in 33<sup>rd</sup> Meeting of Technical Sub Committee of MCL Board on 13<sup>th</sup> April 2021. Following are the minutes of the meeting for finalization MDO variant of project report:

**QUOTE**

In the approved PR, the provision of evacuation of coal from Subhadra OCP is through proposed Phase-II of MCRL railway line (Balram-Putgadia-Jharpada-Tentuloi – 55 km), for which a provision has been kept for 4 siding lines, 2 km each, adding up to 8 km for an amount of Rs.90.71 crores. Now, to improve the operational efficiency and to expedite the eco-friendly evacuation arrangement and to avoid dependency on future project, i.e. MCRL Phase-II it is proposed for constructing rail connectivity from Subhadra OCP to Balram Angul Rail line (MCRL Phase-I). This minor deviation is permissible with the approval of competent authority, as per CIL Board Approval.

Keeping in view of the above guidelines, the Sub-committee directed that in addition to the scope already covered in the draft MDO report for Subhadra OCP, the scope of work for Mine Operator in Subhadra MDO shall be as below:

1. Construction of rail connectivity from Subhadra OCP to Balram Angul Rail line (MCRL Phase-I) including land acquisition and Forest clearance. MCL shall have rights to use/modify/supplement the rail infrastructure for its own use as and when required.
2. MDO operator shall construct 33kV double circuit double string (DCDS) overhead line on 132 kV towers from the 120 MVA, 132kV/33kV Nandira substation of MCL including land acquisition and Forest clearance for the purpose of erection of towers etc. and ensure incoming power supply to project and CHP sub-statins. MCL shall have rights to draw power to other adjacent mines of MCL (i.e. Balabhadra OCP, Hingula AOCP, Balram OCP etc.) from this DCDS OH Line.
3. Residential buildings to be constructed by MDO for the use of MCL shall comply to the DPE guidelines.
4. EC & FC clearances: Scope of MDO:
  - Environment clearance including public hearing and all other activities including getting the various studies done as per ToR, preparation of EIA-EMP, Public consultation etc. except preparation of form-I & Pre-Feasibility Report.
  - Forest clearance (Stage-I and Stage-II) including tree enumeration, pallisabha for obtaining NoC from Collector under FRA-2006 and all other activities from grass root level to ministry including DGPS survey of CA land.
  - Preparation of Wildlife Conservation Plan.

- Socio-economic Survey of affected villages.
- Any other study required by MoEF, SPCB, CPCB and other statutory body in connection with EC & FC.
- Obtaining CTE and CTO from SPCB.

**UNQUOTE**

The final PR of MDO Variant has been prepared accordingly. MDO variant of the PR was submitted to MCL on 22.04.2021 after incorporating minutes of 33th TSC of MCL Board held on 13.04.2021. The MDO variant of PR has been approved by MCL Board on 29.05.2021 in it's 235 Meeting of Board of Directors.

GM(CMC), MCL vide mail dated 04.08.2021 further communicated Minutes of meeting dated 10.08.2021 for revision in financials for Subhadra OCP due to change in timeline of completion of Railway line . As per minutes of this meeting, investment on rail link line and siding lines and CHP are to be stretched upto 4<sup>th</sup> year. Accordingly MDO Variant of PR of Subhadra OCP has been further modified in this report.

#### **4.0 BROAD GEOMINING PARAMETER OF THE MINE**

The Project Report of Subhadra OCP, 25 Mty has been prepared within western part of Gopalprasad west and Utkal-A coal block of Talcher coalfield, Angul district of Odisha.

The block lies between latitude 20°55'56.225"N and 20°58'47.344"N and longitude 84°58'42.383"E and 85°0'50.476"E and is covered under Survey of India toposheet No.F45Z13 & F45T1 on RF 1:50,000. Utkal-A and Western part of Gopalprasad West block covers an area of 11.45 sq.km. The block is nearly triangular in shape having about 5.2 km length in north-south direction and about maximum 3.6 km width in east-west direction. There are 140 boreholes spreading over 11.45 sq. km. area and involving 22,529.65m (in 139bh.) of drilling in the block under reference. The borehole density of the block comes to 12.35 boreholes/sq. km. Within the Utkal-A & Western Part of Gopalprasad West block the strike is generally East-West varying to ENE-WSW. The beds have low northerly dip which varies from 3° to 8° within the block. Local variations in dip and strike have been observed at places

Thick seams occur at shallow depth in wide area having power grade coal reserve. It can be best extracted by open cast mining method deploying mechanical shovels of high capacity and dumpers of matching sizes.

With due considerations to all surface constraints and geological dispositions within the block, quarry boundaries have been derived as below:

North: 30m from Singhada Jhor where embankment is not required and up to 42 m where difference between levels of surface and top of embankment is highest.

Meanderings of Singhada Jhor nala towards north and south are proposed to be straightened.

East: 50 m from center line of 500 kV DC transmission line.

South: At about latitude 772300 m (coal grid) which is workable limit of seam II E.

West: 7.5 m from western block boundary as per statute and at least 45m from the State Highway towards south-west.

| <b>Seam name</b>   | <b>G-6</b> | <b>G-7</b> | <b>G-8</b> | <b>G-9</b> | <b>G-10</b> | <b>G-11</b> | <b>G-12</b> | <b>G-13</b> | <b>G-14</b> | <b>G-15</b> | <b>G-16</b> | <b>G-17</b> | <b>Total</b>  |
|--------------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
| XI                 | 0          | 0          | 0          | 0          | 0           | 0.21        | 4.65        | 12.38       | 6.24        | 0.12        | 0           | 0           | <b>23.60</b>  |
| X                  | 0          | 0          | 0          | 0          | 0           | 0           | 0.44        | 4.21        | 8.68        | 1.63        | 0.05        | 0           | <b>15.01</b>  |
| IX                 | 0          | 0.01       | 0.05       | 0.48       | 10.33       | 27.62       | 74.64       | 31.77       | 3.77        | 0.21        | 0.01        | 0           | <b>148.89</b> |
| VIII+IX            | 0          | 0          | 0          | 0          | 0           | 0           | 3.66        | 36.7        | 8.52        | 0           | 0           | 0           | <b>48.88</b>  |
| VIII               | 0          | 0          | 0          | 0          | 0.17        | 1.01        | 12.64       | 32.54       | 26.67       | 3.34        | 0.51        | 0           | <b>76.88</b>  |
| VII B              | 0.05       | 0.17       | 0.53       | 3.02       | 8.87        | 11.65       | 6.52        | 2.02        | 0.47        | 0.01        | 0           | 0           | <b>33.31</b>  |
| VII A              | 0          | 0          | 0          | 0          | 0.02        | 0.31        | 0.35        | 0.71        | 1.57        | 1.2         | 0.48        | 0.02        | <b>4.66</b>   |
| VB                 | 0          | 0          | 0          | 0.05       | 0.43        | 2.76        | 8.5         | 7.64        | 10.18       | 3.58        | 0.48        | 0           | <b>33.62</b>  |
| V(A+B)             | 0          | 0          | 0          | 0.3        | 0.4         | 0.62        | 5.36        | 7.93        | 7.87        | 1.54        | 0.97        | 0.3         | <b>25.29</b>  |
| VA                 | 0.02       | 0.15       | 0.52       | 1.24       | 4.58        | 5.22        | 2.57        | 0.74        | 0.27        | 0.28        | 0           | 0           | <b>15.59</b>  |
| IV B               | 0          | 0          | 0          | 0          | 0           | 0.14        | 3.08        | 24.52       | 27.18       | 2.27        | 0.3         | 0           | <b>57.49</b>  |
| III E Top          | 0          | 0          | 0          | 0.12       | 0.91        | 2.9         | 1.93        | 0.6         | 0.27        | 0.1         | 0           | 0           | <b>6.83</b>   |
| III E              | 0          | 0          | 0          | 0.65       | 5.83        | 6.9         | 4.45        | 1.43        | 0.34        | 0.09        | 0           | 0           | <b>19.69</b>  |
| III E Bot.         | 0          | 0          | 0          | 0          | 0           | 0           | 0.38        | 1.2         | 0           | 0           | 0           | 0           | <b>1.58</b>   |
| III (D+E)          | 0          | 0          | 0          | 0          | 0           | 1.8         | 15.77       | 5.01        | 0.61        | 0           | 0           | 0           | <b>23.19</b>  |
| III (D+E Bot.)     | 0          | 0          | 0          | 0          | 0           | 6.91        | 5.32        | 4.71        | 1.55        | 0           | 0           | 0           | <b>18.49</b>  |
| III D              | 0          | 0.26       | 0.44       | 0.44       | 0.57        | 0.98        | 3.01        | 3.15        | 3.93        | 0.34        | 0           | 0           | <b>13.12</b>  |
| III A Top to III E | 0          | 0          | 0          | 0          | 0           | 3.69        | 19.24       | 1.38        | 0           | 0           | 0           | 0           | <b>24.31</b>  |
| III (A+D+E)        | 0          | 0          | 0          | 0          | 0.1         | 7.51        | 33.99       | 5.67        | 3.35        | 3.02        | 0           | 0           | <b>53.64</b>  |
| III (A+D)          | 0          | 0          | 0          | 0          | 0           | 0           | 1.14        | 8.21        | 3.92        | 0.79        | 0.35        | 0.52        | <b>14.93</b>  |
| III A Top          | 0          | 0          | 0          | 0.19       | 0.25        | 0.38        | 0.34        | 0.08        | 0.03        | 0           | 0           | 0           | <b>1.27</b>   |
| III A              | 0          | 0          | 0.11       | 0.3        | 0.69        | 1.86        | 2.18        | 4.86        | 4.03        | 0.4         | 0           | 0           | <b>14.43</b>  |
| III A Bot          | 0.01       | 0.02       | 0.13       | 0.36       | 0.36        | 0.53        | 0.6         | 0.27        | 0.19        | 0           | 0           | 0           | <b>2.47</b>   |
| II E               | 0          | 0          | 0.2        | 0.9        | 4.77        | 10.18       | 7.09        | 2.6         | 0.13        | 0           | 0           | 0           | <b>25.87</b>  |

| Grade wise Extractable Coal Reserve within Quarry Configuration (Mt) |      |      |      |      |       |       |        |        |        |      |      |      |        |
|--|------|------|------|------|-------|-------|--------|--------|--------|------|------|------|--------|
| Seam name  | G-6  | G-7  | G-8  | G-9  | G-10  | G-11  | G-12   | G-13   | G-14   | G-15 | G-16 | G-17 | Total  |
| II(D+E)  | 0    | 0    | 0    | 0.53 | 1.94  | 10.57 | 24.24  | 17.86  | 1.99   | 0.05 | 0    | 0    | 57.18  |
| II D   | 0    | 0    | 0.09 | 0.27 | 1.45  | 2.05  | 1.37   | 2.55   | 0.66   | 0.17 | 0    | 0    | 8.61   |
| Net Mineable Coal  | 0.08 | 0.62 | 2.03 | 8.42 | 31.82 | 88.51 | 196.44 | 263.61 | 150.42 | 22.7 | 3.35 | 0.85 | 768.83 |

### Geo-mining Parameters

| Sl. | Particulars                                   | Unit    | Value  |
|-----|---|---------|--------|
| 1   | Quarry floor area                             | ha      | 688.49 |
| 2   | Quarry surface area                           | ha      | 881.28 |
| 3   | Mineable reserve                              | Mt      | 768.83 |
| 4   | Over burden incl. Re-Handling                 | Mcum    | 719.60 |
| 5   | Stripping ratio                               | cum/t   | 0.93   |
| 6   | No. of seams/ sections*                       | No.     | 9/26   |
| 7   | Capacity                                      | Mty     | 25     |
| 8   | Life (including 2 years' construction period) | Years   | 36     |
| 9   | Average seam gradient                         | Degrees | 3.48   |
| 10  | Strike length(along floor)                    |         |        |
|     | Maximum                                       | m       | 2977   |
|     | Minimum                                       | m       | 2144   |
| 11  | Strike length(along surface)                  |         |        |
|     | Maximum                                       | m       | 3467   |
|     | Minimum                                       | m       | 2354   |
| 12  | Quarry depth                                  |         |        |
|     | Maximum                                       | m       | 215    |
|     | Minimum                                       | m       | 23     |
| 13  | Quarry perimeter                              | m       | 12806  |
| 14  | Average Dip-rise length                       |         |        |
|     | Along floor                                   | m       | 2810   |
|     | Along surface                                 | m       | 3141   |

\*including all split sections and combinations

### Production Programme

| Total Quarry |           |                           |           |       |                               |               |                         |
|--------------|-----------|---------------------------|-----------|-------|-------------------------------|---------------|-------------------------|
| Year         | Coal (Mt) | In-situ Overburden (Mcum) |           |       | Rehandle (In-situ equivalent) | Total OB Mcum | Stripping Ratio (cum/t) |
|              |           | With drill                | W/o drill | Total |                               |               |                         |
| C-1          |           |                           |           |       |                               |               |                         |
| C-2          |           |                           |           |       |                               |               |                         |
| P-1          | 4         | 5.8                       | 4.85      | 10.65 |                               | 10.65         | 2.66                    |
| P-2          | 10        | 13.82                     | 4.69      | 18.51 |                               | 18.51         | 1.85                    |
| P-3          | 15        | 16.57                     | 5.59      | 22.16 |                               | 22.16         | 1.48                    |

| Year         | Coal<br>(Mt)  | Total Quarry  |              |               | Rehandle<br>(In-situ<br>equivalent) | Total<br>OB  | Stripping<br>Ratio |
|--------------|---------------|---------------|--------------|---------------|-------------------------------------|--------------|--------------------|
|              |               | With<br>drill | W/o<br>drill | Total         |                                     |              |                    |
|              |               | Mcum          | Mcum         | (cum/t)       |                                     |              |                    |
| P-4          | 20            | 20.88         | 7.01         | 27.89         |                                     | 27.89        | 1.39               |
| P-5          | 25            | 24.3          | 7.07         | 31.37         |                                     | 31.37        | 1.25               |
| P-6          | 25            | 26.53         | 4.77         | 31.3          |                                     | 31.3         | 1.25               |
| P-7          | 25            | 28.67         | 2.36         | 31.03         |                                     | 31.03        | 1.24               |
| P-8          | 25            | 30.03         | 0.83         | 30.86         |                                     | 30.86        | 1.23               |
| P-9          | 25            | 29.76         | 1.15         | 30.91         |                                     | 30.91        | 1.24               |
| P-10         | 25            | 24.57         | 0            | 24.57         |                                     | 24.57        | 0.98               |
| P-11         | 25            | 23.23         | 0.47         | 23.7          | 3.08                                | 26.78        | 1.07               |
| P-12         | 25            | 18.77         | 2.04         | 20.81         | 8.99                                | 29.8         | 1.19               |
| P-13         | 25            | 15.12         | 2.04         | 17.16         | 8.99                                | 26.15        | 1.05               |
| P-14         | 25            | 15.01         | 2.16         | 17.17         | 8.99                                | 26.16        | 1.05               |
| P-15         | 25            | 14.91         | 2.29         | 17.2          | 8.99                                | 26.19        | 1.05               |
| P-16         | 25            | 12.74         | 2.24         | 14.98         | 8.99                                | 23.97        | 0.96               |
| P-17         | 25            | 14.99         | 2.19         | 17.18         | 8.99                                | 26.17        | 1.05               |
| P-18         | 25            | 15.04         | 2.12         | 17.16         | 8.99                                | 26.15        | 1.05               |
| P-19         | 25            | 15.32         | 1.8          | 17.12         | 8.99                                | 26.11        | 1.04               |
| P-20         | 25            | 15.45         | 1.65         | 17.1          | 8.99                                | 26.09        | 1.04               |
| P-21         | 25            | 15.63         | 1.45         | 17.08         | 8.99                                | 26.07        | 1.04               |
| P-22         | 25            | 12.04         | 1.35         | 13.39         | 8.99                                | 22.38        | 0.9                |
| P-23         | 25            | 12.09         | 1.3          | 13.39         | 1.75                                | 15.14        | 0.61               |
| P-24         | 25            | 12.16         | 1.23         | 13.39         |                                     | 13.39        | 0.54               |
| P-25         | 25            | 12.16         | 1.23         | 13.39         |                                     | 13.39        | 0.54               |
| P-26         | 25            | 12.43         | 0.91         | 13.34         |                                     | 13.34        | 0.53               |
| P-27         | 25            | 12.44         | 0.21         | 12.65         |                                     | 12.65        | 0.51               |
| P-28         | 25            | 12.58         | 0.02         | 12.6          |                                     | 12.6         | 0.5                |
| P-29         | 25            | 12.6          | 0.03         | 12.63         |                                     | 12.63        | 0.51               |
| P-30         | 25            | 12.59         | 0.12         | 12.71         |                                     | 12.71        | 0.51               |
| P-31         | 25            | 10.33         | 0.53         | 10.86         |                                     | 10.86        | 0.43               |
| P-32         | 20            | 10.47         | 0.55         | 11.02         |                                     | 11.02        | 0.55               |
| P-33         | 15            | 8.82          | 0.26         | 9.08          |                                     | 9.08         | 0.61               |
| P-34         | 9.83          | 8.6           | 0.22         | 8.82          |                                     | 8.82         | 0.9                |
| <b>Total</b> | <b>768.83</b> | <b>553.61</b> | <b>59.57</b> | <b>613.18</b> | <b>103.72</b>                       | <b>716.9</b> | <b>0.93</b>        |

Overall Grade of coal is considered as G13

Further details of the mine have been described in Approved PR (Departmental & outsourcing Variant)

## 5.0 BASIS OF ESTIMATION OF MDO VARIANT

The scope of MDO and capital & operating cost has been worked out based on the following:

- (i) Model MOD Document OC Mines Amended September 2020 issued by CIL.
- (ii) Guidelines issued by G.M(OC) , CMPDI, HQ vide No.D-5/G-38 dated 07.02.2020 and subsequent clarifications given time to time during preparation of cost estimate of MDO variant of other projects.
- (iii) For departmental operation, existing norm /practice for departmental variant is considered.
- (iv) In the absence of any guideline for a particular issue, the prevalent practice has been considered.
- (v) Scope of MDO as per Scope of Work communicated by MCL vide letter no.  
MCL/SBP/CS/Tech-31/Exct/2020/11141 dated 19.08.2020 and  
MCL/HQ/GM(P&P)/20/1182-H dated 19.03.2020.

## 6.0 SCOPE OF MDO

A broad distribution of the Scope of work between MCL and MDO is presented below based on the model NIT document

**Table no. 6.1**

| MCL  | MINE DEVELOPER CUM OPERATOR (MDO)  |
|--|--|
| <ol style="list-style-type: none"> <li>1. Payment for Land Compensation incl. compensatory afforestation.</li> <li>2. Rehabilitation &amp; Resettlement of Project Affected persons.</li> <li>3. Procurement &amp; maintenance of vehicles required for MCL officials.</li> <li>4. Deployment of statutory and supervisory manpower for fulfilment of responsibility of owner</li> <li>5. preparation of form-I &amp; Pre-Feasibility Report</li> <li>6. Payment of upfront amount and BG.</li> <li>7. Expenditure towards Scientific studies, Exploration, PR preparation etc.</li> <li>8. Rehabilitation fund.</li> <li>9. CSR expenditure.</li> </ol> | <ol style="list-style-type: none"> <li>1. Guaranteed coal production at designated grade and size and OB removal as per the Mining Schedule.</li> <li>2. Drilling and blasting operations shall be carried out under the supervision of the MCL officials.</li> <li>3. Procurement, operation &amp; maintenance of equipment required for target coal production and OB removal.</li> <li>4. Construction of overhead transmission line from Nandira substation of MCL &amp; Incoming Power supply at Project &amp; CHP Substation.</li> <li>5. Construction of railway line siding and associated Infrastructure. MDO will have to construct additional rail</li> </ol> |

|  |   |
|--|---|
|  | <p>connectivity from Subhadra OCP to Balram Angul Rail line (MCRL Phase-I).</p> <ol style="list-style-type: none"> <li>6. Construction &amp; maintenance of Residential colony &amp; Service Buildings both for MCL and its own.</li> <li>7. Construction and maintenance of workshop, store, office and other infrastructure for the HEMM deployed by the Mine Operator.</li> <li>8. Supply of explosive as per the requirement.</li> <li>9. Design, construction, operation and maintenance of haul road, dozing &amp; grading wherever necessary &amp; activities related to pumping.</li> <li>10. Effective dust suppression measures, quarry &amp; surface lighting, stock maintenance and other ancillary activities.</li> <li>11. Reclamation and compliance with the environmental standards as prescribed in the EMP.</li> <li>12. Engage manpower for maintenance and operation at its own terms and conditions, provided that this manpower will have no legal right to employment in MCL at the expiry of the term of agreement. Provision of salary &amp; wages, provident fund, gratuity, health care, compensation to its manpower shall be as per High Power Committee (HPC) wages, Coal Mines Provident Fund and miscellaneous provisions Act 1948 and its amendments, Coal Mines Pension Scheme-1998 and its amendments (CMPS) and other statutory Rules &amp; Regulations applicable for coal mining.</li> <li>13. Safe conduct of mining operations including ensuring safety of the workforce deployed.</li> <li>14. Deployment of adequately qualified, skilled and trained manpower and imparting periodic training as per statute.</li> </ol> |
|--|---|

|  |  |
|--|--|
|  | <p>15. Financing of proposed work as per the contract.</p> <p>16. The mine operator will have to construct project substations (I&amp;II), CHP substation and other power supply/distribution system for the purpose of the contracted work. The mine operator will have to obtain all necessary installation, commissioning, operation and maintenance of substations and other electrical installations from the DGMS. The mine operator shall indicate in detail the power supply requirement with single line electrical diagram as per contract.</p> <p>17. Construction, operation &amp; maintenance of CHP with conveyor system upto the point of rail dispatch.</p> <p>18. Construction, operation &amp; maintenance of RLS with Surge-bin at the point of rail despatch.</p> <p>19. All mine developmental works including construction of road and culverts, bridges etc</p> <p>20. Environment clearance including public hearing and all other activities including getting the various studies done as per ToR, preparation of EIA-EMP, Public consultation etc. except preparation of form-I &amp; Pre-Feasibility Report.</p> <p>21. Forest clearance (Stage-I and Stage-II) including tree enumeration, pallisabha for obtaining NoC from Collector under FRA-2006 and all other activities from grass root level to ministry including DGPS survey of CA land.</p> <p>22. Preparation of Wildlife Conservation Plan.</p> <p>23. Socio-economic Survey of affected villages.</p> <p>24. Any other study required by MoEF, SPCB, CPCB and other statutory body in connection with EC &amp; FC.</p> <p>25. Obtaining CTE and CTO from SPCB.</p> <p>26. Ensuring safety due to fire and provisions of fire-fighting at all places</p> |
|--|--|

|  |  |
|--|--|
|  | <p>of the mine including stock railway siding, CHP, RLS etc.</p> <p>27. Water supply arrangement for mining operation, coal evacuation and domestic use.</p> <p>28. Effective dust suppression arrangement using all modern and state of art technologies to comply with the statutory Air pollution norms at all points of production, transportation and dispatch proper lighting and illumination as per statute to be insured at all operational sites.</p> <p>29. Arrangement of digital surveillance system like CCTV camera, YIZ camera with centralized control room.</p> <p>30. Arrangement of proper security system for ensuring no pilferage/theft of coal from any point.</p> <p>31. Proper lighting and illumination as per statute to be insured at all operational sites.</p> <p>32. Any other work not covered under MCL.</p> |
|--|--|

Above scope of work may be reviewed by MCL before finalization of tender document.

## 7.0 CAPITAL ESTIMATION

The estimate of capital for MCL component and MDO component is as per the scope of the work mentioned at para 6.0. Segregation of capital heads for MCL and MDO were done with reference to the documents/letters as mentioned at para 5.0 above.

### BREAK UP OF CAPITAL HEADS BETWEEN MCL and MDO

| MCL  | MDO  |
|--|--|
| <p><b>Capital heads:-</b></p> <ul style="list-style-type: none"> <li>• Land &amp; R&amp;R</li> <li>• Furniture &amp; Fitting</li> <li>• Vehicles</li> <li>• Prospecting Boring</li> <li>• Capital outlay in mines<br/>Including Upfront Amount, payment towards compensatory afforestation &amp; other costs related to forest land</li> </ul> | <p><b>Capital heads:-</b></p> <ul style="list-style-type: none"> <li>• Service building</li> <li>• Residential Building</li> <li>• P&amp;M</li> <li>• Furniture fitting</li> <li>• Vehicles</li> <li>• Capital outlay in mines</li> <li>• Roads &amp; culverts</li> <li>• Water supply &amp; sewerage</li> </ul> |

|  |   |
|--|---|
| <ul style="list-style-type: none"> <li>PR Preparation cost</li> <li>Scientific Research</li> <li>Revenue Exp. Capitalised (Gross block)</li> </ul> | <ul style="list-style-type: none"> <li>Railway Siding &amp; Rail connectivity to Balaram-Angul Railway line</li> <li>P&amp;M – Electricals for OH line</li> </ul> |
|--|---|

• WDV value of the immovable assets (water supply & sewerage, roads & culverts, capital outlay, residential building & service building) of MDO has to be acquired by MCL at the end of contract period.

The Capital Investment under major heads along with phasing has been detailed under various Appendices and appended in the document.

A brief on major Investment heads for MCL are broadly outlined;

#### A. MCL COMPONENT:

##### LAND:

For MCL component, the capital estimate is as per the deptt. Variant norm. Land acquisition and R&R has to be done by MCL for which capital provision as per other two variant is kept. Total capital investment for Land and R&R is Rs 1033.43 Crore and Rs 405.46 crore respectively.

| <b>Project area*</b>                              |                   | <b>Total land</b> |         |
|---|-------------------|-------------------|---------|
|   |                   | Ha                |         |
|   | Total Land        | Ha                | 1247.08 |
|   | Forest land       | Ha                | 146.55  |
|   | Non – Forest land | Ha                | 1100.53 |
| <b>Land to be acquired within mine lease area</b> |                   |                   |         |
|   | Total Land        | Ha                | 1111.85 |
|   | Forest land       | Ha                | 125.24  |
|   | Non – Forest land | Ha                | 986.61  |
| <b>Land to be acquired outside mine take area</b> |                   |                   |         |
|   | Total Land        | Ha                | 135.23  |
|   | Forest land       | Ha                | 21.31   |
|   | Non-forest land   | Ha                | 113.92  |

Provision has been kept for 42.69 ha for Residential Colony, 39.56 ha for R&R site and 52.98 ha for Rail Link Line with sidings outside Mining Lease. Requirement may vary depending upon decision for R&R site and Residential Colony outside Mining Lease, actual survey of rail link line.

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No HEMM & other auxiliary equipment will be provided in the mine by MCL. Further MDO will construct all the service & residential buildings both for requirement of MCL & MDO.

Since it is a CMSB block, MCL has to deposit the upfront amount at MoC which is estimated to be Rs 164.98 crore. Further for scientific study, an amount of Rs 5.24 crore has been provisioned and kept under MCL's scope of capital. Since the block is explored and PR is prepared, the cost of prospecting and boring and PR preparation cost has been kept under MCL. Revenue expenditure capitalized under gross block has been assessed to be Rs.36.85 crore and kept under MCL.

## **B. FOR MDO COMPONENT**

### **a) BUILDINGS & WATER SUPPLY**

As per observations of TSC for Subhadra OCP conveyed vide letter dated 19-08-2020, housing satisfaction for MDO employees has been considered as below:

Executives: 100%

Staff: 40%

Workers: 10%

Hostel: 150 numbers.

CPWD plinth area rate as on 01.04.2019 has been considered as base rate and updated as per Cost Index for assessment of investment.

#### **BUILDING FOR MCL:**

Quarter( A,B,C,D Type) : 66

Hostel type: 11

#### **BUILDING FOR MDO:**

Quarter( A,B,C Type) : 506

Hostel type: 150

Total water requirement : 5.11 MLD ( Potable: 0.83 MLD, INDUSTRIAL: 4.28 MLD)

The basis for the estimation of the cost of civil construction viz. residential buildings, service buildings, roads etc. has been given in Appendices - A.2.1, A.2.2 & A.8.2.

### **b) PLANT AND MACHINERY**

#### **(i) HEMM**

Major HEMM, CHP & other machinery will be deployed by MDO for coal production.

Norms for estimation of HEMM and financial appendices were prepared with reference to letter dated 07-02-2020 number D-5/G-38/ with subject “Working out a model for calculation of MDO rate per tonne of coal” issued by CMPDIL, HQ.

Estimation of HEMM has been made with following modified working hours:

| TYPE                            | Working hours per year |      | Annual production (Mcum) |      |
|---------------------------------|------------------------|------|--------------------------|------|
|                                 | Var-I                  | MDO  | Var-I                    | MDO  |
| 10-12 cum shovel                | 4851                   | 6002 | 2.96                     | 3.66 |
| 6-7 cum shovel                  | 4851                   | 6002 | 1.78                     | 2.20 |
| 100 T dumper                    | 3960                   | 4969 |                          |      |
| 60 T dumper<br>(including coal) | 3960                   | 4969 |                          |      |

\* With 6.5 cum hydraulic shovel in OB

#### MAJOR HEMM REQUIREMENT– MDO Variant

| SI                | EQUIPMENT NAME             | SIZE            | TOTAL |
|-------------------|----------------------------|-----------------|-------|
| <b>OVERBURDEN</b> |                            |                 |       |
| 1.                | Electric Hyd. Shovel       | 10 - 11 cum     | 5     |
| 2.                | Diesel Hyd. Shovel         | 6 – 7 cum       | 6     |
| 3.                | Rear Dumper                | 100 T           | 40    |
| 4.                | Rear Dumper                | 60 T            | 76    |
| 5.                | Electric Drill             | 250 mm          | 9     |
| 6.                | Diesel Drill               | 160 mm          | 14    |
| 7.                | Crawler Dozer with Ripper  | 850 HP          | 10    |
| 8.                | Crawler Dozer              | 410 HP          | 6     |
| <b>COAL</b>       |                            |                 |       |
| 1.                | Surface Miner - windrowing | 3.8 m wide drum | 7     |
| 2.                | Front End Loader           | 5–7 cum         | 7     |
| 3.                | Wheel Dozer                | 450 HP          | 4     |
| 4.                | Rear Dumper                | 60 T            | 39    |

#### (ii) P&M- OTHER THAN HEMM

Coal Handling & transport by conveyor, RLS with bunker & storage was in the scope of MCL in both departmental and outsource variant. However for MDO mode of operations, the same will be considered through MDO & no departmental investment has been included under the CHP head.

Capital investment on P&M is given in Appendix-A.3. The detailed break-up for HEMM in the case of Open cast Mining operations, Pump & Pipes, Workshop, CHP and Other P&M etc. are given in Appendix-A.3.1. For the plant and machinery, as far as possible, the prices have been taken from the Standard Price List of Mining Equipment published by CMPDI and whenever information regarding price was not available, a broad estimate was made.

The Total capital investment on P&M worked out is given below:

**Investment on P&M (HEMM & Other than HEMM)**

| <b>Particulars</b> | <b>Unit</b> | <b>MDO Variant</b> |                     |
|--------------------|-------------|--------------------|---------------------|
| Capital Investment | Rs.Crores   | 1556.78 for MDO    | 1.89 for Department |

Two numbers of substations i.e. 3x7.5 MVA, 33/6.6 kV project substation and 2x6.3 MVA 33/6.6 kV CHP substations have been proposed. The MDO scope consists of construction of these above mentioned two numbers of 33/6.6 kV substations and power distribution arrangement to quarry, lighting, workshop, colony and other auxiliary loads of mine.

**c) FURNITURE AND FITTINGS**

General furniture & fittings for GM office, other offices, guest house , dispensary etc have been assessed as Rs 2.02 Crores in total , out of which MDO component is Rs1.72 crore and MCL component is Rs 0.30 crore. Details are given in Appendix A.4

**d) VEHICLES**

Total Provision of Rs.3.14 crore has been kept for Light & heavy vehicles required by MCL/MDO, out of which MDO component is Rs 2.32 crore and MCL component is Rs.0.82 crore. Details are given in Appendix A.6

**e) MINE DEVELOPMENT**

All type of mine developmental works including environmental and ecological jobs are to be undertaken by MDO. Further construction of roads/culverts/bridges and water supply/sewerage is under the scope of MDO. A total provision of Rs.147.69 crore has been kept for Mine development under MDO component. Details are given in Appendix A 8.1, 8.2 and 8.3.

**f) RAILWAY**

In the approved PR, the provision of evacuation of coal from Subhadra OCP is through proposed Phase-II of MCRL railway line (Balram-Putgadia-Jharpada-Tentuloi – 55 km), for which a provision was kept for 4 siding lines, 2 km each, adding up to 8 km for an amount of Rs.90.71 crores. Draft report of MDO Variant was prepared considering railway line & associated infrastructure to be in the scope of MCL as estimate of the same is very tentative. Later this investment has been changed to be in the scope of MDO as per minutes of meeting of TSC of MCL Board. MCL later communicated the investment /km for construction of railway line as 13.94 cr/km & instructed to adopt the same for estimation of investment. Total tentative provision of Rs 145.93 crore has been kept for railway siding of around 8 Km with a flyover near the approach road to the project under the scope of MDO as advised by MCL. Details are given in Appendix A.5

Now it has been proposed by MCL to construct additional rail connectivity from Subhadra OCP to Balram Angul Rail line (MCRL Phase-I) to improve the operational efficiency and to expedite the eco-friendly evacuation arrangement and to avoid dependency on future project, i.e. MCRL Phase-II. This minor deviation is permissible with the approval of competent authority, as per CIL Board Approval. This investment will also be in the scope of MDO as per minutes of meeting of TSC of MCL Board. Investment on railways is generally estimated by RITES or similar agency & depends on route survey, no of bridges, culverts etc., in absence of such study lump sum investment at a rate of 13.94crore/km has been assumed for railway link as advised by MCL. This rate has been derived by MCL on the basis of approved DPR, 2017 for Angul-Balrampur-Jarpada rail corridor, single line (MCRL inner rail corridor project). Provision of land for railway line has also been estimated tentatively based on alignment provided by MCL & have been included in land requirement of MCL. Total tentative provision of Rs 139.40 crore has been kept for this proposed additional rail link of length of around 10 Km incl. tentative take off line of 1 km.

**g) POWERLINE**

Presently there is no source of power supply in this mine. The mine will receive 33 kV power supply from 132/33 kV central substation of MCL at Nandira. MDO will construct 33 kV double circuit overhead transmission line from the 120 MVA, 132KV/33KV Nandira sub-

station of MCL and ensure incoming power supply to Project and CHP sub-stations.

Investment of OH power line is very tentative and can be finalized after actual route survey.

## **h) MANPOWER**

Statutory Manpower provision has been made as per Schedule-9 of the Model MDO document -Sept 2020 issued by CIL. Annual working hours of shovels and dumpers have been modified as per CMPDIL letter dated 07-02-2020. Segregation of works and manpower have done as per scope of work &statutory requirement. However, the manpower estimate done in the report is as below;

### **(i) Mine Authority Manpower/ MCL manpower**

The following manpower of MCL have been provisioned in the report.

#### **Statutory Manpower**

- a) Agent (in GM rank)
- b) Mine Manager
- c) Statutory Officials (Officer grade), like Safety Officer, Assistant Manager, Welfare officer/Personnel , etc
- d) Supervisory staffs, such as, Electrical Supervisor, etc.
- e) Survey Officer & Surveyor

#### **General Administrative Manpower**

- a) Supporting office staff of Agent & mine manager.
- b) Administrative officer & its staff
- c) Finance officer & its staff
- d) Survey staff

**Category wise and Group wise manpower requirement is given below:**

| <b>SI No.</b> | <b>Manpower Particulars</b> | <b>Category</b>             | <b>Maximum no.</b> |
|---------------|-----------------------------|-----------------------------|--------------------|
| 1             | Unskilled                   | CAT - I                     | 3                  |
| 2             | Semiskilled                 | CAT – II & III              | 7                  |
| 3             | Skilled                     | CAT – IV &V                 | 4                  |
| 4             | Highly skilled              | CAT - VI                    | 18                 |
| <b>5</b>      | <b>Total Workers</b>        |                             | <b>32</b>          |
| <b>6</b>      | <b>Total Monthly Rated</b>  | <b>T&amp;S and Clerical</b> | <b>34</b>          |
| <b>7</b>      | <b>Officers</b>             | <b>E1 – E8</b>              | <b>41</b>          |
| <b>8</b>      | <b>Total Manpower(MCL)</b>  |                             | <b>107</b>         |

## **(ii) Mine Developer & Operator Manpower**

Manpower requirement has been assessed considering 357 working days (excluding 8 Gazette holidays) and 3 shifts working. Annual leave with wages and weekly day of rest has been considered while assessment of manpower as per Mines Act, 1952.

Manpower for OB removal, coal operation together with common services and land reclamation has been estimated to be 2001.

**Category wise and Group wise manpower requirement is given below:**

| SI No.    | Manpower Particulars               | Category                             | Maximum no. |
|-----------|------------------------------------|--------------------------------------|-------------|
| 1         | Unskilled                          | CAT - I                              | 204         |
| 2         | Semiskilled                        | EXCV GR D, EXCV GR E, CAT – II & III | 342         |
| 3         | Skilled                            | EXCV GR B, EXCV GR C, CAT – IV &V    | 482         |
| 4         | Highly skilled                     | EXCV SPL GR., EXCV GR A, CAT - VI    | 740         |
| <b>5</b>  | <b>Total Workers (1 to 4)</b>      |                                      | <b>1768</b> |
| 6         | Unskilled                          | GR – H, GR - G                       | 08          |
| 7         | Semiskilled                        | GR – D, GR – E, GR-F                 | 08          |
| 8         | Skilled                            | GR – C, GR - B                       | 135         |
| 9         | Highly skilled                     | GR – A1, GR - A                      | 40          |
| <b>10</b> | <b>Total Monthly Rated (6 – 9)</b> |                                      | <b>191</b>  |
| <b>11</b> | <b>Officers</b>                    | <b>E1</b>                            | <b>42</b>   |
| <b>12</b> | <b>Total Manpower(MDO)</b>         |                                      | <b>2001</b> |

### **i) REPLACEMENT CAPITAL**

Replacement capital of assets are estimated based on the prevailing norms of CIL i.e. useful life of the asset. Replacement capital has been considered for P&M and vehicles.

### **j) RESIDUAL VALUE**

Total Capital investment including replacement capital excluding the amount of depreciation availed up to 25 years to be considered as residual value of assets at the end of the year as Cash inflow. However, the residual value of immovable assets are to be acquired by MCL, hence the same is shown as investment/outflow in MCL scope.

**Note:** - Lease hold Land and R&R value was amortized for a period of Project Life.

### **k) GST CREDIT**

GST credit has been considered on capital item (P&M) for both MDO scope and department scope of MDO variant and accordingly shown as inflow of the project. No GST credit has been availed against capital items in MCL scope as per the guidelines circulated by CIL.

### **l) OPENING OF REVENUE ACCOUNT**

Revenue Expenditure is not capitalised as per the guideline circulated for calculation of MDO rate vide No.D-5/G-38 dt.07.02.20. However, REC is considered in Gross block in line with Departmental & outsourcing variant.

### **m) TOTAL CAPITAL INVESTMENT**

The Capital investment of Subhadra OCP has been proposed from 100% equity for both MDO scope and Department scope in MDO variant. The capital requirements are given below:

#### Total Capital Requirement

| Particulars              | Unit      | MDO Variant     |                 |
|--------------------------|-----------|-----------------|-----------------|
| Total Capital Investment | Rs.Crores | 1693.81 for MCL | 2261.84 for MDO |

| Appendix No.                          | Appendices            | MDO              |               |                  |
|---------------------------------------|-----------------------|------------------|---------------|------------------|
|                                       |                       | MCL - DEPART.    | MINE OPERATOR | TOTAL            |
| A.1                                   | Land                  | 103342.64        |               | 103342.64        |
|                                       | R&R                   | 40546.04         |               | 40546.04         |
| <b>Sub - total (Land and R&amp;R)</b> |                       | <b>143888.68</b> |               | <b>143888.68</b> |
| A.2                                   | Buildings             |                  |               |                  |
| A.2.1                                 | Service Buildings     |                  | 8350.93       | 8350.93          |
| A.2.2                                 | Residential Buildings |                  | 18418.09      | 18418.09         |
| <b>Sub - total (Buildings)</b>        |                       | <b>26769.02</b>  |               | <b>26769.02</b>  |
| A.3                                   | Plant & Machinery     |                  |               |                  |
| A.3.1                                 | HEMM                  |                  | 93823.86      | 93823.86         |
| <b>OTHER THAN HEMM</b>                |                       |                  |               |                  |
| A.3.2                                 | P & M Electrical      |                  | 6016.62       | 6016.62          |
| A.3.3                                 | Workshop & Stores     |                  |               |                  |
| A.3.3.A                               | HEMM W/S              |                  | 1038.63       | 1038.63          |
| A.3.3.B.                              | E & M W/S             |                  | 181.35        | 181.35           |

| Appendix No. | Appendices                             | MDO              |                  |                  |
|--------------|--|------------------|------------------|------------------|
|              |  | MCL - DEPART.    | MINE OPERATOR    | TOTAL            |
| A.3.3.C.     | Stores                                 |                  | 157.76           | 157.76           |
| A.3.4        | Pumps                                  |                  | 1003.41          | 1003.41          |
| A.3.5        | Coal Handling Plant                    |                  | 42879.82         | 42879.82         |
| A.3.6        | P & M Others                           | 1.89             | 1510.66          | 1512.55          |
| A.3.7        | Float Engines & Assembly               |                  | 9066.46          | 9066.46          |
|              | <b>Sub - total (Other than HEMM)</b>   | <b>1.89</b>      | <b>61854.71</b>  | <b>61856.6</b>   |
|              | <b>Sub - total (P&amp;M)</b>           | <b>1.89</b>      | <b>155678.57</b> | <b>155680.46</b> |
| A.4          | Furniture & Fittings                   | 30.04            | 172              | 202.04           |
| A.5          | Railway siding                         |                  | 28563.48         | 28563.48         |
| A.6          | Vehicles                               | 81.83            | 232.39           | 314.22           |
| A.7          | Prospecting & Boring                   | 2031.92          |                  | 2031.92          |
| A.8          | Development                            |                  |                  |                  |
| A.8.0        | Upfront payment for allotment          | 16498.01         |                  | 16498.01         |
| A.8.1        | Capital Outlay in Mines                | 734.1            | 6878.43          | 7612.53          |
| A.8.2        | Roads and Culverts                     |                  | 6467.8           | 6467.8           |
| A.8.3        | Water supply & sewerage                |                  | 1422.59          | 1422.59          |
| A.8.4        | Scientific Research                    | 524.03           |                  | 524.03           |
| A.8.5        | PR & other Reports<br>Preparation Cost | 1905.24          |                  | 1905.24          |
|              | <b>Sub - total (Development)</b>       | <b>19661.38</b>  | <b>14768.82</b>  | <b>34430.2</b>   |
| A.9          | Washery                                |                  |                  |                  |
| A.10         | Revenue Exp. Capitalised               |                  |                  |                  |
|              | during Dev. Period                     | 3685.29          |                  | 3685.29          |
| A.10.1       | Interest during const. period          |                  |                  |                  |
| A.10.2       | Less : Dep. Capitalised                |                  |                  |                  |
|              | During Dev. period                     |                  |                  |                  |
|              | <b>Total</b>                           | <b>169381.03</b> | <b>226184.28</b> | <b>395565.31</b> |
|              | <b>WDV value*</b>                      | <b>3632.32</b>   |                  |                  |

\*WDV value of the immovable assets of MDO has to be acquired by MCL at the end of contract period.

## 8.0 OPERATING COST

Appendix-C gives the details of average cost and profitability for the target production of 25.0 MTY

### BREAK UP OF OPERATING COST HEADS BETWEEN MCL and MDO

| MCL   | MDO  |
|---|--|
| <p><b>Operating cost heads:-</b></p> <ul style="list-style-type: none"> <li>• Salaries &amp; wages for departmental manpower</li> <li>• Stores Cost <ul style="list-style-type: none"> <li>01. Diesel for Vehicle</li> <li>02. R&amp;M cost P&amp;M – Elect.</li> <li>03. Misc. items</li> </ul> </li> <li>• Misc Expenditure <ul style="list-style-type: none"> <li>01. Provision for TA/DA</li> <li>02. Workshop debit for P&amp;M(Electrical)</li> <li>03. R&amp;M Vehicle</li> <li>04. Insurance vehicles</li> <li>05. Misc. items.</li> </ul> </li> <li>• Administrative Cost</li> <li>• Reserve price @ Rs.138.60 per tonne</li> <li>• BG charges @ Rs.8.58 Cr per annum</li> <li>• Interest on working capital</li> <li>• Depreciation/amortization of Department side capital investment</li> </ul> | <p><b>Operating cost heads:-</b></p> <ul style="list-style-type: none"> <li>• Salaries &amp; wages for MDO manpower</li> <li>• Stores Cost <ul style="list-style-type: none"> <li>01. Diesel &amp; Lubricant Cost</li> <li>02. R&amp;M cost of P&amp;M</li> <li>03. Explosive cost</li> <li>04. Diesel for vehicles</li> <li>05. Misc. items</li> </ul> </li> <li>• Misc Expenditure <ul style="list-style-type: none"> <li>01. Provision for TA/DA for MDO manpower</li> <li>02. Workshop debit for P&amp;M</li> <li>03. R&amp;M of civil items</li> <li>04. R&amp;M of vehicles</li> <li>05. Haul road maintenance</li> <li>06. Contingency</li> <li>07. Environment related cost</li> <li>08. Hiring &amp; diesel charges of vehicles</li> <li>09. Misc. items</li> <li>10. CTO</li> </ul> </li> <li>• Power cost</li> <li>• Mine Closure Cost</li> <li>• Interest on working capital</li> <li>• Depreciation/amortization of MDO capital investment</li> </ul> |

The method adopted in estimating the costs are briefly explained as follows:

#### a) SALARIES & WAGES

The requirement of departmental manpower for the targeted production of 25.00 MTY is estimated category wise/ scale wise. Prevalent pay scales for executives with impact of latest executive pay revision and non- executives (NCWA-X) are adopted. Initial basic + 7.97% of the relevant pay scales of executives & non-executives have been considered in estimating the salary and wages cost.

For MDO scope, the wages of Non-Executives has been estimated based on notified CIL HPC wages notified vide office order No.CIL/C-5B/JBCCI/JC/VDA/160 dtd.19.05.2020. The impact of PF& Pension has been considered @ 19.72 % of wages cost per annum. The estimate is based @26 days/month of payment for skilled, semi-skilled and unskilled workforce. For

Executive manpower of MDO scope, a CTC of E1 grade executive @ Rs.12.10 lakh per annum has been considered as per the guidelines vide letter No.D-5/G-38/dtd.07.02.20.

The average wages cost per Tonne has been shown in Appendix – C and is also shown in Table 7.1.

### b) STORES

Stores cost in case of Open Cast Mine consists (1) diesel and lubricants, (2) explosives and detonator, (3) R&M cost of plant & Machinery and Miscellaneous stores etc. Prevalent norms in CMPDIL have been followed in estimating stores cost.

The average store cost per tonne has been shown in Table 9.1. (Diesel cost =Rs.80.00/Litre is considered for estimation).

Note: - Explosives cost on coal is calculated in the stores cost estimation considering 0.22 kg/cum as powder factor given by the planner because 5% Coal was extracted through explosives. Explosive cost on OB is calculated considering 0.4 kg/cum as powder factor (Explosive cost = Rs.29.18/Kg)

The Breakup of stores cost elements are as follows:-

**Table-8.1**

| S.No | Break up of Stores Cost        | Variant-III       |
|------|--------------------------------|-------------------|
|      |                                | Combined Dept+MDO |
|      |                                | Rs./Tonne         |
| 1    | DILESEL COST                   | 153.56            |
| 2    | LUBRICANT COST                 | 8.01              |
| 3    | REPAIR & MAINTENANCE COST HEMM | 15.14             |
| 4    | R&M OF OTHERTHAN HEMM          | 4.11              |
| 5    | EXPLOSIVE COST                 | 9.86              |
| 6    | DIESEL FOR VEHICLES            | 0.40              |
| 7    | MISC.STORES                    | 9.55              |
|      | <b>TOTAL STORES COST</b>       | <b>200.64</b>     |

### c) POWER

The average Power cost per Tonne has been shown in Table 9.1 based on annual KWH consumed and applicable power tariff.

#### d) MISCELLANEOUS EXPENDITURE

This covers the expenditure on printing & stationery, postages, telephone, repairs and maintenance of assets other than P&M, workshop debits for annual servicing and overhauling of HEMM, insurance and taxes for vehicles, hiring charges of hired vehicles, contingency expenditure, cost of watch & wizard, Environment related cost etc.

The Breakup of Misc. Cost are as follows:-

**Table-8.2**

| <b>S.No</b> | <b>Break up of Misc. Cost</b>             | <b>Variant-III</b> |
|-------------|---|--------------------|
|             |   | <b>Dept+MDO</b>    |
| 1           | PROVISION FOR TA/DA                       | 0.90               |
| 2           | WORKSHOP FOR HEMM/UG MACHINERY            | 6.63               |
| 3           | R&M OF CIVIL ITEMS                        | 2.89               |
| 4           | R&M OF VEHICLES                           | 0.03               |
| 5           | CONTINGENCY                               | 1.00               |
| 6           | HAUL ROAD MAINTANENACE                    | 0.50               |
| 7           | WORKSHOP FOR OTHER THAN HEMM              | 5.71               |
| 8           | INSURANCE FOR VEHICLES                    | 0.02               |
| 9           | ENVIRONMENT RELATED                       | 6.00               |
| 10          | HIRING & DIESEL CHARGES OF HIRED VEHICLES | 0.42               |
| 11          | CTO                                       | 0.34               |
| 11          | OTHER MISC. (IF ANY)                      | 1.22               |
|             | <b>TOTAL MISC.COST</b>                    | <b>25.66</b>       |

The average Miscellaneous cost /Tonne has been shown in Table 9.1.

#### e) FINAL MINE CLOSURE COST

Mine closure cost has been considered in MDO scope. A fund equal to Rs.8.87 Lakhs/hectare of land in case of Opencast Mining Land is proposed to be created towards a fund for final mine closure. The fund has been distributed over life of the mine with a yearly escalation of 5%. The average Mine closure cost per tonne has been shown in Table 9.1.

As per guidelines for Mining Plan dated 29<sup>th</sup> May, 2020, “up to 50% of the total deposited amount including interest accrued in the Escrow account may be released after every 5 years in line with periodic examination of the Closure Plan. The amount released should be equal to expenditure incurred on the progressive mine closure in past 5 years or 50% whichever is less”.

As per Article 5.15 of Model MDO Document Sep'20, "in the event that final mine closure occurs at any time after the expiry of this Agreement, an amount equal to the balance amount of the escrow account, after settlement of all periodic claims in accordance with applicable guidelines and Applicable Laws, shall be paid to the Mine Operator by the Authority, provided the Mine Operator has undertaken and completed the progressive restoration of the Mines as per Mine Closure Plan with full satisfaction to the Authority". Reimbursement of 50% of the deposited has been shown as inflow in App.D1 & D2. Further, the reimbursement of balance amount in Escrow Account has been considered as inflow for MDO in 25<sup>th</sup> year. However, in absence of rate of interest on Escrow Account, the same has not been applied.

#### **f) ADMINISTRATIVE CHARGES**

Administrative cost per tonne includes Area overhead, Apex overhead etc. The average Administrative cost per tonne has been shown in Table 9.1. Estimation of Administrative cost based on expenditure of MCL is given below:

**Table-8.3**

|  |              |
|--|--------------|
| Existing Production(2019-20)   | 140.36 Mty   |
| Additional Production  | 25.00Mty     |
| Total Production   | 165.36 Mty   |
| Existing administrative cost (Rs. Per tonne)                           | 84.24        |
| New administrative cost<br>(Incremental production for due adjustment) | <b>71.50</b> |
| Project Administrative cost  | <b>8.42</b>  |
| Notional Administrative cost   | <b>63.08</b> |

Note: - 10% of previous year administrative cost per tonne is considered for IRR calculation and existing cost with due adjustment of incremental production is considered for cost of production purpose.

#### **g) INTEREST ON WORKING CAPITAL**

Working capital is estimated based on 4 months cash operating cost of Department scope in MDO variant whereas for MDO scope it is calculated on 2 month cash operating cost. The rate of Interest on working capital is taken as 14.50% per annum.

The average Interest on working capital cost per tonne has been shown in Table 9.1.

#### **h) BG charges & Reserve price:-**

BG charges has been considered as 1.5% per annum of BG amount.

##### **BG amount and BG charges calculation**

01. Notified price of coal :- Rs.817.00 per tonne
02. Royalty on coal :- 14%
03. Peak capacity :- 250 LT
04. BG Amount = Rs.817.00 x 14% x 2 x 250LT =Rs.57190 Lakh
05. BG Charges per annum @ 1.5% of BG amount Rs.857.58 Lakh

Reserve price is considered as Rs.138.60/tonne as communicated by CMPDIL HQ.

The average BG charges & Reserve price per tonne has been shown in Table 9.1.

#### **i) DEPRECIATION**

Depreciation on assets is computed based on the life of the assets. The Straight line method (SLM) method of charging depreciation has been adopted. The average Depreciation cost per tonne has been shown in Table 9.1.

Note: - Land value is amortized based on the Life of the mine.

#### **j) SELLING PRICE**

The declared Selling Price per tonne of coal has been adopted for the G-13 Grade of coal @ 817/- per tonne and with an additional charges of Rs.87/- per tonne for sizing of coal up to - 100mm. An additional charge of Rs.29 per tonne is considered for RLS charges of coal and Rs.50 per tonne has been considered as evacuation charge when coal is transported in any mode other than silo. An additional Rs.43/- per tonne as STC charged for 0-03 KM

**Table-8.4**

| <b>SI.NO</b> | <b>Particulars</b>         | <b>G-13</b>      |                     |
|--------------|----------------------------|------------------|---------------------|
|              |                            | <b>With Silo</b> | <b>Without silo</b> |
| 1            | Notified Sale price        | 817.00           | 817.00              |
| 2            | 95% of notified sale price | 776.15           | 776.15              |

| SI.NO | Particulars          | G-13          |              |
|-------|----------------------|---------------|--------------|
|       |                      | With Silo     | Without silo |
| 3     | Add:- Sizing(-100MM) | 87.00         | 87.00        |
| 4     | Add:-RLS charges     | 29.00         | 50.00        |
| 5     | STC (0-03 Km)        | 43.00         | 43.00        |
| 6     | Final sale price     | 935.15        | 956.15       |
| 7     | Average Sale price   | <b>935.71</b> |              |

\*95% of grade based on borehole data as per norms for economics calculation.

## 9.0 FINANCIAL ANALYSIS

### a. COST & PROFITABILITY

The details of the average cost and profitability estimates, at 100% capacity and at 85% capacity are given in **Appendix-C, C1 & C2**.

These have been summarised in the table below 100% & 85% capacity utilization:-

**Table No. 9.1**  
**Cost & Profitability Estimates**  
**(100% capacity Utilization)**

| PARTICULARS                     | 100% capacity Utilization | 85% capacity Utilization |
|---------------------------------|---------------------------|--------------------------|
| SALARY & WAGES                  | 35.87                     | 42.20                    |
| STORES COST                     | 200.64                    | 220.84                   |
| POWER COST                      | 20.96                     | 23.74                    |
| MISC.COST                       | 25.66                     | 27.64                    |
| MINE CLOSURE COST               | 2.64                      | 3.10                     |
| PROJECT ADMINISTRATIVE COST     | 8.42                      | 9.91                     |
| RESERVE PRICE                   | 138.60                    | 138.60                   |
| BG CHARGES                      | 4.09                      | 4.82                     |
| INTEREST ON WORKING CAPITAL     | 14.36                     | 15.26                    |
| INTEREST ON LOAN CAPITAL        | 0.00                      | 0.00                     |
| DEPRECIATION/AMMORTIZATION      | 82.26                     | 96.78                    |
| NOTIONAL ADMINISTRATIVE COST    | 63.08                     | 74.21                    |
| <b>TOTAL COST OF PRODUCTION</b> | <b>596.59</b>             | <b>657.10</b>            |
| <b>AVERAGE SALE PRICE</b>       | <b>935.71</b>             | <b>935.71</b>            |
| <b>PROFIT/LOSS</b>              | <b>339.12</b>             | <b>278.61</b>            |

### b. IRR, NPV AND DESIRED SELLING PRICE

The year-wise cash flows at 100% and 85% capacity utilisation have been estimated and are detailed in Appendix-D. & D.1, respectively. The operating cash-flows exclude depreciation are considered for calculation. The Project IRR on total capital of the project at 100% and 85% level of the rated output have been worked out based on the estimates of the aforesaid cash flows. These have been worked out and which is summarised in the table below:

**Table-9.2**  
**IRR, NPV, DSP for all variants with different capacity utilization**

| Particulars      | IRR           | NPV @ 12%<br>(Rs in Crores) | DSP at 12% IRR Per<br>tonne |
|------------------|---------------|-----------------------------|-----------------------------|
| At 100% Capacity | <b>26.88%</b> | <b>3151</b>                 | <b>678</b>                  |
| At 85% Capacity  | <b>21.58%</b> | <b>1916</b>                 | <b>753</b>                  |

*Note: - The estimations and financial analysis of the project report are based on some underlying assumptions and past experiences. The actual figures at the time of implementation of the project may differ from the Project report*

# **APPENDICES**

# **MDO VARIANT**

# **MCL/MINE AUTHORITY PART**

## Cost base: August 2020

Statement Showing Estimated Total Capital Investment

| Sl. No. | Particulars                                     | Total Capital    | Existing Capital as on 01.04.2020 |                 | Additional Capital requirement |                 | CONSTRUCTION PERIOD |                 |                 |                 | Year-wise Phasing of additional capital |                 |               | (Amount in ₹ Lakhs) |
|---------|---|------------------|-----------------------------------|-----------------|--------------------------------|-----------------|---------------------|-----------------|-----------------|-----------------|---|-----------------|---------------|---------------------|
|         |   |                  | Gross Block                       | Net Block       | Y1                             | Y2              | Y3                  | Y4              | Y5              | Y6              | Y7                                      | Y8 & beyond     |               |                     |
|         |   |                  |                                   |                 | Coal (Mty)                     | OB (Mcum)       | 10.65               | 18.51           | 22.16           | 27.89           | 31.37                                   | 25.00           |               |                     |
| 1       | Land R&R  | 103342.64        | 7174.69                           | 6827.84         | 96167.95                       | 11385.95        | 19527.80            | 13140.00        | 12920.20        | 12641.75        | 12600.00                                | 13377.10        | 575.15        |                     |
| 2       | Buildings                                       | 40546.04         |                                   |                 | 40546.04                       | 9500.00         | 9986.04             | 4000.00         | 4000.00         | 4000.00         | 4000.00                                 | 5060.00         |               |                     |
| 3       | Plant & Machinery HEMM Other than HEMM          | 1.89             |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
| 4       | Furniture & Fittings                            | 30.04            |                                   |                 | 30.04                          | 6.35            |                     |                 |                 |                 |   |                 |               |                     |
| 5       | Railway siding                                  |                  |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
| 6       | Vehicles  | 81.83            |                                   |                 |                                |                 | 81.83               |                 |                 |                 |   |                 |               |                     |
| 7       | Prospecting & Boring                            | 2031.92          |                                   |                 | 1531.92                        | 1531.92         |                     |                 |                 |                 |   |                 |               |                     |
| 8       | Development                                     | 16498.01         |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
|         | 8.0 Upfront payment for allotment               | 734.10           |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
|         | 8.1 Capital Outlay in Mines                     |                  |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
|         | 8.2 Roads and Culverts                          |                  |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
|         | 8.3 Water supply & sewerage                     |                  |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
|         | 8.4 Scientific Research                         | 524.03           |                                   |                 | 211.03                         |                 |                     |                 |                 |                 |   |                 |               |                     |
|         | 8.5 PR & other Reports Preparation Cost         | 1905.24          |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
| 9       | Washery   |                  |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
| 10      | Revenue Exp. Capitalised during Dev. Period     | 3685.29          |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
|         | 10.1 Interest during const. period              |                  |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
|         | 10.2 Less : Dep. Capitalised During Dev. period |                  |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               |                     |
|         | <b>Total</b>                                    | <b>169381.03</b> | <b>12634.86</b>                   | <b>12264.29</b> | <b>156746.17</b>               | <b>37970.46</b> | <b>30099.44</b>     | <b>18231.06</b> | <b>18003.96</b> | <b>16775.19</b> | <b>16633.44</b>                         | <b>18457.47</b> | <b>575.15</b> |                     |
|         | <b>WDV value acquired by MCL</b>                | <b>3632.32</b>   |                                   |                 |                                |                 |                     |                 |                 |                 |   |                 |               | <b>3632.32</b>      |

| Sl. No. | Particulars                                     | Additional capital requirement upto year 7 | Year-wise Phasing of additional capital |              |              |               |               |               |     |     |     |     |     |     | Additional capital requirement upto year 25 |     |     |     |                      |
|---------|---|--|---|--------------|--------------|---------------|---------------|---------------|-----|-----|-----|-----|-----|-----|---|-----|-----|-----|----------------------|
|         |   |  | PRODUCTION PERIOD                       |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
|         |   | Y8   | Y9                                      | Y10          | Y11          | Y12           | Y13           | Y14           | Y15 | Y16 | Y17 | Y18 | Y19 | Y20 | Y21   | Y22 | Y23 | Y24 | Y25                  |
| 1       | Land R&R  | 95592.80<br>40546.04                       | 45.00                                   | 45.00        | 145.00       | 145.00        | 195.15        |               |     |     |     |     |     |     |   |     |     |     | 96167.95<br>40546.04 |
| 2       | Buildings                                       |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 2.1     | Service Buildings                               |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 2.2     | Residential Buildings                           |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 3       | Plant & Machinery HEMM                          |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
|         | Other than HEMM                                 |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 4       | Furniture & Fittings                            |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 5       | Railway siding                                  |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 6       | Vehicles  |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 7       | Prospecting & Boring                            |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 8       | Development                                     |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
|         | Upfront payment for allotment                   |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 8.1     | Capital Outlay in Mines                         |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
|         | 734.10  |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 8.2     | Roads and Culverts                              |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 8.3     | Water supply & sewerage                         |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 8.4     | Scientific Research                             |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 8.5     | PR & other Reports                              |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
|         | 1905.24   |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 9       | Washery   |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
| 10      | Revenue Exp. Capitalised during Dev. Period     |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
|         | 10.1 Interest during const. period              |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
|         | 10.2 Less : Dep. Capitalised During Dev. period |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     |                      |
|         | <b>Total</b>                                    |  | <b>156171.02</b>                        | <b>45.00</b> | <b>45.00</b> | <b>145.00</b> | <b>145.00</b> | <b>195.15</b> |     |     |     |     |     |     |   |     |     |     | <b>156746.17</b>     |
|         | <b>WDV value acquired by MCL</b>                |  |   |              |              |               |               |               |     |     |     |     |     |     |   |     |     |     | <b>3632.32</b>       |

**Cost base: August 2020**

| Sl.<br>No. | Particulars               | Additional Capital |                 |               | Forest Land     |                 | Govt. Land      |               | Tenancy Land    |               |
|------------|---------------------------|--------------------|-----------------|---------------|-----------------|-----------------|-----------------|---------------|-----------------|---------------|
|            |                           | Area (ha)          | Amount (₹ Lakh) | Area (ha)     | Amount (₹ Lakh) | Area (ha)       | Amount (₹ Lakh) | Area (ha)     | Amount (₹ Lakh) | Area (ha)     |
| A          | Mining Lease area         | 1111.85            | 88340.75        | 125.24        | 5635.80         | 290.11          | 13054.95        | 696.50        | 69650.00        |               |
| B          | Outside Mining Lease area |                    |                 |               |                 |                 |                 |               |                 |               |
| 1          | Residential Colony        | 42.69              | 1921.05         | 1780.20       | 42.69           | 1921.05         | 1780.20         | 31.67         | 3167.00         |               |
| 2          | R&R Site                  | 39.56              | 1780.20         | 4125.95       | 39.56           | 1986.04         | 4000.00         | 5060.00       | 5060.00         |               |
| 3          | Railway                   | 52.98              | 4125.95         | 21.31         | 958.95          | 82.25           | 3701.25         | 31.67         | 3167.00         |               |
|            | <b>Sub -total (B)</b>     | <b>135.23</b>      | <b>7827.20</b>  | <b>21.31</b>  | <b>958.95</b>   | <b>372.36</b>   | <b>16756.20</b> | <b>728.17</b> | <b>72817.00</b> |               |
|            | <b>Total (A+B)</b>        | <b>1247.08</b>     | <b>96167.95</b> | <b>146.55</b> | <b>6594.75</b>  | <b>13377.10</b> | <b>45.00</b>    | <b>45.00</b>  | <b>145.00</b>   | <b>195.15</b> |

**Capital Phasing**

| Sl.<br>No. | Particulars               | Year-wise Phasing of additional capital |                 |                 |                 |                 |                 |                 |                 |              |              |               |               |
|------------|---------------------------|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------|--------------|---------------|---------------|
|            |                           | Additional Capital requirement          | Y1              | Y2              | Y3              | Y4              | Y5              | Y6              | Y7              | Y8           | Y9           | Y10           | Y11           |
| A          | Mining Lease area         | 88340.75                                | 5860.00         | 18006.75        | 12640.00        | 12641.75        | 12600.00        | 13377.10        | 45.00           | 45.00        | 145.00       | 145.00        | 195.15        |
| B          | Outside Mining Lease area |   |                 |                 |                 |                 |                 |                 |                 |              |              |               |               |
| 1          | Residential Colony        | 1921.05                                 | 900.00          | 1021.05         | 500.00          | 500.00          | 280.20          |                 |                 |              |              |               |               |
| 2          | R&R Site                  | 1780.20                                 | 500.00          |                 |                 |                 |                 |                 |                 |              |              |               |               |
| 3          | Railway                   | 4125.95                                 | 4125.95         |                 |                 |                 |                 |                 |                 |              |              |               |               |
|            | <b>Total (A+B)</b>        | <b>96167.95</b>                         | <b>11385.95</b> | <b>19527.80</b> | <b>13140.00</b> | <b>12920.20</b> | <b>12641.75</b> | <b>12600.00</b> | <b>13377.10</b> | <b>45.00</b> | <b>45.00</b> | <b>145.00</b> | <b>145.00</b> |

**Note :** Rate of Forest Land, Govt. Non Forest Land & Tenancy Land have been considered as ₹ 45.00 Lakh/ha, ₹ 45.00 Lakh/ha & ₹ 100.00 Lakh/ha respectively as communicated by Project authorities.

**Statement Showing Estimated Capital Requirement on R&R****1.(a) Rehabilitation (excluding Land but including House compensation)**

- Calculation of Families**  
**(i) No. of Project affected families/PAF** (as per Census data of 2011)  
*(Exact no. of PAF will be known only after due enumeration by Project Authority)*  
**(ii) Considering other families & decade growth @ 30 %**  
**(iii) Total families (i+ii)**
- One time R&R cash comp./family in onetime payment basis @ ₹ 20 Lakh/PDF

- 1.(b) Development of Rehab Site**  
**Resettlement Land requirement**  
**Civil cost for Development of Rehab Site**

| Sl.<br>No. | Particulars   | Year-wise Phasing of additional capital |                |                |                |                |                |                |                |                |                |                |                |
|------------|---|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|            |   | Additional Capital                      | Y1             | Y2             | Y3             | Y4             | Y5             | Y6             | Y7             | Y8             | Y9             | Y10            | Y11            |
| 1. (a)     | R&R (excluding land but including house compensation) | 37060.00                                | 8000.00        | 8000.00        | 4000.00        | 4000.00        | 4000.00        | 4000.00        | 4000.00        | 4000.00        | 4000.00        | 4000.00        | 4000.00        |
| (b)        | R&R Site development (excluding cost of land)         | 3486.04                                 | 1500.00        | 1986.04        |                |                |                |                |                |                |                |                |                |
|            | <b>Total (A+B)</b>                                    | <b>40546.04</b>                         | <b>9500.00</b> | <b>9986.04</b> | <b>4000.00</b> |

Cost base: August 2020

**STATEMENT SHOWING ESTIMATED CAPITAL EXPENDITURE ON SERVICE BUILDINGS**

| Sl.No. | Particulars                        | Unit  | Nos. | Plinth area | Total pl.area | Rate /Sq.m in Rs CI 100 | Present rate as per CI 4798.00 | Total expenditure in lakhs अगस्त-20 |
|--------|------------------------------------|-------|------|-------------|---------------|-------------------------|--------------------------------|-------------------------------------|
|        | Levelling & Dressing of Total area |       |      | 375200      | 375200        | 1.00                    | 47.98                          | 180.02                              |
|        | <b>Common Facilities</b>           |       |      |             |               |                         |                                |                                     |
|        | Dispensary                         | sq.m. | 1    | 500         | 500           | 467.00                  | 22406.66                       | 112.03                              |
|        | Underground reservoir              | cum   | 1    | 313         | 313           | 650.00                  | 31187.00                       | 97.62                               |
|        | Pump House                         | sq.m. | 1    | 25          | 25            | 446.00                  | 21399.08                       | 5.35                                |
|        | OverHead tank                      | cum   | 1    | 100         | 100           | 1100.00                 | 52778.00                       | 52.78                               |
|        | Community Hall                     | sq.m. | 1    | 800         | 800           | 380.00                  | 18232.40                       | 145.86                              |
|        | Lavatories & Urinals               | sq.m. | 1    | 52          | 52            | 685.00                  | 32866.30                       | 17.09                               |
|        | School                             | sq.m. | 1    | 2500        | 2500          | 380.00                  | 18232.40                       | 455.81                              |
|        | Place for religious congregation   | sq.m. | 2    | 50          | 100           | 380.00                  | 18232.40                       | 18.23                               |
|        | Club                               | sq.m. | 1    | 181         | 181           | 380.00                  | 18232.40                       | 33.00                               |
|        | Shopping Complex                   | sq.m. | 1    | 500         | 500           | 380.00                  | 18232.40                       | 91.16                               |
|        | Children Park and Play ground      | LS    | 1    | 15000       | 15000         |                         |                                | 20.00                               |
|        | Street light arrangement           | LS    |      |             |               |                         |                                | 30.00                               |
|        | Water Supply Arrangement           | m     |      |             | 9270          | 101.75                  | 4881.97                        | 452.56                              |
|        | <b>TOTAL</b>                       |       |      |             |               |                         |                                | 1711.51                             |
|        | CONTINGENCIES.....3%               |       |      |             |               |                         |                                | 51.00                               |
|        | <b>GRAND TOTAL</b>                 |       |      |             |               |                         |                                | <b>1762.51</b>                      |

**STATEMENT SHOWING THE ESTIMATED CAPITAL COST ON ROADS & CULVERTS****1. COLONY ROADS & CULVERTS**A) Total Length of road **9270** RM**i) Major stratum B Road**

4.5m wide bituminous with pucca shoulders

22.5 cm thick cobble soling over 27.5 cm moorum filling

(Moorum fillings in case of BC soil/clayey soil only)

15 cm thick WBM in 2 layers under 4 cm thick premix surfacing

**(Amt. in lakh)**

|    |   |      |                  |        |        |
|----|---|------|------------------|--------|--------|
| A) | Length of road  | 9270 | RM @ Rs. 8305    | per RM | 769.90 |
| B) | Slab Culverts (3.05 m span)                             | 9    | No. @ Rs. 950004 |        | 85.50  |
|    | Hume pipe culverts (0.61 m dia)                         | 9    | No. @ Rs. 118031 |        | 10.62  |
| C) | Tree guards   | 371  | No. @ Rs. 1487   | each   | 5.52   |
| D) | RCC Slab for drain crossing<br>(1.53 x 0.61 x 0.075 m.) | 371  | No. @ Rs. 1247   | each   | 4.63   |
| E) | Extra for poor soil for culverts                        |      |                  |        | 9.61   |
|    |   |      | Total            |        | 876.17 |
|    |   |      | Contingencies 3% |        | 26.29  |
|    |   |      | "Sub-Total-1"    |        | 902.46 |

**ABSTRACT OF ROAD COSTING: FIG**

QTY (M) IN LAKHS

|                    |      |               |
|--------------------|------|---------------|
| 1 COLONY ROAD      | 9270 | 902.46        |
| <b>GRAND TOTAL</b> |      | <b>902.46</b> |

**COMPUTATION OF WATER DEMAND**

- A. Total No. of persons : 927  
 B. Total No. of housing units provided: 927  
 C. Total No. of residential population : 4635

**(I) DRINKING WATER DEMAND**

1. Water demand for residential population @ 135 litres/person/day 625725 litres  
 2. Water demand for non-residential population @ 45 litres/person/day 0 litres  
 3. Water demand in service building @ 45 litres/person/day 41715 litres  
 Total 667440 litres  
 4. Add 10% towards loss etc. 66744 litres  
 Grand total 734184 litres

## Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West &amp; Utkal A Block]

Details of Estimated capital requirement for R&R Site development

Cost base: August 2020

Say

0.73 MLD

ESTIMATED CAPITAL EXPENDITURE FOR WATER SUPPLY AND SEWERAGEInvestment on Colony sewerage

|   | Unit | Quantity | Unit rate at Cl<br>100 | Amount<br>in lakhs |
|---|------|----------|------------------------|--------------------|
| 1 Combined open surface drain                 | Km   | 0.927    | 104000                 | 46.26              |
| i) 60 x 90 cm size                            | Km   | 1.854    | 57000                  | 50.7               |
| ii) 30 x 45 cm size                           | Km   | 2.3175   | 28000                  | 31.13              |
| 2 Sewage disposal for quarters                | each | 927      | 750                    | 333.58             |
| 3 Provision for poor/BC soil for item 1 @ 10% | LS   |          |                        | 12.809             |
| SUB TOTAL (1+2+3)                             |      |          |                        | 474.479            |
| 4 Contingencies 3%                            |      |          |                        | 14.23437           |
| <b>TOTAL (1+2+3+4)</b>                        |      |          |                        | <b>488.7134</b>    |

CONTRIBUTION TOWARDS INTEGRATED WATER SUPPLY SCHEME

|   |  |                          |
|---|--|--------------------------|
| 1 | Gross capital outlay of scheme prepared in Nov-81 ( at Cl= 180 ) Rs. | 95943079                 |
| 2 | Total Capacity Of Scheme = 14 MGD =                                  | 63.56 MLD                |
| 3 | Gross capital outlay of scheme at present Cl =<br>Cost per lit       | 4798.00 Rs.<br>Rs. 40.24 |

| SL.<br>NO. | PARTICULARS  | UNIT   | RATE  | QUANTITY   | AMOUNT<br>in Lakh |
|------------|--|--------|-------|------------|-------------------|
|            | Total no of housing unit provided                                    |        |       | 927        | Nos.              |
|            | Total water demand   |        |       | 730000     | MLD               |
| A.         | DRINKING WATER   |        |       |            |                   |
|            | i) Cost of water supply scheme                                       | Litres | 40.24 | 730000     | 293.75            |
|            | ii) Add L.S. amount for long range<br>pipe during construction stage |        |       | Rs. 14.69  |                   |
|            |  |        |       | Sub-total  | 308.44            |
| B.         | Cost of residential sewage disposal scheme                           |        |       |            | .....I            |
|            |  |        |       |            | 488.71            |
|            | Total of I +II+III+IV  |        |       | Rs. 797.15 | .....II           |
|            | Add 3% contingencies :   |        |       | Rs. 23.91  |                   |
|            | <b>GRAND TOTAL</b>   |        |       | Rs. 821.07 |                   |

Estimated expenditure on R & R site

| Sl. No. | Particulars      | Amount in Lakhs |
|---------|------------------|-----------------|
| 1       | Service Building | 1762.51         |
| 2       | Road & Culvert   | 902.46          |
| 3       | Water Cost       | 821.07          |
|         | <b>Total</b>     | <b>3486.04</b>  |

Variant :MDO (Mine Authority/MCL Part)  
 Project Report of Subhadra OCP (25 MTy) [West of Gopalprasad West & Utkal A Block]

**Appendix-A.6**

**Statement Showing Estimated Capital Requirement on Vehicles**

**Cost base: August 2020**

**(Amount in ₹ Lakhs)**

| Sl.<br>No. | Particulars           | Total Additional Capital<br>requirement |       |              | Year wise phasing of capital |              |              |              |              |              |              |
|------------|-----------------------|---|-------|--------------|------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
|            |                       | No.                                     | Rate  | Total        | Y1                           | Y2           | Y3           | Y4           | Y5           | Y6           | Y7           |
| <b>A</b>   | <b>Light Vehicles</b> |   |       |              |                              |              |              |              |              |              |              |
| 1          | Car/Gypsy/Jeep        | 4                                       | 10.37 | 41.48        |                              |              |              |              |              |              |              |
| 2          | Car/Gypsy/Jeep        | 5                                       | 8.07  | 40.35        |                              |              |              |              |              |              |              |
|            | <b>Total</b>          |   |       | <b>81.83</b> |                              |              |              |              |              |              |              |
|            |                       |   |       |              | <b>18.44</b>                 | <b>16.14</b> | <b>16.14</b> | <b>18.44</b> | <b>18.44</b> | <b>10.37</b> | <b>10.37</b> |

**Variant :MDO (Mine Authority/MCL Part)**

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]  
Statement Showing Estimated Capital Requirement on Exploration**

**Appendix-A.7**

| SI No. | Particulars  | Additional Capital requirement | Year-wise Phasing of additional capital |               |               |               |               | (Amount in ₹ Lakhs) |
|--------|--|--------------------------------|---|---------------|---------------|---------------|---------------|---------------------|
|        |  |                                | Y1                                      | Y2            | Y3            | Y4            | Y5            |                     |
| 1      | Exploration to be done in future<br>(Production support) | 500.00                         | 100.00                                  | 100.00        | 100.00        | 100.00        | 100.00        | 100.00              |
|        | <b>Total</b>   | <b>500.00</b>                  | <b>100.00</b>                           | <b>100.00</b> | <b>100.00</b> | <b>100.00</b> | <b>100.00</b> | <b>100.00</b>       |

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utikal A Block]**  
**Statement Showing Estimated Capital Requirement on Developmental activities**

**Cost base: August 2020**

(Amount in ₹ Lakh)

| Sl.<br>No. | Particulars   | Capital<br>Requirement | Year wise capital phasing |               |    |    |    |
|------------|---|------------------------|---------------------------|---------------|----|----|----|
|            |   |                        | Y1                        | Y2            | Y3 | Y4 | Y5 |
| <b>1</b>   | <b>Environmental &amp; Ecological cost</b>                        |                        |                           |               |    |    |    |
|            | Compensatory Afforestation (including fencing around safety zone) | 671.60                 | 300.00                    | 371.60        |    |    |    |
|            | (a) Other Cost(s) Related to Forest Land                          | 62.50                  | 62.50                     |               |    |    |    |
|            | <b>Total</b>  | <b>734.10</b>          | <b>362.50</b>             | <b>371.60</b> |    |    |    |

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**Statement Showing Estimated Capital Requirement for Scientific research etc**

Cost base: August 2020

(Amount in ₹ Lakhs)

| Sl. No. | Particulars   | Additional Capital Requirement | Year wise phasing of additional capital |              |              |              |              |              |       |
|---------|---|--------------------------------|---|--------------|--------------|--------------|--------------|--------------|-------|
|         |   |                                | Y1                                      | Y2           | Y3           | Y4           | Y5           | Y6           | Y7    |
| 1       | Environmental data generation & Clearance                     | 70.00                          | 40.00                                   | 30.00        |              |              |              |              |       |
| 2       | Scientific research, reclamation studies, Schemes, Plans etc. | 160.00                         | 50.00                                   | 20.00        | 10.00        | 10.00        | 10.00        | 10.00        | 10.00 |
| 3       | Implementation of ISO   | 15.00                          |   | 5.00         | 5.00         | 5.00         | 5.00         | 5.00         |       |
| 4       | Financial appraisal   | 10.00                          | 20.00                                   |              |              |              |              |              |       |
| 5       | Slope Stability study   | 40.00                          |   |              |              |              |              |              |       |
| 6       | Ground Water Study & Clearance                                | 18.00                          | 9.00                                    |              |              |              |              |              |       |
|         | <b>Total</b>  | <b>313.00</b>                  | <b>124.00</b>                           | <b>20.00</b> | <b>15.00</b> | <b>15.00</b> | <b>15.00</b> | <b>10.00</b> |       |

**Project Report Subhadra OCP [ West of Gopalprasad West & Utkal - A Block] ( 25 MTY)****STATEMENT SHOWING CATEGORYWISE/DESIGNATION WISE DEPARTMENTAL MANPOWER REQUIREMENT IN MDO MODE****MDO VARIANT (MCL Part)**

| Sl. No. | Particulars   | Category/ Grade (Excv./ MR/DR/T&S/Clerical) | Manpower req. upto Target year | Manpower req.beyond Target year | Total Manpower Requirement |
|---------|---|---|--------------------------------|---------------------------------|----------------------------|
| (a)     | (b)   | (c)   | (d)                            | (e)                             | (f) = (d)+(e)              |
| I.      | O.B.R. Direct   |   |                                |                                 |                            |
|         | <b>Sub-total (I)</b>  |   |                                |                                 |                            |
| II.     | <b>Coal Direct</b>  |   |                                |                                 |                            |
| A.      | <b>Coal Face</b>  |   |                                |                                 |                            |
|         | <b>Sub total (A) :</b>  |   |                                |                                 |                            |
| B.      | <b>Coal Handling Plant Operations</b>                         |   |                                |                                 |                            |
|         | <b>Sub-total (B) :</b>  |   |                                |                                 |                            |
| C.      | <b>Despatch, Loading &amp; Quality Control</b>                |   |                                |                                 |                            |
| 1       | Asstt./Deputy Manager (Marketing & Sales)                     | E2/E3/E4                                    | 4                              |                                 | 4                          |
| 2       | Despatch Officer  | E6/E5                                       | 1                              |                                 | 1                          |
| 3       | Scientist/chemist   | T&S Gr. B                                   | 4                              |                                 | 4                          |
| 4       | Lab. assistant  | Cat - III                                   | 4                              |                                 | 4                          |
| 5       | Lab. assistant  | Cat - V                                     | 4                              |                                 | 4                          |
|         | <b>Sub total (C) :</b>  |   | <b>17</b>                      |                                 | <b>17</b>                  |
|         | <b>Total Coal (II) (A+B+C)</b>                                |   | <b>17</b>                      |                                 | <b>17</b>                  |
| III.    | <b>Common</b>   |   |                                |                                 |                            |
| A.      | <b>Common Operation (HEMM)</b>                                |   |                                |                                 |                            |
|         | <b>Sub total (A)</b>  |   |                                |                                 |                            |
| B.      | <b>Excavation Supervision</b>                                 |   |                                |                                 |                            |
| 1       | Manager/Dy. Manager (Excavation)                              | E5/E4                                       | 1                              |                                 | 1                          |
| 2       | Foreman incharge  | T&S Gr. A1/A/B                              | 1                              |                                 | 1                          |
| 3       | Foreman (Elect & Mech)  | T&S Gr. B                                   | 3                              |                                 | 3                          |
|         | <b>Sub-total (B)</b>  |   | <b>5</b>                       |                                 | <b>5</b>                   |
| C.      | <b>E&amp;M Supervision</b>                                    |   |                                |                                 |                            |
| 1       | Manager/Dy. Manager (E&M)                                     | E5/E4                                       | 1                              |                                 | 1                          |
| 2       | Foreman incharge (E&M)  | T&S Gr. A1                                  | 2                              |                                 | 2                          |
| 3       | Electrical Supervisor   | T&S Gr. A                                   | 2                              |                                 | 2                          |
|         | <b>Sub-total (C) :</b>  |   | <b>5</b>                       |                                 | <b>5</b>                   |
| D.      | <b>Excavation P&amp;M Maintenance</b>                         |   |                                |                                 |                            |
|         | <b>Sub-total (D) :</b>  |   |                                |                                 |                            |
| E.      | <b>E&amp;M Maintenance including CHP &amp; Communication</b>  |   |                                |                                 |                            |
|         | <b>Sub-total (E) :</b>  |   |                                |                                 |                            |
| F.      | <b>Operational Manpower for Pumping</b>                       |   |                                |                                 |                            |
|         | <b>Sub-total (F) :</b>  |   |                                |                                 |                            |
| G.      | <b>Transport</b>  |   |                                |                                 |                            |
| 1       | Driver  | Cat -VI                                     | 18                             |                                 | 18                         |
|         | <b>Sub total (G)</b>  |   | <b>18</b>                      |                                 | <b>18</b>                  |
| H.      | <b>Project Office/Manager's Office</b>                        |   |                                |                                 |                            |
| 1       | General manager/Project Officer/Agent                         | M2  | 1                              |                                 | 1                          |
| 2       | Dy. General manager/Project Manager                           | M1  | 1                              |                                 | 1                          |
| 3       | Sr. Manager(M) / Safety Officer                               | E6  | 1                              |                                 | 1                          |
| 3       | Asstt. Colliery Manger (Manager (M)/Dy. Manager(M)) 1st class | E2/E3/E4                                    | 7                              |                                 | 7                          |
| 4       | Asstt. Colliery Manger (Manager (M)/Dy. Manager(M)) 2nd class | E2/E3/E4                                    | 14                             |                                 | 14                         |
| 5       | Liasion Officer   | E3/E2                                       | 2                              |                                 | 2                          |
| 6       | Legal Asstt.  | E3/E2                                       | 1                              |                                 | 1                          |
| 8       | Office suptd.   | Clerical Gr. A1/A/B                         | 1                              |                                 | 1                          |
| 9       | Sr.P.A.   | Clerical Gr. A1/A/B                         | 1                              |                                 | 1                          |
| 10      | Data Entry operator/ Steno/Typist                             | Clerical Gr. C                              | 6                              |                                 | 6                          |
| 11      | Mazdoor/ Helper   | Cat - I/II                                  | 4                              |                                 | 4                          |

**Project Report Subhadra OCP [ West of Gopalprasad West & Utkal - A Block] ( 25 MTY)****STATEMENT SHOWING CATEGORYWISE/DESIGNATION WISE DEPARTMENTAL MANPOWER REQUIREMENT IN MDO MODE****MDO VARIANT (MCL Part)**

| Sl. No.    | Particulars                                 | Category/ Grade<br>(Excv./<br>MR/DR/T&S/Clerical) | Manpower req.<br>upto Target<br>year | Manpower req.beyond<br>Target year            | Total<br>Manpower<br>Requirement           |
|------------|---|---|--------------------------------------|---|--|
| (a)        | (b)   | (c)   | (d)                                  | (e)   | (f) = (d)+(e)                              |
| 12         | Sr.Clerk                                    | Clerical Gr. A                                    | 3                                    |   | 3  |
|            | <b>Sub total (H)</b>                        |   | <b>42</b>                            |   | <b>42</b>                                  |
| <b>I.</b>  | <b>Training</b>                             |   |                                      |   |  |
|            | <b>Sub total (I)</b>                        |   |                                      |   |  |
| <b>J.</b>  | <b>Accounts</b>                             |   |                                      |   |  |
| 1          | Asstt. Manager (F&A)/Accounts officer       | E3/E2   | 1                                    |   | 1  |
| 2          | Accountant                                  | Clerical Gr. A1/A/B                               | 2                                    |   | 2  |
|            | <b>Sub total (J)</b>                        |   | <b>3</b>                             |   | <b>3</b>                                   |
| <b>K.</b>  | <b>Watch and Ward</b>                       |   |                                      |   |  |
| 1          | Security officer/Asstt. Manager (Security)  | E3  | 2                                    |   | 2  |
|            | <b>Sub total (K)</b>                        |   | <b>2</b>                             |   | <b>2</b>                                   |
| <b>L.</b>  | <b>Personnel/Welfare</b>                    |   |                                      |   |  |
| 1          | Asstt. Manager (Personnel)/ Welfare Officer | E4/E3   | 1                                    |   | 1  |
|            | <b>Sub total (L)</b>                        |   | <b>1</b>                             |   | <b>1</b>                                   |
| <b>M.</b>  | <b>Store &amp; Magazine</b>                 |   |                                      |   |  |
|            | <b>Sub total (M)</b>                        |   |                                      |   |  |
| <b>N.</b>  | <b>Civil</b>                                |   |                                      |   |  |
| 1          | SOE (C )                                    | E1  | 1                                    |   | 1  |
|            | <b>Sub total (N)</b>                        |   | <b>1</b>                             |   | <b>1</b>                                   |
| <b>O.</b>  | <b>Medical &amp; Sanitation</b>             |   |                                      |   |  |
| 1          | Sr.medical officer/D.G.M.O.                 | E4  |                                      |   |  |
|            | <b>Sub total (O)</b>                        |   |                                      |   |  |
| <b>P.</b>  | <b>Survey</b>                               |   |                                      |   |  |
| 1          | Survey officer                              | E2  | 1                                    |   | 1  |
| 2          | Dy. Surveyor (Qualified / Unqualified)      | T&S Gr. C   | 9                                    |   | 9  |
| 3          | Survey Mazdoors/helper                      | Cat - I/II  | 2                                    |   | 2  |
|            | <b>Sub total (P)</b>                        |   | <b>12</b>                            |   | <b>12</b>                                  |
|            | <b>Total Common services (III)</b>          |   | <b>89</b>                            |   | <b>89</b>                                  |
| <b>IV.</b> | <b>Land Reclamation ENV. &amp; R/R</b>      |   |                                      |   |  |
| 1          | Land officer/ Dy. Manager (Envt.)           | E4  | 1                                    |   | 1  |
|            | <b>Total (IV)</b>                           |   | <b>1</b>                             |   | <b>1</b>                                   |
|            | <b>GRAND TOTAL</b>                          |   |                                      | <b>Manpower req.<br/>upto Target<br/>year</b> | <b>Manpower req.beyond<br/>Target year</b> |
| <b>I</b>   | <b>OB</b>                                   |   |                                      |   | <b>Total<br/>Manpower<br/>Requirement</b>  |
| <b>II</b>  | <b>Coal</b>                                 |   |                                      |   | <b>17</b>                                  |
| <b>III</b> | <b>Common</b>                               |   |                                      |   | <b>89</b>                                  |
| <b>IV.</b> | <b>L/R</b>                                  |   |                                      |   | <b>1</b>                                   |
|            |   |   | <b>Grand Total</b>                   | <b>107</b>                                    | <b>107</b>                                 |

Note In actual practice scale/grades are likely to be changed/ altered keeping the total strength unchanged

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**STATEMENT SHOWING ESTIMATED SALARIES & BENEFITS**

| SL NO | PARTICULARS                         | Annual Earnings | Surface Manpower | Annual Earnings | Under-ground Manpower | Total Manpower | Total cost                                   |
|-------|-------------------------------------|-----------------|------------------|-----------------|-----------------------|----------------|--|
|       |                                     | Rs.in Lakhs     | No.              | Rs.in Lakhs     | No.                   | No.            | Rs.in Lakhs                                  |
|       | <b>Daily Rated</b>                  |                 |                  |                 |                       |                |  |
|       | <b>Excavation</b>                   |                 |                  |                 |                       |                |  |
| 1     | EXCAVATION SPECIAL GRADE            | 10.55           |                  |                 |                       |                |  |
| 2     | EXCAVATION GRADE-A                  | 10.10           |                  |                 |                       |                |  |
| 3     | EXCAVATION GRADE-B                  | 9.60            |                  |                 |                       |                |  |
| 4     | EXCAVATION GRADE-C                  | 9.25            |                  |                 |                       |                |  |
| 5     | EXCAVATION GRADE-D                  | 8.97            |                  |                 |                       |                |  |
| 6     | EXCAVATION GRADE-E                  | 8.48            |                  |                 |                       |                |  |
|       | <b>Category</b>                     |                 |                  |                 |                       |                |  |
| 7     | CATEGEORY-I                         | 8.03            | 3                |                 |                       | 3              | 24.09  |
| 8     | CATEGEORY-II                        | 8.18            | 3                |                 |                       | 3              | 24.54  |
| 9     | CATEGEORY-III                       | 8.39            | 4                |                 |                       | 4              | 33.56  |
| 10    | CATEGEORY-IV                        | 8.53            |                  |                 |                       |                |  |
| 11    | CATEGEORY-V                         | 8.83            | 4                |                 |                       | 4              | 35.32  |
| 12    | CATEGEORY-VI                        | 9.16            | 18               |                 |                       | 18             | 164.88                                       |
|       | <b>Monthly Rated</b>                |                 |                  |                 |                       |                |  |
| 13    | GRADE-H                             | 8.18            |                  |                 |                       |                |  |
| 14    | GRADE-G                             | 8.33            |                  |                 |                       |                |  |
| 15    | GRADE-F                             | 8.43            |                  |                 |                       |                |  |
| 16    | GRADE-E                             | 8.50            |                  |                 |                       |                |  |
| 17    | GRADE-D                             | 8.81            |                  |                 |                       |                |  |
| 18    | GRADE-C                             | 9.41            | 15               |                 |                       | 15             | 141.15                                       |
| 19    | GRADE-B                             | 10.06           | 10               |                 |                       | 10             | 100.60                                       |
| 20    | GRADE-A                             | 10.73           | 6                |                 |                       | 6              | 64.38  |
| 21    | GRADE-A1                            | 13.44           | 3                |                 |                       | 3              | 40.32  |
|       | <b>Executives</b>                   |                 |                  |                 |                       |                |  |
| 22    | E-1                                 | 12.10           | 1                |                 |                       | 1              | 12.10  |
| 23    | E-2                                 | 15.03           | 5                |                 |                       | 5              | 75.15  |
| 24    | E-3                                 | 17.96           | 14               |                 |                       | 14             | 251.44                                       |
| 25    | E-4                                 | 21.33           | 16               |                 |                       | 16             | 341.28                                       |
| 26    | E-5                                 | 24.33           | 1                |                 |                       | 1              | 24.33  |
| 27    | E-6                                 | 27.88           | 2                |                 |                       | 2              | 55.76  |
| 28    | E-7                                 | 30.94           | 1                |                 |                       | 1              | 30.94  |
| 29    | E-8                                 | 37.80           | 1                |                 |                       | 1              | 37.80  |
|       | <b>Total Manpower</b>               |                 | 107              |                 |                       | 107            | 1457.64                                      |
|       | <b>NO.OF MANSHIFTS PER MANPOWER</b> |                 | 264              |                 | 261                   | 28248          |  |
|       |                                     |                 |                  |                 |                       |                | Cost/T(Rs.) 6.02                             |
|       |                                     |                 |                  |                 |                       |                | EMS(Rs.) 5160.15                             |
|       |                                     |                 |                  |                 |                       |                | Total estimated outsourced manpower(Approx.) |
|       |                                     |                 |                  |                 |                       |                | Total Required Manpower for the Project 107  |
|       |                                     |                 |                  |                 |                       |                | O.M.S (Tonne) 855.91                         |

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**STATEMENT SHOWING ESTIMATED SALARIES & BENEFITS**

| <b>TARGET OUTPUT(L.Te)</b>            |  | 250.00 | <b>TOTAL MANPOWER</b> | 107 |
|---------------------------------------|--|--------|-----------------------|-----|
| <b>AVERAGE STRIPPING RATIO(M3/Te)</b> |  | 1.12   |                       |     |
| <b>SPECIFIC GRAVITY OF COAL</b>       |  | 1.71   |                       |     |
| <b>COST BASE - AUG 2020</b>           |  |        |                       |     |

| SR.NO | PARTICULARS                     | TOTAL COST    | FIXED         | VARIABLE      | % ON TOTAL COST |
|-------|---------------------------------|---------------|---------------|---------------|-----------------|
|       |                                 | (Rs./Te)      | (Rs./Te)      | (Rs./Te)      |                 |
| 1     | SALARY & WAGES COST             | 6.02          | 6.02          | 0.00          | 2.41%           |
| 2     | STORES COST                     | 0.10          | 0.10          | 0.00          | 0.04%           |
| 3     | POWER COST                      |               |               |               |                 |
| 4     | MISS.COST                       | 0.17          | 0.17          | 0.00          | 0.07%           |
| 5     | MINE CLOSURE COST               |               |               |               |                 |
| 6     | PROJECT ADMINISTRATIVE COST     | 8.42          | 8.42          | 138.60        | 3.37%           |
| 7     | RESERVE PRICE                   |               |               |               |                 |
| 8     | OUTSOURCING COST                |               |               |               |                 |
| 9     | BG CHARGES                      | 4.09          | 4.09          | 0.91          | 1.64%           |
| 10    | INTEREST ON WORKING CAPITAL     | 7.61          | 7.61          | 6.70          | 3.04%           |
| 11    | <b>TOTAL CASH COST</b>          | <b>165.02</b> | <b>19.71</b>  | <b>145.30</b> | <b>66.01%</b>   |
| 12    | INTEREST ON LOAN CAPITAL        |               |               |               |                 |
| 13    | DEPRECIATION/AMORTIZATION       | 21.88         | 21.88         |               | 8.75%           |
| 14    | NOTIONAL ADMINISTRATIVE COST    | 63.08         | 63.08         |               | 25.23%          |
| 15    | <b>TOTAL COST OF PRODUCTION</b> | <b>249.97</b> | <b>104.67</b> | <b>145.30</b> | <b>100.00%</b>  |

**Project Report of Subhadra OCP (25 MTy) [West of Gopalprasad West & Uttkal A Block]**

**STATEMENT SHOWING REVENUE CASH OUTFLOW AT 100% LEVEL OF PRODUCTION**

Cost base: August 2020

| YEAR                  | SALARIES & WAGES | STORES & COST  | PO MISCELLANEOUS COST | MIN-E-CLO SURVEYS COST | ADMINISTRATIVE COST | RESERVE PRICE   | OUT SOURCING COST | BG CHARGE      | INTEREST ON WORKING CAPITAL | CASH COST       | INT'L RESERVE LOAN | DEPRECIATION | AMORTIZATION    | NOTIONAL ADMINISTRATIVE COST | COST OF PRODUCTION  | COST PER TONNE (RS)        | AVERAGE SALE PRICE (RS/TN) | SALES REALIZATION | PROFIT/LOSS       |
|-----------------------|------------------|----------------|-----------------------|------------------------|---------------------|-----------------|-------------------|----------------|-----------------------------|-----------------|--------------------|--------------|-----------------|------------------------------|---------------------|----------------------------|----------------------------|-------------------|-------------------|
|                       | TOTAL COST       | TOTAL AL. COST | TOTAL AL. COST        | TOTAL AL. COST         | TOTAL AL. COST      | TOTAL AL. COST  | TOTAL AL. COST    | TOTAL AL. COST | TOTAL AL. COST              | TOTAL AL. COST  | TOTAL CAP.         | TOTAL CAP.   | TOTAL COST      | TOTAL COST                   | COST PER TONNE (RS) | AVERAGE SALE PRICE (RS/TN) | SALES REALIZATION          | PROFIT/LOSS       |                   |
|                       | TOTAL COST       | TOTAL AL. COST | TOTAL AL. COST        | TOTAL AL. COST         | TOTAL AL. COST      | TOTAL AL. COST  | TOTAL AL. COST    | TOTAL AL. COST | TOTAL AL. COST              | TOTAL AL. COST  | TOTAL CAP.         | TOTAL CAP.   | TOTAL COST      | TOTAL COST                   | COST PER TONNE (RS) | AVERAGE SALE PRICE (RS/TN) | SALES REALIZATION          | PROFIT/LOSS       |                   |
| 1                     | 0.00             | 0.04           | 0.00                  | 0.14                   | 0.00                | 0.00            | 0.00              | 857.85         | 41.47                       | 899.50          | 0.00               | 1126.09      | 769.83          | 0.00                         | 0.00                | 0.00                       | 0.00                       | -2795.42          |                   |
| 2                     | 0.00             | 0.04           | 0.00                  | 0.14                   | 0.00                | 0.00            | 0.00              | 857.85         | 41.47                       | 899.50          | 0.00               | 1155.37      | 1589.66         | 0.00                         | 0.00                | 0.00                       | 0.00                       | -3644.53          |                   |
| 3                     | 871.15           | 5.58           | 0.00                  | 23.71                  | 336.80              | 5544.00         | 0.00              | 857.85         | 369.22                      | 8008.32         | 0.00               | 1210.42      | 2065.77         | 2523.20                      | 13807.71            | 40.00                      | 345.19                     | 956.15            | 38246.00          |
| 4                     | 910.44           | 11.13          | 0.00                  | 25.40                  | 842.00              | 13860.00        | 0.00              | 857.85         | 797.83                      | 17304.64        | 0.00               | 1265.05      | 2535.77         | 6308.00                      | 2743.46             | 100.00                     | 274.13                     | 956.15            | 9561.50           |
| 5                     | 1110.12          | 16.67          | 0.00                  | 31.34                  | 1263.00             | 20790.00        | 0.00              | 857.85         | 1163.33                     | 25232.32        | 0.00               | 1272.21      | 2998.04         | 9462.00                      | 38964.58            | 150.00                     | 259.76                     | 935.15            | 140272.50         |
| 6                     | 1158.82          | 22.22          | 0.00                  | 33.32                  | 1684.00             | 27720.00        | 0.00              | 857.85         | 1521.35                     | 32997.56        | 0.00               | 1274.38      | 3459.15         | 12616.00                     | 50347.10            | 200.00                     | 251.74                     | 935.15            | 187030.00         |
| 7                     | 1342.17          | 24.99          | 0.00                  | 38.51                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1885.90                     | 40904.41        | 0.00               | 1275.68      | 3971.30         | 15770.00                     | 61921.39            | 250.00                     | 247.69                     | 935.15            | 233787.50         |
| 8                     | 1390.87          | 24.99          | 0.00                  | 39.79                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1888.31                     | 40956.81        | 0.00               | 1275.68      | 3972.55         | 15770.00                     | 61975.03            | 250.00                     | 247.90                     | 935.15            | 233787.50         |
| 9                     | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3973.80         | 15770.00                     | 62048.12            | 250.00                     | 248.19                     | 935.15            | 233787.50         |
| 10                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3977.82         | 15770.00                     | 62052.15            | 250.00                     | 248.21                     | 935.15            | 233787.50         |
| 11                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3981.85         | 15770.00                     | 62056.17            | 250.00                     | 248.22                     | 935.15            | 233787.50         |
| 12                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 62061.59            | 250.00                     | 248.25                     | 935.15            | 233787.50         |
| 13                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 62061.59            | 250.00                     | 248.25                     | 935.15            | 233787.50         |
| 14                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 62061.59            | 250.00                     | 248.25                     | 935.15            | 233787.50         |
| 15                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 62061.59            | 250.00                     | 248.25                     | 935.15            | 233787.50         |
| 16                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 62061.59            | 250.00                     | 248.25                     | 935.15            | 233787.50         |
| 17                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 62061.59            | 250.00                     | 248.25                     | 935.15            | 233787.50         |
| 18                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 62061.59            | 250.00                     | 248.25                     | 935.15            | 233787.50         |
| 19                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 62061.14            | 250.00                     | 248.24                     | 935.15            | 233787.50         |
| 20                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 62061.14            | 250.00                     | 248.24                     | 935.15            | 233787.50         |
| 21                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 60935.50            | 250.00                     | 243.74                     | 935.15            | 233787.50         |
| 22                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 60906.22            | 250.00                     | 243.62                     | 935.15            | 233787.50         |
| 23                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 60852.59            | 250.00                     | 243.41                     | 935.15            | 233787.50         |
| 24                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 1275.68      | 3987.27         | 15770.00                     | 60799.21            | 250.00                     | 243.20                     | 935.15            | 233787.50         |
| 25                    | 1457.64          | 24.99          | 0.00                  | 41.54                  | 2105.00             | 34650.00        | 0.00              | 857.85         | 1891.62                     | 41028.64        | 0.00               | 7.54         | 3987.27         | 15770.00                     | 60793.46            | 250.00                     | 243.17                     | 935.15            | 233787.50         |
| <b>TOTAL</b>          | <b>31563.45</b>  | <b>530.43</b>  | <b>0.00</b>           | <b>898.58</b>          | <b>0.00</b>         | <b>44120.80</b> | <b>726264.00</b>  | <b>0.00</b>    | <b>21446.25</b>             | <b>39866.47</b> | <b>864689.98</b>   | <b>0.00</b>  | <b>25519.55</b> | <b>89117.36</b>              | <b>330539.20</b>    | <b>1309866.09</b>          | <b>5240.00</b>             | <b>4903126.00</b> | <b>3593259.91</b> |
| <b>COST PER TONNE</b> | <b>6.02</b>      | <b>0.10</b>    | <b>0.00</b>           | <b>0.17</b>            | <b>0.00</b>         | <b>8.42</b>     | <b>138.60</b>     | <b>0.00</b>    | <b>4.09</b>                 | <b>7.61</b>     | <b>165.02</b>      | <b>0.00</b>  | <b>4.87</b>     | <b>17.01</b>                 | <b>63.08</b>        | <b>249.97</b>              | <b>1.00</b>                | <b>935.71</b>     | <b>685.74</b>     |

## Project Report of Subhadra OCP (25 MTy) [West of Gopalprasad West &amp; Utkal A Block]

## STATEMENT SHOWING REVENUE CASH OUTFLOW AT 85% LEVEL OF PRODUCTION

Cost base: August 2020

| YEAR                  | STATEMENT SHOWING REVENUE CASH OUTFLOW AT 85% LEVEL OF PRODUCTION |               |              |                    |                      |                     |                  |                   |                     |                 |                  | (Amount in ₹ Lakhs) |                 |                              |                    |                   |                     |                             |                    |               |           |
|-----------------------|---|---------------|--------------|--------------------|----------------------|---------------------|------------------|-------------------|---------------------|-----------------|------------------|---------------------|-----------------|------------------------------|--------------------|-------------------|---------------------|-----------------------------|--------------------|---------------|-----------|
|                       | SALARIES & WAGES  | STORES COST   | PO WE R COST | MISCELLANEOUS COST | MIN E-LLAN EOUS COST | ADMINISTRATIVE COST | CLOSURE COST     | OUT SOURCING COST | INTEREST ON CAPITAL | CASH COST       | INT EREST ON LOA | DEPREC IATION       | AMORTI ZATION   | NOTIONAL ADMINISTRATIVE COST | COST OF PRODUCT ON | PRODUCTION (LTY)  | COST PER TONNE (RS) | AVERAGE SALE PRICE (RS /TN) | SALES REALIZATI ON | PROFIT/LOSS   |           |
|                       | TOTAL COST  | TOTAL COST    | TOTAL COST   | TOTAL COST         | TOTAL COST           | TOTAL COST          | TOTAL COST       | TOTAL COST        | TOTAL COST          | TOTAL COST      | TOTAL COST       | TOTAL COST          | TOTAL COST      | TOTAL COST                   | TOTAL COST         | TOTAL COST        | TOTAL COST          |                             |                    |               |           |
| 1                     | 0.00  | 0.04          | 0.00         | 0.14               | 0.00                 | 0.00                | 0.00             | 857.85            | 41.47               | 899.50          | 0.00             | 1126.09             | 769.83          | 0.00                         | 2795.42            | 0.00              | 0.00                | 0.00                        | 0.00               | -2795.42      |           |
| 2                     | 0.00  | 0.04          | 0.00         | 0.14               | 0.00                 | 0.00                | 0.00             | 857.85            | 41.47               | 899.50          | 0.00             | 1155.37             | 1889.66         | 0.00                         | 3644.53            | 0.00              | #DIV/0!             | 0.00                        | 0.00               | -3644.53      |           |
| 3                     | 871.15  | 5.58          | 0.00         | 23.71              | 0.00                 | 336.80              | 4712.40          | 0.00              | 857.85              | 329.03          | 7136.52          | 0.00                | 1210.42         | 2065.77                      | 2523.20            | 12935.91          | 34.00               | 380.47                      | 956.15             | 32509.10      | 19573.19  |
| 4                     | 910.44  | 11.12         | 0.00         | 25.40              | 0.00                 | 842.00              | 11781.00         | 0.00              | 857.85              | 697.34          | 15125.16         | 0.00                | 1265.05         | 2335.77                      | 6308.00            | 25233.98          | 85.00               | 296.87                      | 956.15             | 81272.75      | 56038.77  |
| 5                     | 1110.12   | 16.67         | 0.00         | 31.34              | 0.00                 | 1263.00             | 17871.50         | 0.00              | 857.85              | 1012.61         | 21963.09         | 0.00                | 1272.21         | 2998.04                      | 9462.00            | 35695.34          | 127.50              | 279.96                      | 935.15             | 119231.63     | 83536.28  |
| 6                     | 1158.82   | 22.21         | 0.00         | 33.32              | 0.00                 | 1684.00             | 23562.00         | 0.00              | 857.85              | 1320.38         | 28638.58         | 0.00                | 1274.38         | 3459.15                      | 12616.00           | 45988.12          | 170.00              | 270.52                      | 935.15             | 158975.50     | 112987.38 |
| 7                     | 1342.17   | 24.98         | 0.00         | 38.51              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1634.68         | 35455.70         | 0.00                | 1275.68         | 3971.30                      | 15770.00           | 56472.67          | 212.50              | 265.75                      | 935.15             | 198719.38     | 142246.70 |
| 8                     | 1390.87   | 24.98         | 0.00         | 39.79              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1637.10         | 35508.09         | 0.00                | 1275.68         | 3972.55                      | 15770.00           | 56526.32          | 212.50              | 266.01                      | 935.15             | 198719.38     | 142193.06 |
| 9                     | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 1275.68         | 3973.80                      | 15770.00           | 56599.40          | 212.50              | 266.35                      | 935.15             | 198719.38     | 142119.97 |
| 10                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 1275.68         | 3977.82                      | 15770.00           | 56603.43          | 212.50              | 266.37                      | 935.15             | 198719.38     | 142115.94 |
| 11                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 1275.68         | 3981.85                      | 15770.00           | 56607.46          | 212.50              | 266.39                      | 935.15             | 198719.38     | 142111.92 |
| 12                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 1275.68         | 3987.27                      | 15770.00           | 56612.88          | 212.50              | 266.41                      | 935.15             | 198719.38     | 142106.50 |
| 13                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 1275.68         | 3987.27                      | 15770.00           | 56612.88          | 212.50              | 266.41                      | 935.15             | 198719.38     | 142106.50 |
| 14                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 1275.68         | 3987.27                      | 15770.00           | 56612.88          | 212.50              | 266.41                      | 935.15             | 198719.38     | 142106.50 |
| 15                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 1275.68         | 3987.27                      | 15770.00           | 56612.88          | 212.50              | 266.41                      | 935.15             | 198719.38     | 142106.50 |
| 16                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 1275.68         | 3987.27                      | 15770.00           | 56612.88          | 212.50              | 266.41                      | 935.15             | 198719.38     | 142106.50 |
| 17                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 1275.68         | 3987.27                      | 15770.00           | 56612.88          | 212.50              | 266.41                      | 935.15             | 198719.38     | 142106.50 |
| 18                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 1275.68         | 3987.27                      | 15770.00           | 56612.88          | 212.50              | 266.41                      | 935.15             | 198719.38     | 142106.50 |
| 19                    | 1457.64   | 21.24         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35576.00         | 0.00                | 1275.68         | 3987.27                      | 15770.00           | 56608.50          | 212.50              | 266.39                      | 935.15             | 198719.38     | 142110.88 |
| 20                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 1275.68         | 3987.27                      | 15770.00           | 56612.42          | 212.50              | 266.41                      | 935.15             | 198719.38     | 142106.50 |
| 21                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 149.59          | 3987.27                      | 15770.00           | 55486.67          | 212.50              | 261.11                      | 935.15             | 198719.38     | 143232.95 |
| 22                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 120.31          | 3987.27                      | 15770.00           | 55457.51          | 212.50              | 260.98                      | 935.15             | 198719.38     | 143261.87 |
| 23                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 66.68           | 3987.27                      | 15770.00           | 55403.87          | 212.50              | 260.72                      | 935.15             | 198719.38     | 143315.50 |
| 24                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 13.29           | 3987.27                      | 15770.00           | 55350.49          | 212.50              | 260.47                      | 935.15             | 198719.38     | 143368.88 |
| 25                    | 1457.64   | 24.98         | 0.00         | 41.54              | 0.00                 | 2105.00             | 29452.50         | 0.00              | 857.85              | 1640.41         | 35579.93         | 0.00                | 7.54            | 3987.27                      | 15770.00           | 55344.74          | 212.50              | 260.45                      | 935.15             | 198719.38     | 143374.63 |
| <b>TOTAL COST</b>     | <b>31563.45</b>   | <b>526.62</b> | <b>0.00</b>  | <b>898.56</b>      | <b>0.00</b>          | <b>44120.80</b>     | <b>617324.40</b> | <b>0.00</b>       | <b>21446.25</b>     | <b>34600.87</b> | <b>750480.95</b> | <b>0.00</b>         | <b>25519.55</b> | <b>89117.36</b>              | <b>330539.20</b>   | <b>1195657.06</b> | <b>4454.00</b>      | <b>4167657.10</b>           | <b>2972000.04</b>  |               |           |
| <b>PER TONNE (RS)</b> | <b>7.09</b>   | <b>0.12</b>   | <b>0.00</b>  | <b>0.20</b>        | <b>0.00</b>          | <b>9.91</b>         | <b>138.60</b>    | <b>0.00</b>       | <b>4.82</b>         | <b>7.77</b>     | <b>168.50</b>    | <b>0.00</b>         | <b>5.73</b>     | <b>20.01</b>                 | <b>74.21</b>       | <b>268.45</b>     | <b>1.00</b>         |                             | <b>935.71</b>      | <b>667.27</b> |           |

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**STATEMENT SHOWING CASH FLOW AT 100% CAPACITY LEVEL**

(Amount in ₹ Lakhs)

| YEAR            | TOTAL CAPITAL INVESTMENT | LESS:- GST CREDIT | REPLACEMENT CAPITAL | TOTAL CAPITAL INVESTMENT | OPERATING COST | TOTAL CASH OUTFLOW | SALES INFLOW  | NET CASH FLOW  | PRODUCTION (LTY) |
|-----------------|--------------------------|-------------------|---------------------|--------------------------|----------------|--------------------|---------------|----------------|------------------|
| <b>EXISTING</b> | 10732                    |                   |                     | 10732                    |                | 10732              |               | -10732         |                  |
| 1               | 37970                    |                   |                     | 37970                    | 900            | 38870              |               | -38870         |                  |
| 2               | 30099                    |                   |                     | 30099                    | 900            | 30999              |               | -30999         |                  |
| 3               | 18231                    |                   |                     | 18231                    | 8008           | 26239              | 38246         | 12007          | 40               |
| 4               | 18004                    |                   |                     | 18004                    | 17305          | 35309              | 95615         | 60306          | 100              |
| 5               | 16775                    |                   |                     | 16775                    | 25232          | 42008              | 140273        | 98265          | 150              |
| 6               | 16633                    |                   |                     | 16633                    | 32998          | 49631              | 187030        | 137399         | 200              |
| 7               | 18457                    |                   |                     | 18457                    | 40904          | 59362              | 233788        | 174426         | 250              |
| 8               | 45                       |                   |                     | 45                       | 40957          | 41002              | 233788        | 192786         | 250              |
| 9               | 45                       |                   |                     | 45                       | 41029          | 41074              | 233788        | 192714         | 250              |
| 10              | 145                      |                   |                     | 145                      | 41029          | 41174              | 233788        | 192614         | 250              |
| 11              | 145                      |                   |                     | 145                      | 41029          | 41174              | 233788        | 192614         | 250              |
| 12              | 195                      |                   |                     | 195                      | 41029          | 41224              | 233788        | 192564         | 250              |
| 13              |                          |                   |                     |                          | 41029          | 41029              | 233788        | 192759         | 250              |
| 14              |                          |                   |                     |                          | 41029          | 41029              | 233788        | 192759         | 250              |
| 15              |                          |                   |                     |                          | 41029          | 41029              | 233788        | 192759         | 250              |
| 16              |                          | 18                |                     | 18                       | 41029          | 41047              | 233788        | 192740         | 250              |
| 17              |                          | 16                |                     | 16                       | 41029          | 41045              | 233788        | 192743         | 250              |
| 18              |                          | 18                |                     | 18                       | 41029          | 41047              | 233788        | 192740         | 250              |
| 19              |                          | 18                |                     | 18                       | 41029          | 41047              | 233788        | 192740         | 250              |
| 20              |                          | 10                |                     | 10                       | 41029          | 41039              | 233788        | 192748         | 250              |
| 21              |                          |                   |                     |                          | 41029          | 41029              | 233788        | 192759         | 250              |
| 22              |                          |                   |                     |                          | 41029          | 41029              | 233788        | 192759         | 250              |
| 23              |                          |                   |                     |                          | 41029          | 41029              | 233788        | 192759         | 250              |
| 24              |                          |                   |                     |                          | 41029          | 41029              | 233788        | 192759         | 250              |
| 25              | 3632                     |                   | -54455              | -50823                   | 41029          | -9794              | 233788        | 243582         | 250              |
| <b>TOTAL</b>    | <b>171111</b>            |                   |                     | <b>-54374</b>            | <b>116737</b>  | <b>864690</b>      | <b>981427</b> | <b>4903126</b> | <b>3921699</b>   |
|                 |                          |                   |                     |                          |                |                    |               |                | <b>5240</b>      |

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**STATEMENT SHOWING CASH FLOW AT 85% CAPACITY LEVEL**

(Amount in ₹ Lakhs)

| YEAR         | TOTAL CAPITAL INVESTMENT | LESS:- GST CREDIT | REPLACEMENT CAPITAL | TOTAL CAPITAL INVESTMENT | OPERATING COST | TOTAL CASH OUTFLOW | SALES INFLOW  | NET CASH FLOW  | PRODUCTION (LTY) |
|--------------|--------------------------|-------------------|---------------------|--------------------------|----------------|--------------------|---------------|----------------|------------------|
| EXISTING     | 10732                    |                   |                     | 10732                    |                | 10732              |               | -10732         |                  |
| 1            | 37970                    |                   |                     | 37970                    | 900            | 38870              |               | -38870         |                  |
| 2            | 30099                    |                   |                     | 30099                    | 900            | 30999              |               | -30999         |                  |
| 3            | 18231                    |                   |                     | 18231                    | 7137           | 25368              | 32509         | 7142           | 34               |
| 4            | 18004                    |                   |                     | 18004                    | 15125          | 33129              | 81273         | 48144          | 85               |
| 5            | 16775                    |                   |                     | 16775                    | 21963          | 38738              | 119232        | 80493          | 128              |
| 6            | 16633                    |                   |                     | 16633                    | 28639          | 45272              | 158976        | 113703         | 170              |
| 7            | 18457                    |                   |                     | 18457                    | 35456          | 53913              | 198719        | 144806         | 213              |
| 8            | 45                       |                   |                     | 45                       | 35508          | 35553              | 198719        | 163166         | 213              |
| 9            | 45                       |                   |                     | 45                       | 35580          | 35625              | 198719        | 163094         | 213              |
| 10           | 145                      |                   |                     | 145                      | 35580          | 35725              | 198719        | 162994         | 213              |
| 11           | 145                      |                   |                     | 145                      | 35580          | 35725              | 198719        | 162994         | 213              |
| 12           | 195                      |                   |                     | 195                      | 35580          | 35775              | 198719        | 162944         | 213              |
| 13           |                          |                   |                     | 35580                    | 35580          | 198719             | 163139        | 213            |                  |
| 14           |                          |                   |                     | 35580                    | 35580          | 198719             | 163139        | 213            |                  |
| 15           |                          |                   |                     | 35580                    | 35580          | 198719             | 163139        | 213            |                  |
| 16           |                          | 18                | 18                  | 35580                    | 35598          | 198719             | 163121        | 213            |                  |
| 17           |                          | 16                | 16                  | 35580                    | 35596          | 198719             | 163123        | 213            |                  |
| 18           |                          | 18                | 18                  | 35580                    | 35598          | 198719             | 163121        | 213            |                  |
| 19           |                          | 18                | 18                  | 35576                    | 35594          | 198719             | 163125        | 213            |                  |
| 20           |                          | 10                | 10                  | 35580                    | 35590          | 198719             | 163129        | 213            |                  |
| 21           |                          |                   |                     | 35580                    | 35580          | 198719             | 163139        | 213            |                  |
| 22           |                          |                   |                     | 35580                    | 35580          | 198719             | 163139        | 213            |                  |
| 23           |                          |                   |                     | 35580                    | 35580          | 198719             | 163139        | 213            |                  |
| 24           |                          |                   |                     | 35580                    | 35580          | 198719             | 163139        | 213            |                  |
| 25           | 3632                     |                   | -54455              | -50823                   | 35580          | -15243             | 198719        | 213962         | 213              |
| <b>TOTAL</b> | <b>171111</b>            |                   |                     | <b>-54374</b>            | <b>116737</b>  | <b>750481</b>      | <b>867218</b> | <b>4167657</b> | <b>3300439</b>   |
|              |                          |                   |                     |                          |                |                    |               |                | <b>4454</b>      |

# **MDO/MINE OPERATOR PART**

**Project Report of Subhadra OCP (25 MTy) [West of Gopalprasad West & Utkal A Block]**  
**Statement Showing Estimated Total Capital Investment**

Cost base: August 2020

(Amount in ₹ Lakhs)

| Sl. No. | Particulars                                     | Capital requirement | Year-wise Phasing of capital requirement |                 |                   |                 |                 |                 | Y8 & beyond     |                 |
|---------|---|---------------------|--|-----------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|         |   |                     | CONSTRUCTION PERIOD                      |                 | PRODUCTION PERIOD |                 |                 |                 |                 |                 |
|         |   |                     | Y1<br>Coal (MtY)                         | Y2<br>OB (Mcum) | Y3                | Y4              | Y5              | Y6              | Y7              |                 |
| 1       | Land R&R  |                     |  |                 |                   |                 |                 |                 |                 |                 |
| 2       | Buildings                                       |                     |  |                 |                   |                 |                 |                 |                 |                 |
|         | 2.1 Service Buildings                           | 8350.93             | 3136.75                                  | 1489.55         | 587.88            |                 |                 |                 |                 |                 |
|         | 2.2 Residential Buildings                       | 18418.09            | 3700.00                                  | 3700.00         | 3700.00           | 3700.00         | 3700.00         | 3618.09         |                 |                 |
| 3       | Plant & Machinery HEMM                          | 93823.86            | 28433.89                                 | 19811.84        | 11900.47          | 11658.55        | 10786.87        |                 |                 |                 |
|         | Other than HEMM                                 | 61854.71            | 22799.15                                 | 24487.76        | 2483.12           | 2260.23         | 3247.09         |                 |                 |                 |
| 4       | Furniture & Fittings                            | 172.00              |  | 40.00           | 25.00             | 39.00           | 24.00           | 44.00           |                 |                 |
| 5       | Railway siding                                  | 28563.48            | 4009.20                                  | 9469.08         | 7527.60           | 7557.60         |                 |                 |                 |                 |
| 6       | Vehicles  | 232.39              |  | 77.69           | 37.06             | 33.83           | 25.01           | 58.80           |                 |                 |
| 7       | Prospecting & Boring                            |                     |  |                 |                   |                 |                 |                 |                 |                 |
| 8       | Development                                     |                     |  |                 |                   |                 |                 |                 |                 |                 |
|         | 8.0 Upfront payment for allotment               | 6878.43             | 1480.85                                  | 920.00          | 601.00            | 601.00          | 701.00          | 837.61          | 736.97          |                 |
|         | 8.1 Capital Outlay in Mines                     | 6467.80             | 500.00                                   | 655.58          | 1100.00           | 1100.00         | 1100.00         | 1045.72         | 996.49          |                 |
|         | 8.2 Roads and Culverts                          | 1422.59             |  |                 | 280.00            | 280.00          | 280.00          | 280.00          | 302.59          |                 |
|         | 8.3 Water supply & sewerage                     |                     |  |                 |                   |                 |                 |                 |                 |                 |
|         | 8.4 Scientific Research                         |                     |  |                 |                   |                 |                 |                 |                 |                 |
|         | 8.5 PR & other Reports Preparation Cost         |                     |  |                 |                   |                 |                 |                 |                 |                 |
| 9       | Washery   |                     |  |                 |                   |                 |                 |                 |                 |                 |
| 10      | Revenue Exp. Capitalised during Dev. Period     |                     |  |                 |                   |                 |                 |                 |                 |                 |
|         | 10.1 Interest during const. period              |                     |  |                 |                   |                 |                 |                 |                 |                 |
|         | 10.2 Less : Dep. Capitalised During Dev. period |                     |  |                 |                   |                 |                 |                 |                 |                 |
|         | <b>Total</b>                                    | <b>226134.28</b>    | <b>10038.40</b>                          | <b>15205.74</b> | <b>66043.88</b>   | <b>58188.14</b> | <b>20237.42</b> | <b>19801.12</b> | <b>19790.90</b> | <b>16873.68</b> |

**Project Report of Subhadra OCP (25 MTy) [West of Gopalprasad West & Utkal A Block]**  
**Statement Showing Estimated Total Capital Investment**

Cost base: August 2020

| Sl. No. | Particulars                                 | Capital requirement upto year 7 | Year-wise Phasing of capital requirement |                |               |               |               |                |                |                |               |               |               |               | Capital requirement upto year 25 |                  |              |              |              |
|---------|---|---------------------------------|--|----------------|---------------|---------------|---------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------------------------|------------------|--------------|--------------|--------------|
|         |   |                                 | Y8<br>25.00                              | Y9<br>25.00    | Y10<br>25.00  | Y11<br>25.00  | Y12<br>25.00  | Y13<br>25.00   | Y14<br>25.00   | Y15<br>25.00   | Y16<br>25.00  | Y17<br>25.00  | Y18<br>25.00  | Y19<br>25.00  | Y20<br>25.00                     | Y21<br>25.00     | Y22<br>25.00 | Y23<br>25.00 | Y24<br>25.00 |
| 1       | Land R&R                                    |                                 |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 2       | Buildings                                   | 8350.93                         |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 2.1     | Service Buildings                           | 18418.09                        |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 2.2     | Residential Buildings                       |                                 |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 3       | Plant & Machinery HEMM                      | 82591.62                        | 5293.75                                  | 384.40         | 338.40        | 456.75        | 1921.57       | 1647.06        | 1098.04        | 274.51         | 274.51        | 469.74        | 111.38        |               |                                  |                  |              |              |              |
|         | Other than HEMM                             | 57213.27                        | 1552.37                                  | 948.07         | 194.30        | 240.20        | 205.89        | 137.26         | 34.31          |                |               |               |               |               |                                  |                  |              |              |              |
| 4       | Furniture & Fittings                        |                                 | 172.00                                   |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 5       | Railway siding                              |                                 | 28563.48                                 |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 6       | Vehicles                                    |                                 | 232.39                                   |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 7       | Prospecting & Boring                        |                                 |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 8       | Development                                 |                                 |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 8       | Upfront payment for allotment               |                                 |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 8       | Capital Outlay in Mines                     | 5878.43                         |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 8.2     | Roads and Culverts                          | 6467.80                         |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 8.3     | Water supply & sewerage                     | 1422.59                         |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 8.4     | Scientific Research                         |                                 |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 8.5     | PR & other Reports Preparation Cost         |                                 |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 9       | Washery                                     |                                 |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 10      | Revenue Exp. Capitalised during Dev. Period |                                 |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 10.1    | Interest during const. period               |                                 |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
| 10.2    | Less : Dep. Capitalised During Dev. period  |                                 |  |                |               |               |               |                |                |                |               |               |               |               |                                  |                  |              |              |              |
|         | <b>Total</b>                                | <b>209310.60</b>                | <b>6846.12</b>                           | <b>1332.47</b> | <b>532.70</b> | <b>500.00</b> | <b>956.75</b> | <b>2161.77</b> | <b>1852.95</b> | <b>1235.30</b> | <b>308.82</b> | <b>744.25</b> | <b>111.38</b> | <b>282.87</b> | <b>8.30</b>                      | <b>226184.28</b> |              |              |              |

**Statement Showing Estimated Capital Requirement on Service Building**

Cost base: August 2020

**(I) Statement Showing Estimated Capital Requirement on Service Building For Mine Authority**

| Sl.No. | Particulars                 | Unit  | Nos. | Plinth | Total   | Rate /Sq.m in ₹ | Present rate as per CI<br>4798 | Total expenditure in ₹ lakhs |
|--------|-----------------------------|-------|------|--------|---------|-----------------|--------------------------------|------------------------------|
|        |                             |       |      | area   | pl.area |                 |                                |                              |
| 1      | <b>GM OFFICE</b>            | Sq.m. | 1    | 1000   | 1000    | 27392.00        | 29583.36                       | 295.83                       |
| 2      | Parking area                | Sq.m. | 1    | 90     | 90      | 235.00          | 11275.30                       | 10.15                        |
| 3      | First Aid Centre            | Sq.m. | 2    | 17     | 34      | 27392.00        | 29583.36                       | 10.06                        |
| 4      | Canteen                     | Sq.m. | 1    | 106    | 106     | 27392.00        | 29583.36                       | 31.36                        |
| 5      | Toilet                      | Sq.m. | 1    | 30     | 30      | 685.00          | 32866.30                       | 9.86                         |
| 6      | Boundary wall               | RM    | 1    | 160    | 160     | 112.00          | 5373.76                        | 8.60                         |
| 7      | Gate                        | Nos   | 2    |        |         | 6000.00         | 287880.00                      | 5.76                         |
| 8      | concrete pavement           | Sq.m. | 1    | 1350   | 1350    | 45.00           | 2159.10                        | 29.15                        |
| 9      | security room               | Sq.m. | 2    | 10.5   | 21      | 27392.00        | 29583.36                       | 6.21                         |
| 10     | Officer's club              | Sq.m. | 1    | 158    | 158     | 27392.00        | 29583.36                       | 46.74                        |
| .      | <b>T O T A L</b>            |       |      |        |         |                 |                                | 453.72                       |
|        | <b>CONTINGENCIES.....3%</b> |       |      |        |         |                 |                                | 13.61                        |
|        | <b>G R A N D T O T A L</b>  |       |      |        |         |                 |                                | <b>467.33</b>                |

**Statement Showing Estimated Capital Requirement on Service Building**

Cost base: August 2020

**(II) Statement Showing Estimated Capital Requirement on Service Building For Mine Operator**

| Sl.No.   | Particulars                              | Unit  | Nos. | Plinth<br>area | Total<br>pl.area | Rate /Sq.m in ₹ | Present rate<br>as per CI | Total<br>expenditure<br>in ₹ lakhs |
|----------|--|-------|------|----------------|------------------|-----------------|---------------------------|------------------------------------|
|          |  |       |      |                |                  |                 |                           | CI 100                             |
| <b>A</b> | <b>PO OFFICE</b>                         | Sq.m. | 1    | <b>461</b>     | 461              | 27392.00        | 29583.36                  | 136.38                             |
|          | <b>MANAGER'S Office</b>                  | Sq.m. | 1    | <b>282</b>     | 282              | 27392.00        | 29583.36                  | 83.43                              |
| <b>A</b> | <b>PROJECT STORE</b>                     |       |      |                |                  |                 |                           |                                    |
|          | Security Post                            | Sq.m. | 1    | 4              | 4                | 380.00          | 18232.40                  | 0.73                               |
|          | Scrap yard                               | Sq.m. | 1    | 864            | 864              | 45.00           | 2159.10                   | 18.65                              |
|          | Store Covered shed Complex               | Sq.m. | 3    | 1134           | 3402             | 550.00          | 26389.00                  | 897.75                             |
|          | Store yard.                              | Sq.m. | 1    | 576            | 576              | 45.00           | 2159.10                   | 12.44                              |
|          | POL Store                                | Sq.m. | 1    | 288            | 288              | 380.00          | 18232.40                  | 52.51                              |
|          | Cement Store                             | Sq.m. | 1    | 144            | 144              | 380.00          | 18232.40                  | 26.25                              |
|          | Store Office                             | Sq.m. | 1    | 100            | 100              | 550.00          | 26389.00                  | 26.39                              |
|          | Gate                                     | Nos.  | 1    |                |                  | 6000.00         | 287880.00                 | 2.88                               |
| <b>B</b> | <b>Workshop(HEMM) ( CI. ht.15.0 m)</b>   |       |      |                |                  |                 |                           |                                    |
| <b>a</b> | <b>Dozer Section</b>                     |       |      |                |                  |                 |                           |                                    |
|          | Washing station (Dozer)                  | Sq.m. | 1    | 120            | 120              | 125.00          | 5997.50                   | 7.20                               |
|          | Settling Tank                            | Nos.  | 1    |                |                  | 8000.00         | 383840.00                 | 3.84                               |
|          | Dozer Parking Area                       | Sq.m. | 1    | 300            | 300              |                 |                           |                                    |
|          | Dozer repairing complex                  | Sq.m. | 1    | 1260           | 1260             | 650.00          | 31187.00                  | 392.96                             |
|          | Dozer repairing complex (extra)          | Sq.m. | 1    | 252            | 252              |                 |                           |                                    |
|          | Scrap yard                               | Sq.m. | 1    | 864            | 864              | 45.00           | 2159.10                   | 18.65                              |
| <b>b</b> | <b>Dumper Section</b>                    |       |      |                |                  |                 |                           |                                    |
|          | Dumper Washing station                   | Sq.m. | 3    | 240            | 720              | 125.00          | 5997.50                   | 43.18                              |
|          | Settling Tank                            | Nos.  | 1    |                |                  | 8000.00         | 383840.00                 | 3.84                               |
|          | Pump House                               | Sq.m. | 4    | 24             | 96               | 380.00          | 18232.40                  | 17.50                              |
|          | Dumper Parking Area                      | Sq.m. | 1    | 8028           | 8028             |                 |                           |                                    |
|          | Dumper daily maintenance shop            | Sq.m. | 4    | 216            | 864              | 1100.00         | 52778.00                  | 456.00                             |
|          | Dumper repair shop                       | Sq.m. | 4    | 216            | 864              | 1100.00         | 52778.00                  | 456.00                             |
|          | Electrical repair shop                   | Sq.m. | 4    | 216            | 864              | 1100.00         | 52778.00                  | 456.00                             |
|          | Machine shop                             | Sq.m. | 2    | 216            | 432              | 1100.00         | 52778.00                  | 228.00                             |
|          | Assembly & sub assembly shop             | Sq.m. | 2    | 216            | 432              | 1100.00         | 52778.00                  | 228.00                             |
|          | Radiator shop                            | Sq.m. | 2    | 216            | 432              | 1100.00         | 52778.00                  | 228.00                             |
|          | Heavy repair shop                        | Sq.m. | 2    | 216            | 432              | 1100.00         | 52778.00                  | 228.00                             |
|          | Structural & welding shop                | Sq.m. | 2    | 216            | 432              | 1100.00         | 52778.00                  | 228.00                             |
|          | Tyre Repair Shop                         | Sq.m. | 2    | 216            | 432              | 1100.00         | 52778.00                  | 228.00                             |
|          | Dumper Repair Complex(Extra)             | Sq.m. | 1    | 5124           | 5124             |                 |                           |                                    |
|          | Boundary wall                            | RM    | 1    | 720            | 720              | 112.00          | 5373.76                   | 38.69                              |
|          | Concrete pavement                        | Sq.m. | 1    | 11379          | 11379            | 45.00           | 2159.10                   | 245.68                             |
|          | Gate                                     | Nos.  | 4    |                |                  | 6000.00         | 287880.00                 | 11.52                              |
| <b>c</b> | <b>General Section</b>                   |       |      |                |                  |                 |                           |                                    |
|          | Security Office                          | Sq.m. | 4    | 4              | 16               | 380.00          | 18232.40                  | 2.92                               |
|          | Diesel filling station                   | Nos.  | 4    | 9              | 36               | 125.00          | 5997.50                   | 2.16                               |
| <b>d</b> | <b>Field Workshop (CI. Ht. 15.0 m)</b>   |       |      |                |                  |                 |                           |                                    |
|          | Dumper daily maintenance shop            | Sq.m. | 5    | 216            | 1080             | 740.00          | 35505.20                  | 383.46                             |
|          | Dumper lubrication & inspection shop     | Sq.m. | 3    | 216            | 648              | 740.00          | 35505.20                  | 230.07                             |
| <b>C</b> | <b>Workshop(E&amp;M) ( CI. ht.9.0 m)</b> |       |      |                |                  |                 |                           |                                    |
|          | Substation                               | Sq.m. | 1    | 180            | 180              | 550.00          | 26389.00                  | 47.50                              |
|          | Security Post                            | Sq.m. | 1    | 4              | 4                | 380.00          | 18232.40                  | 0.73                               |
|          | E & M Repair Complex                     | Sq.m. | 1    | 810            | 810              | 740.00          | 35505.20                  | 287.59                             |
|          | LMV Washing station                      | Sq.m. | 1    | 48             | 48               | 125.00          | 5997.50                   | 2.88                               |
|          | Scrap yard.                              | Sq.m. | 1    | 240            | 240              | 45.00           | 2159.10                   | 5.18                               |
|          | Concrete pavement                        | Sq.m. | 1    | 4546           | 4546             | 45.00           | 2159.10                   | 98.15                              |

## Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West &amp; Utkal A Block]

**Statement Showing Estimated Capital Requirement on Service Building****Cost base: August 2020**

|                               |       |   |      |      |          |           |                |
|-------------------------------|-------|---|------|------|----------|-----------|----------------|
| Boundary wall                 | RM    | 1 | 270  | 270  | 112.00   | 5373.76   | 14.51          |
| Gate                          | Nos   | 1 |      |      | 6000.00  | 287880.00 | 2.88           |
| <b>D Common Facilities</b>    |       |   |      |      |          |           |                |
| Security room                 | Sq.m. | 2 | 10.5 | 21   | 380.00   | 18232.40  | 3.83           |
| Car Parking area              | Sq.m. | 1 | 500  | 500  | 235.00   | 11275.30  | 56.38          |
| Concrete pavement             | Sq.m. | 1 | 3250 | 3250 | 45.00    | 2159.10   | 70.17          |
| Scooter and cycle stand       | Sq.m. | 1 | 250  | 250  | 200.00   | 9596.00   | 23.99          |
| Fire fighting station         | Sq.m. | 1 | 100  | 100  | 27392.00 | 29583.36  | 29.58          |
| Hospital 6 bedded             | Sq.m. | 1 | 400  | 400  | 27392.00 | 29583.36  | 118.33         |
| Magazine 10000 lbs            | Sq.m. | 1 | 56   | 56   | 550.00   | 26389.00  | 14.78          |
| Officer's club                | Sq.m. | 1 | 158  | 158  | 27392.00 | 29583.36  | 46.74          |
| Worker's institute            | Sq.m. | 1 | 341  | 341  | 27392.00 | 29583.36  | 100.88         |
| Secondary School              | Sq.m. | 1 | 500  | 500  | 27392.00 | 29583.36  | 147.92         |
| Post office                   | Sq.m. | 1 | 56   | 56   | 27392.00 | 29583.36  | 16.57          |
| Lavatories & Urinals          | Sq.m. | 2 | 52   | 104  | 685.00   | 32866.30  | 34.18          |
| Officer's rest house          | Sq.m. | 1 | 276  | 276  | 27392.00 | 29583.36  | 81.65          |
| Staff rest house              | Sq.m. | 1 | 284  | 284  | 27392.00 | 29583.36  | 84.02          |
| Canteen 80 seater             | Sq.m. | 1 | 245  | 245  | 27392.00 | 29583.36  | 72.48          |
| Substation                    | Sq.m. | 2 |      |      | 150.00   | 300.00    |                |
| Shopping centre               | Sq.m. | 1 | 193  | 193  | 27392.00 | 29583.36  | 57.10          |
| Group Training centre         | Sq.m. | 1 | 246  | 246  | 27392.00 | 29583.36  | 72.78          |
| Rest shelter                  | Sq.m. | 4 | 39   | 156  | 27392.00 | 29583.36  | 46.15          |
| Community hall                | Sq.m. | 1 | 450  | 450  | 27392.00 | 29583.36  | 133.13         |
| CDS Control room              | Sq.m. | 1 | 134  | 134  | 27392.00 | 29583.36  | 39.64          |
| Bank building                 | Sq.m. | 1 | 200  | 200  | 27392.00 | 29583.36  | 59.17          |
| Police station                | Sq.m. | 1 | 50   | 50   | 27392.00 | 29583.36  | 14.79          |
| Staff club                    | Sq.m. | 1 | 181  | 181  | 27392.00 | 29583.36  | 53.55          |
| Bus stand                     | Sq.m. | 1 | 100  | 100  | 235.00   | 11275.30  | 11.28          |
| Parks & playground            | LS    |   |      |      |          |           | 40.00          |
| Watch tower                   | Sq.m. | 4 | 25   | 100  | 27392.00 | 29583.36  | 29.58          |
| Soil investigation & drainage | LS    |   |      |      |          |           | 20.00          |
| Boundary wall                 | RM    | 1 | 280  | 280  | 112.00   | 5373.76   | 15.05          |
| Gate                          | Nos   | 2 |      |      | 6000.00  | 287880.00 | 5.76           |
| <b>TOTAL</b>                  |       |   |      |      |          |           | 7653.98        |
| CONTINGENCIES.....3%          |       |   |      |      |          |           | 229.62         |
| <b>GRAND TOTAL</b>            |       |   |      |      |          |           | <b>7883.60</b> |

|                           |                        |
|---------------------------|------------------------|
| <b>GRAND TOTAL (I+II)</b> | <b>₹ 8,350.93 Lakh</b> |
|---------------------------|------------------------|

**Note:**

Plinth area for Stores, E &amp; M Workshop, HEMM Workshop has been taken from E &amp; M Department

Plinth area for common buildings have been taken from Civil Engineering Norms and as per existing practice

CPWD Plinth Area rate as on 01.04.2019 has been considered as base rate for common service buildings wherever applicable and updated as per Cost Index

Plinth area rate for Store, E &amp; M Workshop, HEMM Workshop and some common facilities like magazine building, parking, Lavatories &amp; Urinals etc has been taken from Civil Engineering Norms and updated as per Cost Index

**Statement Showing Estimated Capital Requirement on Residential Building**

Cost base: August 2020

**(I) Statement Showing Estimated Capital Requirement on Residential Building for Mine Authority Manpower**

| Sl.<br>No. | Cat./Scale                        | Type<br>of<br>qtrs. | No. of<br>persons | % of<br>satis-<br>faction | No. of<br>qtrs.<br>reqd. | Unit cost<br>Rs.'000s.<br>AS per<br>CPWD<br>Plinth Area<br>rate as on<br>1.04.2019 | Capital Requirement on Residential Building for Mine Authority Manpower |                        | Total cost<br>of quarters<br>₹.in Lakhs |
|------------|-----------------------------------|---------------------|-------------------|---------------------------|--------------------------|--|---|------------------------|---|
|            |                                   |                     |                   |                           |                          |  | Unit cost<br>Rs.'000s.  | Unit cost<br>Rs.'000s. |   |
| 1          | 2                                 | 3                   | 4                 | 5                         | 6                        | 7  | 8   | 9                      |   |
| 1.         | CAT I to VI,Excv-B,C,D,E, MR,G,H  | A                   | 32                | 50                        | 16                       | 2121.00  | 2290.68   |                        | 366.51                                  |
| 2          | Excv-A,SPL,MR-A1,A TO F, Clerical | B                   | 34                | 60                        | 20                       | =  | 2636.28   |                        | 421.80                                  |
| 4          | E1 TO E5                          | C                   | 37                | 100                       | 37                       | =  | 4   | 2441.00                |   |
| 5          | E6 & above                        | D                   | 4                 | 100                       | 4                        | =  | 16  | 30                     | 4352.40                                 |
| 6          | Hostel type accommodation         |                     |                   |                           | 11                       |  | 7   | 6103                   | 6591.24                                 |
|            | <b>TO TAL</b>                     |                     | <b>107</b>        | <b>72</b>                 | <b>77</b>                |  |   | 661.00                 | 713.88                                  |
|            | Design Engineering @ 3.75%        |                     |                   |                           |                          |  |   |                        | <b>2436.21</b>                          |
|            | Survey @ 0.1 %                    |                     |                   |                           |                          |  |   |                        | 91.36                                   |
|            | Levelling and Horticulture        |                     |                   |                           |                          |  |   |                        | 2.44                                    |
|            | Contingencies 3%                  |                     |                   |                           |                          |  |   |                        | 19.39                                   |
|            | <b>GRAND TOTAL</b>                |                     |                   |                           |                          |  |   |                        | 73.09                                   |
|            |                                   |                     |                   |                           |                          |  |   |                        | <b>2622.48</b>                          |

**Statement Showing Estimated Capital Requirement on Residential Building**

Cost base: August 2020

**(II) Statement Showing Estimated Capital Requirement on Residential Building**

| Sl. No. | Cat./Scale  | Type of qtrs. | No. of persons | % of satisfaction | No. of qtrs. reqd. | Unit cost Rs.'000s. AS per CPWD Plinth Area rate as on 1.04.2019 | Unit cost Rs.'000s. | Total cost of quarters ₹ in Lakhs   |
|---------|---|---------------|----------------|-------------------|--------------------|--|---------------------|---|
| 1       |   | 2             | 3              | 4                 | 5                  |  | 7                   | 8   |
| 1.      | CAT I to VI,Excv-B,C,D,E, MR-G,H  | A             | 1064           | 10                | 106                | 2121.00  | 2290.68             | 2428.12   |
| 2       | Excv-A,SP1,MR-A1,A TO F, Clerical   | B             | 895            | 40                | 358                | 2441.00  | 2636.28             | 9437.88   |
| 4       | E1 TO E8  | C             | 42             | 100               | 42                 | 4030.00  | 4352.40             | 1828.01   |
| 6       | Hostel type accommodation   |               |                |                   | 150                | 661.00   | 713.88              | 1070.82   |
|         | TOTAL   |               | 2001           | 33                | 656                |  |                     | <b>15795.61</b>   |
|         | Design Engineering @ 3.75%<br>Survey @ 0.1 %<br>Leveling and Horticulture<br>Contingencies 3% |               |                |                   |                    |  |                     | Plinth Area taken for A B C & D Type quarters are 63.00Sq.m, 73.00 Sq.m 121.00 Sq.m and 181 Sq.m respectively as approved in 383rd meeting of board of directors of CIL |

**GRAND TOTAL**

All residential Buildings and Hostel are G+3 Storied RCC frame Building with stilt parking

CPWD Plinth Area rate as on 01.04.2019 has been considered as base rate and updated as per Wholesale Price Index January 2021 (August WPI interpolated from the series from January 2019 to December 2020 as published )

Land requirement has been taken as 15 nos. of quarters per acre.3 nos. of hostel accommodation has been considered as one unit of quarter for land requirement. Cost of land has not been considered

Arrangement for Fire fighting and provision of single lift in each block has been considered  
20% of B & C type quarters have been considered for hostel type accommodation  
Design Engineering cost @ 3.75 % and Survey @0.1% has been taken  
Levelling and Horticulture cost @ Rs2.15/sq.m of total land area for colony has been considered**GRAND TOTAL (I) +(II)** **₹ 18,418.09 Lakhs**

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]  
Statement showing Total Capital Investment on Plant & Machinaries**

**Cost base: August 2020**

| Sl.<br>No. | Particulars                                | Capital<br>requirement | Year-wise Phasing of capital requirement |                |                 |                 |                 |                 | <b>Y8 &amp;<br/>BEYOND</b> |
|------------|--|------------------------|--|----------------|-----------------|-----------------|-----------------|-----------------|----------------------------|
|            |  |                        | <b>Y1</b>                                | <b>Y2</b>      | <b>Y3</b>       | <b>Y4</b>       | <b>Y5</b>       | <b>Y6</b>       |                            |
| 1          | HEMM                                       | 93823.86               |  | 28433.89       | 19811.84        | 11900.47        | 11658.55        | 10786.87        | 11232.24                   |
| 2          | <b>OTHER THAN HEMM</b><br>P & M Electrical | 6016.62                | 911.60                                   | 1325.19        | 1371.30         | 358.44          | 350.21          | 408.76          | 1291.12                    |
| 3          | Workshop & Stores                          |                        |  |                |                 |                 |                 |                 |                            |
| A.         | HEMM W/S                                   | 1038.63                |  | 786.23         |                 |                 |                 |                 |                            |
| B.         | E & M W/S                                  | 181.35                 |  | 140.89         |                 |                 |                 |                 |                            |
| C.         | Stores                                     | 157.76                 |  | 97.20          |                 |                 |                 |                 |                            |
| 4          | Pumps                                      | 1003.41                |  |                |                 | 144.23          |                 | 248.93          | 610.25                     |
| 5          | Coal Handling Plant                        | 42879.82               |  |                |                 | 18460.42        | 20703.50        | 743.18          | 743.18                     |
| 6          | P & M Others                               | 1510.66                |  |                |                 | 186.19          | 149.51          | 159.47          | 105.16                     |
| 7          | Float Engines & Assembly                   | 9066.46                |  |                |                 | 2827.35         | 1910.03         | 1077.80         | 1061.68                    |
|            | <b>Sub - Total (B )</b>                    | <b>61854.71</b>        | <b>911.60</b>                            | <b>1024.32</b> | <b>22799.15</b> | <b>24487.76</b> | <b>2483.12</b>  | <b>2260.23</b>  | <b>3247.09</b>             |
|            | <b>Total (A+B)</b>                         | <b>155678.57</b>       | <b>911.60</b>                            | <b>1024.32</b> | <b>51233.04</b> | <b>44299.60</b> | <b>14383.59</b> | <b>13918.78</b> | <b>14033.96</b>            |
|            |  |                        |  |                |                 |                 |                 |                 | <b>4641.44</b>             |
|            |  |                        |  |                |                 |                 |                 |                 | <b>15873.68</b>            |

**Project Report of Subhadra OCP (25 MTy) [West of Gopalprasad West & Utkal A Block]**  
**Statement showing Total Capital Investment on Plant & Machinaries**

Cost base: August 2020

| Sl.<br>No. | Particulars                                     | Additional capital requirement upto year 7 | Year-wise Phasing of capital requirement |                |               |               |                |                |                |               |               | Capital requirement upto year 25. |                  |
|------------|---|--|--|----------------|---------------|---------------|----------------|----------------|----------------|---------------|---------------|-----------------------------------|------------------|
|            |   |  | Y8                                       | Y9             | Y10           | Y12           | Y13            | Y14            | Y15            | Y16           | Y17           | Y18                               |                  |
| 1          | HEMM  | 82591.62                                   | 5293.75                                  | 384.40         | 338.40        |               | 1921.57        | 1647.06        | 1098.04        | 274.51        |               |                                   | 93823.86         |
| 2          | <b>OTHER THAN HEMM<br/>P &amp; M Electrical</b> | 4725.50                                    | 238.21                                   | 189.51         | 178.92        | 244.68        |                |                |                | 232.29        | 111.38        | 87.83                             | 8.30             |
| 3          | Workshop & Stores                               |  |  |                |               |               |                |                |                |               |               |                                   |                  |
|            | A. HEMM W/S                                     | 1038.63                                    |  |                |               |               |                |                |                |               |               |                                   | 1038.63          |
|            | B. E & M W/S                                    | 181.35                                     |  |                |               |               |                |                |                |               |               |                                   | 181.35           |
|            | C. Stores                                       | 157.76                                     |  |                |               |               |                |                |                |               |               |                                   | 157.76           |
| 4          | Pumps   | 393.16                                     |  |                |               | 212.07        |                |                |                |               |               |                                   | 203.14           |
| 5          | Coal Handling Plant                             | 41393.46                                   | 743.18                                   | 743.18         |               |               |                |                |                |               |               |                                   | 195.04           |
| 6          | P & M Others                                    | 1510.66                                    |  |                |               |               |                |                |                |               |               |                                   | 1003.41          |
| 7          | Float Engines & Assembly                        | 7812.75                                    | 570.98                                   | 15.38          | 15.38         |               | 240.20         | 205.89         | 137.26         | 34.31         | 34.31         |                                   | 42879.82         |
|            | <b>Sub - Total (B )</b>                         | <b>57213.27</b>                            | <b>1552.37</b>                           | <b>948.07</b>  | <b>194.30</b> | <b>456.75</b> | <b>240.20</b>  | <b>205.89</b>  | <b>137.26</b>  | <b>34.31</b>  | <b>469.74</b> | <b>111.38</b>                     | <b>282.87</b>    |
|            | <b>Total (A+B)</b>                              | <b>139804.89</b>                           | <b>6846.12</b>                           | <b>1332.47</b> | <b>532.70</b> | <b>456.75</b> | <b>2161.77</b> | <b>1852.95</b> | <b>1235.30</b> | <b>308.82</b> | <b>744.25</b> | <b>111.38</b>                     | <b>282.87</b>    |
|            |   |  |  |                |               |               |                |                |                |               |               |                                   | <b>8.30</b>      |
|            |   |  |  |                |               |               |                |                |                |               |               |                                   | <b>8.30</b>      |
|            |   |  |  |                |               |               |                |                |                |               |               |                                   | <b>155678.57</b> |

## Statement Showing Phasing of Capital Investment on HEMM | P&amp;M |

| Equipment Name  | Size/Spec.    | Total Required | Unit Price | Total Cap.       | Required Up to Yr-12 | No.     | Amount          | YEAR-3  | YEAR-4          | YEAR-5 | YEAR-6          | YEAR-7 | YEAR-8          | YEAR-9 | YEAR-10         | YEAR-11 | YEAR-12         | (Amount in Rs. Lakhs) |               |        |                 |       |
|---|---------------|----------------|------------|------------------|----------------------|---------|-----------------|---------|-----------------|--------|-----------------|--------|-----------------|--------|-----------------|---------|-----------------|-----------------------|---------------|--------|-----------------|-------|
|   |               |                |            |                  |                      |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 | Depreciation Rate%    | Amount        |        |                 |       |
| <b>A. Parting &amp; Top OB</b>  |               |                |            |                  |                      |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               |        |                 |       |
| 1 Hydraulic Shovel  | 10-11 cum     | 5              | 1834.65    | 9173.25          | 5                    | 1       | 1834.65         | 1       | 1834.65         | 1      | 1834.65         | 1      | 1834.65         | 1      | 1834.65         | 1       | 1834.65         | 1                     | 10.00         | 917.33 |                 |       |
| 2 Hydraulic Shovel  | 6-7 cum       | 6              | 3094.62    | 6                | 3                    | 1547.31 | 2               | 1031.64 | 1               | 515.77 |                 |        |                 |        |                 |         |                 |                       |               | 12.50  | 386.53          |       |
| 3 Rear Dumper   | 100 T         | 40             | 386.72     | 15468.80         | 40                   | 11      | 4253.92         | 5       | 1933.60         | 8      | 3480.48         | 7      | 2707.04         |        |                 |         |                 |                       |               | 11.11  | 1718.58         |       |
| 4 Rear Dumper*  | 60 T          | 76             | 274.51     | 20862.76         | 57                   | 32      | 8784.32         | 21      | 5764.71         | 1      | 274.51          | 3      | 823.53          |        |                 |         |                 |                       |               | 14.29  | 2981.29         |       |
| 5 Electric Drill  | 250 mm        | 9              | 438.8      | 3949.20          | 9                    | 2       | 877.60          | 2       | 438.80          | 2      | 877.60          | 1      | 438.80          | 1      | 438.80          | 1       | 438.80          | 1                     | 11.11         | 438.76 |                 |       |
| 6 Diesel Drill  | 160 mm        | 14             | 153.81     | 2163.34          | 14                   | 3       | 461.43          | 4       | 615.24          | 2      | 307.62          | 2      | 307.62          | 2      | 307.62          | 2       | 307.62          | 2                     | 11.11         | 235.24 |                 |       |
| 7 Crawler Dozer   | 850 HP        | 10             | 1067.34    | 10673.40         | 10                   | 3       | 3202.02         | 2       | 2134.68         | 1      | 1067.34         | 2      | 2134.68         | 2      | 2134.68         | 2       | 2134.68         | 2                     | 9.09          | 970.21 |                 |       |
| 8 Crawler Dozer   | 410 HP        | 6              | 272.23     | 1633.38          | 6                    | 4       | 1088.92         | 1       | 272.23          | 1      | 272.23          |        |                 |        |                 |         |                 |                       |               | 11.11  | 181.47          |       |
| <b>Sub-Total</b>  |               |                |            | <b>67008.75</b>  |                      |         | <b>2050.17</b>  |         | <b>14464.25</b> |        | <b>6709.06</b>  |        | <b>9423.03</b>  |        | <b>5804.02</b>  |         | <b>2721.29</b>  |                       | <b>307.62</b> |        | <b>7835.71</b>  |       |
| <b>B. Coal</b>  |               |                |            |                  |                      |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               |        |                 |       |
| 1 Surface Miner   | 50t Class     | 7              | 432.12     | 3024.84          | 7                    | 2       | 864.24          | 1       | 432.12          | 2      | 864.24          | 1      | 432.12          | 1      | 432.12          | 1       | 432.12          | 1                     | 11.11         | 336.06 |                 |       |
| 2 Front End Loader  | 5-7 cum       | 7              | 695.16     | 4866.12          | 7                    | 2       | 1390.32         | 1       | 695.16          | 2      | 1390.32         | 1      | 695.16          | 1      | 695.16          | 1       | 695.16          | 1                     | 11.11         | 540.63 |                 |       |
| 3 Wheel Dozer   | 450 HP        | 4              | 289.44     | 1197.76          | 4                    | 1       | 299.44          | 1       | 299.44          | 1      | 299.44          | 1      | 299.44          | 1      | 299.44          | 1       | 299.44          | 1                     | 10.00         | 119.78 |                 |       |
| 4 Rear Dumper   | 60 T          | 39             | 274.51     | 10705.89         | 39                   | 7       | 1921.57         | 9       | 2470.59         | 7      | 1921.57         |        |                 |        |                 |         |                 |                       |               | 14.29  | 1526.87         |       |
| <b>Sub-Total</b>  |               |                |            | <b>19794.61</b>  |                      |         | <b>4475.57</b>  |         | <b>3897.31</b>  |        | <b>4475.57</b>  |        | <b>1426.72</b>  |        | <b>3323.36</b>  |         | <b>21966.08</b> |                       |               |        | <b>2526.34</b>  |       |
| <b>C. Common Equipments</b>   |               |                |            |                  |                      |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               |        |                 |       |
| 1 Rough Terrain Crane   | 75 T          | 3              | 368.33     | 1104.99          | 3                    | 2       | 736.66          | 1       | 368.33          | 2      | 183.46          | 1      | 917.3           |        |                 |         |                 |                       |               |        | 8.33            | 92.05 |
| 2 Tyre Mounted Telescopic Crane   | 25 T          | 5              | 91.73      | 458.65           | 5                    | 2       | 183.46          | 2       | 183.46          | 1      | 11.76           | 1      | 11.76           | 1      | 11.76           | 1       | 11.76           | 1                     | 11.11         | 50.96  |                 |       |
| 3 Pick-n-Carry Crane  | 10 T          | 4              | 11.76      | 47.04            | 4                    | 1       | 11.76           | 1       | 11.76           | 1      | 11.76           |        |                 |        |                 |         |                 |                       |               | 11.11  | 5.23            |       |
| 4 Fork Lift Truck   | 5 T           | 4              | 14.7       | 58.80            | 4                    | 2       | 29.40           | 2       | 29.40           |        |                 |        |                 |        |                 |         |                 |                       |               | 6.67   | 3.92            |       |
| 5 Water Sprinkler   | 28 KL         | 15             | 139.31     | 2089.65          | 15                   | 3       | 278.62          | 3       | 417.93          | 3      | 417.93          | 3      | 417.93          | 3      | 417.93          | 3       | 417.93          | 3                     | 10.00         | 208.97 |                 |       |
| 6 Diesel Hyd. Backhoe   | 1.5 cum       | 2              | 94.61      | 168.22           | 2                    | 1       | 94.61           | 1       | 94.61           | 1      | 46.00           | 1      | 46.00           | 1      | 46.00           | 1       | 46.00           | 1                     | 14.29         | 27.04  |                 |       |
| 7 Truck Mounted Mobile Canon/Atomizer   | 4             | 46.00          | 184.00     | 4                | 1                    | 46.00   | 1               | 46.00   | 1               | 46.00  |                 |        |                 |        |                 |         |                 |                       |               | 11.11  | 20.44           |       |
| 8 Tyre Handler for upto 100T  | 2             | 137.99         | 275.98     | 2                | 1                    | 137.99  | 1               | 137.99  | 1               | 30.78  | 1               | 30.78  | 1               | 30.78  | 1               | 30.78   | 1               | 30.78                 | 1             | 11.11  | 30.66           |       |
| 9 Vibratory Compactor   | 10t           | 4              | 30.78      | 123.12           | 4                    | 1       | 231.07          | 1       | 231.07          | 1      | 231.07          | 1      | 231.07          | 1      | 231.07          | 1       | 231.07          | 1                     | 11.11         | 13.68  |                 |       |
| 10 Motor Grader   | 280 HP        | 4              | 231.07     | 924.28           | 4                    | 1       | 231.07          | 1       | 231.07          |        |                 |        |                 |        |                 |         |                 |                       |               | 11.11  | 102.69          |       |
| 11 Maintenance Van  | 150 HP        | 2              | 14.25      | 28.50            | 2                    | 1       | 14.25           |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               | 11.11  | 3.17            |       |
| 12 Fire Tender  | 14 KL         | 2              | 73.99      | 147.98           | 2                    | 1       | 73.99           |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               | 11.11  | 16.44           |       |
| 13 Fuel Bowser  | 20 KL         | 4              | 39.56      | 156.24           | 4                    | 1       | 39.56           | 1       | 39.56           | 1      | 39.56           | 1      | 39.56           | 1      | 39.56           | 1       | 39.56           | 1                     | 11.11         | 17.58  |                 |       |
| <b>Sub-Total</b>  |               |                |            | <b>5790.45</b>   |                      |         | <b>1908.15</b>  |         | <b>1450.28</b>  |        | <b>7153.84</b>  |        | <b>469.25</b>   |        | <b>768.99</b>   |         | <b>370.38</b>   |                       | <b>307.78</b> |        | <b>592.83</b>   |       |
| <b>C. Land Reclamation</b>  |               |                |            |                  |                      |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               |        |                 |       |
| 1 Track Dozer   | 4.10 HP       | 2              | 272.23     | 544.46           | 2                    |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               | 11.11  | 60.49           |       |
| 2 Tipping Truck   | 9-10 Te       | 2              | 37.22      | 74.44            | 2                    |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               | 16.67  | 12.41           |       |
| 3 Tree Transplanter   | For 300mm dia | 1              | 550.95     | 550.95           | 1                    |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               | 11.11  | 61.21           |       |
| 4 Water Tanker  | 9-10KL        | 2              | 30.1       | 60.20            | 2                    |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               | 11.11  | 6.69            |       |
| <b>Sub-Total</b>  |               |                |            |                  |                      |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               | 140.80 |                 |       |
| <b>Total of A., B., C. &amp; D.</b>   |               |                |            | <b>93823.86</b>  |                      |         | <b>28433.89</b> |         | <b>19811.84</b> |        | <b>19000.47</b> |        | <b>1658.25</b>  |        | <b>10786.87</b> |         | <b>5293.75</b>  |                       | <b>338.40</b> |        | <b>11093.68</b> |       |
| Float Engines & Assembly  |               |                |            | <b>9066.46</b>   |                      |         | <b>2827.35</b>  |         | <b>1910.03</b>  |        | <b>1061.68</b>  |        | <b>935.89</b>   |        | <b>570.98</b>   |         | <b>15.38</b>    |                       |               |        | <b>1100.99</b>  |       |
| All Total   |               |                |            | <b>102890.32</b> |                      |         | <b>31261.24</b> |         | <b>21721.87</b> |        | <b>12720.23</b> |        | <b>11722.76</b> |        | <b>5864.73</b>  |         | <b>353.78</b>   |                       |               |        | <b>12194.67</b> |       |
| * Initial OB load and lead distance are high and require more dumpers. In later years, requirement reduces in OB and increases in coal due to higher lead. 26 dumpers G0T size will shift from OB to Coal in phased manner. |               |                |            |                  |                      |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               |        |                 |       |
| <b>A. Parting &amp; Top OB</b>  |               |                |            |                  |                      |         |                 |         |                 |        |                 |        |                 |        |                 |         |                 |                       |               |        |                 |       |
| 1 Rear Dumper   | 60 T          | 19             | 274.51     | 5215.69          | 19                   | 7       | 1921.57         | 6       | 1647.06         | 4      | 1098.04         | 1      | 274.51          |        |                 |         |                 |                       |               | 14.29  | 74.32           |       |
| Float Engines & Assembly  |               |                |            | <b>651.96</b>    |                      |         | <b>240.20</b>   |         | <b>205.88</b>   |        | <b>137.26</b>   |        | <b>34.31</b>    |        | <b>308.82</b>   |         | <b>308.82</b>   |                       |               |        | <b>93.77</b>    |       |
| All Total   |               |                |            | <b>5867.65</b>   |                      |         |                 |         | <b>1852.94</b>  |        | <b>1235.30</b>  |        |                 |        |                 |         |                 |                       |               |        | <b>83.49</b>    |       |

**STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT IN ELECTRICAL P&M OF 33 KV OVERHEAD TRANSMISSION LINE**

Cost base: August 2020

| SL NO.   | ITEM DESCRIPTION  | TOTAL PROVISION |           |           |               | QTY. REQ. | TOTAL COST    | QTY. REQ. | TOTAL COST    | QTY. REQ. | TOTAL COST  |
|--|---|-----------------|-----------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|-------------|
|  |   | UNIT            | QTY. REQ. | UNIT COST | TOTAL COST    |           |               |           |               |           |             |
| 1  | 1      2  | 3               | 4         | 5         | 6             | 7         | 8             | 9         | 10            | 11        | 12          |
| 1  | <b>3x7.5 MVA, 33/6.6 KV PROJECT SUB-STATION :</b>   |                 |           |           |               |           |               |           |               |           |             |
| <b>A    33 KV OUTDOOR SWITCHYARD AND INDOOR CONTROL ROOM EQUIPMENT</b> |   |                 |           |           |               |           |               |           |               |           |             |
| 1  | 33 KV Double Circuit OHTL through tower from 120 MVA, 132/33 KV Central substation through Panther AAA Conductor                | -               | LS        | -         | 304.89        | LS        | 152.44        | LS        | 152.44        | 0.00      | 0.00        |
| A.1  | <b>TOTAL OF PROJECT SUBSTATION ELECTRICAL P&amp;M WITHOUT GST</b>   |                 |           |           | 304.89        |           | 152.44        |           | 152.44        |           | 0.00        |
| A.2  | Erection and commissioning  |                 |           |           | 30.49         |           | 15.24         |           | 15.24         |           | 0.00        |
| A.3  | Design & Engg.  |                 |           |           | 16.77         |           | 8.38          |           | 8.38          |           | 0.00        |
| A.4  | Overhead construction cost  |                 |           |           | 52.82         |           | 26.41         |           | 26.41         |           | 0.00        |
| A.5  | Insurance   |                 |           |           | 2.52          |           | 1.26          |           | 1.26          |           | 0.00        |
| A.6  | Contingencies   |                 |           |           | 12.15         |           | 6.07          |           | 6.07          |           | 0.00        |
| A.7  | Store cost for maintenance of P&M electrical equipment installed in substation during defect liability period                   |                 |           |           | 24.39         |           | 12.20         |           | 12.20         |           | 0.00        |
| A.8  | Manpower cost for operation and maintenance of P&M electrical equipment installed in substation during defect liability period. |                 |           |           | 0.00          |           | 0.00          |           | 0.00          |           | 0.00        |
| A.9  | Training of operation staff   |                 |           |           | 0.15          |           | 0.00          |           | 0.15          |           | 0.00        |
| <b>A.10</b>  | <b>Total of A.1 to A.9</b>  |                 |           |           | <b>444.18</b> |           | <b>222.01</b> |           | <b>222.16</b> |           | <b>0.00</b> |
| <b>A.11</b>  | <b>GST</b>  |                 |           |           | <b>79.95</b>  |           | <b>39.96</b>  |           | <b>39.99</b>  |           | <b>0.00</b> |
| <b>A.12</b>  | <b>Total Of A.1 to A.11</b>   |                 |           |           | <b>524.13</b> |           | <b>261.97</b> |           | <b>262.15</b> |           | <b>0.00</b> |

Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT IN ELECTRICAL P&M  
3x7.5 MVA, 33/6.6 KV PROJECT SUBSTATION**

(Amount in ₹ Lakhs)

Cost base: August 2020

| SL NO | ITEM DESCRIPTION  | UNIT | TOTAL PROVISION |              |               | Y1           |               | Y3           |               | Y4           |               |
|-------|---|------|-----------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
|       |   |      | QTY.<br>REQ.    | UNIT<br>COST | TOTAL<br>COST | QTY.<br>REQ. | TOTAL<br>COST | QTY.<br>REQ. | TOTAL<br>COST | QTY.<br>REQ. | TOTAL<br>COST |
| 1     | 2   | 3    | 4               | 5            | 6             | 7            | 8             | 9            | 10            | 11           | 12            |
| I     | <b>3x7.5 MVA, 33/6.6 KV PROJECT SUB-STATION</b>   |      |                 |              |               |              |               |              |               |              |               |
| A     | 33 KV OUTDOOR SWITCHYARD AND INDOOR CONTROL ROOM EQUIPMENT  |      |                 |              |               |              |               |              |               |              |               |
| 1     | 4/ 2 Pole terminal structure for receiving 33 kV power supply   | SET  | 2               | 2.12         | 4.24          | 1            | 2.12          | 1            | 2.12          |              |               |
| 2     | 30 kV Lightning arrestor  | SET  | 7               | 0.14         | 0.98          | 2            | 0.28          | 3            | 0.42          | 2.00         | 0.28          |
| 3     | 33 kV, 1250 A Isolator with earthing switch   | SET  | 2               | 1.35         | 2.70          | 1            | 1.35          | 1            | 1.35          |              |               |
| 4     | 33 kV, 1250 A Isolator  | SET  | 12              | 0.92         | 11.04         | 4            | 3.68          | 4            | 3.68          | 4.00         | 3.68          |
| 5     | 33 kV, 1250 A, Isolator with earth switch & DO fuse   | SET  | 5               | 1.16         | 5.80          | 2            | 2.32          | 1            | 1.16          | 2.00         | 2.32          |
| 6     | 33 kV, 400-200/1-1-1 A outdoor type current transformer   | SET  | 7               | 0.95         | 6.65          | 2            | 1.90          | 3            | 2.85          | 2.00         | 1.90          |
| 7     | 33 kV/110V outdoor type potential transformer   | SET  | 3               | 0.64         | 1.92          | 1            | 0.64          | 1            | 0.64          | 1.00         | 0.64          |
| 8     | 33 kV, 750 MVA, 1250A outdoor VCB with remote control panel   | SET  | 7               | 7.06         | 49.42         | 2            | 14.12         | 3            | 21.18         | 2.00         | 14.12         |
| 9     | 7.5 MVA, 33/6.6 KV outdoor type Power Transformer   | NO.  | 3               | 33.95        | 101.85        | 1            | 33.95         | 1            | 33.95         | 1.00         | 33.95         |
| 10    | 6.6 kV, 50A, 76 ohm Neutral grounding resistor  | NO.  | 3               | 4.24         | 12.71         | 1            | 4.24          | 1            | 4.24          | 1.00         | 4.24          |
| 11    | 160 kVA, 33/0.415 kV outdoor type Station Transformer   | NO.  | 1               | 1.95         | 1.95          | 1            | 1.95          |              |               |              |               |
| 12    | 63 kVA, 33/0.230 KV (L-L) outdoor type lighting Transformer   | NO.  | 1               | 1.75         | 1.75          | 1            | 1.75          |              |               |              |               |
| 13    | 6.6 kV, 2400 kVAR outdoor type capacitor bank with automatic power factor control (APFC)  | SET  | 3               | 62.01        | 186.03        | 1            | 62.01         | 1            | 62.01         | 1.00         | 62.01         |
| 14    | 6.6 kV lightning arrestors  | SET  | 20              | 0.09         | 1.80          | 7            | 0.63          | 7            | 0.63          | 6.00         | 0.54          |
| 15    | 6.6 kV, 2000 A outdoor type off-load isolators with earthing switch   | NO.  | 3               | 0.66         | 1.98          | 1            | 0.66          | 1            | 0.66          | 1.00         | 0.66          |
| 16    | 6.6 kV, 2000 A outdoor type off-load isolators  | NO.  | 7               | 0.55         | 3.85          | 2            | 1.10          | 2            | 1.10          | 3.00         | 1.65          |
| 17    | 6.6 kV, 1250 A outdoor type off-load isolators  | SET  | 30              | 0.51         | 15.30         | 10           | 5.10          | 10           | 5.10          | 10.00        | 5.10          |
| 18    | 6.6 kV, 750 MVA, 2000 A outdoor type Vacuum circuit breakers with remote control panel  | NO.  | 5               | 4.65         | 23.25         | 1            | 4.65          | 2            | 9.30          | 2.00         | 9.30          |
| 19    | 6.6 kV, 750 MVA, 1250 A outdoor type Vacuum circuit breakers with remote control panel  | NO.  | 15              | 3.87         | 58.05         | 5            | 19.35         | 5            | 19.35         | 5.00         | 19.35         |
| 20    | 6.6 kV, 800/1 A outdoor type current transformers   | NO.  | 5               | 0.36         | 1.80          | 1            | 0.36          | 2            | 0.72          | 2.00         | 0.72          |
| 21    | 6.6 kV, 400/1 A outdoor type current transformers   | NO.  | 15              | 0.29         | 4.35          | 5            | 1.45          | 5            | 1.45          | 5.00         | 1.45          |
| 22    | Automatic Firefighting equipment for substation including nitrogen injection system for transformers and other portable fire extinguishers, sand buckets etc. | -    | LS              | -            | 50.85         | LS           | 16.95         | LS           | 16.95         | LS           | 16.95         |

Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT IN ELECTRICAL P&M  
3x7.5 MVA, 33/6.6 KV PROJECT SUBSTATION

(Amount in ₹ Lakhs)

Cost base: August 2020

| SL NO | ITEM DESCRIPTION  | UNIT | TOTAL PROVISION |           |            | Y1        |            | Y3        |            | Y4        |            |
|-------|---|------|-----------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
|       |   |      | QTY. REQ.       | UNIT COST | TOTAL COST | QTY. REQ. | TOTAL COST | QTY. REQ. | TOTAL COST | QTY. REQ. | TOTAL COST |
| 1     | 2   | 3    | 4               | 5         | 6          | 7         | 8          | 9         | 10         | 11        | 12         |
| 23    | Illumination system consisting of LED flood/street/surface mounted light fittings, lighting masts, cables, SLDBs etc for outdoor switchyard & substation building including emergency lighting arrangement and etc for substation | -    | LS              | -         | 38.14      | LS        | 12.71      | LS        | 12.71      | LS        | 12.71      |
| 24    | Earthing system and Lightning protection system for substation  | -    | LS              | -         | 46.61      | LS        | 15.54      | LS        | 15.54      | LS        | 15.54      |
| 25    | Battery & battery charging sets, DCDB and etc.  | -    | LS              | -         | 5.93       | LS        | 1.98       | LS        | 1.98       | LS        | 1.98       |
| 26    | 415V indoor type ACDB for station transformer   | -    | LS              | -         | 4.24       | LS        | 1.41       | LS        | 1.41       | LS        | 1.41       |
| 27    | 230 V (L-L) indoor type MLDB for lighting transformers  | -    | LS              | -         | 3.39       | LS        | 1.13       | LS        | 1.13       | LS        | 1.13       |
| 28    | Multi-core Control Cable of various sizes.  | -    | LS              | -         | 6.78       | LS        | 2.26       | LS        | 2.26       | LS        | 2.26       |
| 29    | 33 kV & 6.6 kV Bus bar arrangement.   | -    | LS              | -         | 12.71      | LS        | 4.24       | LS        | 4.24       | LS        | 4.24       |
| 30    | Miscellaneous Items including Measuring & Testing Equipment for substation, Tools and Tackles etc..   | -    | LS              | -         | 16.95      | LS        | 5.65       | LS        | 5.65       | LS        | 5.65       |
| A.1   | TOTAL OF PROJECT SUBSTATION ELECTRICAL P&M WITHOUT GST  |      |                 |           | 683.01     |           | 225.47     |           | 233.77     |           | 223.77     |
| A.2   | Erection and commissioning  |      |                 |           | 68.30      |           | 22.55      |           | 23.38      |           | 22.38      |
| A.3   | Design & Engg.  |      |                 |           | 37.57      |           | 12.40      |           | 12.86      |           | 12.31      |
| A.4   | Overhead construction cost  |      |                 |           | 118.33     |           | 39.06      |           | 40.50      |           | 38.77      |
| A.5   | Insurance   |      |                 |           | 5.63       |           | 1.86       |           | 1.93       |           | 1.85       |
| A.6   | Contingencies   |      |                 |           | 27.22      |           | 8.98       |           | 9.32       |           | 8.92       |
| A.7   | Store cost for maintenance of P&M electrical equipment installed in substation during defect liability period   |      |                 |           | 54.64      |           | 18.04      |           | 18.70      |           | 17.90      |
| A.8   | Manpower cost for operation and maintenance of P&M electrical equipment installed in substation during defect liability period.   |      |                 |           | 160.10     |           |            |           | 160.10     |           |            |
| A.9   | Training of operation staff   |      |                 |           | 0.34       |           |            |           | 0.34       |           |            |
| A.10  | Total of A.1 to A.9   |      |                 |           | 1155.14    |           | 328.36     |           | 500.89     |           | 325.89     |
| A.11  | GST   |      |                 |           | 207.93     |           | 59.11      |           | 90.16      |           | 58.66      |
| A.12  | Total OF A.1 to A.11  |      |                 |           | 1363.07    |           | 387.47     |           | 591.05     |           | 384.55     |

**STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT IN ELECTRICAL P&M**  
**2x6.3 MVA, 33/6.6 KV CHP SUBSTATION**

Cost base: August 2020

(Amount in ₹ Lakhs)

| SL NO | ITEM DESCRIPTION  | UNIT | TOTAL PROVISION |           |            | Y3        |            | Y4        |            |
|-------|---|------|-----------------|-----------|------------|-----------|------------|-----------|------------|
|       |   |      | QTY. REQ.       | UNIT COST | TOTAL COST | QTY. REQ. | TOTAL COST | QTY. REQ. | TOTAL COST |
| 1     | 2   | 3    | 4               | 5         | 6          | 7         | 8          | 9         | 10         |
| II    | <b>2x6.3 MVA, 33/6.6 KV CHP SUB-STATION:</b>  |      |                 |           |            |           |            |           |            |
| B     | <b>33 KV OUTDOOR SWITCHYARD AND INDOOR CONTROL ROOM EQUIPMENT</b>   |      |                 |           |            |           |            |           |            |
| 1     | 4/ 2 Pole terminal structure for receiving 33 kV power supply   | SET  | 2               | 2.12      | 4.24       | 1         | 2.12       | 1         | 2.12       |
| 2     | 33 kV DC OHTL through tower from proposed 3x6.3 MVA, 33/6.6 KV project substation at Subhadra OCP through WOLF AAA Conductor                                  | -    | LS              | -         | 35.26      | LS        | 17.63      | LS        | 17.63      |
| 3     | 30 kV Lightning arrestor  | SET  | 6               | 0.14      | 0.84       | 3         | 0.42       | 3         | 0.42       |
| 4     | 33 kV, 1250 A Isolator with earthing switch   | SET  | 2               | 2.14      | 4.28       | 1         | 2.14       | 1         | 2.14       |
| 5     | 33 kV, 1250 A Isolator  | SET  | 8               | 1.72      | 13.76      | 4         | 6.88       | 4         | 6.88       |
| 6     | 33 kV, 1250 A, Isolator with earth switch & DO fuse   | SET  | 4               | 1.94      | 7.76       | 2         | 3.88       | 2         | 3.88       |
| 7     | 33 kV, 400-200/1-1-1 A outdoor type current transformer   | SET  | 5               | 0.89      | 4.45       | 2         | 1.78       | 3         | 2.67       |
| 8     | 33 kV/110V outdoor type potential transformer   | SET  | 2               | 0.82      | 1.64       | 1         | 0.82       | 1         | 0.82       |
| 9     | 33 kV, 750 MVA, 1250A outdoor VCB with remote control panel   | SET  | 5               | 5.20      | 26.00      | 2         | 10.40      | 3         | 15.60      |
| 10    | 6.3 MVA, 33/6.6 kV outdoor type Power Transformer   | NO.  | 2               | 34.48     | 68.96      | 1         | 34.48      | 1         | 34.48      |
| 11    | 6.6 kV, 50A, 38 ohm Neutral grounding resistor  | NO.  | 2               | 4.24      | 8.47       | 1         | 4.24       | 1         | 4.24       |
| 12    | 160 kVA, 33/0.415 kV outdoor type Station Transformer   | NO.  | 1               | 1.95      | 1.95       |           |            | 1         | 1.95       |
| 13    | 63 kVA, 33/0.230 kV (L-L) outdoor type lighting Transformer   | NO.  | 1               | 1.75      | 1.75       |           |            | 1         | 1.75       |
| 14    | 6.6 kV, 2000 kVAR outdoor type capacitor bank with automatic control panel  | SET  | 2               | 51.68     | 103.36     | 1         | 51.68      | 1         | 51.68      |
| 15    | 6.6 kV lightning arrestors  | SET  | 12              | 0.09      | 1.08       | 6         | 0.54       | 6         | 0.54       |
| 16    | 6.6 kV, 2000 A outdoor type off-load isolators with earthing switch   | NO.  | 2               | 0.66      | 1.32       | 1         | 0.66       | 1         | 0.66       |
| 17    | 6.6 kV, 2000 A outdoor type off-load isolators  | NO.  | 4               | 0.55      | 2.20       | 2         | 1.10       | 2         | 1.10       |
| 18    | 6.6 kV, 1250 A outdoor type off-load isolators  | SET  | 16              | 0.51      | 8.16       | 8         | 4.08       | 8         | 4.08       |
| 19    | 6.6 kV, 750 MVA, 2000 A outdoor type Vacuum circuit breakers with remote control panel  | NO.  | 3               | 4.65      | 13.95      | 2         | 9.30       | 1         | 4.65       |
| 20    | 6.6 kV, 750 MVA, 1250 A outdoor type Vacuum circuit breakers with remote control panel  | NO.  | 8               | 3.87      | 30.96      | 4         | 15.48      | 4         | 15.48      |
| 21    | 6.6 kV, 800/1 A outdoor type current transformers   | NO.  | 3               | 0.36      | 1.08       | 2         | 0.72       | 1         | 0.36       |
| 22    | 6.6 kV, 400/1 A outdoor type current transformers   | NO.  | 8               | 0.29      | 2.32       | 4         | 1.16       | 4         | 1.16       |
| 23    | Automatic Firefighting equipment for substation including nitrogen injection system for transformers and other portable fire extinguishers, sand buckets etc. | -    | LS              | -         | 42.37      | LS        | 21.19      | LS        | 21.19      |

**STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT IN ELECTRICAL P&M**  
**2x6.3 MVA, 33/6.6 KV CHP SUBSTATION**

Cost base: August 2020

(Amount in ₹ Lakhs)

| SL NO       | ITEM DESCRIPTION  | UNIT | TOTAL PROVISION |           |               | Y3        |               | Y4        |               |
|-------------|---|------|-----------------|-----------|---------------|-----------|---------------|-----------|---------------|
|             |   |      | QTY. REQ.       | UNIT COST | TOTAL COST    | QTY. REQ. | TOTAL COST    | QTY. REQ. | TOTAL COST    |
| 1           | 2   | 3    | 4               | 5         | 6             | 7         | 8             | 9         | 10            |
| 24          | Illumination system consisting of LED flood/street/surface mounted light fittings, lighting masts, cables, SLDBs etc for outdoor switchyard & substation building including emergency lighting arrangement and etc for substation | -    | LS              | -         | 29.66         | LS        | 14.83         | LS        | 14.83         |
| 25          | Earthing system and Lightning protection system for substation  | -    | LS              | -         | 38.14         | LS        | 19.07         | LS        | 19.07         |
| 26          | Battery & battery charging sets, DCDB and etc.  | -    | LS              | -         | 5.08          | LS        | 2.54          | LS        | 2.54          |
| 27          | 415V indoor type ACDB for station transformer   | -    | LS              | -         | 3.39          | LS        |               | LS        | 3.39          |
| 28          | 230 V (L-L) indoor type MLDB for lighting transformers  | -    | LS              | -         | 2.54          | LS        |               | LS        | 2.54          |
| 29          | Multi-core Control Cable of various sizes.  | -    | LS              | -         | 5.08          | LS        | 2.54          | LS        | 2.54          |
| 30          | 33 kV & 6.6 kV Bus bar arrangement.   | -    | LS              | -         | 8.47          | LS        | 4.24          | LS        | 4.24          |
| 31          | Miscellaneous Items including Measuring & Testing Equipment for substation, Tools and Tackles etc..   | -    | LS              | -         | 12.71         | LS        | 6.36          | LS        | 6.36          |
| <b>B.1</b>  | <b>TOTAL OF CHP SUBSTATION ELECTRICAL P&amp;M WITHOUT GST</b>   |      |                 |           | <b>491.25</b> |           | <b>240.27</b> |           | <b>250.98</b> |
| <b>B.2</b>  | Erection and commissioning  |      |                 |           | <b>49.13</b>  |           | <b>24.03</b>  |           | <b>25.10</b>  |
| <b>B.3</b>  | Design & Engg.  |      |                 |           | <b>27.02</b>  |           | <b>13.21</b>  |           | <b>13.80</b>  |
| <b>B.4</b>  | Overhead construction cost  |      |                 |           | <b>85.11</b>  |           | <b>41.63</b>  |           | <b>43.48</b>  |
| <b>B.5</b>  | Insurance   |      |                 |           | <b>4.05</b>   |           | <b>1.98</b>   |           | <b>2.07</b>   |
| <b>B.6</b>  | Contingencies   |      |                 |           | <b>19.58</b>  |           | <b>9.57</b>   |           | <b>10.00</b>  |
| <b>B.7</b>  | Store cost for maintenance of P&M electrical equipment installed in substation during defect liability period   |      |                 |           | <b>39.30</b>  |           | <b>19.22</b>  |           | <b>20.08</b>  |
| <b>B.8</b>  | Manpower cost for operation and maintenance of P&M electrical equipment installed in substation during defect liability period  |      |                 |           | <b>128.08</b> |           |               |           | <b>128.08</b> |
| <b>B.9</b>  | Training of operation staff   |      |                 |           | <b>0.25</b>   |           |               |           | <b>0.25</b>   |
| <b>B.10</b> | <b>Total of B.1 to B.9</b>  |      |                 |           | <b>843.76</b> |           | <b>349.92</b> |           | <b>493.84</b> |
| <b>B.11</b> | <b>GST</b>  |      |                 |           | <b>151.88</b> |           | <b>62.98</b>  |           | <b>88.89</b>  |
| <b>B.12</b> | <b>Total including GST (B.1 to B.11)</b>  |      |                 |           | <b>995.64</b> |           | <b>412.90</b> |           | <b>582.73</b> |

**STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT IN ELECTRICAL P&M****FOR MINE ELECTRICALS**

| SL NO | ITEM DESCRIPTION  | UNIT  | TOTAL PROVISION |           |           | Y1    | Y2    | Y3     | Y4    | Y5     | Y6    | Y7     | Y8    | Y9    | Y10   | Y11   | Y12   | Y13   | Y14   | Y15   | Y16   | Y17   | Y18   | Y19   | Y20   | Y21   | Y22  | Y23   |      |       |    |      |   |  |  |
|-------|---|-------|-----------------|-----------|-----------|-------|-------|--------|-------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|----|------|---|--|--|
|       |   |       | TOTAL QTY.      | UNIT COST | QTY. REQ. |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 1     | 2   | 3     | 4               | 5         | 6         | 11    | 12    | 13     | 14    | 15     | 16    | 17     | 18    | 19    | 20    | 21    | 22    | 23    | 24    | 25    | 26    | 27    | 28    | 29    | 30    | 31    | 32   | 33    | 34   | 35    | 36 |      |   |  |  |
| C     | <b>MINE ELECTRICALS</b>   |       |                 |           |           |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| C.1   | <b>QUARRY POWER DISTRIBUTION</b>  |       |                 |           |           |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 6     | 6.6 KV overhead line  | -     | LS              | -         | 127.12    | LS    | LS    | 10.17  | LS    | 15.25  | LS    | 20.34  | LS    | 10.17 | LS   | 10.17 | LS   | 10.17 | LS |      |   |  |  |
| 2     | 6.6 KV isolator   | SET   | 71              | 0.30      | 21.30     |       | 6     | 1.80   | 5     | 1.50   | 8     | 2.40   | 7     | 2.10  | 12    | 3.60  | 6     | 1.80  | 7     | 2.10  | 4     | 1.20  | 5     | 1.50  | 6     | 1.80  | 5    | 1.50  | 6    | 1.80  | 5  |      |   |  |  |
| 3     | 6.0 KV lightning arrester   | SET   | 125             | 0.09      | 11.25     |       | 10    | 0.90   | 10    | 0.90   | 15    | 1.35   | 15    | 1.35  | 20    | 1.80  | 10    | 0.90  | 10    | 0.90  | 10    | 0.90  | 10    | 0.90  | 10    | 0.90  | 5    | 0.90  | 5    | 0.90  | 5  |      |   |  |  |
| 4     | 6.6 KV Field Switch   | NO.   | 16              | 2.76      | 44.16     |       | 3     | 8.28   | 4     | 11.04  | 3     | 8.28   | 3     | 8.28  | 3     | 8.28  | 3     | 5.52  | 1     | 2.76  |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 5     | 6.6 KV/Cable termination kit outdoor type   | NO.   | 40              | 0.08      | 3.20      |       | 5     | 0.40   | 5     | 0.40   | 4     | 0.32   | 4     | 0.32  | 3     | 0.24  | 3     | 0.24  | 3     | 0.24  | 3     | 0.24  | 3     | 0.24  | 3     | 0.24  | 2    | 0.16  | 2    | 0.16  | 2  |      |   |  |  |
| 6     | 6.6 KV Panel comprising of 3 Nos. VCB for HT pumps  | PANEL | 3               | 10.65     | 31.95     |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 7     | 6.6 KV Panel comprising of 4 Nos. VCB for HT pumps  | PANEL | 5               | 13.92     | 69.60     |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 8     | 6.6 KV Panel comprising of 5 Nos. VCB for HT pumps  | PANEL | 3               | 17.19     | 51.57     |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 9     | 100 kVA, 6.6/0.415 kV unิตised substation with 6.6 KV VCB on HT side & 415V ACB on LT side for feeding power to 415V LT face pumps  | LOT   | 2               | 6.90      | 13.80     |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 10    | 6.6 KV/Cable termination kit outdoor type   | PANEL | 2               | 6.60      | 13.20     |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 11    | 6.6 KV grade, PVC/DWVA Mining type, copper conductor cable of various sizes   | LS    | -               | 175.34    | LS        | LS    | 12.15 | LS     | 26.77 | LS     | 23.43 | LS     | 26.12 | LS    | 16.13 | LS    | 23.82 | LS    | 8.76  | LS    | 4.38  | LS    | 12.15 | LS    | 6.08  | LS    | 3.38 | LS    | 3.38 | LS    |    |      |   |  |  |
| 12    | 6.6 KV grade, copper conductor HEMM trailing cable  | LS    | -               | 107.93    | LS        | LS    | LS    | LS     | LS    | LS     | 20.24 | LS     | 26.98 | LS    | 20.24 | LS    | 20.24 | LS    | 13.49 | LS    | 6.74  | LS    | LS    | LS    |       |       |      |       |      |       |    |      |   |  |  |
| 13    | 1.1 KV overhead transmission line   | -     | LS              | -         | 105.93    | LS    | LS    | 8.47   | LS    | 10.59  | LS    | 10.17  | LS    | 16.53 | LS    | 13.56 | LS    | 8.47  | LS    | 8.05  | LS    | 9.75  | LS    | 6.78  | LS    | 5.93  | LS   | 5.08  | LS   | 2.54  | LS |      |   |  |  |
| 14    | 1.1 KV grade, PVC/DWVA Mining type copper conductor power cable of various sizes  | LS    | -               | 166.20    | LS        | LS    | 15.25 | LS     | 16.95 | LS     | 21.19 | LS     | 20.34 | LS    | 15.72 | LS    | 13.71 | LS    | 12.00 | LS    | 12.00 | LS    | 11.83 | LS    | 11.00 | LS    | 9.21 | LS    | 7.00 | LS    |    |      |   |  |  |
| 15    | Contingencies for C.1 @ 3%  |       | 27.95           |           | 1.55      | 2.02  |       | 3.91   |       | 3.60   |       | 4.44   |       | 2.63  |       | 1.84  |       | 1.44  |       | 2.04  |       | 1.99  |       | 0.95  |       | 1.54  |      |       |      |       |    |      |   |  |  |
| 16    | Total of C.1  |       | 959.76          |           | 53.16     | 69.30 |       | 134.39 |       | 123.63 |       | 152.64 |       | 90.34 |       | 63.07 |       | 49.58 |       | 70.19 |       | 68.25 |       | 32.55 |       | 52.76 |      |       |      |       |    |      |   |  |  |
| C.2   | <b>ILLUMINATION SYSTEM</b>  |       |                 |           |           |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 1     | 250 kVA, 6.6/0.230 kV Lighting transformer  | NO.   | 21              | 0.48      | 10.08     |       | 3     | 1.44   | 2     | 0.96   | 2     | 1.44   | 2     | 0.96  | 2     | 0.96  | 2     | 0.96  | 2     | 0.96  | 2     | 0.96  | 2     | 0.96  | 1     | 0.48  | 1    | 0.48  | 1    | 0.48  | 1  |      |   |  |  |
| 2     | 10 kVA, 6.6/0.230 kV Lighting transformer   | NO.   | 16              | 0.39      | 6.24      |       | 1     | 0.39   | 2     | 0.78   | 1     | 0.39   | 3     | 1.17  | 1     | 0.39  | 1     | 0.39  | 2     | 0.78  | 1     | 0.39  | 2     | 0.78  | 1     | 0.39  | 1    | 0.39  | 1    | 0.39  | 1  |      |   |  |  |
| 3     | 250 kVA, 6.6/0.230 kV Lighting transformer  | NO.   | 2               | 2.04      | 4.08      |       | 1     | 2.04   |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 4     | 100 kVA, 6.6/0.230 kV Lighting transformer  | NO.   | 2               | 1.34      | 2.68      |       | 1     | 1.34   |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 5     | illumination system consisting of 18/23 W surface down lighter for office illumination and 200/180/150/100/70 W LED flood/street light fittings and cables in the work places of quarry (heavy machinery), drilling operations, loading & unloading locations, haul roads, rail haulage work, roadways, permanent paths etc. of mine. | -     | LS              | -         | 235.38    | LS    | LS    | 14.21  | LS    | 18.64  | LS    | 18.40  | LS    | 19.85 | LS    | 29.49 | LS    | 22.37 | LS    | 12.71 | LS    | 16.95 | LS    | 31.10 | LS    | 25.42 | LS   | 13.98 | LS   | 6.78  | LS |      |   |  |  |
| 6     | 20 m ground mounted high mast lighting tower with control panel including 8 nos. of 300 W LED flood light fittings for quarry lighting  | No.   | 12              | 4.92      | 59.02     |       | 2     | 9.84   | 2     | 9.84   | 1     | 4.92   | 1     | 4.92  | 1     | 4.92  | 1     | 4.92  | 1     | 4.92  | 1     | 4.92  | 1     | 4.92  | 1     | 4.92  | 1    | 4.92  | 1    | 4.92  | 1  | 4.92 | 1 |  |  |
| 7     | 18 m self supporting trolley mounted, steel wheel telescopic tilting tower cum search light including 8 nos. of 300 W LED flood light fittings for quarry lighting and spoil dump   | No.   | 16              | 9.22      | 147.58    |       | 2     | 18.45  | 2     | 18.45  | 1     | 9.22   | 1     | 9.22  | 2     | 18.45 | 1     | 9.22  | 2     | 18.45 | 3     | 27.67 | 1     | 9.22  | 1     | 9.22  | 1    | 9.22  | 1    | 9.22  | 1  | 9.22 | 1 |  |  |
| 8     | Portable infrared light & generator set with tower height 4 m to 5 m and generator motor 1.2 kVA, tank capacity 5 litres, 220V, 400 W light brightness 40000 lumen, engine 4 stroke with inbuilt trolley & telescopic support for quarry lighting   | No.   | 12              | 2.14      | 25.70     |       | 2     | 4.28   | 2     | 4.28   | 1     | 2.14   | 2     | 2.14  | 1     | 2.14  | 1     | 2.14  | 1     | 2.14  | 1     | 2.14  | 1     | 2.14  | 1     | 2.14  | 1    | 2.14  | 1    | 2.14  | 1  | 2.14 | 1 |  |  |
| 9     | Contingencies for C.2 @ 3%  |       | 14.72           |           | 1.50      | 1.65  |       | 1.08   |       | 1.19   |       | 1.71   |       | 1.20  |       | 1.11  |       | 1.59  |       | 1.46  |       | 1.22  |       | 0.57  |       | 0.23  |      |       |      |       |    |      |   |  |  |
| 10    | Total of C.2  |       | 505.49          |           | 51.44     | 56.64 |       | 37.12  |       | 40.90  |       | 58.84  |       | 41.21 |       | 38.19 |       | 54.62 |       | 50.11 |       | 42.05 |       | 19.47 |       | 7.01  |      |       |      |       |    |      |   |  |  |
| C.3   | <b>MISCELLANEOUS ITEMS</b>  |       |                 |           |           |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |    |      |   |  |  |
| 1     | Colony Electrification  | -     | LS              | -         | 296.61    | LS    | LS    | 21.19  | LS    | 42.37  | LS    | 42.37  | LS    | 16.95 | LS    | 16.95 | LS    | 12.71 | LS    | 12.71 | LS    | 8.47  | LS    |       |       |       |      |       |      |       |    |      |   |  |  |
| 2     | electrification including feeder pillars, cables and water supply pumps etc.  | -     | LS              | -         | 99.33     | LS    | LS    | 39.73  | LS    | 59.60  | LS    | LS     | LS    | LS    | LS    | LS    | LS    | LS    | LS    | LS    | LS    | LS    | LS    | LS    | LS    | LS    | LS   | LS    | LS   | LS    | LS | LS   |   |  |  |

FOR MINE ELECTRICALS

**STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT IN ELECTRICAL P&M**  
**SUMMARY OF ESTIMATED CAPITAL EXPENDITURE ON ELECTRICAL P&M**

**Cost base: August 2020**

| S.No. | ITEM DESCRIPTION                              | TOTAL   | Y1     | Y3      | Y4      | Y5     | Y6     | Y7     | Y8     |
|-------|---|---------|--------|---------|---------|--------|--------|--------|--------|
| A     | 33 KV OH POWERLINE                            | 444.18  | 444.18 |         |         |        |        |        |        |
| B     | 3 x 7.5 MVA, 33/6.6 KV PROJECT SUBSTATION     | 1155.14 | 328.36 | 500.89  | 325.89  |        |        |        |        |
| C     | 2 x 6.3 MVA, 33/6.6 KV CHP SUBSTATION         | 843.76  |        | 349.92  | 493.84  |        |        |        |        |
| D     | MINE ELECTRICALS                              | 2655.75 |        | 272.23  | 342.39  | 303.76 | 296.79 | 346.41 | 201.87 |
| E     | TOTAL CAPITAL OF ELECTRICAL P&M EXCLUDING GST | 5098.83 | 772.54 | 1123.04 | 1162.12 | 303.76 | 296.79 | 346.41 | 201.87 |
| F     | TOTAL GST                                     | 917.79  | 139.06 | 202.15  | 209.18  | 54.68  | 53.42  | 62.35  | 36.34  |
| G     | TOTAL CAPITAL OF ELECTRICAL P&M INCLUDING GST | 6016.62 | 911.60 | 1325.19 | 1371.30 | 358.44 | 350.21 | 408.76 | 238.21 |

| S.No. | ITEM DESCRIPTION                              | Y9     | Y10    | Y12    | Y17    | Y19    | Y22   | Y23   | Y25  |
|-------|---|--------|--------|--------|--------|--------|-------|-------|------|
| A     | 33 KV OH POWERLINE                            |        |        |        |        |        |       |       |      |
| B     | 3 x 7.5 MVA, 33/6.6 KV PROJECT SUBSTATION     |        |        |        |        |        |       |       |      |
| C     | 2 x 6.3 MVA, 33/6.6 KV CHP SUBSTATION         |        |        |        |        |        |       |       |      |
| D     | MINE ELECTRICALS                              |        |        |        |        |        |       |       |      |
| E     | TOTAL CAPITAL OF ELECTRICAL P&M EXCLUDING GST | 160.60 | 151.63 | 207.36 | 196.86 | 94.39  | 74.43 | 74.43 | 7.03 |
| F     | TOTAL GST                                     | 28.91  | 27.29  | 37.32  | 35.43  | 16.99  | 13.40 | 1.27  |      |
| G     | TOTAL CAPITAL OF ELECTRICAL P&M INCLUDING GST | 189.51 | 178.92 | 244.68 | 232.29 | 111.38 | 87.83 | 8.30  |      |

## Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West &amp; Utkal A Block]

## Statement showing the estimated capital expenditure on Plant and Machinery for HEMM W/S

Cost base: August 2020

(Amount in ₹ Lakhs)

| Sl. No.                         | PARTICULARS   | REQUIREMENT |           | PHASING IN YEARS |               |              |
|---------------------------------|---|-------------|-----------|------------------|---------------|--------------|
|                                 |   | QTY./No     | UNIT COST | AMOUNT           | Y2            | Yr 4         |
| <b>A. Machine Shop</b>          |   |             |           |                  |               |              |
| 1                               | Heavy duty centre lathe ,CH 450 mm, DBC 4000 mm with accessories like CI face plate , 3 jaw chuck , steady rest , coolant equipment , taper turning attachments etc . | 1           | 25.70     | 25.70            | 25.70         |              |
| 2                               | High speed precision lathe, CH-220mm, DBC-1500mm,   | 2           | 4.15      | 8.30             | 4.15          | 4.15         |
| 3                               | Light duty centre lathe,CH 200mm , DBC 1600mm .7.5 kW   | 3           | 5.27      | 15.81            | 10.54         | 5.27         |
| 4                               | Radial drilling machine, radial capacity in steel 50/60mm, drilling radius 2350mm, drilling depth 325mm   | 2           | 16.00     | 32.00            | 16.00         | 16.00        |
| 5                               | Exhaust fan   | 2           | 0.09      | 0.18             | 0.09          | 0.09         |
| 6                               | Column drilling machine, capacity in steel 40mm, drilling depth 325mm   | 1           | 10.50     | 10.50            | 10.50         |              |
| 7                               | Tool & cutter grinder, 1 kW   | 4           | 0.72      | 2.88             | 1.44          | 1.44         |
| 8                               | Double ended Pedestal grinder 250mm, power- 1.00 kw   | 3           | 0.41      | 1.23             | 0.82          | 0.41         |
| 9                               | Angle grinder 25mm, 0.55 kW   | 2           | 0.61      | 1.22             | 0.61          | 0.61         |
| 10                              | Shaping machine,stroke length-630 mm,horizontal travel-650-710mm, vertical travel-350- 370mm,power- 2.25kw  | 2           | 2.59      | 5.18             | 2.59          | 2.59         |
| 11                              | Slotting machine,stroke length - 400 mm power - 5.5kw   | 2           | 6.64      | 13.28            | 13.28         |              |
| 12                              | Portable hydraulic jack,cap-10/20te   | 1           | 0.28      | 0.28             | 0.28          |              |
| 13                              | Standard tools, guages and instruments  | LS          |           | 5.83             | 4.30          | 1.53         |
| 14                              | Benches,port racks tables hand centre etc.  | LS          |           | 12.24            | 9.03          | 3.21         |
| 15                              | Misc items.   |             |           | 6.12             | 4.52          | 1.60         |
| <b>SUB TOTAL A</b>              |   |             |           | <b>140.75</b>    | <b>103.85</b> | <b>36.90</b> |
| <b>B Electrical Repair Shop</b> |   |             |           |                  |               |              |
| 1                               | Automatic battery charging set with control device 72 volts   | 2           | 0.55      | 1.10             | 0.55          | 0.55         |
| 2                               | Test bench for self starter dyanamo Pt No DRTB of M/S LUCAS   | 2           | 1.02      | 2.04             | 2.04          |              |
| 3                               | Soldering iron 1500 watts   | 3           | 0.05      | 0.15             | 0.10          | 0.05         |
| 4                               | Set of electric measuring instruments   | LS          |           | 5.50             | 2.75          | 2.75         |
| 5                               | Transformer oil dielectric strength kit with glass test cell .  | 2           | 0.50      | 1.00             | 1.00          |              |
| 6                               | Eletrical testing equiment (megger ,guages & other tools and tackles )  | LS          |           | 1.96             | 1.96          |              |
| 7                               | H.V. testing kit  | 1           | 0.38      | 0.38             | 0.38          |              |
| 8                               | Cable fault detector  | 3           | 5.26      | 15.78            | 10.52         | 5.260526     |
| 9                               | Hadraulic Jack - 5/10te   | 2           | 0.17      | 0.34             | 0.34          |              |
| 10                              | Distilled water plant cap 15 ltrs / hr.   | 2           | 0.31      | 0.62             | 0.62          |              |
| 11                              | Unit for testing AC electric motors voltage- 3.3kV/6.6 kV   | 1           | 0.94      | 0.94             | 0.94          |              |
| 12                              | Cable vulcaniser  | 2           | 0.56      | 1.12             | 0.56          | 0.56         |

## Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West &amp; Utkal A Block]

## Statement showing the estimated capital expenditure on Plant and Machinery for HEMM W/S

Cost base: August 2020

(Amount in ₹ Lakhs)

| Sl. No.            | PARTICULARS  | REQUIREMENT |           | PHASING IN YEARS |              |              |
|--------------------|--|-------------|-----------|------------------|--------------|--------------|
|                    |  | QTY./No     | UNIT COST | AMOUNT           | Y2           | Yr 4         |
| 13                 | Portable motor and relay test. equip .   | 3           | 0.32      | 0.96             | 0.96         |              |
| 14                 | Apparatus for testing electric insulator ,circuit , 220 V , testing voltage 1100V      | 2           | 0.68      | 1.36             | 0.68         | 0.68         |
| 15                 | Bench,racks,tables cabinets, trolleys, tools and tackles etc.                          | LS          |           | 3.32             | 2.34         | 0.99         |
| <b>SUB TOTAL B</b> |  |             |           | <b>36.57</b>     | <b>25.74</b> | <b>10.84</b> |
| <b>C</b>           | <b>Structural &amp; Welding Shop</b>   |             |           |                  |              |              |
| 1                  | Transformer welding set, thyristor control DC , 300/400 A cap.                         | 2           | 3.74      | 7.48             | 7.48         |              |
| 2                  | Pillar drilling machine, capacity in steel-25mm,2.5 kW                                 | 2           | 1.44      | 2.88             | 1.44         | 1.44         |
| 3                  | Transformer welding set 600 A , 42 V , 36 kVA , oil cooled type                        | 4           | 0.76      | 3.04             | 1.52         | 1.52         |
| 4                  | Oxy-acetylene gas cutting and welding set  | 6           | 0.29      | 1.74             | 0.87         | 0.87         |
| 5                  | Double ended Pedestal grinder 250mm, power- 1.00 kw                                    | 2           | 0.37      | 0.74             | 0.37         | 0.37         |
| 6                  | Hand drill 25mm 0.55 kW.   | 2           | 0.61      | 1.22             | 0.61         | 0.61         |
| 7                  | Bench drill 13mm , 0.55 kW   | 2           | 0.26      | 0.52             | 0.52         |              |
| 8                  | Flexible shaft grinder,100mm , 0.55 kW   | 2           | 0.32      | 0.64             | 0.64         |              |
| 9                  | Hand grinder 100 mm, 0.55 kW   | 2           | 0.31      | 0.62             | 0.31         | 0.31         |
| 10                 | Angle grinder 150mm, 0.55 kW   | 2           | 0.30      | 0.60             | 0.30         | 0.30         |
| 11                 | Air blower   | 2           | 0.13      | 0.26             | 0.26         |              |
| 12                 | Mechanical jacks - 5/10te  | 2           | 0.19      | 0.38             | 0.19         | 0.19         |
| 13                 | Misc. tools & tackles, trolleys, fixtures etc.   | LS          |           | 3.02             | 2.18         | 0.84         |
| <b>SUB TOTAL C</b> |  |             |           | <b>23.14</b>     | <b>16.69</b> | <b>6.45</b>  |
| <b>D</b>           | <b>Dumper Inspection &amp; Lubrication Shed</b>  |             |           |                  |              |              |
| 1                  | Centralised pressurised lubrication system with compressor , pump etc .                | 3           | 9.24      | 27.72            | 18.48        | 9.24         |
| 2                  | Articulated mobile tanks with telescopic funnel for collection of waste oil .          | 3           | 0.87      | 2.61             | 0.87         | 1.74         |
| <b>SUB TOTAL D</b> |  |             |           | <b>30.33</b>     | <b>19.35</b> | <b>10.98</b> |
| <b>E</b>           | <b>Dumper Daily Maintenance , Schedule</b>   |             |           |                  |              |              |
| 1                  | Diagnostic tool set  | 6           | 1.76      | 10.56            | 5.28         | 5.28         |
| 2                  | Master tools kit for Dumper maintenance  | 6           | 3.14      | 18.84            | 9.42         | 9.42         |
| <b>SUB TOTAL E</b> |  |             |           | <b>29.40</b>     | <b>14.70</b> | <b>14.70</b> |
| <b>F</b>           | <b>Dumper Repair Shop</b>  |             |           |                  |              |              |
| 1                  | Hand drill 13mm 0.55 kW.   | 3           | 0.26      | 0.78             | 0.52         | 0.26         |
| 2                  | Nitrogen charging kit  | 3           | 0.37      | 1.11             | 0.74         | 0.37         |
| 3                  | Flexible shaft grinder,100mm , 0.55 kW   | 1           | 0.26      | 0.26             | 0.26         |              |
| 4                  | Vertical drilling m/c single spindle , max. dia of drilling 25mm , 1.5 kW              | 1           | 3.65      | 3.65             | 3.65         |              |
| 5                  | Pneumatic impact wrench set, drive size 1 sq. inch .., torque range 1180 - 1800 ft-lb. | 2           | 3.42      | 6.84             | 3.42         | 3.42         |
| 6                  | Hydraulic torque wrenches set.   | 1           | 22.72     | 22.72            | 22.72        |              |

## Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West &amp; Utkal A Block]

## Statement showing the estimated capital expenditure on Plant and Machinery for HEMM W/S

Cost base: August 2020

(Amount in ₹ Lakhs)

| Sl. No.            | PARTICULARS   | REQUIREMENT |           | PHASING IN YEARS |               |              |
|--------------------|---|-------------|-----------|------------------|---------------|--------------|
|                    |   | QTY./No     | UNIT COST | AMOUNT           | Y2            | Yr 4         |
| 7                  | Hydraulic tyre dismounting, mounting /bead breaking machine suitable for tyre size upto 85te dumper           | 2           | 6.36      | 12.72            | 12.72         |              |
| 8                  | Oxy-acetylene gas cutting and welding set   | 3           | 0.36      | 1.08             | 0.72          | 0.36         |
| 9                  | EOT crane 10/2 t ,span 30m ,lift 7m , double girder   | 2           | 45.15     | 90.30            | 45.15         | 45.15        |
| 10                 | EOT crane 45/5 t ,span 22m ,lift 12m , double girder  | 1           | 88.48     | 88.48            | 88.48         |              |
| 11                 | Wall type tyre inflator   | 2           | 0.12      | 0.24             | 0.12          | 0.12         |
| 12                 | High pressure greasing equipment .  | 1           | 0.71      | 0.71             | 0.71          |              |
| 13                 | Hydraulic jack puller arrangement cap- 50te   | 1           | 4.87      | 4.87             | 4.87          |              |
| 14                 | Miscellaneous items   | LS          |           | 11.69            | 9.20          | 2.48         |
| <b>SUB TOTAL F</b> |   |             |           | <b>245.45</b>    | <b>193.28</b> | <b>52.16</b> |
| <b>G</b>           | <b>Heavy Repair Shop</b>  |             |           |                  |               |              |
| 1                  | Radial drilling machine, drilling cap. In steel 50mm ,in cast iron 60mm ,drilling depth 325mm                 | 1           | 16.00     | 16.00            | 16.00         |              |
| 2                  | Assembly press Max. force 50 te, power-9 kw   | 2           | 2.25      | 4.50             | 2.25          | 2.25         |
| 3                  | Bearing puller kit 50 Te  | 2           | 0.40      | 0.80             | 0.40          | 0.40         |
| 4                  | Bearing heater  | 1           | 0.32      | 0.32             | 0.32          |              |
| 5                  | Bath for heating bearing prior to force fitting   | 1           | 0.18      | 0.18             | 0.18          |              |
| 6                  | Angle grinder 150mm, 0.55 kW  | 2           | 0.30      | 0.60             | 0.30          | 0.30         |
| 7                  | Flexible shaft grinder,100mm , 0.55 kW  | 2           | 0.32      | 0.64             | 0.32          | 0.32         |
| 8                  | Hand grinder 100 mm, 0.55 kW  | 2           | 0.20      | 0.40             | 0.20          | 0.20         |
| 9                  | Hand drill 13mm 0.55 kW.  | 2           | 0.11      | 0.22             | 0.11          | 0.11         |
| 10                 | Hydraulic jack cap- 50te  | 2           | 4.87      | 9.74             | 4.87          | 4.87         |
| 11                 | Rectifier welding set,440v current 60- 400amps,power- 20 kW   | 1           | 0.79      | 0.79             | 0.79          |              |
| 12                 | Oxy-acetylene gas cutting and brazing set   | 2           | 0.30      | 0.60             | 0.30          | 0.30         |
| 13                 | Master tool kit for engine repair   | 2           | 3.23      | 6.46             | 3.23          | 3.23         |
| 14                 | Heavy duty impact socket 25mm square drive with wrench , drive size 1 sqin , torque range 1180 - 1800 ft lb . | 2           | 2.65      | 5.30             | 2.65          | 2.65         |
| 15                 | Stand,work bench,part-racks;trolleys etc.   | LS          |           | 2.53             | 1.33          | 1.20         |
| <b>SUB TOTAL G</b> |   |             |           | <b>49.08</b>     | <b>33.25</b>  | <b>15.83</b> |
| <b>H</b>           | <b>Dozer repair shop</b>  |             |           |                  |               |              |
| 1                  | Heavy duty impact socket 25mm square drive with wrench , drive size 1 sqin , torque range 1180 - 1800 ft lb . | 2           | 2.57      | 5.14             | 2.57          | 2.57         |
| 2                  | Bench drill 25mm , 0.55 kW  | 2           | 0.37      | 0.74             | 0.37          | 0.37         |
| 3                  | Flexible shaft grinder,100mm , 0.55 kW  | 2           | 0.26      | 0.52             | 0.26          | 0.26         |
| 4                  | Hand grinder 100 mm, 0.55 kW  | 2           | 0.31      | 0.62             | 0.31          | 0.31         |
| 5                  | Hand drill 13mm 0.55 kW.  | 1           | 0.09      | 0.09             | 0.09          |              |
| 6                  | Oxy-acetylene gas cutting and welding set   | 2           | 0.28      | 0.56             | 0.28          | 0.28         |
| 7                  | Arc welding transformer with accessories three ph. 415 V , 21.5 kVA oil cooled                                | 1           | 0.84      | 0.84             | 0.84          |              |
| 8                  | Hydraulic jack,cap-50 te single acting  | 2           | 1.94      | 3.88             | 1.94          | 1.94         |
| 9                  | High pressure greasing equipment .  | 2           | 4.10      | 8.20             | 4.10          | 4.10         |
| 10                 | Master tools kit for Dozer repair   | 2           | 1.99      | 3.98             | 1.99          | 1.99         |

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## Statement showing the estimated capital expenditure on Plant and Machinery for HEMM W/S

Cost base: August 2020

(Amount in ₹ Lakhs)

| Sl. No. | PARTICULARS  | REQUIREMENT |           | PHASING IN YEARS |              |              |
|---------|--|-------------|-----------|------------------|--------------|--------------|
|         |  | QTY./No     | UNIT COST | AMOUNT           | Y2           | Yr 4         |
| 11      | Work bench,rack,tools & tackles , Benches , racks hand grinder etc.                                  | LS          |           | 1.23             | 0.64         | 0.59         |
|         | <b>SUB TOTAL H</b>   |             |           | <b>25.80</b>     | <b>13.39</b> | <b>12.41</b> |
| I       | <b>Assembly &amp; Sub-Assembly Including Engine ( minor ) repair Shop</b>                            |             |           |                  |              |              |
| 1       | Electrical steam jenny ellectrically heated with heater, power - 8kw / degreasing m/c                | 1           | 1.50      | 1.50             | 1.50         |              |
| 2       | Bearing puller kit 50 Te   | 1           | 0.32      | 0.32             | 0.32         |              |
| 3       | Oxy-acetylene gas cutting and brazing set  | 1           | 0.22      | 0.22             | 0.22         |              |
| 4       | Stand for checking pneumatic equipment pressure,cap-70 kg/cm2  | 1           | 1.03      | 1.03             | 1.03         |              |
| 5       | Stand for assembling and adjustment of transport clutches  | 2           | 1.45      | 2.90             | 1.45         | 1.45         |
| 6       | Hydraulic puller kit   | 1           | 0.45      | 0.45             | 0.45         |              |
| 7       | Nozzle scoop   | 2           | 0.11      | 0.22             | 0.11         | 0.11         |
| 8       | Hand drill 25mm 0.55 kW.   | 1           | 0.31      | 0.31             | 0.31         |              |
| 9       | Testing instrument for Engine repair shop  | 2           | 0.81      | 1.62             | 0.81         | 0.81         |
| 10      | Stand for dismantling and assembling suspension cylinders, dia-5000 x 800 x1130 mm,                  | 2           | 0.45      | 0.90             | 0.45         | 0.45         |
| 11      | Mechanical jacks - 10te  | 2           | 0.16      | 0.32             | 0.16         | 0.16         |
| 12      | Misc tools & tackles , racks etc .   | LS          |           | 0.95             | 0.67         | 0.28         |
|         | <b>SUB TOTAL I</b>   |             |           | <b>10.74</b>     | <b>7.48</b>  | <b>3.26</b>  |
| J       | <b>Washing Station</b>   |             |           |                  |              |              |
| 1       | High pressure multijet washing unit for dumpers and dozers including pumps and other accessories.    | 7           | 12.42     | 86.94            | 49.68        | 37.26        |
|         | <b>SUB TOTAL J</b>   |             |           | <b>86.94</b>     | <b>49.68</b> | <b>37.26</b> |
| K       | <b>Centralised Compressor House</b>  |             |           |                  |              |              |
| 1       | Air compressor 8.92 cum/mt . FAD working pressure 7kg/cm2,power - 55kw with NFLP electricals         | 2           | 1.20      | 2.40             | 1.20         | 1.20         |
| 2       | Miscellaneous items like compressed air pipelines to different shops.                                | LS          |           | 0.48             | 0.24         | 0.24         |
|         | <b>SUB TOTAL K</b>   |             |           | <b>2.88</b>      | <b>1.44</b>  | <b>1.44</b>  |
| L       | <b>Tyre Repairing Shop</b>   |             |           |                  |              |              |
| 1       | Wall type tyre inflator  | 4           | 0.10      | 0.40             | 0.20         | 0.20         |
| 2       | Hydraulic tyre dismounting, mounting /bead breaking machine suitable for tyre size upto 100te dumper | 2           | 4.46      | 8.92             | 4.46         | 4.46         |
| 3       | Hydraulic tyre dismounting, mounting /bead breaking machine suitable for tyre size upto 190te dumper | 1           | 10.10     | 10.10            | 10.10        |              |
| 4       | Misc.items for tyre repair shop  | LS          |           | 0.97             | 0.74         | 0.23         |
|         | <b>SUB TOTAL L</b>   |             |           | <b>20.39</b>     | <b>15.50</b> | <b>4.89</b>  |
| M       | <b>Radiator Repair shop</b>  |             |           |                  |              |              |
| 1       | Gas torch for brazing of radiators   | 2           | 0.40      | 0.80             | 0.40         | 0.40         |
| 2       | Stand for repair and testing of radiators ,water tub cap. 250 Its. for single working power 6.2 kW   | 2           | 0.69      | 1.38             | 0.69         | 0.69         |

## Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West &amp; Utkal A Block]

## Statement showing the estimated capital expenditure on Plant and Machinery for HEMM W/S

Cost base: August 2020

(Amount in ₹ Lakhs)

| Sl. No.  | PARTICULARS   | REQUIREMENT |           | PHASING IN YEARS |               |               |
|----------|---|-------------|-----------|------------------|---------------|---------------|
|          |   | QTY./No     | UNIT COST | AMOUNT           | Y2            | Yr 4          |
| 3        | Fastening device for radiators                                    | 2           | 0.40      | 0.80             | 0.40          | 0.40          |
|          | <b>SUB TOTAL M</b>  |             |           | <b>2.98</b>      | <b>1.49</b>   | <b>1.49</b>   |
| <b>N</b> | <b>Material Handling Equipment &amp; Common Equipment</b>         |             |           |                  |               |               |
| 1        | EOT crane 20/5 t ,span 18m ,lift 10m , double girder Power 32 kW. | 1           | 50.09     | 50.09            | 50.09         |               |
| 2        | EOT crane 10/5 t ,span 18m ,lift 6m , single girder Power 22 kW.  | 1           | 31.20     | 31.20            | 31.20         |               |
| 3        | Chain pulley block/hoist etc,capacity 10t , 3m lift               | 1           | 0.37      | 0.37             | 0.37          |               |
| 4        | Truck mounted mobile articulated crane 8 te cap                   | 1           | 16.87     | 16.87            | 16.87         |               |
| 5        | Air conditioning & ventilation equipment.                         | 1           | 20.00     | 20.00            | 20.00         |               |
| 6        | Electronic siren,range-5kms                                       | 1           | 0.04      | 0.04             | 0.04          |               |
| 7        | Fire fighting equipment   | 1           | 20.00     | 20.00            | 20.00         |               |
| 8        | Fueling station   | 1           | 7.95      | 7.95             | 7.95          |               |
| 9        | Time clock & card punching machine                                | 1           | 0.06      | 0.06             | 0.06          |               |
| 10       | Weighing machine , cap. 10 te                                     | 1           | 0.61      | 0.61             | 0.61          |               |
| 11       | Misc items.   | LS          |           | 2.94             | 2.94          |               |
|          | <b>SUB TOTAL N</b>  |             |           | <b>150.15</b>    | <b>150.15</b> |               |
| <b>O</b> | <b>Condition Monitoring Equipment</b>                             |             |           |                  |               |               |
|          | Tools for BEML machine  | 1           | 1.11      | 1.11             | 1.11          |               |
|          | Tools for CAT machine   | 1           | 0.17      | 0.17             | 0.17          |               |
|          | Tools for CUMMINS machine   | 1           | 0.09      | 0.09             | 0.09          |               |
|          | Misc Tools  | 1           | 2.41      | 2.41             | 2.41          |               |
|          | <b>SUB TOTAL O</b>  |             |           | <b>3.77</b>      | <b>3.77</b>   |               |
|          | <b>TOTAL</b>  |             |           | 858.37           | 649.77        | 208.61        |
| <b>P</b> | <b>Electrical cost</b>  |             |           | 85.84            | 64.98         | 20.86         |
| <b>Q</b> | <b>Erection &amp; Commisioning</b>                                |             |           | 94.42            | 71.48         | 22.95         |
| <b>R</b> | <b>GRAND TOTAL</b>  |             |           | <b>1038.63</b>   | <b>786.23</b> | <b>252.40</b> |
|          | <b>TOTAL WITHOUT GST</b>  |             |           | <b>880.20</b>    | <b>666.30</b> | <b>213.90</b> |

Cost base: August 2020

(Amount in ₹ Lakh)

| SI No              | PARTICULARS  | REQUIREMENT |           |              | PHASING IN YEARS |              |
|--------------------|--|-------------|-----------|--------------|------------------|--------------|
|                    |  | QTY./No     | UNIT COST | AMOUNT       | Y2               | Y4           |
| <b>A</b>           | <b>Machine Shop</b>  |             |           |              |                  |              |
| 1                  | Light duty centre lathe,CH 200mm , DBC 1600mm . 7.5 kW   | 1           | 5.27      | 5.27         | 5.27             |              |
| 2                  | High speed precision lathe, CH-220mm, DBC-1500 with all accessories  | 1           | 4.15      | 4.15         | 4.15             |              |
| 3                  | Shaping machine,stroke length-630 mm,horizontal travel-650-710mm, vertical travel-350- 370mm,power- 2.25kw | 2           | 2.59      | 5.18         | 2.59             | 2.59         |
| 4                  | Slotting machine,stroke length - 400 mm power - 5.5kw  | 2           | 6.57      | 13.14        | 6.57             | 6.57         |
| 5                  | Tool & cutter grinder, 1 kW  | 4           | 0.62      | 2.48         | 1.24             | 1.24         |
| 6                  | Column drilling machine, capacity in steel 40mm, drilling depth 325mm                                      | 1           | 10.50     | 10.50        | 10.50            |              |
| 7                  | Double ended Pedestal grinder 150mm, power-1.00 kw   | 2           | 0.30      | 0.60         | 0.30             | 0.30         |
| 8                  | Misc. items , benches, racks etc.  | LS          |           | 2.07         | 1.53             | 0.54         |
| <b>SUB TOTAL A</b> |  |             |           | <b>43.39</b> | <b>32.15</b>     | <b>11.24</b> |
| <b>B</b>           | <b>Mechanical repair shop (For pump and CHP equipment)</b>   |             |           |              |                  |              |
| 1                  | Double ended Pedestal grinder 250mm, power-1.00 kw   | 2           | 0.43      | 0.86         | 0.43             | 0.43         |
| 2                  | Portable hand drill  | 2           | 0.20      | 0.40         | 0.20             | 0.20         |
| 3                  | Bench drill 25mm , 0.55 kW   | 2           | 0.61      | 1.22         | 0.61             | 0.61         |
| 4                  | EOT crane 5 t ,span 18m ,lift 6m ,floor operated   | 1           | 24.21     | 24.21        | 24.21            |              |
| 5                  | Chain pulley block/hoist etc,capacity 5t , 10m lift  | 4           | 0.33      | 1.32         | 0.66             | 0.66         |
| 6                  | Hydraulic press for dismantling and assembling , cap- 50te ,1015x405 travel 205mm 9kW .                    | 1           | 1.55      | 1.55         | 1.55             |              |
| 7                  | Oxy-acetylene gas cutting and welding set  | 4           | 0.27      | 1.10         | 0.55             | 0.55         |
| 8                  | Master tool kit for gear box and drive units   | 4           | 0.74      | 2.96         | 1.48             | 1.48         |
| 9                  | Hydraulic jack,cap- 50te   | 2           | 4.87      | 9.74         | 4.87             | 4.87         |
| 10                 | Surface plate, work stand benches, racks, parts trolleys, hand carts, .                                    |             |           | 2.00         | 2.00             |              |
| <b>SUB TOTAL B</b> |  |             |           | <b>45.36</b> | <b>36.56</b>     | <b>8.80</b>  |
| <b>C</b>           | <b>L.M.V. Repair Shop</b>  |             |           |              |                  |              |
| 1                  | Hydro mechanical washing platform to lift car,trucks,bus etc.cap-10 te with washing unit                   | 1           | 2.67      | 2.67         | 2.67             |              |
| 2                  | Greasing equipment,cap-10lts   | 5           | 0.32      | 1.60         | 0.96             | 0.64         |
| 3                  | Wall type tyre inflator  | 1           | 0.07      | 0.07         | 0.07             |              |
| 4                  | Hydraulic Bearing puller for LMV   | 1           | 0.24      | 0.24         | 0.24             |              |
| 5                  | Automatic battery charging set with control device 12 volts  | 1           | 0.23      | 0.23         | 0.23             |              |
| 6                  | Portable hand drill  | 1           | 0.08      | 0.08         | 0.08             |              |
| 7                  | Hydraulic jack,cap-5/10te  | 2           | 0.12      | 0.24         | 0.12             | 0.12         |

Cost base: August 2020

(Amount in ₹ Lakh)

| SI No    | PARTICULARS  | REQUIREMENT |           |               | PHASING IN YEARS |              |
|----------|--|-------------|-----------|---------------|------------------|--------------|
|          |  | QTY./No     | UNIT COST | AMOUNT        | Y2               | Y4           |
| 8        | Work benches, part storage rack cabling, hand circuit etc.             | LS          |           | 0.51          | 0.44             | 0.08         |
|          | <b>SUB TOTAL C</b>   |             |           | <b>5.64</b>   | <b>4.80</b>      | <b>0.84</b>  |
| <b>D</b> | <b>Electrical Repair Shop</b>  |             |           |               |                  |              |
| 1        | Soldering iron 1500 watts  | 5           | 0.05      | 0.25          | 0.05             | 0.20         |
| 2        | Automatic battery charging set with control device 24 volts            | 3           | 0.43      | 1.29          | 0.43             | 0.86         |
| 3        | Test bench for self starter dyanamo Pt No DRTB of M/S LUCAS            | 1           | 1.02      | 1.02          | 1.02             |              |
| 4        | Cable fault detector   | 3           | 5.26      | 15.78         | 5.26             | 10.52        |
| 5        | Oxy-acetylene gas cutting and welding set                              | 3           | 0.27      | 0.82          | 0.41             | 0.41         |
| 6        | Portable hand grinder,150mm, 0.55kW                                    | 1           | 0.31      | 0.31          | 0.31             |              |
| 7        | Eletrical testing equiment (megger ,guages & other tools and tackles ) | LS          |           | 0.70          | 0.70             |              |
| 8        | Transformer oil filtration machine cap.2.27 cum/hr                     | 1           | 0.94      | 0.94          | 0.94             |              |
|          | <b>SUB TOTAL D</b>   |             |           | <b>21.12</b>  | <b>9.12</b>      | <b>11.99</b> |
| <b>E</b> | <b>Structural &amp; Welding Shop</b>                                   |             |           |               |                  |              |
| 1        | Transformer welding set, thyristor control DC , 300/400 A cap.         | 1           | 3.39      | 3.39          | 3.39             |              |
| 2        | Pillar drilling machine, capacity in steel-25mm,2.5 kW                 | 1           | 1.42      | 1.42          | 1.42             |              |
| 3        | Transformer welding set 600 A , 42 V , 36 KVA , oil cooled type        | 1           | 0.75      | 0.75          | 0.75             |              |
| 4        | Oxy-acetylene gas cutting and welding set                              | 5           | 0.27      | 1.35          | 0.81             | 0.54         |
| 5        | Hand drill 25mm 0.55 kW.   | 1           | 0.61      | 0.61          | 0.61             |              |
| 6        | Bench drill 13mm , 0.55 kW   | 1           | 0.26      | 0.26          | 0.26             |              |
| 7        | Double ended Pedestal grinder 250mm, power-1.00 kw                     | 1           | 0.39      | 0.39          | 0.39             |              |
| 8        | Mechanical jacks - 5/10te  | 1           | 0.18      | 0.18          | 0.18             |              |
| 9        | Misc. tools & tackles, etc.  | LS          |           | 0.42          | 0.39             | 0.03         |
| 10       | Fork lift truck , 5te capacity with drum handling attachment           | 1           | 3.59      | 3.59          | <b>3.59</b>      |              |
|          | <b>SUB TOTAL E</b>   |             |           | <b>12.37</b>  | <b>11.80</b>     | <b>0.57</b>  |
| <b>F</b> | <b>Miscellaneous Equipment</b>   |             |           |               |                  |              |
| 1        | Co2 / foam type fire extinguishers                                     | LS          |           | 2.00          | 2.00             |              |
| 2        | Personal Computer  | LS          |           | 5.00          | 5.00             |              |
| 3        | Ventilation and air conditioning system                                | LS          |           | 15.00         | 15.00            |              |
|          | <b>SUB TOTAL F</b>   |             |           | <b>22.00</b>  | <b>22.00</b>     |              |
| <b>G</b> | <b>TOTAL</b>   |             |           | 149.87        | 116.44           | 33.44        |
| <b>H</b> | <b>Electrical cost</b>   |             |           | 14.99         | 11.64            | 3.34         |
| <b>I</b> | <b>Erection &amp; Commisioning</b>                                     |             |           | 16.49         | 12.81            | 3.68         |
| <b>J</b> | <b>GRAND TOTAL</b>   |             |           | <b>181.35</b> | <b>140.89</b>    | <b>40.46</b> |
|          | <b>TOTAL WITHOUT GST</b>   |             |           | <b>153.69</b> | <b>119.40</b>    | <b>34.29</b> |

**Variant : MDO (MDO Part)**

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**

**Statement showing the estimated capital expenditure on Plant and Machinery for Store Complex**  
**(Amount in ₹ Lakhs)**

**Cost base: August 2020**

**Appendix A.3.3.(C)**

| <b>Sl.<br/>No.</b> | <b>PARTICULARS</b>  | <b>ADDITIONAL REQUIREMENT</b> |                  |               | <b>Capital phasing</b> |
|--------------------|---|-------------------------------|------------------|---------------|------------------------|
|                    |   | <b>QTY./No</b>                | <b>UNIT COST</b> | <b>AMOUNT</b> |                        |
| 1                  | Fork lift truck , 5te capacity with drum handling attachment          | 1                             | 25.45            | 25.45         | 25.45                  |
| 2                  | Store racking system  | LS                            | 121.12           | 72.67         | 48.45                  |
| 3                  | Miscellaneous items like chain pulley block , stock weighing m/c etc. | LS                            |                  | 36.64         | 24.53                  |
| <b>TOTAL</b>       |   |                               |                  | <b>157.76</b> | <b>97.20</b>           |
|                    | Excluding GST amount Total  |                               |                  | <b>133.69</b> | <b>82.37</b>           |
|                    |   |                               |                  | <b>51.32</b>  |                        |

**Project Report of Subhadra OCP (25 MTy) [West of Gopalprasad West & Utkal A Block]****Statement showing the estimated capital expenditure on Pumps, pipes & fittings**

Cost base: August 2020

(Amount in ₹ Lakhs)

| Sl. No.                  | Particulars  | Unit       | Qty | Unit cost     | Total cost up  | PHASING       |               |               |               |               |        |
|--------------------------|--|------------|-----|---------------|----------------|---------------|---------------|---------------|---------------|---------------|--------|
|                          |  |            |     |               |                | Total cost    | Y5            | Y7            | Y12           | Y17           | Y22    |
| 1                        | Centrifugal pump cap -120 lps . head- 150 m , power-300 kw with electricals , 6.6 KV   | NOS (4+1). | 5   | 21.27         | 85.08          | 106.35        | 63.81         | 21.27         | 21.27         |               |        |
| 2                        | Centrifugal pump cap -180 lps . head- 200 m , power-490 kw with electricals , 6.6 KV   | NOS. (4+1) | 5   | 29.34         | 88.02          | 146.70        |               | 88.02         | 58.68         |               |        |
| 3                        | Centrifugal pump cap -225 lps . head- 250 m , power-900 kw with electricals , 6.6 KV   | NOS. (6+2) | 8   | 33.31         | 0.00           | 266.48        |               |               |               | 133.24        | 133.24 |
| 4                        | Slurry pump cap -70lps. head-54 m , power-75kw, with electrical at 415 V   | NOS.       | 2   | 5.17          | 5.17           | 10.34         |               | 5.17          | 5.17          |               |        |
| 5                        | Slurry pump capacity 16 lps. head-35 m,power-30kW, with electricals 415 V  | NOS.       | 2   | 3.76          | 3.76           | 7.52          |               | 3.76          | 3.76          |               |        |
| 6                        | Centrifugal face pump cap -38 lps. head- 30 m, power-15kw with electricals 415 V   | NOS.       | 4   | 2.06          | 8.24           | 8.24          | 4.12          | 4.12          |               |               |        |
| 7                        | Diesel pump, capacity 80 lps, head 120m  | NOS.       | 2   | 9.17          | 18.34          | 18.34         | 9.17          | 9.17          |               |               |        |
| 8                        | ERW pipe outside dia 324mm   | KM         | 5   | 27.95         | 55.91          | 139.75        | 13.98         | 41.93         | 55.90         |               | 27.94  |
| 9                        | M.S. pipes ,dia- 200 mm  | KM         | 4   | 17.42         | 34.84          | 69.68         | 17.42         | 17.42         | 17.42         |               | 17.42  |
| 10                       | M.S. pipes ,dia- 150 mm  | KM         | 3   | 13.06         | 13.06          | 39.18         | 6.53          | 6.53          | 13.06         | 13.05         |        |
| 11                       | M.S. pipes ,dia- 100mm   | KM         | 2   | 8.34          | 12.51          | 16.68         | 4.17          | 8.34          |               | 4.17          |        |
| 12                       | Miscellaneous items like non-return valve,sluice valve , manometer , fittings , bends , rubber hoses ,jointing materials ,pantoon etc. | LS         |     | 32.49         | 82.93          | 11.92         | 20.57         | 17.53         | 16.79         | 16.12         |        |
| 13                       | Installation cost @ 10%  | LS         |     | 35.74         | 91.22          | 13.11         | 22.63         | 19.28         | 18.47         | 17.73         |        |
| <b>TOTAL</b>             |  |            |     | <b>393.16</b> | <b>1003.41</b> | <b>144.23</b> | <b>248.93</b> | <b>212.07</b> | <b>203.14</b> | <b>195.04</b> |        |
| <b>Without GST Total</b> |  |            |     | <b>875.96</b> | <b>125.73</b>  | <b>216.93</b> | <b>183.76</b> | <b>178.20</b> | <b>171.34</b> |               |        |

## Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West &amp; Utkal A Block]

Statement showing the estimated capital expenditure on P&M for Coal Handling Plant

Cost base: August 2020

(Amount in ₹ Lakhs)

| SL.<br>NO. | Particulars  | Unit | Qty   | Unit<br>cost | Total<br>cost  | PHASING IN YEARS |         |                |                |    |    |    |    |     |
|------------|--|------|-------|--------------|----------------|------------------|---------|----------------|----------------|----|----|----|----|-----|
|            |  |      |       |              |                | Y2               | Y3      | Y4             | Y5             | Y6 | Y7 | Y8 | Y9 | Y10 |
|            | <b>MECHANICAL</b>  |      |       |              |                |                  |         |                |                |    |    |    |    |     |
|            | <b>A CONVEYORS</b>   |      |       |              |                |                  |         |                |                |    |    |    |    |     |
| 1.1        | Belt Conveyor C1A/B , Rated Capacity 1800 TPH, HRS 150 m , Belt Speed 2.75m/sec, Lift 6 m, Motor Power 1x110 kW  | NO   | 2     | 90.51        | 181.02         |                  | 181.02  |                |                |    |    |    |    |     |
| 1.2        | Belt Conveyor C2A/B , Rated Capacity 1800 TPH, HRS 220 m , Belt Speed 2.75m/sec, Lift 35 m, Motor Power 1X300 kW   | NO   | 2     | 151.26       | 302.52         |                  | 302.52  |                |                |    |    |    |    |     |
| 1.3        | Belt Conveyor C3A/B(tripper) , Rated Capacity 1800 TPH, HRS 250 m , Belt Speed 2.75m/sec, Lift 7 m, Motor Power 1X150 kW   | NO   | 2     | 163.60       | 327.20         |                  | 327.20  |                |                |    |    |    |    |     |
| 1.4        | Belt Conveyor C4A/B (reclaim) , Rated Capacity 3000 TPH, HRS 630 m , Belt Speed 4.28m/sec, Lift 57 m, Motor Power 2X450 kW   | NO   | 2     | 411.64       | 823.28         |                  | 823.28  |                |                |    |    |    |    |     |
| 1.5        | Belt Conveyor C5A/B , Rated Capacity 1800 TPH, HRS 150 m , Belt Speed 2.75m/sec, Lift 6 m, Motor Power 1X110 kW  | NO   | 2     | 90.51        | 181.01         |                  |         | 181.01         |                |    |    |    |    |     |
| 1.6        | Belt Conveyor C6A/B , Rated Capacity 1800 TPH, HRS 220 m , Belt Speed 2.75m/sec, Lift 35 m, Motor Power 1x300 kW   | NO   | 2     | 151.26       | 302.52         |                  |         | 302.52         |                |    |    |    |    |     |
| 1.7        | Belt Conveyor C7A/B (tripper) , Rated Capacity 1800 TPH, HRS 250 m , Belt Speed 2.75m/sec, Lift 7 m, Motor Power 1x150 kW  | NO   | 2     | 163.53       | 327.06         |                  |         | 327.06         |                |    |    |    |    |     |
| 1.8        | Belt Conveyor C8A/B (reclaim) , Rated Capacity 3000 TPH, HRS 660 m , Belt Speed 4.28m/sec, Lift 57 m, Motor Power 2x450 kW   | NO   | 2     | 422.84       | 845.68         |                  |         | 845.68         |                |    |    |    |    |     |
| 1.9        | Belt Conveyor C9A/B (Bridge conv. With Reversible ) , Rated Capacity 3000 TPH, HRS 50 m , Belt Speed 4.28m/sec, Lift 0 m, Motor Power 1x110 kW   | NO   | 2     | 53.20        | 106.40         |                  |         | 106.40         |                |    |    |    |    |     |
|            | <b>SUB TOTAL A</b>   |      |       |              | <b>3396.69</b> |                  |         | <b>1634.02</b> | <b>1762.67</b> |    |    |    |    |     |
|            | <b>B BELTING</b>   |      |       |              |                |                  |         |                |                |    |    |    |    |     |
| 2.1        | Steel cord ST- 1400 (8+5), 1600 mm belt width  | kM   | 10.85 | 95.11        | 1032.11        |                  | 464.45  | 567.66         |                |    |    |    |    |     |
|            | <b>SUB TOTAL 2</b>   |      |       |              | <b>1032.11</b> |                  |         | <b>464.45</b>  | <b>567.66</b>  |    |    |    |    |     |
|            | <b>C EQUIPMENT</b>   |      |       |              |                |                  |         |                |                |    |    |    |    |     |
| 3.1        | Rapid loading system-, 5000-6000 tph loading capacity, including, arch breaker. Air cannon, Air compressor, pre-weigh hopper, hydraulic system .test weights pipes & fittings with electricals,printer , display facility etc. | NO   | 2     | 660.00       | 1320.00        |                  | 660.00  | 660.00         |                |    |    |    |    |     |
| 3.2        | Plough feeder 3000t rated capacity   | NO   | 8     | 270.00       | 2160.00        |                  | 1080.00 | 1080.00        |                |    |    |    |    |     |
| 3.3        | Vibro feeder 450 tph capacity  | NO   | 20    | 4.84         | 96.80          |                  | 48.40   | 48.40          |                |    |    |    |    |     |
| 3.4        | Feeder breaker with seconday crusher, 400 tph capacity   | No   | 2     | 300.00       | 600.00         |                  | 300.00  | 300.00         |                |    |    |    |    |     |
| 3.5        | Automatic coal sampling system   | NO   | 1     | 154.29       | 154.29         |                  | 154.29  |                |                |    |    |    |    |     |
| 3.6        | Motorised hoist  | Lot  |       |              | 129.59         |                  | 58.32   | 71.2745        |                |    |    |    |    |     |
| 3.7        | Chute assembly with liner  | Lot  |       |              | 164.00         |                  | 73.80   | 90.2           |                |    |    |    |    |     |
| 3.8        | Motorized flap gate  | NO   | 4     | 4.20         | 16.80          |                  | 8.40    | 8.4            |                |    |    |    |    |     |
| 3.9        | In line magnet seperator for 1600mm wide belt  | NO   | 4     | 33.97        | 135.88         |                  | 67.94   | 67.94          |                |    |    |    |    |     |
| 3.10       | Metal Detector for 1600 mm wide belt   | NO   | 4     | 4.87         | 19.48          |                  | 9.74    | 9.74           |                |    |    |    |    |     |

## Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West &amp; Utkal A Block]

Statement showing the estimated capital expenditure on P&M for Coal Handling Plant

Cost base: August 2020

(Amount in ₹ Lakhs)

| SL.<br>NO. | Particulars   | Unit | Qty | Unit<br>cost | Total<br>cost   | PHASING IN YEARS |                 |                 |               |               |               |               |               |               |
|------------|---|------|-----|--------------|-----------------|------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
|            |   |      |     |              |                 | Y2               | Y3              | Y4              | Y5            | Y6            | Y7            | Y8            | Y9            | Y10           |
| 3.11       | Belt cleaner ( Primary, secondary & V plough)   | Lot  |     |              | 19.62           |                  | 10.90           | 8.72            |               |               |               |               |               |               |
| 3.12       | Belt weigher  | NO   | 4   | 5.47         | 21.88           |                  | 10.94           | 10.94           |               |               |               |               |               |               |
| 3.13       | Dust suppression system with piping & other accessories.  | SET  |     |              | 124.83          |                  | 56.17           | 68.66           |               |               |               |               |               |               |
| 3.14       | Safety & fire fighting system   | SET  |     |              | 416.11          |                  | 187.25          | 228.86          |               |               |               |               |               |               |
| 3.15       | Misc equipment for any more item required to complete the CHP   | LS   |     |              | 537.93          |                  | 272.61          | 265.31          |               |               |               |               |               |               |
|            | <b>SUB TOTAL 3</b>  |      |     |              | <b>5917.21</b>  |                  | <b>2998.76</b>  | <b>2918.45</b>  |               |               |               |               |               |               |
| <b>1</b>   | <b>TOTAL MECHANICAL (A+B+C)</b>   |      |     |              | <b>10346.01</b> |                  | <b>5097.23</b>  | <b>5248.78</b>  |               |               |               |               |               |               |
| <b>2</b>   | <b>ELECTRICALS (Excluding 33 kV S/S)</b>  |      |     |              | <b>1583.36</b>  |                  | <b>787.57</b>   | <b>795.79</b>   |               |               |               |               |               |               |
| <b>3</b>   | <b>Errection and commissioning @ 10% on Mech &amp; Elec.</b>  |      |     |              | 1192.94         |                  | 588.48          | 604.46          |               |               |               |               |               |               |
| <b>4.1</b> | <b>CIVIL &amp; STRUCTURALS</b>  |      |     |              |                 |                  |                 |                 |               |               |               |               |               |               |
| 4.1.1      | Civil and structural work (2 no. overground bunker, rapid loading system (RCC surge bin), conveyor gantry, Drive & transfer houses, sampler house, RCC truck receipt hopper etc.) | LS   |     |              | 14554.49        |                  | 6549.52         | 8004.97         |               |               |               |               |               |               |
| 4.1.2      | Developmental work and infra- structure   | LS   |     |              | 1047.33         |                  | 471.30          | 576.03          |               |               |               |               |               |               |
| 4.1.3      | Survey and Soil testing with documentation  |      |     |              | 5.00            |                  | 5.00            |                 |               |               |               |               |               |               |
|            | <b>SUB-TOTAL (4.1)</b>  |      |     |              | <b>15606.82</b> |                  | <b>7025.82</b>  | <b>8581.00</b>  |               |               |               |               |               |               |
| <b>5.1</b> | <b>Design engineering @ 3.75% on Civil &amp; structural</b>   |      |     |              | 585.26          |                  | 263.47          | 321.79          |               |               |               |               |               |               |
| <b>5.2</b> | <b>Design engineering @ 5% of (1) to (3)</b>  |      |     |              | 656.12          |                  | 323.66          | 332.45          |               |               |               |               |               |               |
| <b>6</b>   | <b>Overhead construction cost @ 15% on (1) to (3) &amp; 5.1</b>   |      |     |              | <b>2056.14</b>  |                  | <b>1010.52</b>  | <b>1045.62</b>  |               |               |               |               |               |               |
| <b>7</b>   | <b>Insurance @ .75% of (1) to (3) &amp; 4.1)</b>  |      |     |              | <b>215.47</b>   |                  | <b>101.24</b>   | <b>114.23</b>   |               |               |               |               |               |               |
| <b>8</b>   | <b>Contigencies @3% of (1), (2), (3). (4.1), (5.1) &amp; (6)</b>  |      |     |              | <b>941.12</b>   |                  | <b>443.20</b>   | <b>497.92</b>   |               |               |               |               |               |               |
| <b>9.1</b> | <b>Store cost for maintenance of P &amp; M (Mech. +elect.) @ 2% per year on Sl. No. 1 &amp; 2 i.e. 8% on Sl. No. 1 &amp; 2</b>  |      |     |              | <b>954.35</b>   |                  |                 | <b>190.87</b>   | <b>190.87</b> | <b>190.87</b> | <b>190.87</b> | <b>190.87</b> | <b>190.87</b> |               |
| <b>9.2</b> | <b>Cost of maintenance or operation &amp; maintenance during DLP inclusion @ 15% of contractor's margin</b>   |      |     |              | <b>2194.68</b>  |                  |                 | <b>438.94</b>   | <b>438.94</b> | <b>438.94</b> | <b>438.94</b> | <b>438.94</b> | <b>438.94</b> |               |
| <b>10</b>  | <b>Training of O &amp; M staff @ 0.05% of (1), (2) &amp; (3)</b>  |      |     |              | <b>6.56</b>     |                  | <b>3.24</b>     | <b>3.32</b>     |               |               |               |               |               |               |
| <b>11</b>  | <b>TOTAL</b>  |      |     |              | <b>36338.83</b> |                  | <b>15644.43</b> | <b>17545.35</b> | <b>629.81</b> | <b>629.81</b> | <b>629.81</b> | <b>629.81</b> | <b>629.81</b> | <b>629.81</b> |
| <b>12</b>  | <b>GST @18% OF (11)</b>   |      |     |              | <b>6540.99</b>  |                  | <b>2815.99</b>  | <b>3158.15</b>  | <b>113.37</b> | <b>113.37</b> | <b>113.37</b> | <b>113.37</b> | <b>113.37</b> | <b>113.37</b> |
| <b>13</b>  | <b>GRAND TOTAL (11) + (12)</b>  |      |     |              | <b>42879.82</b> |                  | <b>18460.42</b> | <b>20703.50</b> | <b>743.18</b> | <b>743.18</b> | <b>743.18</b> | <b>743.18</b> | <b>743.18</b> | <b>743.18</b> |

Statement Showing Estimated Capital Requirement on P & M others

Cost base: August 2020

(Amount in ₹ Lakhs)

| Sl. No. | Particulars  | Capital requirement  | Year-wise Phasing of capital  |   |               |               |                                  |               |
|---------|--|--|---|---|---------------|---------------|----------------------------------|---------------|
|         |  |  | Y1  | Y2  | Y3            | Y4            | Y5                               | Y6            |
| 1       | Survey equipment<br>3D Laser Scanner (1 no.)<br>Hand GPS (3 no.)<br>Slope Monitoring Equipment<br>Safety & Monitoring Equipments<br>Personal dust Sampler (20 nos.)<br>Blasting siren (4 nos.)<br>Alcohol breath analyser (10 nos.)<br>LUX meter (20 nos.)<br>Noise level meter (20 nos.)<br>CCTV Surveillance system for mine, offices & WS<br>Water Mist Fire Extinguisher (6 nos.)<br>Fire extinguisher (CO2/DCP/Foam) - 200 nos.<br>Multishot exploder with cont. tester (200 shot)<br>Boom Barrier (LS)<br>PDS (12nos.) | 188.53<br>1.12<br>818.74   |   | 100.00  | 88.53<br>1.12 |               |                                  |               |
| 2       |  |  |   | 5.00  | 5.00          |               |                                  |               |
| 3       | a<br>b<br>c<br>d<br>e<br>f<br>g<br>h<br>i<br>j<br>k<br>l<br>m<br>n<br>o<br>p<br>q<br>r<br>s<br>t<br>u<br>v<br>w<br>x<br>y<br>z   | 22.35<br>0.20<br>0.50<br>0.50<br>1.62<br>2.20<br>20.00<br>11.38<br>13.02<br>1.80<br>20.00<br>5.00<br>4.00<br>1.00<br>8.00<br>0.62<br>183.18<br>5.00<br>134.59<br>67.81 | 0.20<br>0.50<br>1.62<br>2.20<br>10.00<br>11.38<br>1.80<br>5.00<br>4.00<br>1.00<br>8.00<br>0.62<br>5.00<br>44.86<br>44.86<br>44.86 | 5.00  | 5.00          | 10.00         | 13.02                            | 5.00          |
| 4       | Communication System/devices<br>Walkie Talkie set<br>Public address system (2 nos)<br>Electronic Display Board (20 nos)<br>LCD Projector (2 nos)<br>Vehicle Mounted Mist fog canon - 4 nos.<br>Water Analysis kit<br>100 T Inmotion Weigh Bridges (6 nos.)<br>Truck Mounted insulated Boom lifter (LS)   |  |   | 4.00<br>1.00<br>8.00<br>0.62<br>183.18<br>5.00<br>134.59<br>67.81 |               |               | 91.59<br>91.59<br>44.86<br>44.86 | 10.00<br>5.00 |
| 5       |  |  |   |   |               |               |                                  | 91.59         |
| 6       |  |  |   |   |               |               |                                  |               |
| 7       |  |  |   |   |               |               |                                  |               |
| 8       |  |  |   |   |               |               |                                  |               |
|         | <b>Total</b>   | <b>1510.66</b>   |   |   | <b>186.19</b> | <b>149.51</b> | <b>159.47</b>                    | <b>105.16</b> |
|         |  |  |   |   |               |               |                                  | <b>910.33</b> |

**Statement Showing Estimated Capital Requirement on Furniture & Fittings**

**Cost base: August 2020**      **(Amount in ₹ Lakhs)**

| Sl. No. | Particulars   | Capital requirement | Year-wise Phasing of capital |      |              |              |               |
|---------|---|---------------------|------------------------------|------|--------------|--------------|---------------|
|         |   |                     | Y1                           | Y2   | Y3           | Y4           | Y5            |
| (a)     | (b)   | (d)                 |                              |      |              |              |               |
| 1       | General furniture & fittings  | 40.00               |                              |      | 10.00        | 5.00         | 10.00         |
| 2       | Office equipment including computers, printers, FAX, Photo copier etc   | 40.00<br>12.00      |                              | 5.00 | 10.00        | 5.00<br>4.00 | 10.00<br>4.00 |
| 3       | Air conditioners  | 10.00               |                              |      | 5.00         | 5.00         |               |
| 4       | Refrigerator & Water cooler etc   | 5.00                |                              |      | 5.00         |              |               |
| 5       | Store furniture   | 5.00                |                              |      | 5.00         |              |               |
| 6       | Fire alarm  | 60.00               |                              |      | 20.00        | 20.00        | 20.00         |
| 7       | Miscellaneous (Laptop to Executives, Electronic telephone exchange etc) |                     |                              |      |              |              |               |
|         | <b>Total</b>  | <b>172.00</b>       |                              |      | <b>40.00</b> | <b>25.00</b> | <b>39.00</b>  |
|         |   |                     |                              |      |              | <b>24.00</b> | <b>44.00</b>  |

Statement Showing Estimated Capital Requirement for Railway and Siding

**Cost base: August 2020**

(Amount in ₹ Lakhs)

| Sl. No. | Particulars   | Capital requirement | Year-wise Phasing of capital |                |                |                |    |    |
|---------|---|---------------------|------------------------------|----------------|----------------|----------------|----|----|
|         |   |                     | Y1                           | Y2             | Y3             | Y4             | Y5 | Y6 |
| 1       | Railway link link from Subhadra OCP, to Balaram-Angul Rail line(MCRL, Ph-I), 10km incl line for take off (excluding cost of Land) | 13940.00            | 1394.00                      | 4182.00        | 4182.00        | 4182.00        |    |    |
| 2       | Railway siding below the two RLS and two escape lines(excluding cost of Land), 8km  | 11152.00            | 1115.20                      | 3345.60        | 3345.60        | 3345.60        |    |    |
| 3       | Provision of Fly over at proposed railway siding for approach road to Project (600m X 7.5m)                                       | 3441.48             | 1500.00                      | 1941.48        |                |                |    |    |
| 4       | Wheel washing system  | 30.00               |                              |                | 30.00          |                |    |    |
|         | <b>Total</b>  | <b>28563.48</b>     | <b>4009.20</b>               | <b>9469.08</b> | <b>7527.60</b> | <b>7557.60</b> |    |    |

Cost base: August 2020

(Amount in ₹ Lakhs)

| Sl.<br>No. | Particulars                        | Total Additional Capital<br>requirement |       |               | Year-wise Phasing of capital |    |    |    |              |              |              |
|------------|------------------------------------|---|-------|---------------|------------------------------|----|----|----|--------------|--------------|--------------|
|            |                                    | No.                                     | Rate  | Total         | Y1                           | Y2 | Y3 | Y4 | Y5           | Y6           | Y7           |
| <b>A</b>   | <b>Light Vehicles</b>              |   |       |               |                              |    |    |    |              |              |              |
| 1          | Ambulance van (BLS)                | 1                                       | 12.58 | 12.58         |                              |    |    |    |              |              |              |
| 2          | Ambulance van                      | 1                                       | 6.04  | 6.04          |                              |    |    |    |              |              |              |
| 3          | Pick up van                        | 4                                       | 5.37  | 21.47         |                              |    |    |    |              |              |              |
|            | <b>Sub Total (A)</b>               |   |       | <b>40.09</b>  |                              |    |    |    | <b>16.77</b> |              |              |
| <b>B</b>   | <b>Heavy Vehicles</b>              |   |       |               |                              |    |    |    |              |              |              |
| 1          | Explosive Van (3 te)               | 1                                       | 12.43 | 12.43         |                              |    |    |    |              |              |              |
| 2          | School Bus                         | 1                                       | 16.37 | 16.37         |                              |    |    |    |              |              |              |
| 3          | Shift bus                          | 1                                       | 25.04 | 25.04         |                              |    |    |    |              |              |              |
| 4          | Tipping Truck (8.5 cum)            | 2                                       | 37.06 | 74.12         |                              |    |    |    |              |              |              |
| 5          | Truck                              | 1                                       | 11.03 | 11.03         |                              |    |    |    |              |              |              |
| 6          | Canteen/Store Truck (16.2 te BSIV) | 1                                       | 18.45 | 18.45         |                              |    |    |    |              |              |              |
| 7          | Water Tanker (9 KL)                | 2                                       | 17.43 | 34.86         |                              |    |    |    |              |              |              |
|            | <b>Sub Total (B)</b>               |   |       | <b>192.30</b> |                              |    |    |    | <b>60.92</b> | <b>37.06</b> | <b>28.46</b> |
|            | <b>Total</b>                       |   |       | <b>232.39</b> |                              |    |    |    | <b>77.69</b> | <b>37.06</b> | <b>33.83</b> |
|            |                                    |   |       |               |                              |    |    |    |              | <b>25.01</b> | <b>58.80</b> |

**Note :** In addition to these, 17 nos. of Light Vehicles (Car/Gypsy/Jeep) for Mine officials will be kept on Hiring basis

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utikal A Block]**  
**Statement Showing Estimated Capital Requirement on Developmental activities**

Cost base: August 2020

(Amount in ₹ Lakh)

| Sl.<br>No. | Particulars   | Capital<br>Requirement | Year wise capital phasing |               |               |               |               |               |               |
|------------|---|------------------------|---------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|            |   |                        | Y1                        | Y2            | Y3            | Y4            | Y5            | Y6            | Y7            |
| 1          | Environmental & Ecological cost   |                        |                           |               |               |               |               |               |               |
|            | (a) CTO & CTE   | 496.00                 | 496.00                    |               |               |               |               |               |               |
|            | (b) Wild life conservation  | 84.85                  | 84.85                     |               |               |               |               |               |               |
|            | (c) Arboriculture including avenue plantation                               | 474.80                 |                           | 100.00        | 100.00        | 100.00        | 100.00        | 100.00        | 74.80         |
|            | (e) Garland and storm Water Drainage  | 1523.19                |                           | 300.00        | 300.00        | 300.00        | 300.00        | 300.00        | 323.19        |
|            | (f) Rain water harvesting   | 92.16                  |                           |               |               |               |               |               | 92.16         |
|            | (g) Wind barrier wall ( 1 km long & 10m height)                             | 298.00                 |                           |               |               |               | 100.00        | 198.00        |               |
|            | (h) Vertical Greenery system ( 1 km length)                                 | 38.61                  |                           |               |               |               |               | 38.61         |               |
|            | (i) REM Stations  | 5.00                   |                           |               |               |               |               |               | 1.00          |
| 2          | Peripheral Village Community development                                    | 1045.81                |                           |               |               |               |               |               | 1.00          |
| 3          | Diversion of village Road   | 200.00                 | 100.00                    |               |               |               |               | 200.00        | 245.81        |
| 4          | Temporary Hutmets   | 20.00                  | 20.00                     |               |               |               |               |               |               |
| 5          | Widening & strengthening of existing road for the purpose of approach roads | 600.00                 |                           | 300.00        |               |               |               |               |               |
| 6          | Construction of diversional channel including construction of Embankment .  | 1926.70                |                           | 500.00        | 426.70        |               |               |               |               |
| 7          | Provision of RCC Bridge (2 nos. 10m x 3.5m)                                 | 73.30                  |                           | 73.30         |               |               |               |               |               |
|            | <b>Total</b>  | <b>6878.43</b>         | <b>1480.85</b>            | <b>920.00</b> | <b>601.00</b> | <b>601.00</b> | <b>701.00</b> | <b>837.61</b> | <b>736.97</b> |
|            |   |                        |                           |               |               |               |               |               | <b>500.00</b> |
|            |   |                        |                           |               |               |               |               |               | <b>500.00</b> |

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**STATEMENT SHOWING THE ESTIMATED CAPITAL COST ON ROADS & CULVERTS**

**1. COLONY ROADS & CULVERTS**

A) Total Length of road                           **3665** RM

i) Major stratum B Road

7.5m wide bituminous with pucca shoulders  
 22.5 cm thick cobble soling over 27.5 cm moorum filling  
 (Moorum fillings in case of BC soil/clayey soil only)  
 15 cm thick WBM in 2 layers under 4 cm thick premix surfacing

|  |      |           |         |                      | (Amt. in lakh) |
|--|------|-----------|---------|----------------------|----------------|
| A) Length of road  | 3665 | RM @ Rs.  | 13842   | per RM               | 507.32         |
| B) Slab Culverts (3.05 m span)                             | 4    | No. @ Rs. | 1583340 |                      | 63.33          |
| Hume pipe culverts (0.61 m dia)                            | 4    | No. @ Rs. | 196718  |                      | 7.87           |
| C) Tree guards   | 147  | No. @ Rs. | 1487    | each                 | 2.19           |
| D) RCC Slab for drain crossing<br>(1.53 x 0.61 x 0.075 m.) | 31   | No. @ Rs. | 1247    | each                 | 0.39           |
| E) Extra for poor soil for culverts                        |      |           |         |                      | 7.12           |
|  |      |           |         | Total                | 588.22         |
|  |      |           |         | Contingencies 3%     | 17.65          |
|  |      |           |         | <b>"Sub-Total-1"</b> | <b>605.87</b>  |

**2) APPROACH ROAD TO COLONY**

Specifications:-

i) 7.5m. wide bituminous

|   |      |           |         |                    | (Amt. in lakh) |
|---|------|-----------|---------|--------------------|----------------|
| Length of road  | 2000 | RM @ Rs.  | 13842   | per RM             | 276.84         |
| Slab Culverts (3.05 m span)                           | 2    | No. @ Rs. | 1583340 |                    | 31.67          |
| Hume pipe culverts (0.61 m dia)                       | 2    | No. @ Rs. | 196718  |                    | 3.93           |
| Tree guards   | 80   | No. @ Rs. | 1487    | each               | 1.19           |
| Extra for poor soil for culverts<br>and afforestation | LS   |           |         |                    | 3.56           |
|   |      |           |         | total              | 16.61          |
|   |      |           |         | Contingencies 3%   | 333.81         |
|   |      |           |         | <b>Sub-Total-2</b> | <b>10.01</b>   |
|   |      |           |         |                    | <b>343.82</b>  |

**3) APPROACH ROAD TO PROJECT**

Specifications:-

i) 7.5m. wide bituminous

|   |      |           |         |                    | (Amt. in lakh) |
|---|------|-----------|---------|--------------------|----------------|
| Length of road  | 1500 | RM @ Rs.  | 13842   | per RM             | 207.63         |
| Slab Culverts (3.05 m span)                           | 2    | No. @ Rs. | 1583340 |                    | 31.67          |
| Hume pipe culverts (0.61 m dia)                       | 2    | No. @ Rs. | 196718  |                    | 3.93           |
| Tree guards   | 60   | No. @ Rs. | 1487    | each               | 0.89           |
| Extra for poor soil for culverts<br>and afforestation | LS   |           |         |                    | 3.56           |
|   |      |           |         | total              | 12.46          |
|   |      |           |         | Contingencies 3%   | 260.14         |
|   |      |           |         | <b>Sub-Total-3</b> | <b>7.80</b>    |
|   |      |           |         |                    | <b>267.95</b>  |

**4) HAUL ROADS FOR 100 T DUMPERS**

Specifications:

30 M wide

(Amt. in lakh)

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**STATEMENT SHOWING THE ESTIMATED CAPITAL COST ON ROADS & CULVERTS**

|                                     |      |           |         |                    |                |
|-------------------------------------|------|-----------|---------|--------------------|----------------|
| Length of road                      | 5500 | RM @ Rs.  | 71826   | per RM             | 3950.43        |
| Culverts(17.5 M wide & 3.05 M span) | 6    | No. @ Rs. | 4732028 |                    | 283.92         |
| Extra for poor soil for culverts    |      | LS        |         |                    | 28.39          |
|                                     |      |           |         | total              | 4262.74        |
|                                     |      |           |         | Contingencies 3%   | 127.88         |
|                                     |      |           |         | <b>Sub-Total-4</b> | <b>4390.62</b> |

### 5) APPROACH ROAD TO MAGAZINE

Specifications:-

|                                  |                |           |         |                    |
|----------------------------------|----------------|-----------|---------|--------------------|
| i) 7.5m. wide bituminous         | (Amt. in lakh) |           |         |                    |
| Length of road                   | 2000           | RM @ Rs.  | 13842   | per RM             |
| Slab Culverts (3.05 m span)      | 2              | No. @ Rs. | 1583340 |                    |
| Hume pipe culverts (0.61 m dia)  | 2              | No. @ Rs. | 196718  |                    |
| Tree guards                      | 80             | No. @ Rs. | 1487    | each               |
| Extra for poor soil for culverts |                |           |         | 3.56               |
| and afforestation                |                | LS        |         | 16.61              |
|                                  |                |           |         | total              |
|                                  |                |           |         | 333.81             |
|                                  |                |           |         | Contingencies 3%   |
|                                  |                |           |         | 10.01              |
|                                  |                |           |         | <b>Sub-Total-5</b> |
|                                  |                |           |         | <b>343.82</b>      |

### 6) SERVICE ROAD

Specifications:-

|                                  |                |           |         |                    |
|----------------------------------|----------------|-----------|---------|--------------------|
| i) 7.5m. wide bituminous         | (Amt. in lakh) |           |         |                    |
| Length of road                   | 3000           | RM @ Rs.  | 13842   | per RM             |
| Slab Culverts (3.05 m span)      | 3              | No. @ Rs. | 1583340 |                    |
| Hume pipe culverts (0.61 m dia)  | 3              | No. @ Rs. | 196718  |                    |
| Tree guards                      | 120            | No. @ Rs. | 1487    | each               |
| Extra for poor soil for culverts |                |           |         | 5.34               |
| and afforestation                |                | LS        |         | 24.92              |
|                                  |                |           |         | total              |
|                                  |                |           |         | 500.70             |
|                                  |                |           |         | Contingencies 3%   |
|                                  |                |           |         | 15.02              |
|                                  |                |           |         | <b>Sub-Total-6</b> |
|                                  |                |           |         | <b>515.72</b>      |

| ABSTRACT OF ROAD COSTING: FIG | QTY (M) | IN LAKHS       |
|-------------------------------|---------|----------------|
| 1 COLONY ROAD                 | 3665    | 605.87         |
| 2 APPROACH ROAD TO COLONY     | 2000    | 343.82         |
| 3 APPROACH ROAD TO PROJECT    | 1500    | 267.95         |
| 4 HAUL ROAD FOR 100 T DUMPERS | 5500    | 4390.62        |
| 5 APPROACH ROAD TO MAGAZINE   | 2000    | 343.82         |
| 6 SERVICE ROAD                | 3000    | 515.72         |
| <b>GRAND TOTAL</b>            |         | <b>6467.80</b> |

Colony Road has been considered double lane as advised by MCL Planning Committee vide letter no.  
MCL/HQ/GM(CP&P)/16/1603 dtd 06.12.2016

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**Statement Showing Computation of Water Demand**

**Cost base: August 2020**

**COMPUTATION OF WATER DEMAND**

|  |             |
|--|-------------|
| A. Total No. of persons :                | <b>2108</b> |
| B. Total No. of housing units provided:  | <b>572</b>  |
| C. Total No. of residential population : | <b>2860</b> |
| D. Total No. of hostels provided:        | <b>161</b>  |

**(I) DRINKING WATER DEMAND**

|  |             |            |   |
|--|-------------|------------|---|
| 1 Water demand for residential population @ 200 litres/person/day    | 572000      | litres     | Water demand considered @ 200 lphd for residential buildings and @ 135 lphd for hostels as per IS 1172:1993 |
| 2 Water demand for hostels @ 135 litres/person/day                   | 21735       | litres     |   |
| 3 Water demand for non-residential population @ 45 litres/person/day | 61875       | litres     | For higher income group community   |
| 4 Water demand in service building @ 45 litres/person/day            | 94860       | litres     |   |
| Total  | 750470      | litres     |   |
| 5 Add 10% towards loss etc.  | 75047       | litres     |   |
| Grand total  | 825517      | litres     |   |
| <b>Say</b>   | <b>0.83</b> | <b>MLD</b> |   |

**(II) NON-DRINKING WATER DEMAND**

|  |               |        |
|--|---------------|--------|
| 1 Water required for washing of dumper / truck etc. @ 1800 litres / day / dumper, so for 285 no. of dumper/dozer//shift bus/ truck/disel jeep etc. | 513000        | Litres |
| Water required for dust suppression in CHP &   |               |        |
| 2 Other industrial premises @ 22500 litres/day for one million tonnes of coal so for 25.0 million tonnes of coal production.                       | 562500        | Litres |
| 3 Water required for road watering @ 67500 litres/day for one million tonne of production , so for 25.0 million tonnes of production               | 1687500       | Litres |
| 4 Water required for fire-fighting @ 45000 litres/day for one million tonne of production , so for 25.0 million tonnes of production               | 1125000       | Litres |
| Total  | 3888000       | Litres |
| 5 Add 10% towards loss etc.  | <u>388800</u> | Litres |

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**Statement Showing Computation of Water Demand**

**Cost base: August 2020**

|                        |         |        |
|------------------------|---------|--------|
| Grand total            | 4276800 | Litres |
| Say                    | 4.28    | Litres |
| Total demand=(I)+(II)= | 5.11    | MLD    |

**ESTIMATED CAPITAL EXPENDITURE FOR WATER SUPPLY AND SEWERAGE**

**Investment on Colony sewerage**

|   | Unit | Quantity | Unit rate at CI<br>100 | Amount<br>in lakhs |
|---|------|----------|------------------------|--------------------|
| 1 Combined open surface drain                 |      |          |                        |                    |
| i) 60 x 90 cm size                            | Km   | 0.3665   | 104000                 | 18.29              |
| ii) 30 x 45 cm size                           | Km   | 0.733    | 57000                  | 20.05              |
| iii) 22.5 x 30 cm size                        | Km   | 0.91625  | 28000                  | 12.31              |
| 2 Sewage disposal for quarters                | each | 733      | 750                    | 263.77             |
| 3 Provision for poor/BC soil for item 1 @ 10% | LS   |          |                        | 5.065              |
| SUB TOTAL (1+2+3)                             |      |          |                        | 319.485            |
| 4 Contingencies 3%                            |      |          |                        | 9.58455            |
| <b>TOTAL (1+2+3+4)</b>                        |      |          |                        | <b>329.07</b>      |

**Investment on Industrial sewerage**

|  | Unit  | Quantity | Unit rate at CI<br>100 | Amount<br>in lakhs |
|--|-------|----------|------------------------|--------------------|
| 1 Combined open surface drain 30 x 45 cm size      | Km    | 1.1      | 57000                  | 30.08              |
| 2 Sewage disposal arrangement for service building | Lakhs |          |                        | 229.85             |
| 3 Provision for poor/BC soil for item 1 @ 10%      | LS    |          |                        | 3.008              |
| SUB TOTAL (1+2+3)                                  |       |          |                        | 262.94             |
| 4 Contingencies 3%                                 |       |          |                        | 7.89               |
| <b>TOTAL (1+2+3+4)</b>                             |       |          |                        | <b>270.826</b>     |

**CONTRIBUTION TOWARDS INTEGRATED WATER SUPPLY SCHEME**

|  |     |            |
|--|-----|------------|
| 1 Gross capital outlay of scheme prepared in Nov-81 ( at CI= 180 ) | Rs. | 95943079   |
| 2 Total Capacity Of Scheme = 14 MGD =                              |     | 63.56 MLD  |
| 3 Gross capital outlay of scheme at present CI = 4798              | Rs. | 2557416072 |
| Cost per lit   | Rs. | 40.24      |

Statement Showing Computation of Water Cost

Cost base: August 2020

| SL.NO. | PARTICULARS   | UNIT   | RATE  | QUANTITY    | AMOUNT<br>in Lakh |
|--------|---|--------|-------|-------------|-------------------|
| A.     | Total no of housing unit provided<br>Total water demand         |        |       | 733<br>5.11 | Nos.<br>MLD       |
| A.     | DRINKING WATER  |        |       |             |                   |
| i)     | Cost of water supply scheme                                     | Litres | 40.24 | 830000      | 333.99            |
| ii)    | Add L.S. amount for long range pipe during construction stage   |        | Rs.   |             | 16.70             |
|        |   |        |       | Sub-total   | 350.69            |
| B.     | NON-DRINKING WATER DEMAND                                       |        |       |             | .....I            |
| i)     | Cost of water supply scheme                                     | Litres | 0.00  | 4280000     | 0.00              |
| ii)    | Add L.S. amount for reservoirs pipeline and pumping arrangement |        | Rs.   |             | 430.57            |
|        |   |        |       | Sub-total   | 430.57            |
| C.     | Cost of sewerage disposal for residential buildings             |        |       |             | .....II           |
| D.     | Cost of sewage disposal for service buildings                   |        |       |             | 329.07            |
|        |   |        |       |             | .....III          |
|        |   |        |       |             | 270.83            |
|        | Total of I +II+III+IV   |        | Rs.   |             | 1381.16           |
|        | Add 3% contingencies :  |        | Rs.   |             | 41.43             |
|        | <b>GRAND TOTAL</b>  |        | Rs.   |             | <b>1422.59</b>    |

**Project Report of North of Arkhapal -Srirampur (Northern part) Coal Mine ( 15 MTY)****STATEMENT SHOWING CATEGORYWISE/DESIGNATION WISE MANPOWER REQUIREMENT FOR MDO****MDO Variant**

| Sl. No.    | Particulars   | Category under MDO | Manpower req. upto Target year | Manpower req.beyond Target year | Total Manpower Requirement |
|------------|---|--------------------|--------------------------------|---------------------------------|----------------------------|
| (a)        | (b)   | (c )               | (d)                            | (e)                             | (f) = (d)+(e)              |
| <b>I.</b>  | <b>O.B.R. Direct</b>                                |                    |                                |                                 |                            |
| 1          | Shovel operator                                     | Highly Skilled     | 16                             |                                 | 16                         |
| 2          | Shovel operator                                     | Highly Skilled     | 19                             |                                 | 19                         |
| 3          | Drill operator                                      | Highly Skilled     | 27                             |                                 | 27                         |
| 4          | Drill operator                                      | Highly Skilled     | 35                             | 6                               | 41                         |
| 5          | Dumper operator                                     | Highly Skilled     | 329                            |                                 | 329                        |
| 6          | Dozer operator                                      | Highly Skilled     | 30                             |                                 | 30                         |
| 7          | Dozer operator                                      | Skilled            | 18                             |                                 | 18                         |
|            | <b>Sub-total (I)</b>                                |                    | <b>474</b>                     | <b>6</b>                        | <b>480</b>                 |
| <b>II.</b> | <b>Coal Direct</b>                                  |                    |                                |                                 |                            |
| <b>A.</b>  | <b>Coal Face</b>                                    |                    |                                |                                 |                            |
| 1          | Surface Miner Operator                              | Highly Skilled     | 21                             |                                 | 21                         |
| 2          | Front End Loader Operator                           | Highly Skilled     | 22                             |                                 | 22                         |
| 3          | Dumper operator                                     | Highly Skilled     | 88                             | 23                              | 111                        |
| 4          | Dozer operator                                      | Skilled            | 12                             |                                 | 12                         |
|            | <b>Sub total (A) :</b>                              |                    | <b>143</b>                     | <b>23</b>                       | <b>166</b>                 |
| <b>B.</b>  | <b>Coal Handling Plant Operations</b>               |                    |                                |                                 |                            |
| 1          | Loading pointcontrol room attendant                 | Skilled            | 12                             |                                 | 12                         |
| 2          | Plough feeder/ Reclaim conveyor attendant attendant | Skilled            | 6                              |                                 | 6                          |
| 3          | Conveyor system attendant                           | Semiskilled        | 24                             |                                 | 24                         |
| 4          | Tripper operator                                    | Skilled            | 6                              |                                 | 6                          |
| 5          | Chute attendant                                     | Semiskilled        | 15                             |                                 | 15                         |
| 6          | Lift operator                                       | Semiskilled        | 3                              |                                 | 3                          |
| 7          | Sub - station attendant                             | Skilled            | 6                              |                                 | 6                          |
| 8          | Pump operator supervisor                            | Skilled            | 9                              |                                 | 9                          |
| 9          | Crusher House attendant                             | Skilled            | 3                              |                                 | 3                          |
| 10         | Vibro feeder attendant                              | Skilled            | 12                             |                                 | 12                         |
| 11         | Magnetic separator operator                         | Skilled            | 2                              |                                 | 2                          |
| 12         | CHP Incharge  | Skilled            | 2                              |                                 | 2                          |
| 13         | Mazdoor/Cleaner                                     | Unskilled          | 5                              |                                 | 5                          |
|            | <b>Sub-total (B) :</b>                              |                    | <b>105</b>                     |                                 | <b>105</b>                 |
| <b>C.</b>  | <b>Despatch, Loading &amp; Quality Control</b>      |                    |                                |                                 |                            |
| 1          | Sr. Manager (Sales)                                 | E1                 | 1                              |                                 | 1                          |
| 2          | Dy. Manager (Sales)                                 | E1                 | 1                              |                                 | 1                          |
| 3          | Asst. Manager (Sales)                               | E1                 | 1                              |                                 | 1                          |
| 4          | Technical Inspector                                 | E1                 | 3                              |                                 | 3                          |
| 5          | Chemist   | Skilled            | 4                              |                                 | 4                          |
| 6          | Lab Assistant                                       | Skilled            | 4                              |                                 | 4                          |
| 7          | Quality Inspector                                   | Highly Skilled     | 1                              |                                 | 1                          |
| 8          | LDC/Typist/PC Operator                              | Skilled            | 4                              |                                 | 4                          |
| 9          | Loading Supervisor                                  | Skilled            | 4                              |                                 | 4                          |

**Project Report of North of Arkhapal -Srirampur (Northern part) Coal Mine ( 15 MTY)****STATEMENT SHOWING CATEGORYWISE/DESIGNATION WISE MANPOWER REQUIREMENT FOR MDO****MDO Variant**

| Sl. No.     | Particulars   | Category under MDO | Manpower req. upto Target year | Manpower req.beyond Target year | Total Manpower Requirement |
|-------------|---|--------------------|--------------------------------|---------------------------------|----------------------------|
| (a)         | (b)   | (c )               | (d)                            | (e)                             | (f) = (d)+(e)              |
| 10          | Despatch Clerk  | Highly Skilled     | 3                              |                                 | 3                          |
| 11          | Sampling incharge                                       | Highly Skilled     | 3                              |                                 | 3                          |
| 12          | Sampling/siding mazdoor/helper                          | Semiskilled        | 5                              |                                 | 5                          |
|             | <b>Sub total (C) :</b>                                  |                    | <b>34</b>                      |                                 | <b>34</b>                  |
|             | <b>Total Coal (II) (A+B+C)</b>                          |                    | <b>282</b>                     | <b>23</b>                       | <b>305</b>                 |
| <b>III.</b> | <b>Common</b>   |                    |                                |                                 |                            |
| <b>A.</b>   | <b>Common Operation (HEMM)</b>                          |                    |                                |                                 |                            |
| 1           | Grader operator   | Skilled            | 9                              |                                 | 9                          |
| 2           | Forklift/ Crane operator                                | Highly Skilled     | 7                              |                                 | 7                          |
| 3           | Forklift/ Crane operator                                | Skilled            | 12                             |                                 | 12                         |
| 4           | Forklift/ Crane operator                                | Skilled            | 9                              |                                 | 9                          |
| 5           | Truck mounted mobile canon/Atomizer operator            | Skilled            | 9                              |                                 | 9                          |
| 6           | Water sprinkler operator                                | Highly Skilled     | 35                             |                                 | 35                         |
| 7           | Tyre handler operator                                   | Skilled            | 5                              |                                 | 5                          |
| 8           | Backhoe/F.E.L operator                                  | Skilled            | 5                              |                                 | 5                          |
| 9           | Driver for auxiliary/supporting equipment/truck/tractor | Semiskilled        | 28                             |                                 | 28                         |
| 10          | Vibratory compactor operator                            | Skilled            | 7                              | 2                               | 9                          |
|             | <b>Sub total (A)</b>                                    |                    | <b>126</b>                     | <b>2</b>                        | <b>128</b>                 |
| <b>B.</b>   | <b>Excavation Supervision</b>                           |                    |                                |                                 |                            |
| 1           | Foreman incharge  | Highly Skilled     | 6                              |                                 | 6                          |
| 2           | Foreman (Elect & Mech)                                  | Skilled            | 26                             |                                 | 26                         |
|             | <b>Sub-total (B)</b>                                    |                    | <b>32</b>                      |                                 | <b>32</b>                  |
| <b>C.</b>   | <b>E&amp;M Supervision</b>                              |                    |                                |                                 |                            |
| 1           | General manager (E&M)                                   | E1                 | 1                              |                                 | 1                          |
| 2           | Dy. General manager / Chief Manager (E&M)               | E1                 | 1                              |                                 | 1                          |
| 3           | Manager/Dy. Manager (E&M)                               | E1                 | 3                              |                                 | 3                          |
| 4           | Asstt. Manager (Electronics/Telecom)                    | E1                 | 3                              |                                 | 3                          |
| 5           | Asstt. Manager (E&M)                                    | E1                 | 3                              |                                 | 3                          |
| 6           | Foreman incharge (E&M)                                  | Highly Skilled     | 5                              |                                 | 5                          |
| 7           | Electrical Supervisor                                   | Skilled            | 4                              |                                 | 4                          |
| 8           | Foreman (Elect.,Mech. & Telecom.)                       | Skilled            | 4                              |                                 | 4                          |
| 9           | Sr. Draughtsman   | Highly Skilled     | 2                              |                                 | 2                          |
| 10          | PS / Sr.PA  | Skilled            | 2                              |                                 | 2                          |
| 11          | LDC/Typist/PC Operator                                  | Skilled            | 2                              |                                 | 2                          |
| 12          | Majdoor/Peon  | Unskilled          | 4                              |                                 | 4                          |
|             | <b>Sub-total (C) :</b>                                  |                    | <b>34</b>                      |                                 | <b>34</b>                  |
| <b>D.</b>   | <b>Excavation P&amp;M Maintenance</b>                   |                    |                                |                                 |                            |
| 1           | Sr. Mechanic  | Highly Skilled     | 13                             |                                 | 13                         |
| 2           | Fitter (mech.)  | Skilled            | 173                            | 3                               | 176                        |
| 3           | EP Elect  | Skilled            | 94                             | 2                               | 96                         |
| 4           | EP Welder   | Skilled            | 36                             |                                 | 36                         |
| 5           | EP Turner   | Skilled            | 12                             |                                 | 12                         |
| 6           | EP Machinist  | Skilled            | 12                             |                                 | 12                         |

**Project Report of North of Arkhapal -Srirampur (Northern part) Coal Mine ( 15 MTY)****STATEMENT SHOWING CATEGORYWISE/DESIGNATION WISE MANPOWER REQUIREMENT FOR MDO****MDO Variant**

| Sl. No.   | Particulars  | Category under MDO | Manpower req. upto Target year | Manpower req.beyond Target year | Total Manpower Requirement |
|-----------|--|--------------------|--------------------------------|---------------------------------|----------------------------|
| (a)       | (b)  | (c )               | (d)                            | (e)                             | (f) = (d )+(e)             |
| 7         | Helper   | Unskilled          | 303                            | 5                               | 308                        |
| 8         | Tyndal   | Skilled            | 2                              |                                 | 2                          |
| 9         | Mazdoor/cleaner  | Unskilled          | 24                             |                                 | 24                         |
|           | <b>Sub-total (D) :</b>                                       |                    | <b>669</b>                     | <b>10</b>                       | <b>679</b>                 |
| <b>E.</b> | <b>E&amp;M Maintenance including CHP &amp; Communication</b> |                    |                                |                                 |                            |
| 1         | Helper   | Unskilled          | 16                             |                                 | 16                         |
| 2         | Fitter (Mech.)   | Skilled            | 6                              |                                 | 6                          |
| 3         | Fitter (Elect.)  | Skilled            | 6                              |                                 | 6                          |
| 4         | Welder   | Skilled            | 4                              |                                 | 4                          |
| 5         | Machinist/turner   | Skilled            | 4                              |                                 | 4                          |
| 6         | Motor mechanic   | Skilled            | 2                              |                                 | 2                          |
| 7         | Auto electrician   | Skilled            | 2                              |                                 | 2                          |
| 8         | Telephone Mechanic/ Radio Mechanic                           | Skilled            | 2                              |                                 | 2                          |
| 9         | Tyndal zamadar   | Skilled            | 4                              |                                 | 4                          |
| 10        | Tyndal   | Skilled            | 4                              | 2                               | 6                          |
| 11        | Line Man/Mistry  | Skilled            | 3                              |                                 | 3                          |
| 12        | EPABX operator   | Semiskilled        | 2                              |                                 | 2                          |
| 13        | Forklift/Crane operator                                      | Skilled            | 3                              |                                 | 3                          |
| 14        | Mazdoor/ Cleaner   | Unskilled          | 6                              |                                 | 6                          |
|           | <b>Sub-total (E) :</b>                                       |                    | <b>64</b>                      | <b>2</b>                        | <b>66</b>                  |
| <b>F.</b> | <b>Operational Manpower for Pumping</b>                      |                    |                                |                                 |                            |
| 1         | Pump operator including Pipeline Maintenance crew            | Skilled            | 28                             |                                 | 28                         |
|           | <b>Sub-total (F) :</b>                                       |                    | <b>28</b>                      |                                 | <b>28</b>                  |
| <b>G.</b> | <b>Transport</b>   |                    |                                |                                 |                            |
| 1         | Driver   | Skilled            | 14                             |                                 | 14                         |
|           | <b>Sub total (G)</b>   |                    | <b>14</b>                      |                                 | <b>14</b>                  |
| <b>H.</b> | <b>Project Office/Manager's Office</b>                       |                    |                                |                                 |                            |
| 1         | General manager/Project Officer                              | E1                 |                                |                                 |                            |
| 2         | Dy. General manager/Project Manager                          | E1                 | 1                              |                                 | 1                          |
| 3         | Sr. Manager(M) / Safety Officer                              | E1                 | 1                              |                                 | 1                          |
| 4         | Safety Officer (Assistant)                                   | E1                 | 2                              |                                 | 2                          |
| 5         | Asstt. Colliery Manger                                       | E1                 | 5                              |                                 | 5                          |
| 6         | Overman  | Highly Skilled     | 9                              |                                 | 9                          |
| 7         | Blasting Foremen   | Highly Skilled     | 1                              |                                 | 1                          |
| 8         | Mining Sirdar  | Skilled            | 17                             |                                 | 17                         |
| 9         | Mining Sirdar (Blasting)                                     | Skilled            | 1                              |                                 | 1                          |
| 10        | Shotfirer  | Skilled            | 1                              |                                 | 1                          |
| 11        | Blasting Mazdoor   | Skilled            | 5                              |                                 | 5                          |
| 12        | Dump spotter   | Semiskilled        | 32                             |                                 | 32                         |
|           | <b>Sub total (H)</b>   |                    | <b>75</b>                      |                                 | <b>75</b>                  |
| <b>I.</b> | <b>Training</b>  |                    |                                |                                 |                            |

**Project Report of North of Arkhapal -Srirampur (Northern part) Coal Mine ( 15 MTY)****STATEMENT SHOWING CATEGORYWISE/DESIGNATION WISE MANPOWER REQUIREMENT FOR MDO****MDO Variant**

| Sl. No. | Particulars                          | Category under MDO | Manpower req. upto Target year | Manpower req.beyond Target year | Total Manpower Requirement |
|---------|--------------------------------------|--------------------|--------------------------------|---------------------------------|----------------------------|
| (a)     | (b)                                  | (c )               | (d)                            | (e)                             | (f) = (d )+(e)             |
| 1       | Training officer/Sr. Manager (M)     | E1                 | 1                              |                                 | 1                          |
| 2       | Instructor                           | Highly Skilled     | 2                              |                                 | 2                          |
| 3       | Office suptd.                        | Skilled            | 1                              |                                 | 1                          |
| 4       | Peon                                 | Semiskilled        | 1                              |                                 | 1                          |
|         | <b>Sub total (I)</b>                 |                    | <b>5</b>                       |                                 | <b>5</b>                   |
| J.      | <b>Accounts</b>                      |                    |                                |                                 |                            |
| 1       | Sr. Manager (Finance & Accounts)     | E1                 | 1                              |                                 | 1                          |
| 2       | Manager (Finance & Accounts)         | E1                 | 1                              |                                 | 1                          |
| 3       | Asst. Manager (Finance & Accounts)   | E1                 | 1                              |                                 | 1                          |
| 4       | Accounts officer                     | E1                 | 1                              |                                 | 1                          |
| 5       | Accountant                           | Highly Skilled     | 1                              |                                 | 1                          |
| 6       | Cost Accountant                      | Skilled            | 1                              |                                 | 1                          |
| 7       | Clerk                                | Skilled            | 2                              |                                 | 2                          |
| 8       | Peon                                 | Semiskilled        | 1                              |                                 | 1                          |
|         | <b>Sub total (J)</b>                 |                    | <b>9</b>                       |                                 | <b>9</b>                   |
| K.      | <b>Watch and Ward</b>                |                    |                                |                                 |                            |
| 1       | Security Officer                     | E1                 | 1                              |                                 | 1                          |
| 2       | Security Inspector                   | Semiskilled        | 2                              |                                 | 2                          |
| 3       | Head Security Guard                  | Semiskilled        | 2                              |                                 | 2                          |
| 4       | Security Guard                       | Unskilled          | 5                              |                                 | 5                          |
| 5       | Security Guard                       | Unskilled          | 32                             |                                 | 32                         |
|         | <b>Sub total (K)</b>                 |                    | <b>42</b>                      |                                 | <b>42</b>                  |
| L.      | <b>Personnel/Welfare</b>             |                    |                                |                                 |                            |
| 1       | Manager (Personnel)                  | E1                 | 1                              |                                 | 1                          |
| 2       | Dy. Manager (Personnel)              | E1                 | 1                              |                                 | 1                          |
| 3       | Asstt. Manager (Personnel)           | E1                 | 1                              |                                 | 1                          |
| 4       | Office suptd.                        | Highly Skilled     | 1                              |                                 | 1                          |
| 5       | Clerk                                | Skilled            | 3                              |                                 | 3                          |
| 6       | Peon                                 | Semiskilled        | 1                              |                                 | 1                          |
|         | <b>Sub total (L)</b>                 |                    | <b>8</b>                       |                                 | <b>8</b>                   |
| M.      | <b>Store &amp; Magazine</b>          |                    |                                |                                 |                            |
| 1       | Materials manager (Store & purchase) | E1                 | 1                              |                                 | 1                          |
| 2       | Chief Store keeper                   | Highly Skilled     | 1                              |                                 | 1                          |
| 3       | Store keeper                         | Skilled            | 2                              |                                 | 2                          |
| 4       | Asst.S.K./Magazine clerk             | Skilled            | 2                              |                                 | 2                          |
| 5       | LDC/typist                           | Skilled            | 2                              |                                 | 2                          |
| 6       | Forklift cum EOT Crane operator      | Skilled            | 4                              |                                 | 4                          |
| 7       | Tyndals/ Store Mazdoor               | Semiskilled        | 4                              |                                 | 4                          |
|         | <b>Sub total (M)</b>                 |                    | <b>16</b>                      |                                 | <b>16</b>                  |
| N.      | <b>Civil</b>                         |                    |                                |                                 |                            |
| 1       | DGM (Civil)                          | E1                 |                                |                                 |                            |

**Project Report of North of Arkhapal -Srirampur (Northern part) Coal Mine ( 15 MTY)****STATEMENT SHOWING CATEGORYWISE/DESIGNATION WISE MANPOWER REQUIREMENT FOR MDO****MDO Variant**

| Sl. No.    | Particulars                              | Category under MDO | Manpower req. upto Target year        | Manpower req.beyond Target year        | Total Manpower Requirement        |
|------------|--|--------------------|---------------------------------------|--|-----------------------------------|
| (a)        | (b)                                      | (c )               | (d)                                   | (e)                                    | (f) = (d)+(e)                     |
| 2          | Manager (C )/Dy. Manager (C )            | E1                 | 1                                     |  | 1                                 |
| 3          | SOE (C )                                 | E1                 | 4                                     |  | 4                                 |
| 4          | Overseer (C )                            | Highly Skilled     | 4                                     |  | 4                                 |
| 5          | Helper                                   | Unskilled          | 15                                    |  | 15                                |
| 6          | Sewage treatment Plant operator          | Semiskilled        | 7                                     |  | 7                                 |
|            | <b>Sub total (N)</b>                     |                    | <b>31</b>                             |  | <b>31</b>                         |
| <b>O.</b>  | <b>Medical</b>                           |                    |                                       |  |                                   |
| 1          | Medical suptd.                           | E1                 |                                       |  |                                   |
| 2          | Sr.medical officer/G.D.M.O.              | E1                 | 1                                     |  | 1                                 |
| 4          | Compounder                               | Skilled            | 1                                     |  | 1                                 |
| 5          | Dresser                                  | Skilled            | 1                                     |  | 1                                 |
| 6          | Nurse                                    | Skilled            | 3                                     |  | 3                                 |
| 7          | Sr. Ward boy/Mid-wife/Dai/Aya            | Semiskilled        | 3                                     |  | 3                                 |
| 8          | Peon                                     | Semiskilled        | 1                                     |  | 1                                 |
|            | <b>Sub total (O)</b>                     |                    | <b>10</b>                             |  | <b>10</b>                         |
| <b>P.</b>  | <b>Survey</b>                            |                    |                                       |  |                                   |
| 1          | Sr. Manager / Manager (Survey)           | E1                 |                                       |  |                                   |
| 2          | Survey officer                           | E1                 | 1                                     |  | 1                                 |
| 3          | Dy. Surveyor (Qualified / Unqualified)   | Semiskilled        | 9                                     |  | 9                                 |
| 4          | Chief Draughtsman                        | Highly Skilled     | 1                                     |  | 1                                 |
| 5          | Chainman                                 | Skilled            | 1                                     |  | 1                                 |
| 6          | Survey Mazdoors/helper                   | Unskilled          | 4                                     |  | 4                                 |
|            | <b>Sub total (P)</b>                     |                    | <b>16</b>                             |  | <b>16</b>                         |
|            | <b>Total Common services (III)</b>       |                    | <b>1179</b>                           | <b>14</b>                              | <b>1193</b>                       |
| <b>IV.</b> | <b>Land Reclamation ENV. &amp; R/R</b>   |                    |                                       |  |                                   |
| 1          | Supd. engineer (Env.)/Sr. Manager (Env.) | E1                 | 1                                     |  | 1                                 |
| 2          | Land officer/ Dy. Manager (Env.)         | E1                 | 1                                     |  | 1                                 |
| 3          | Dozer operator                           | Skilled            | 6                                     |  | 6                                 |
| 4          | Tipping Truck operator                   | Skilled            | 6                                     |  | 6                                 |
| 5          | Tree Transplanter operator               | Highly Skilled     | 3                                     |  | 3                                 |
| 6          | Water Tanker                             | Skilled            | 6                                     |  | 6                                 |
|            | <b>Total (IV)</b>                        |                    | <b>23</b>                             |  | <b>23</b>                         |
|            | <b>GRAND TOTAL</b>                       |                    | <b>Manpower req. upto Target year</b> | <b>Manpower req.beyond Target year</b> | <b>Total Manpower Requirement</b> |
| I          | OB                                       |                    | 474                                   | 6                                      | 480                               |
| II         | Coal                                     |                    | 282                                   | 23                                     | 305                               |
| III        | Common                                   |                    | 1179                                  | 14                                     | 1193                              |
| IV.        | L/R                                      |                    | 23                                    |  | 23                                |
|            | <b>Grand Total</b>                       |                    | <b>1958</b>                           | <b>43</b>                              | <b>2001</b>                       |

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**STATEMENT SHOWING ESTIMATED SALARIES & BENEFITS**

| SL NO | PARTICULARS                         | Annual Earings | Surface Manpower | Total Manpower                               | Total cost     |
|-------|-------------------------------------|----------------|------------------|--|----------------|
|       |                                     | Rs.in Lakhs    | No.              | No.  | Rs.in Lakhs    |
|       | <b>Daily Rated</b>                  |                |                  |  |                |
|       | <b>Excavation</b>                   |                |                  |  |                |
| 1     | HIGHLY SKILLED                      | 3.63           | 302              | 302  | 1096.26        |
| 2     | HIGHLY SKILLED                      | 3.63           | 410              | 410  | 1488.30        |
| 3     | SKILLED                             | 3.51           | 240              | 240  | 842.40         |
| 4     | SKILLED                             | 3.51           | 133              | 133  | 466.83         |
| 5     | SEMISKILLED                         | 3.38           | 59               | 59   | 199.42         |
| 6     | SEMISKILLED                         | 3.38           |                  |  |                |
|       | <b>Category</b>                     |                |                  |  |                |
| 1     | UNSKILLED                           | 3.26           | 204              | 204  | 665.04         |
| 2     | SEMISKILLED                         | 3.38           | 220              | 220  | 743.60         |
| 3     | SEMISKILLED                         | 3.38           | 63               | 63   | 212.94         |
| 4     | SKILLED                             | 3.51           | 84               | 84   | 294.84         |
| 5     | SKILLED                             | 3.51           | 25               | 25   | 87.75          |
| 6     | HIGHLY SKILLED                      | 3.63           | 28               | 28   | 101.64         |
|       | <b>Monthly Rated</b>                |                |                  |  |                |
| 1     | UNSKILLED                           | 3.26           |                  |  |                |
| 2     | UNSKILLED                           | 3.26           | 8                | 8  | 26.08          |
| 3     | SEMISKILLED                         | 3.38           |                  |  |                |
| 4     | SEMISKILLED                         | 3.38           | 4                | 4  | 13.52          |
| 5     | SEMISKILLED                         | 3.38           | 4                | 4  | 13.52          |
| 6     | SKILLED                             | 3.51           | 68               | 68   | 238.68         |
| 7     | SKILLED                             | 3.51           | 67               | 67   | 235.17         |
| 8     | HIGHLY SKILLED                      | 3.63           | 21               | 21   | 76.23          |
| 9     | HIGHLY SKILLED                      | 3.63           | 19               | 19   | 68.97          |
|       | <b>Executives</b>                   |                |                  |  |                |
| 1     | E-1                                 | 12.10          | 4                | 4  | 48.40          |
| 2     | E-1                                 | 12.10          | 5                | 5  | 60.50          |
| 3     | E-1                                 | 12.10          | 10               | 10   | 121.00         |
| 4     | E-1                                 | 12.10          | 9                | 9  | 108.90         |
| 5     | E-1                                 | 12.10          | 5                | 5  | 60.50          |
| 6     | E-1                                 | 12.10          | 5                | 5  | 60.50          |
| 7     | E-1                                 | 12.10          | 3                | 3  | 36.30          |
| 8     | E-1                                 | 12.10          | 1                | 1  | 12.10          |
|       | <b>Total Manpower</b>               |                | <b>2001</b>      | <b>2001</b>                                  | <b>7379.39</b> |
|       | <b>NO.OF MANSHIFTS PER MANPOWER</b> |                | <b>264</b>       | <b>528264</b>                                |                |
|       |                                     |                |                  | <b>Cost/T(Rs.)</b>                           | <b>29.85</b>   |
|       |                                     |                |                  | <b>EMS(Rs.)</b>                              | <b>1396.91</b> |
|       |                                     |                |                  | Total estimated outsourced manpower(Approx.) |                |
|       |                                     |                |                  | Total Required Manpower for the Project      | <b>2001</b>    |
|       |                                     |                |                  | <b>O.M.S (Tonne)</b>                         | <b>46.96</b>   |

# **COMBINED FINANCIAL RESULT**

**Project Report of Subhadra OCP (25 MTy) [West of Gopalprasad West & Utkal A Block]**  
**Statement Showing Estimated Total Capital Investment in MDO variant (combined)**

Cost base: August 2020

| Sl. No. | Particulars   | Existing capital as on 31.03.2020 |                 | Additional capital requirement | Total capital requirement | Year-wise Phasing of capital requirement PRODUCTION PERIOD |                     |                     |                      |                      |                     |                      |
|---------|---|-----------------------------------|-----------------|--------------------------------|---------------------------|--|---------------------|---------------------|----------------------|----------------------|---------------------|----------------------|
|         |   | Gross Block                       | Net block       |                                |                           | Y1<br>Coal (MMt)<br>OB (Medium)                            | Y2<br>Coal (MMt)    | Y3<br>4.00          | Y4<br>10.00          | Y5<br>18.51          | Y6<br>22.16         | Y7<br>20.00<br>27.89 |
| 1       | Land R&R  | 7174.69                           | 6827.84         | 96167.95<br>40546.04           | 103342.64<br>40546.04     | 95592.80<br>9500.00  | 11385.95<br>4000.00 | 19527.80<br>4000.00 | 13140.00<br>4000.00  | 12920.20<br>3700.00  | 12641.75<br>3700.00 | 13377.10<br>3700.00  |
| 2       | Buildings   |                                   |                 | 8350.93<br>18418.09            | 8350.93<br>18418.09       |  | 3136.75             |                     | 1489.55<br>3700.00   | 587.88<br>3700.00    |                     |                      |
| 2.1     | Service Buildings                                   |                                   |                 |                                |                           |  |                     |                     |                      |                      |                     |                      |
| 2.2     | Residential Buildings                               |                                   |                 |                                |                           |  |                     |                     |                      |                      |                     |                      |
| 3       | Plant & Machinery HEMM Other than HEMM              | 1.89                              | 1.86            | 93823.86<br>61854.71           | 93823.86<br>61856.60      | 82591.62<br>57213.28                                       | 911.60              | 1024.32             | 28433.89<br>22799.15 | 19811.84<br>24487.76 | 11900.47<br>2483.12 | 11658.55<br>2260.24  |
| 4       | Furniture & Fittings                                | 30.04                             | 6.35            | 172.00                         | 202.04                    | 172.00   |                     |                     | 40.00                | 25.00                | 39.00               | 24.00                |
| 5       | Railway siding                                      |                                   |                 | 28563.48                       | 28563.48                  |  | 4009.20             | 9469.08             | 7527.60              | 7557.60              |                     |                      |
| 6       | Vehicles  |                                   |                 | 314.22                         | 314.22                    |  |                     |                     | 96.13                | 53.20                | 52.27               | 43.45                |
| 7       | Prospecting & Boring                                | 1531.92                           | 1531.92         | 500.00                         | 2031.92                   | 500.00   | 100.00              | 100.00              | 100.00               | 100.00               |                     | 69.17                |
| 8       | Development   |                                   |                 |                                |                           |  |                     |                     |                      |                      |                     |                      |
| 8.1     | Capital Outlay in Mines (including upfront payment) | 24110.54                          | 24110.54        | 23110.54                       | 18341.36                  | 1291.60  | 601.00              | 601.00              | 701.00               | 701.00               | 837.61              | 736.97               |
| 8.2     | Roads and Culverts                                  | 6467.80                           | 6467.80         | 6467.80                        | 500.00                    | 655.58   | 1100.00             | 1100.00             | 1100.00              | 1100.00              | 1015.72             | 996.49               |
| 8.3     | Water supply & sewerage                             | 1422.59                           | 1422.59         | 1422.59                        | 313.00                    | 524.03   | 280.00              | 280.00              | 280.00               | 280.00               | 302.59              | 302.59               |
| 8.4     | Scientific Research                                 | 313.00                            | 211.03          | 313.00                         | 1905.24                   | 124.00   | 114.00              | 114.00              | 20.00                | 20.00                | 15.00               | 10.00                |
| 8.5     | PR & other Reports Preparation Cost                 |                                   |                 |                                |                           |  |                     |                     | 952.62               | 952.62               |                     |                      |
| 9       | Washery   |                                   |                 |                                |                           |  |                     |                     |                      |                      |                     |                      |
| 10      | Revenue Exp. Capitalised during Dev. Period         | 3685.29                           | 3685.29         | 3685.29                        |                           |  |                     |                     |                      |                      |                     |                      |
| 10.1    | Interest during const. period                       |                                   |                 |                                |                           |  |                     |                     |                      |                      |                     |                      |
| 10.2    | Less : Dep. Capitalised During Dev. period          |                                   |                 |                                |                           |  |                     |                     |                      |                      |                     |                      |
|         | <b>Total</b>  | <b>12634.86</b>                   | <b>12264.29</b> | <b>382930.44</b>               | <b>395565.30</b>          | <b>365481.62</b>   | <b>48008.86</b>     | <b>45305.17</b>     | <b>84279.94</b>      | <b>76192.10</b>      | <b>37012.61</b>     | <b>36434.57</b>      |
|         |   |                                   |                 |                                |                           |  |                     |                     |                      |                      |                     | <b>38248.37</b>      |
|         |   |                                   |                 |                                |                           |  |                     |                     |                      |                      |                     | <b>17448.82</b>      |

**Variant : MDO (Combined)**

**Appendix-A**

**Project Report of Subhadra OCP (25 MTy) [West of Gopalprasad West & Utkal A Block]  
Statement Showing Estimated Total Capital Investment in MDO variant (combined)**

**Cost base: August 2020**

| Sl. No. | Particulars   | Capital requirement upto year 7 | Year-wise Phasing of capital requirement |                  |                  |               |                |                |                |                   |                   |                   |                 |               | Capital requirement upto year 25 |               |             |               |                      |
|---------|---|---------------------------------|--|------------------|------------------|---------------|----------------|----------------|----------------|-------------------|-------------------|-------------------|-----------------|---------------|----------------------------------|---------------|-------------|---------------|----------------------|
|         |   |                                 | PRODUCTION PERIOD                        |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               |                      |
| PR of   |   | Y8                              | Y9                                       | Y10              | Y11              | Y12           | Y13            | Y14            | Y15            | Y16               | Y17               | Y18               | Y19             | Y20           | Y21                              | Y22           | Y23         | Y24           | Y25                  |
| 1       | Land R&R  | 95592.80<br>40546.04            | 45.00                                    | 45.00            | 145.00           | 145.00        | 195.15         |                |                |                   |                   |                   |                 |               |                                  |               |             |               | 96167.95<br>40546.04 |
| 2       | Buildings   | 8350.93<br>18418.09             |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               | 8350.93<br>18418.09  |
| 2.1     | Service Buildings   |                                 |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               |                      |
| 2.2     | Residential Buildings   |                                 |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               |                      |
| 3       | Plant & Machinery HEMM<br>Other than HEMM                       | 82591.62<br>57213.28            | 5293.75<br>1552.37                       | 384.40<br>948.07 | 338.40<br>194.31 |               |                |                | 456.76         | 1647.06<br>240.20 | 1921.57<br>205.89 | 1098.04<br>137.26 | 274.51<br>34.31 | 469.74        |                                  |               |             |               | 93823.86<br>61854.71 |
| 4       | Furniture & Fittings  |                                 |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               |                      |
| 5       | Railway siding  | 172.00                          |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               | 172.00               |
| 6       | Vehicles  | 28563.48                        |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               | 28563.48             |
| 7       | Prospecting & Boring  | 314.22                          |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               | 314.22               |
| 8       | Development Capital Outlay in Mines (including upfront payment) | 500.00                          |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               | 500.00               |
| 8.2     | Roads and Culverts  | 23110.54                        |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               | 23110.54             |
| 8.3     | Water supply & sewerage   | 6467.80                         |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               | 6467.80              |
| 8.4     | Scientific Research   | 1422.59                         |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               | 1422.59              |
| 8.5     | PR & other Reports Preparation Cost                             | 313.00                          |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               | 313.00               |
|         |   | 1905.24                         |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               | 1905.24              |
| 9       | Washery   |                                 |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               |                      |
| 10      | Revenue Exp. Capitalised during Dev. Period                     |                                 |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               |                      |
| 10.1    | Interest during const. period                                   |                                 |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               |                      |
| 10.2    | Less : Dep. Capitalised During Dev. period                      |                                 |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               |                      |
|         | <b>Total</b>  | <b>365481.62</b>                | <b>6891.12</b>                           | <b>1377.47</b>   | <b>677.71</b>    | <b>645.00</b> | <b>1151.91</b> | <b>2161.77</b> | <b>1852.95</b> | <b>1235.30</b>    | <b>308.82</b>     | <b>744.26</b>     | <b>111.38</b>   | <b>282.87</b> | <b>8.27</b>                      | <b>282.87</b> | <b>8.27</b> | <b>282.87</b> | <b>8.27</b>          |
|         |   |                                 |  |                  |                  |               |                |                |                |                   |                   |                   |                 |               |                                  |               |             |               | <b>382930.44</b>     |

Variant : MDO (Combined)

**Project Report of Subhadra OCP (25 MTy) [West of Gopalprasad West & Utkal A Block]  
STATEMENT SHOWING ESTIMATED COST OF PRODUCTION PER TONNE @ 100% CAPACITY**

Cost base: August 2020

Appendix-C

|   |                                 | COST IN RS./Te         |                        |
|---|---------------------------------|------------------------|------------------------|
|   |                                 | 250.00<br>1.12         | TOTAL MANPOWER<br>1.71 |
| TARGET OUTPUT(L.Te)<br>AVERAGE STRIPPING RATIO(M3/Te)<br>SPECIFIC GRAVITY OF COAL<br>COST BASE - AUG 2020 |                                 | 2108                   |                        |
| SR.NO   | PARTICULARS                     | TOTAL COST<br>(Rs./Te) | FIXED<br>(Rs./Te)      |
| 1   | SALARY & WAGES COST             | 35.87                  | 35.87                  |
| 2   | STORES COST                     | 200.64                 | 114.48                 |
| 3   | POWER COST                      | 20.96                  | 15.72                  |
| 4   | MISC.COST                       | 25.66                  | 11.26                  |
| 5   | MINE CLOSURE COST               | 2.64                   | 2.64                   |
| 6   | PROJECT ADMINISTRATIVE COST     | 8.42                   | 8.42                   |
| 7   | RESERVE PRICE                   | 138.60                 | 0.00                   |
| 8   | OUTSOURCING COST                | 0.00                   | 0.00                   |
| 9   | BG CHARGES                      | 4.09                   | 4.09                   |
| 10  | INTEREST ON WORKING CAPITAL     | 14.36                  | 5.11                   |
| <b>11</b>   | <b>TOTAL CASH COST</b>          | <b>451.25</b>          | <b>197.59</b>          |
| 12  | INTEREST ON LOAN CAPITAL        | 0.00                   | 0.00                   |
| 13  | DEPRECIATION/AMORTIZATION       | 82.26                  | 82.26                  |
| 14  | NOTIONAL ADMINISTRATIVE COST    | 63.08                  | 63.08                  |
| <b>15</b>   | <b>TOTAL COST OF PRODUCTION</b> | <b>596.59</b>          | <b>342.93</b>          |
|   |                                 |                        | <b>253.66</b>          |
|   |                                 |                        | <b>100.00%</b>         |

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]  
STATEMENT SHOWING REVENUE CASH OUTFLOW AT 100% LEVEL OF PRODUCTION**

Cost base: August 2020

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**STATEMENT SHOWING REVENUE CASH OUTFLOW AT 85% LEVEL OF PRODUCTION**

Cost base: August 2020

(Amount in ₹ Lakhs)

| PR of<br>YEAR                | SALARIE<br>S &<br>WAGES | STORES<br>COST | POWER<br>COST | MISCELL<br>ANEOUS<br>COST | MINE -<br>CLOSURE<br>COST | ADMINI<br>STRATIVE<br>COST | RESERV<br>E PRICE | OUTSOURC<br>ING COST | BG<br>CHARG<br>ES | INTERE<br>ST ON<br>WORKIN<br>G CAPITAL | CASH<br>COST | DEPRECI<br>ATION | AMORTI<br>ZATION | NONOP<br>ERAL<br>ADMINISTRATIVE<br>COST | COST OF<br>PRODUCT<br>ION | PRODUCTION<br>(LTY) | COST PER<br>TONNE (RS) | AVERAGE SALE<br>PRICE (RS /TN) | SALES<br>REALISAT<br>ION | PROFIT/<br>LOSS |            |
|------------------------------|-------------------------|----------------|---------------|---------------------------|---------------------------|----------------------------|-------------------|----------------------|-------------------|--|--------------|------------------|------------------|---|---------------------------|---------------------|------------------------|--------------------------------|--------------------------|-----------------|------------|
|                              |                         |                |               |                           |                           |                            |                   |                      |                   |  |              |                  |                  |   |                           |                     |                        |                                |                          |                 |            |
| Subhadra                     |                         |                |               |                           |                           |                            |                   |                      |                   |  |              |                  |                  |   |                           |                     |                        |                                |                          |                 |            |
| OCP                          | 1                       | 0.00           | 15.29         | 52.51                     | 164.40                    | 289.41                     | 0.00              | 0.00                 | 0.00              | 857.85                                 | 54.07        | 1433.53          | 1616.26          | 769.83                                  | 0.00                      | 3819.61             | 0.00                   | 0.00                           | 0.00                     |                 |            |
| OCP                          | 2                       | 0.00           | 32.42         | 74.71                     | 447.03                    | 303.88                     | 0.00              | 0.00                 | 0.00              | 857.85                                 | 62.20        | 1778.10          | 2424.07          | 1589.66                                 | 0.00                      | 0.00                | 0.00                   | 0.00                           | 0.00                     |                 |            |
| OCP                          | 3                       | 3444.71        | 15214.84      | 2237.55                   | 1937.87                   | 319.08                     | 4712.40           | 0.00                 | 857.85            | 866.82                                 | 29927.92     | 7230.73          | 2065.77          | 2523.20                                 | 41747.62                  | 34.00               | 1227.87                | 956.15                         | 32509.10                 | -9238.52        |            |
| MITY                         | 4                       | 4872.86        | 25864.40      | 2617.83                   | 3375.70                   | 335.03                     | 842.00            | 11781.00             | 0.00              | 857.85                                 | 1570.22      | 52116.88         | 11300.60         | 2535.77                                 | 6308.00                   | 72261.25            | 85.00                  | 850.13                         | 956.15                   | 81272.75        | 9011.50    |
| MITY                         | 5                       | 6169.62        | 31617.04      | 3288.79                   | 4082.26                   | 3511.78                    | 1263.00           | 17671.50             | 0.00              | 857.85                                 | 2084.43      | 67386.27         | 12794.43         | 2998.04                                 | 9462.00                   | 92940.75            | 127.50                 | 726.59                         | 935.15                   | 119231.63       | 26590.88   |
| MDO                          | 6                       | 7257.79        | 36888.90      | 3652.47                   | 4778.35                   | 369.37                     | 1684.00           | 23562.00             | 0.00              | 857.85                                 | 2570.58      | 81621.31         | 14213.72         | 3459.15                                 | 12616.00                  | 11190.19            | 170.00                 | 658.30                         | 935.15                   | 158975.50       | 47065.31   |
| MDO                          | 7                       | 8245.94        | 42178.81      | 5443.33                   | 387.84                    | 2105.00                    | 29452.50          | 0.00                 | 857.85            | 3054.29                                | 95617.57     | 15647.57         | 3971.30          | 15770.00                                | 131006.44                 | 212.50              | 616.50                 | 935.15                         | 198719.38                | 67712.94        |            |
| VARIANT                      | 8                       | 8537.67        | 44578.30      | 3973.81                   | 5635.28                   | 407.23                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3127.62      | 98675.25         | 16255.12         | 3972.55                                 | 15770.00                  | 134672.92           | 212.50                 | 633.75                         | 935.15                   | 198719.38       | 64046.46   |
| VARIANT                      | 9                       | 8684.38        | 44962.31      | 4090.55                   | 5646.37                   | 427.59                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3145.68      | 99372.24         | 16335.61         | 3973.80                                 | 15770.00                  | 135451.64           | 212.50                 | 637.42                         | 935.15                   | 198719.38       | 63267.73   |
| VARIANT                      | 10                      | 8733.37        | 45227.88      | 4453.75                   | 5654.17                   | 448.97                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3162.76      | 100996.26        | 16070.25         | 3977.82                                 | 15770.00                  | 135914.33           | 212.50                 | 639.60                         | 935.15                   | 198719.38       | 62805.04   |
| VARIANT                      | 11                      | 8733.37        | 45198.71      | 4459.53                   | 5654.17                   | 471.42                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3162.74      | 100995.30        | 16095.25         | 3981.85                                 | 15770.00                  | 135942.40           | 212.50                 | 639.73                         | 935.15                   | 198719.38       | 62776.97   |
| VARIANT                      | 12                      | 8733.37        | 44645.01      | 4360.90                   | 5656.04                   | 494.99                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3147.59      | 99455.26         | 15728.12         | 3987.27                                 | 15770.00                  | 134938.65           | 212.50                 | 635.01                         | 935.15                   | 198719.38       | 63780.73   |
| VARIANT                      | 13                      | 8733.37        | 45722.57      | 4332.42                   | 5689.21                   | 519.74                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3174.34      | 100587.01        | 15909.94         | 3987.27                                 | 15770.00                  | 136254.22           | 212.50                 | 641.20                         | 935.15                   | 198719.38       | 62465.15   |
| VARIANT                      | 14                      | 8733.37        | 46277.33      | 4140.39                   | 5717.65                   | 545.73                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3184.43      | 101014.24        | 16201.12         | 3987.27                                 | 15770.00                  | 136972.63           | 212.50                 | 644.58                         | 935.15                   | 198719.38       | 61746.75   |
| VARIANT                      | 15                      | 8761.79        | 46958.64      | 5019.62                   | 5737.35                   | 573.01                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3224.93      | 102730.69        | 16390.55         | 3987.27                                 | 15770.00                  | 138878.52           | 212.50                 | 653.55                         | 935.15                   | 198719.38       | 59840.86   |
| VARIANT                      | 16                      | 8815.25        | 46733.17      | 5017.22                   | 5743.49                   | 601.66                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3220.59      | 102546.73        | 16543.95         | 3987.27                                 | 15770.00                  | 138847.95           | 212.50                 | 653.40                         | 935.15                   | 198719.38       | 59871.42   |
| VARIANT                      | 17                      | 8826.14        | 46904.41      | 5069.10                   | 5750.31                   | 631.75                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3227.13      | 102824.19        | 16551.79         | 3987.27                                 | 15770.00                  | 139133.25           | 212.50                 | 654.74                         | 935.15                   | 198719.38       | 59586.12   |
| VARIANT                      | 18                      | 8837.03        | 46669.69      | 5023.30                   | 5750.39                   | 663.34                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3221.39      | 10280.68         | 16557.79         | 3987.27                                 | 15770.00                  | 138895.74           | 212.50                 | 653.63                         | 935.15                   | 198719.38       | 59823.63   |
| VARIANT                      | 19                      | 8837.03        | 46911.18      | 5070.76                   | 5751.04                   | 696.50                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3229.09      | 102910.96        | 16546.85         | 3987.27                                 | 15770.00                  | 139215.08           | 212.50                 | 655.13                         | 935.15                   | 198719.38       | 59504.29   |
| VARIANT                      | 20                      | 8837.03        | 46920.34      | 58904.04                  | 5751.04                   | 731.33                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3250.14      | 10379.28         | 16173.98         | 3987.27                                 | 15770.00                  | 139730.53           | 212.50                 | 657.56                         | 935.15                   | 198719.38       | 58988.85   |
| Appendices                   | 21                      | 8837.03        | 46950.61      | 5899.73                   | 5751.04                   | 767.89                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3251.89      | 103873.55        | 14257.41         | 3987.27                                 | 15770.00                  | 137888.23           | 212.50                 | 648.89                         | 935.15                   | 198719.38       | 60311.15   |
| Page                         | 22                      | 8837.03        | 46969.52      | 5902.51                   | 5752.22                   | 806.29                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3253.38      | 103936.30        | 13707.88         | 3987.27                                 | 15770.00                  | 137401.45           | 212.50                 | 646.60                         | 935.15                   | 198719.38       | 61317.93   |
| No                           | 23                      | 8837.03        | 46970.03      | 5731.22                   | 5752.25                   | 846.60                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3250.22      | 103802.71        | 13221.27         | 3987.27                                 | 15770.00                  | 136781.26           | 212.50                 | 643.68                         | 935.15                   | 198719.38       | 61938.12   |
| No                           | 24                      | 8837.03        | 46590.15      | 5732.87                   | 5752.25                   | 888.93                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3242.11      | 103458.69        | 12531.81         | 3987.27                                 | 15770.00                  | 135747.77           | 212.50                 | 638.81                         | 935.15                   | 198719.38       | 62971.60   |
| A.                           | 25                      | 8837.03        | 46595.52      | 5733.60                   | 5752.25                   | 933.38                     | 2105.00           | 29452.50             | 0.00              | 857.85                                 | 3243.33      | 103510.46        | 11632.29         | 3987.27                                 | 15770.00                  | 134900.03           | 212.50                 | 634.82                         | 935.15                   | 198719.38       | 63819.35   |
| 71                           | TOTAL                   | 187979.24      | 983637.07     | 105721.22                 | 123125.66                 | 13812.74                   | 44120.80          | 617324.40            | 0.00              | 21446.25                               | 67981.98     | 2165149.37       | 341938.36        | 89117.36                                | 330539.20                 | 2926744.29          | 4454.00                |                                |                          | 416767.10       | 1240912.81 |
| COST<br>PER<br>TONNE<br>(RS) |                         | 42.20          | 220.84        | 23.74                     | 27.64                     | 3.10                       | 9.91              | 138.60               | 0.00              | 4.82                                   | 15.26        | 486.11           | 76.77            | 20.01                                   | 74.21                     | 657.10              | 1.00                   |                                |                          | 935.71          | 278.61     |

Cost base: August 2020

| YEAR  | TOTAL CAPITAL INVESTMENT | REPLACEMENT CAPITAL | LESS:- GST CREDIT | TOTAL CAPITAL INVESTMENT | OPERATING COST | TOTAL CASH OUTFLOW | INFLOW FROM MINE CLOSURE FUND & SALES REALISATION | (Amount in ₹ Lakhs) |                  |  |
|---|--------------------------|---------------------|-------------------|--------------------------|----------------|--------------------|---|---------------------|------------------|--|
|   |                          |                     |                   |                          |                |                    |   | NET CASH OUT FLOW   | PRODUCTION (LTY) |  |
| EXISTING  | 10732                    | 0                   | 0                 | 10732                    | 0              | 10732              | 0   | -10732              | 0                |  |
| 1   | 48009                    | 0                   | 139               | 47870                    | 1437           | 49307              | 0   | -49307              | 0                |  |
| 2   | 45305                    | 0                   | 156               | 45149                    | 1784           | 46933              | 0   | -46933              | 0                |  |
| 3   | 84280                    | 0                   | 8933              | 75346                    | 32082          | 107429             | 38246   | -69183              | 40               |  |
| 4   | 76192                    | 0                   | 7515              | 68677                    | 56530          | 125207             | 95615   | -29592              | 100              |  |
| 5   | 37013                    | 0                   | 2589              | 34424                    | 73406          | 107830             | 141072  | 33242               | 150              |  |
| 6   | 36435                    | 398                 | 2446              | 34387                    | 89223          | 123610             | 187030  | 63420               | 200              |  |
| 7   | 38248                    | 665                 | 2668              | 36245                    | 104785         | 141030             | 233788  | 92757               | 250              |  |
| 8   | 6891                     | 0                   | 1208              | 5683                     | 108056         | 113739             | 233788  | 120048              | 250              |  |
| 9   | 1377                     | 398                 | 267               | 1509                     | 108809         | 110318             | 233788  | 123470              | 250              |  |
| 10  | 678                      | 8720                | 1939              | 7459                     | 109582         | 117042             | 235208  | 118166              | 250              |  |
| 11  | 645                      | 9783                | 2038              | 8390                     | 109576         | 117966             | 233788  | 115821              | 250              |  |
| 12  | 1152                     | 13610               | 2566              | 12196                    | 108832         | 121028             | 233788  | 112759              | 250              |  |
| 13  | 2162                     | 10865               | 2419              | 10608                    | 110022         | 120630             | 233788  | 113157              | 250              |  |
| 14  | 1853                     | 14320               | 2958              | 13216                    | 110428         | 123643             | 233788  | 110144              | 250              |  |
| 15  | 1235                     | 14241               | 2871              | 12605                    | 112185         | 124790             | 235200  | 111010              | 250              |  |
| 16  | 309                      | 10054               | 1788              | 8575                     | 111983         | 120558             | 233788  | 113230              | 250              |  |
| 17  | 744                      | 12854               | 2595              | 11003                    | 112273         | 123276             | 233788  | 110511              | 250              |  |
| 18  | 0                        | 9247                | 1958              | 7290                     | 111986         | 119276             | 233788  | 114512              | 250              |  |
| 19  | 111                      | 7985                | 1378              | 6718                     | 112365         | 119083             | 233788  | 114704              | 250              |  |
| 20  | 0                        | 7836                | 1575              | 6262                     | 113284         | 119545             | 236456  | 116911              | 250              |  |
| 21  | 0                        | 33618               | 5641              | 27977                    | 113363         | 141340             | 233788  | 92447               | 250              |  |
| 22  | 283                      | 33457               | 5602              | 28138                    | 113429         | 141567             | 233788  | 92220               | 250              |  |
| 23  | 8                        | 10750               | 1904              | 8855                     | 113292         | 12147              | 233788  | 111641              | 250              |  |
| 24  | 0                        | 15609               | 2963              | 12646                    | 112880         | 125526             | 233788  | 108262              | 250              |  |
| 25  | 3632                     | -110099             | 2338              | -108804                  | 112932         | 4128               | 240699  | 236571              | 250              |  |
| <b>TOTAL</b>  | <b>397295</b>            | <b>104312</b>       | <b>68452</b>      | <b>433156</b>            | <b>2364525</b> | <b>2797681</b>     | <b>4916939</b>                                    | <b>2119258</b>      | <b>5240</b>      |  |
| <b>PER TONNE</b>                                    | <b>346</b>               | <b>44</b>           | <b>30</b>         | <b>360</b>               | <b>435</b>     | <b>795</b>         | <b>979</b>  | <b>184</b>          | <b>1</b>         |  |
| <b>PRE TAX INTERNAL RATE OF RETURN(IRR)</b>         |                          |                     |                   |                          |                | <b>%</b>           |   |                     |                  |  |
| <b>DESIRED SELLING PRICE TO ARRIVE 12% IRR(DSP)</b> |                          |                     |                   |                          |                | <b>RS/Te</b>       |   |                     |                  |  |
| <b>NET PRESENT VALUE @ 12% (NPV)</b>                |                          |                     |                   |                          |                | <b>RS IN CRORE</b> |   |                     |                  |  |
|   |                          |                     |                   |                          |                | <b>678</b>         |   |                     |                  |  |
|   |                          |                     |                   |                          |                | <b>3151</b>        |   |                     |                  |  |

**Project Report of Subhadra OCP (25 Mty) [West of Gopalprasad West & Utkal A Block]**  
**STATEMENT SHOWING CASH FLOW AT 85% CAPACITY LEVEL**

| YEAR  | TOTAL CAPITAL INVESTMENT | EQUITY CAPITAL | DEBT CAPITAL | PRINCIPAL REPAYMENT | REPLACE MENT CAPITAL | LESS:- GST CREDIT | TOTAL CAPITAL INVESTM ENT | OPERATIN G COST | TOTAL CASH OUTFLOW | (Amount in ₹ Lakhs)                               |                   |                  |
|---|--------------------------|----------------|--------------|---------------------|----------------------|-------------------|---------------------------|-----------------|--------------------|---|-------------------|------------------|
|   |                          |                |              |                     |                      |                   |                           |                 |                    | INFLOW FROM MINE CLOSURE FUND & SALES REALISATION | NET CASH OUT FLOW | PRODUCTI ON(LTY) |
| <b>Cost base: August 2020</b>                       |                          |                |              |                     |                      |                   |                           |                 |                    |   |                   |                  |
| EXISTING  | 10732                    | 10732          |              |                     |                      |                   | 139                       | 47870           | 1434               | 10732   | -10732            |                  |
| 1   | 48009                    |                |              |                     |                      |                   | 156                       | 45149           | 1778               | 49303   | -49303            |                  |
| 2   | 45305                    |                |              |                     |                      |                   | 8933                      | 75346           | 29928              | 105274  | -46927            |                  |
| 3   | 84280                    |                |              |                     |                      |                   | 7515                      | 68677           | 52117              | 120794  | -72765            | 34               |
| 4   | 76192                    |                |              |                     |                      |                   | 2589                      | 34424           | 67386              | 101810  | 81273             | -39521           |
| 5   | 37013                    |                |              |                     |                      |                   | 398                       | 2446            | 34387              | 81621   | 120031            | 18221            |
| 6   | 36435                    |                |              |                     |                      |                   | 665                       | 2668            | 36245              | 95618   | 116008            | 128              |
| 7   | 38248                    |                |              |                     |                      |                   | 398                       | 1208            | 5683               | 98675   | 104358            | 170              |
| 8   | 6891                     |                |              |                     |                      |                   | 665                       | 2668            | 36245              | 131862  | 198719            | 85               |
| 9   | 1377                     |                |              |                     |                      |                   | 398                       | 267             | 1509               | 99372   | 100881            | 122              |
| 10  | 678                      |                |              |                     |                      |                   | 8720                      | 1939            | 7459               | 100096  | 107555            | 170              |
| 11  | 645                      |                |              |                     |                      |                   | 9783                      | 2038            | 8390               | 100095  | 108485            | 170              |
| 12  | 1152                     |                |              |                     |                      |                   | 13610                     | 2566            | 12196              | 99453   | 111650            | 170              |
| 13  | 2162                     |                |              |                     |                      |                   | 10865                     | 2419            | 10608              | 100587  | 111195            | 170              |
| 14  | 1853                     |                |              |                     |                      |                   | 14320                     | 2958            | 13216              | 101014  | 114230            | 170              |
| 15  | 1235                     |                |              |                     |                      |                   | 14241                     | 2871            | 12605              | 102731  | 115336            | 170              |
| 16  | 309                      |                |              |                     |                      |                   | 10054                     | 1788            | 8575               | 102547  | 111122            | 170              |
| 17  | 744                      |                |              |                     |                      |                   | 12854                     | 2595            | 11003              | 102824  | 113827            | 170              |
| 18  |                          |                |              |                     |                      |                   | 9247                      | 1958            | 7290               | 102581  | 109870            | 170              |
| 19  |                          |                |              |                     |                      |                   | 7985                      | 1378            | 6718               | 102911  | 109629            | 170              |
| 20  |                          |                |              |                     |                      |                   | 7836                      | 1575            | 6262               | 103799  | 110061            | 170              |
| 21  |                          |                |              |                     |                      |                   | 33618                     | 5641            | 27977              | 103874  | 131851            | 170              |
| 22  | 283                      |                |              |                     |                      |                   | 33457                     | 5602            | 28138              | 103936  | 132074            | 170              |
| 23  | 8                        |                |              |                     |                      |                   | 10750                     | 1904            | 8855               | 103803  | 112657            | 170              |
| 24  |                          |                |              |                     |                      |                   | 15609                     | 2963            | 12646              | 103459  | 116105            | 170              |
| 25  | 3632                     |                |              |                     |                      |                   | -110099                   | 2338            | -108804            | 103510  | -5294             | 170              |
| <b>TOTAL</b>  | <b>397295</b>            | <b>10732</b>   |              |                     |                      |                   | <b>104312</b>             | <b>68452</b>    | <b>433156</b>      | <b>2165149</b>                                    | <b>2598305</b>    | <b>4181470</b>   |
| <b>PER TONNE</b>                                    | <b>407</b>               | <b>407</b>     |              |                     |                      |                   | <b>52</b>                 | <b>36</b>       | <b>424</b>         | <b>486</b>  | <b>910</b>        | <b>979</b>       |
| <b>PRE TAX INTERNAL RATE OF RETURN(IRR)</b>         |                          |                |              |                     |                      |                   |                           |                 |                    | <b>%</b>  | <b>21.58%</b>     |                  |
| <b>DESIRED SELLING PRICE TO ARRIVE 12% IRR(DSP)</b> |                          |                |              |                     |                      |                   |                           |                 |                    | <b>RS/Te</b>                                      | <b>753</b>        |                  |
| <b>NET PRESENT VALUE @ 12% (NPV)</b>                |                          |                |              |                     |                      |                   |                           |                 |                    | <b>RS IN CRORE</b>                                | <b>1916</b>       |                  |
|   |                          |                |              |                     |                      |                   |                           |                 |                    | <b>4454</b>                                       | <b>1</b>          |                  |

**Central Mine Planning and Design Institute Limited**

*(A Subsidiary of Coal India Limited)*

**Regional Institute – VII**

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