

**ARR AND TARIFF ANALYSIS OF ODISHA POWER  
GENERATION CORPORATION LIMITED  
(OPGC UNIT 1 & 2)  
FOR FY: 2022-23**

World Institute of Sustainable Energy, Pune (Consumer Counsel)

# BACKGROUND



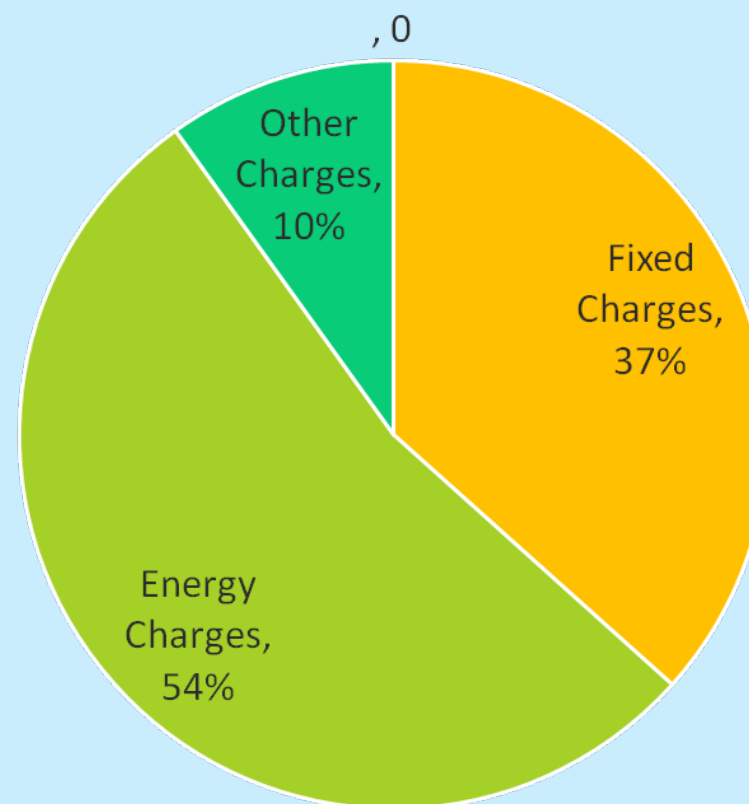
- Hon'ble OERC, vide its Order dated March 21, 2016 approved the Generation Tariff for **FY 2016-17** (Case No. 53/2015). OPGC filed Appeal No. 126 of 2016 before the **Hon'ble Appellate Tribunal for Electricity (APTEL)** and also filed Civil Appeal No. 9485 of 2017 before the **Hon'ble Supreme Court**. The Hon'ble Supreme Court (dated April 19, 2018) set aside the Tariff Order for FY 2016-17 and remanded the matter.
- The Commission in Case No **33 of 2018**, on March 28, 2019, issued order for re-determination of Tariff for FY 2016-17, FY 2017-18 and FY 2018-19 considering the original project cost as per the approved Amended PPA. Subsequently, tariff orders were issued by the Commission for **FY 2019-20, FY 2020-21 and FY 2021-22**.
- Hon'ble OERC in **Case No 43 of 2017** (dated 28 Oct 2020) issued order on basis of calculation of GCV to be considered in the tariff. OPGC filed Appeal No 189 of 2020 before APTEL against the same order.
- In Case No. **54 of 2018**, OPGC filed petition for approval of additional capitalisation for FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19. The Commission vide order dated May 21, 2021 (54 of 2018) disallowed actual additional capitalisation for FY 2015-16 to FY 2017-18 and proposed additional capital expenditure for FY 2018-19. OPGC has filed an Appeal APTEL on November 15, 2021, as DFR No. 407/2021 against OERC Order in Case No 54 of 2018, dated May 21, 2021.
- Generation tariff of FY 2022-23 is in line with the approach considered in earlier cases (case no 33,54 and 70 of 2018 and case no 69 of 2019 and case no 71 of 2020).

# ANNUAL REVENUE REQUIREMENT FOR FY 2022-23

(RS CRORE)



| Particulars                 | Original project cost         |
|-----------------------------|-------------------------------|
| O & M Expenses              | 190.46                        |
| Depreciation                | 0.00                          |
| Interest on Term Loans      | 0.00                          |
| Interest on Working Capital | 13.10                         |
| Return on Equity            | 72.00                         |
| <b>Fixed charges</b>        | <b>275.56</b>                 |
| Energy Charge               | 405.67<br><u>(177.89 P/U)</u> |
| Other Charges               | 72.29                         |



# **Analysis of Generation tariff for FY 2022-23**

# ADDITIONAL CAPITALIZATION



- In the present Petition, OPGC has not claimed actual additional capitalisation for FY 2020-21 and projected additional capitalisation for FY 2021-22 and FY 2022-23.
- Based on the outcome of the Appeal filed in APTEL against the Hon'ble Commission's order in Case No. 54 of 2018, OPGC will approach the Hon'ble Commission for approval of actual additional capitalisation for FY 2015-16 to FY 2020-21 and projected additional capitalisation for FY 2021-22 and FY 2022-23 through a separate petition.
- No impact of additional capitalisation is claimed in the present petition of FY 22-23 and hence, the tariff should be based on original project cost only.

# DEBT-EQUITY RATIO, ROE AND INTEREST



- Original capital cost of the Project is Rs. 1060 Crore as per the Amended PPA signed between OPGC and GRIDCO. While approving the Amended PPA vide Order dated April 27, 2015, Hon'ble OERC has approved the loan of Rs. 610 Crore and equity of Rs. 450 Crore, i.e. approved ratio was 57.5 : 42.5.
- Return on equity is calculated as given below:

| Particulars                                   | Units     | Original capital cost (Rs Crore) |
|---|-----------|----------------------------------|
| Equity corresponding to original project cost | Rs. Crore | 450.00                           |
| Rate of Return on Equity                      | %         | 16.00%                           |
| Return on Equity                              | Rs.Crore  | 72.00                            |

- OPGC submitted that Clause 8.0 (7) and (11) of Schedule II of the Amended PPA provides the loan amount of Rs. 610 Crore and interest on loan as per actual. Since the loan amount of Rs. 610 Crore has been fully repaid by financial year ending March 31, 2012, OPGC has not claimed any interest on loan capital for FY 2022-23.

# INTEREST ON WORKING CAPITAL (RS CRORE)



| Sl. No. | Particulars                        | Norms considered | FY 2022-23                             |
|---------|------------------------------------|------------------|--|
|         |                                    |                  | Corresponding to original project cost |
| 1       | Coal Cost                          | 1.5 months       | 45.21                                  |
| 2       | Oil Cost                           | 2 months         | 7.33                                   |
| 3       | O & M expenses                     | 1 month          | 15.87                                  |
| 4       | Recievables                        | 2 months         | 113.54                                 |
| 5       | Working capital Loan Requirement   |                  | 181.95                                 |
| 6       | Rate of Interest                   |                  | 7.20%                                  |
| 7       | <b>Interest on Working Capital</b> |                  | <b>13.10</b>                           |

- As OPGC has started availing working capital from external sources, the actual interest rate for the Working Capital facility availed by OPGC in FY 21-22 is 7.20%. Accordingly, the same has been considered for FY 2022-23.
- Working capital components on approved values should be considered.

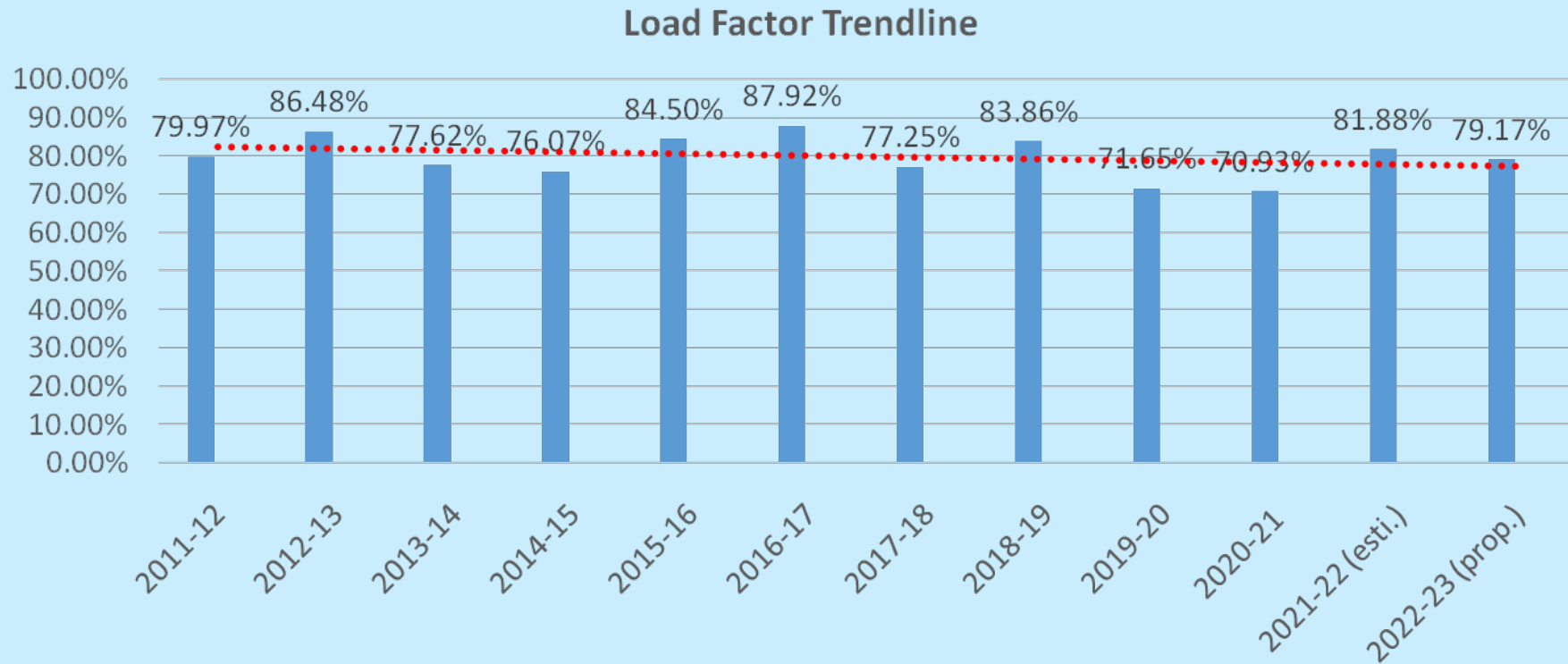
# O&M EXPENSES



- As per Clause 3.0 (d) and (e) of Schedule II of the Amended PPA provides that O&M expenses for first year of operation at the rate of 2.5% of the capital cost which shall be escalated by 8% each year from April 1, 1996.
- O&M Expenses of Rs.**190.46**Crore for FY 2022-23 has been proposed.
- As per clause 3 (d) & (e) of Schedule-II of the amended PPA, O&M expenses can be approved by the Commission after prudence check.



# PLANT LOAD FACTOR



- As per Clause 3.0 (g) of Schedule II of the Amended PPA, the PLF applicable for computation of incentive shall be 80%.
- As per the generation plan submitted to GRIDCO, the ex-bus generation projected for FY 2022-23 is 2597.987 MU which corresponds to PLF of 78.03%
- Average PLF (2011-12 to 2021-22) : 79.83%

# SHR, SECONDARY FUEL OIL AND AUXILIARY CONSUMPTION



|  | Station Heat Rate (kcal/kWh) | Specific oil consumption (ml/kWh) | Auxiliary consumption  |
|--|------------------------------|-----------------------------------|--|
| Proposed in ARR                        | 2500                         | 3.5<br>(LDO – 0.35 and HFO -3.15) | 9.50%  |
| General norms in Regulations           | 2450<br><br>(below 500 MW)   | 1.0                               | Natural draft – 8.5%<br>Induced draft – 9%<br><br>(below 500 MW) |
| Approved in last year order as per PPA | 2500                         | 3.50                              | 9.50%  |

# GCV AND PRICE OF COAL



| Year              | GCV (kCal/kg)<br>Proposed        | GCV (kCal/kg)<br>Approved | Price (Rs / MT)<br>Proposed | Price (Rs / MT)<br>Approved |
|-------------------|----------------------------------|---------------------------|-----------------------------|-----------------------------|
| 2016-17           | 2,828.92                         | 2,716.00                  | 1,232.56                    | 1,186.62                    |
| 2017-18           | 2629.10                          | 3400.00                   | 1645.04                     | 1,539.00                    |
| 2018-19           | 2,685.41                         | 3100.00                   | 1368.91                     | 1491.00                     |
| 2019-20           | 2972.00                          | 3100.00                   | 1600.13                     | 1532.00                     |
| 2020-21           | 3077.00                          | 3100.00                   | 1603.68                     | 1552.00                     |
| 2021-22           | 2740.93<br>(3003 response Query) | 3101                      | 1542.30                     | 1573.00                     |
| 2022-23(Proposed) | 2772.64                          |                           | 1614.28                     |                             |

- **GCV:** Last year approved was 3100 kCal/kg and proposed 2772.64 kCal/kg for FY 2022-23.
- Para 92: *“As per Commission’s Order dated 28.10.2020, sampling report by CIMFR at mine’s end with moisture correction would be considered for determining GCV of ‘as delivered’ Coal on total moisture basis. This is in line with PPA and order of Hon’ble Supreme Court. ....., the Commission has decided to consider the base GCV of Grade-14 (G-14), i.e. 3101 kcal/kg similar to last year order.”*
- The present MCL declared grade’s GCV (G-14) can be considered.
- The latest available price of coal can be considered after prudence check. FY 21-22 actual: Rs 1599 / MT

# PRICE OF SECONDARY OIL



| Month - year            | Actual/proposed<br>Weighted Average<br>price of secondary<br>oil (Rs / kL) | Approved<br>Weighted Average<br>price of secondary<br>oil (Rs / kL) | Secondary oil<br>mix (FO :<br>LDO) |
|-------------------------|--|---|------------------------------------|
| 2016-17                 | 37101  | 33339   | 90:10                              |
| 2017-18 )               | 42622  | 27730   | 0:100                              |
| 2018-19                 | 51696  | 41390   | 0:100                              |
| 2019-20                 | 52884  | 40826/48291   | 90:10                              |
| 2020-21 (LDO, Nov 20)   | 40647  | 44493.67/53188.79   | 90:10                              |
| 2021-22(HFO/LDO)        | 36921.93/46344.95  | 36921.93/46344.95   | 90:10                              |
| <u>2022-23(HFO/LDO)</u> | <u>49540.30 /52744.07</u>  |   | <u>90:10</u>                       |

- From April 2019 onwards, they have used LDO only but proposing to use LDO and HFO.

# YEAR END CHARGES FOR FY 2022-23



- Rs.0.55/kWh towards electricity duty for FY 2021-22 was approved by Commission in accordance with PPA norms, i.e. 9.5% of auxiliary Consumption on normative generation of 68.49%. OPGC proposed as per payment made in FY 20-21.
- Along with water cess and water charges, energy compensation to OHPC is proposed. This should be reviewed. OPGC should produce proper justification of payment of such charges along with relevant documents while claiming reimbursement from GRIDCO.
- Income tax can be approved on the basis of RoE; this can be based on equity approved by the Commission.
- Water conservation fund should be reviewed vis-a-vis the Govt. order and verification by GRIDCO.
- SOC and MOC for SLDC can be allowed as per Commission's approved order.

| S. No. | Particulars                            | FY2022-23<br>(proposed) | FY 21-22<br>(approved) |
|--------|--|-------------------------|------------------------|
| 1      | Electricity Duty                       | 17.35                   | 12.98                  |
| 2      | Water Cess and Water Charges           | 8.58                    | 7.94                   |
| 3      | Energy Compensation Charges            | 0.71                    | 0.43                   |
| 3      | Tax and Cess on Land                   | 0.05                    | 0.19                   |
| 4      | SOC and MOC for SLDC                   | 0.34                    | 0.34                   |
| 5      | ERPC Charges                           | 0.16                    | 0.16                   |
| 6      | Income Tax                             | 38.67                   | 38.67                  |
| 8      | Recovery of ARR & Tariff Petition Fees | 0.30                    | 0.30                   |
| 9      | Water conservation fund                | 6.13                    | 6.13                   |
|        | <b>Total</b>                           | <b>72.29</b>            | <b>67.15</b>           |

# GENERATION TARIFF PROPOSED FOR FY 2022-23

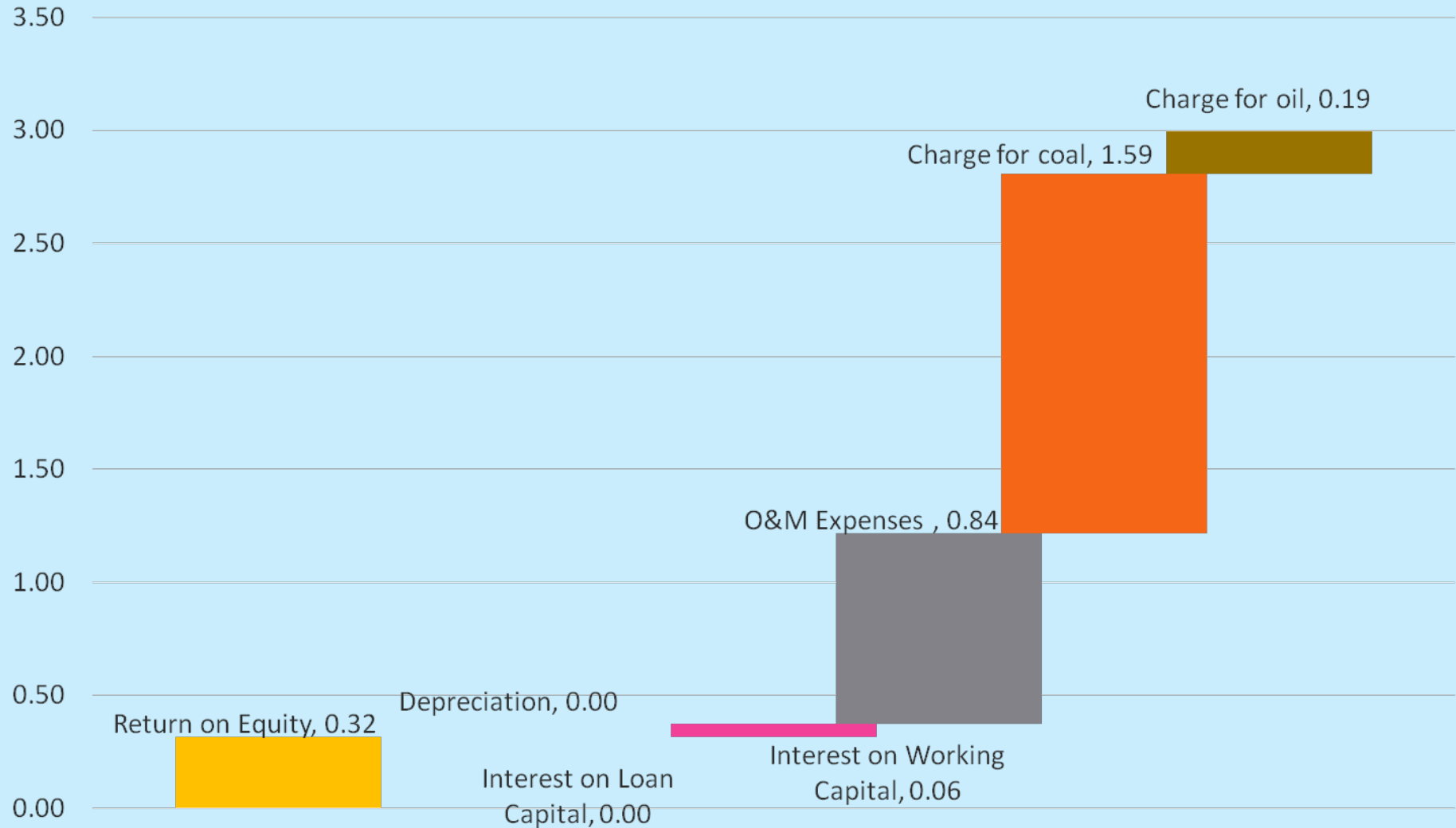


| Sl. No       | Particulars                           | Original capital cost (Rs Cr) | Tariff (Rs/kWh)* |
|--------------|---------------------------------------|-------------------------------|------------------|
| 1.           | Return on Equity                      | 72.00                         | 0.32             |
| 2.           | Depreciation                          |                               |                  |
| 3.           | Interest on Loan Capital              |                               |                  |
| 4.           | Interest on Working Capital           | 13.10                         | 0.06             |
| 5.           | O&M Expenses                          | 190.46                        | 0.84             |
| A            | Total Annual Fixed Cost               | 275.56                        | 1.208            |
| B            | Energy Charges                        | 405.67                        | 1.779            |
| <b>A+B</b>   | <b>Tariff for Sale of Power</b>       | <b>681.23</b>                 | <b>2.987</b>     |
| C            | Year End Charges                      | 72.29                         | 0.317            |
| <b>A+B+C</b> | <b>Total Tariff for Sale of Power</b> | <b>753.52</b>                 | <b>3.304</b>     |

\*Based on normative generation @68.49%

# GENERATION TARIFF FOR FY 2022-23

(RS / KWH)



Excluding year-end charges

# GENERATION TARIFF PROPOSED FOR FY 2022-23



| Sl. No   | Particulars                               | Proposed for FY 22-23 | Approved for FY 21-22 |
|----------|---|-----------------------|-----------------------|
| 1.       | Return on Equity                          | 72.00                 | 72.00                 |
| 2.       | Depreciation                              | -                     | -                     |
| 3.       | Interest on Loan Capital                  | -                     | -                     |
| 4.       | Interest on Working Capital               | 13.10                 | 12.41                 |
| 5.       | O&M Expenses                              | 190.46                | 176.35                |
| <b>A</b> | <b>Total Annual Fixed Cost (Rs crore)</b> | <b>275.56</b>         | <b>260.76</b>         |
| <b>B</b> | <b>Energy Charges (Rs / kWh)</b>          | <b>1.7789</b>         | <b>1.5281</b>         |
| <b>C</b> | <b>Year End Charges (Rs crore)</b>        | <b>72.29</b>          | <b>67.15</b>          |



Thank You