

**BEFORE THE ORISSA ELECTRICITY REGULATORY COMMISSION  
BHUBANESWAR**

**Case No.-----  
Filing No. 1**

**IN THE MATTER OF:** An application for approval of Annual Revenue Requirement and Transmission Tariff for the Financial Year 2012-13 under Section 62, 64 and all other applicable provisions of the Electricity Act, 2003 read with relevant provisions of OERC (Terms and Conditions for Determination of Tariff) Regulations, 2004 and OERC (Conduct of Business) Regulations, 2004, and other tariff related matters.

**AND**

**IN THE MATTER OF:** Orissa Power Transmission Corporation Limited, Janpath, and Bhubaneswar-751022.

**... Applicant**

**The Humble Applicant above named;**

**MOST RESPECTFULLY SHEWETH THAT:**

In exercise of powers conferred under Sections 39,131,133 and 134 of the Electricity Act, 2003 read with Sections 23 & 24 of the Orissa Electricity Reform Act, 1995, the State Government published the Orissa Electricity Reform (Transfer of Transmission and Related Activities) Scheme, 2005 (hereinafter called the “**Transfer Scheme**”) in the Gazette dated 09.06.2005 which was effective retrospectively from 01.04.2005 wherein the Transmission Undertaking (the Undertaking related to the activities of Transmission, State Transmission Utility and State Load Dispatch Centre and acts incidental and ancillary thereto) of the Grid Corporation of Orissa Limited (Transferor), (now renamed GRIDCO Ltd.- hereinafter referred to as “GRIDCO”) has been transferred and vested in Orissa Power Transmission Corporation Limited (hereinafter called “OPTCL”).

As per Clause 10 of the Transfer Scheme, the OPTCL is a deemed Transmission Licensee under Section 14 of the Electricity Act, 2003 (hereinafter referred to as ‘Act’) for undertaking the business to transmit electricity in the State of Odisha. The OPTCL has also been notified as the State Transmission Utility (hereinafter called ‘STU’) and accordingly, shall discharge the State Load Dispatch functions from the date of transfer till further orders of the State Government.

Hon’ble Orissa Electricity Regulatory Commission (hereinafter called ‘OERC’) has issued Licence Conditions of OPTCL vide its order dated 27.10.2006 passed in Case No 22 of 2006 to undertake the activities relating to transmission of electricity in the State of Odisha.

Consequent upon transfer of Transmission Undertaking and functions to OPTCL as per the Transfer Scheme, all the obligations under Bulk Supply Agreement dated 18.09.1999 between

GRIDCO & CESCO (now the Central Electricity Supply Utility of Orissa - "CESU") and between GRIDCO & WESCO, GRIDCO & NESCO, GRIDCO and SOUTHCO on dated 24.05.1999 including all other contracts of GRIDCO with any party other than those four Distribution Licensees, in so far they relate to transmission of electricity and matter connected therewith including the provisions dealing with operating arrangements, connections & metering, rights of access, non-interfering with the equipments etc. is required to be discharged by OPTCL in the same manner as GRIDCO was doing / performing under the said agreements and also as per the Regulations, Orders and directions of OERC made from time to time and all such services shall be rendered by OPTCL to GRIDCO.

As provided under Regulation 53 (1) at Chapter VIII of OERC (Conduct of Business) Regulations, 2004 and under Clause 19.3 of Licence Conditions of OPTCL (effective from 01.11.2006) approved by Hon'ble OERC vide Order Dated 27.10.2006 in Case No. 22 of 2006, OPTCL is required to submit its Annual Revenue Requirement (ARR) Application for the ensuing year before Hon'ble OERC for approval.

In consonance with the above, OPTCL herewith submits its Annual Revenue Requirement & Transmission Tariff application for FY 2012-13 for kind approval of the Hon'ble Commission.

### **CATEGORISATION OF CUSTOMERS**

All the customers seeking open access to OPTCL Transmission System are classified under two categories.

#### **a. Long Term Open Access Customers (LTOA Customers)**

A Long Term Open Access Customer means a person availing or intending to avail access to the Inter-State / Intra-State Transmission System **for a period of 25 years or more**. Based on such premise, four DISCOMs & Captive Generating Plants (CGPs) happen to be the Long Term Customers of OPTCL.

#### **b. Short Term Open Access Customers (STOA Customers)**

Open Access Customers other than Long Term Customer (s) are classified as Short Term Customer(s). The **maximum duration that a Short Term Customer** can avail open access to the Inter-State / Intra-State Transmission is **one year** with a condition to reapply after expiry of the term.

### **TRANSMISSION CHARGE:**

In a significant departure from the past, the Tariff Policy, 2006 framed under the Act has embodied the National Tariff Framework which provides that the transmission tariff is to be

sensitive to distance, direction and related to quantum of power flow in a transmission service network. Para 7(1) (3) of the Tariff Policy provides for Transmission charges to be determined on MW per circuit kilometer basis, zonal Postage Stamp basis, or on the basis of some other pragmatic variant, the ultimate objective being to get the transmission system users to share the total transmission cost in proportion to their respective utilization of the transmission system. The overall tariff framework should be such as not to inhibit planned development/augmentation of the transmission system, but should discourage non-optimal transmission investment.

**Till date, OPTCL has been following the Postage Stamp Method for determination of its Transmission Charges.**

The Hon'ble OERC has not yet framed any separate Regulations for determination of Intra-State Transmission Tariff to be charged by a Transmission Licensee. In such a situation, OPTCL, the deemed Transmission Licensee, is guided by the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "CERC Regulations, 2009") applicable for Transmission Tariff. In view of the above, OPTCL has formulated its ARR & Transmission Tariff Application for FY 2012-13 as per the related provisions pertaining to the conduct of Business and Tariff determination as provided under OERC Regulations, 2004 dated 09.06.2004 and as per the CERC Regulation, 2009 respectively.

The costs of the deemed Transmission Licensee OPTCL for the FY 2012-13 for deriving the ARR and Transmission Tariff have been categorized under the following heads:

**A) FIXED CHARGES:**

- Operation & Maintenance (O & M) Expenses
- Interest on Loan Capital
- Depreciation
- Special appropriation
- Return on Equity
- Interest on Working Capital

**B) ADDITIONAL EXPENSES:**

- Contingency Reserve
- Provision for Bad & Doubtful Debts
- Grid Co-ordination Committee (GCC) Expense
- Incentive for System Availability

**C) PASS THROUGH EXPENSES:**

- Other Expenses (Pass through of Previous Losses and Liabilities)

**COMPUTATION OF TRANSMISSION CHARGES:****A) FIXED CHARGES:**

The Fixed Charges of OPTCL include expenses incurred towards Operation & Maintenance (Employee Cost including Terminal Benefits, Administration & General Expenses and Repairs & Maintenance Expenses). The details of such expenses for FY 2012-13 are projected as under: -

**A.1) O&M EXPENSES:**

As per CERC Regulations, 2009, Operation and Maintenance (O&M) Expenses means the expenditure incurred on operation and maintenance of the project, or part thereof, and **includes the expenditure on manpower, repairs, spares, consumables, insurance and overheads.**

Accordingly, OPTCL proposes **O & M Expenses** under the following heads:

- I. EMPLOYEE COST INCLUDING TERMINAL BENEFITS**
- II. ADMINISTRATION & GENERAL EXPENSES**
- III. REPAIR & MAINTENANCE EXPENSES**

**I. EMPLOYEE COST INCLUDING TERMINAL BENEFITS:**

A significant number of posts are lying vacant in different ranks due to retirement, death, promotion etc. as a result of which the functioning of the organization has been seriously affected. OPTCL plans to fill up the vacancies in a phased manner and accordingly the recruitment process has been initiated. In the mean time some additional manpower has been inducted and more will be recruited in coming years.

Due to rapid industrialization, urbanisation and rural electrification initiatives in the State under Central as well as State sponsored schemes, there has been manifold increase in the demand of power. In order to cater to the increasing demand of power, several new grid sub-

stations and transmission lines have been commissioned and many others are at different stages of implementation. The increased transmission infrastructure badly requires adequate competent personnel in Technical, Finance, HRD, IT and other relevant streams. In order to align OPTCL's organizational structure in line with the requirements of the Act and the evolving industry and regulatory structure in India, OPTCL has assigned the National Productivity Council (NPC) to study the current organizational structure and carry out a comprehensive organizational restructuring to meet the emerging demands of the sector and to meet the emerging needs of important aspects of the transmission utility like Project Implementation, O&M, Telecom, Finance and IT support etc.

### I (A) EMPLOYEE COST

The Employee Cost include Salaries, Dearness Allowance, Conveyance Allowance, Medical Allowance, Bonus / Ex-gratia etc. The Employee Expenses for FY 2012-13 estimated as **₹ 234.29 Cr.** excluding Terminal Benefits Liability. The component wise details of Employee Cost are given in **TRF-13** and the abstract is shown in **Table-1** below:

**Table - 1**  
**Employee Cost for FY 2012-13** **(Rs.in Cr)**

| Sl. No. | Particulars                             | FY 10-11 (Prov.) | Apprvd. FY 11-12 | FY 11-12 (Estt.) | FY 12-13 (Estt.) | Assumption (% increase over last FY)   |
|---------|---|------------------|------------------|------------------|------------------|--|
| 1       | Salaries (Basic and Grade Pay)          | 74.72            | 62.58            | 76.96            | 79.27            | 3% Increase (Basic & Grade pay) in 2011-12 and 3% increase in 2012-13  |
| 2       | Overtime                                |                  | 0                |                  |                  |  |
| 3       | Dearness Allowance                      | 12.04            | 34.42            | 44.64            | 56.28            | DA: 58% for 2011-12 & 71% for 2012-13.   |
| 4       | Other Allowance                         | 0.5              | 0.73             | 0.58             | 0.66             | 15% increase   |
| 5       | Bonus                                   | 0.1              | 0.13             | 0.12             | 0.13             | 15% increase   |
| 6       | Provision towards Wage Revision         |                  |                  |                  | 2.8              | for Non-Executive w.e.f. 01.04.2010  |
| 7       | Enhanced in salary (NPC)                |                  |                  |                  | 14.8             | due to implementation of NPC structure for executive and Non-executive   |
| 8       | <b>Sub-Total (1 to 7)</b>               | <b>87.36</b>     | <b>97.86</b>     | <b>122.3</b>     | <b>153.95</b>    |  |
|         | <b>OTHER STAFF COST</b>                 |                  |                  |                  |                  |  |
| 9       | Reimbursement of Medical Expenses       | 3.39             | 3.13             | 3.85             | 3.96             | 5% of (Basic & Grade Pay)  |
| 10      | Leave Travel Concession                 | 0.1              | 0.73             | 0.77             | 0.77             | As per Budget  |
| 11      | House Rent allowance                    | 9.14             | 9.39             | 15.39            | 15.85            | 20% HRA (Basic & Grade pay)  |
| 12      | Premium under Group Insurance scheme    | 0.32             | 0.53             | 0.38             | 0.46             | 20% increase   |
| 13      | Stipend to Management Trainee           |                  | 3.91             |                  | 3.39             | Rs 3.39 Crores towards 213 new recruits @ Rs. 15000 per month for MT (139 nos.) and @ Rs 10000 per month for Junior Mgr. (74 nos.) |
| 14      | Stipend for new recruited Non-Executive |                  |                  |                  | 1.9              | Recruitment of 305 new Non-executive   |

|    |   |               |               |               |               |   |
|----|---|---------------|---------------|---------------|---------------|---|
| 15 | Honorarium  |               |               | 0.08          | 0.08          | As per Budget                                       |
| 16 | Payment under Workmen compensation Act                      | 0.04          | 0.03          | 0.05          | 0.06          | 20% increase  |
| 17 | Ex-gratia   | 0.01          |               | 0.16          | 0.16          | As per Budget                                       |
| 18 | Uniform & Liveries  | 0.21          |               | 0.3           | 1.33          | As per Budget                                       |
| 19 | Miscellaneous   | 0.09          | 0.56          | 0.11          | 0.13          | 20% increase  |
| 20 | <b>Sub-Total (9 to 19)</b>                                  | <b>13.3</b>   | <b>18.28</b>  | <b>21.1</b>   | <b>28.1</b>   |   |
| 21 | Staff Welfare Expenses including sports expenses            | 0.67          | 3.2           | 3.2           | 3.2           | As per Budget                                       |
| 22 | <b>Sub-Total (8+20+21)</b>                                  | <b>101.33</b> | <b>119.34</b> | <b>146.6</b>  | <b>185.16</b> |   |
| 23 | Provision towards 6th pay Commission & Wage Revision Arrear |               | 49.04         |               | 49.04         | 1/3rd of Rs.147.13 Cr allowed by Hon'ble commission |
|    | <b>TOTAL</b>  | <b>101.33</b> | <b>168.38</b> | <b>146.60</b> | <b>234.29</b> |   |

### I (B) TERMINAL BENEFIT:

#### (a) Terminal Benefit Liability of Employees and Existing Pensioners:

The actuarial valuation towards terminal benefit liability of employees of OPTCL and pensioners as at 31.03.2011 and projection as at 31.03.2012 and 31.03.2013 has been carried out by an Independent Actuary M/s Bhudev Chatterjee, Kolkata. As per the valuation report dated 29.09.2011, the projected liability as at 31.03.2013 is estimated as **₹1425.02 Crore**. The Hon'ble commission in the ARR and Transmission Tariff order for the FY 2011-12 has approved **₹1015.86 Crore** as terminal liabilities up to 31.03.2011. Thus additional fund required towards Pension and Leave Liabilities works out to **₹411.42 Crore** for the FY 2012-13. It is to bring to the kind notice of the Hon'ble Commission that the projected liabilities for Gratuity has decreased as per the valuation report. Hence, in this respect no additional fund is required for the FY 2012-13. Further, pursuant to the Govt of Odisha in Finance Dept. Resolution No. 16500 dated 02.04.2011, OPTCL issued Notification No. AW-Pen-I-9/2009/11279 dated 05.07.2011 for revision of the maximum limit of Death-cum-Retirement Gratuity from **₹2.50 lakhs** to **₹7.50 lakhs** w.e.f. 01.01.2006 for executive and non-executive employees of OPTCL. The additional liabilities in this respect works out to **₹8.20 Crore** (approx.). It is further submitted that this additional liabilities of **₹8.20 Crore** is not included in the projected liabilities of Gratuity of **₹63.83 Crore**. Besides, **₹1.00 Crore** is required towards employer's matching contribution for the employees joined under NPS and Non-Pensioners Categories. The item wise details are shown in **Table-2** below:

**Table-2**

(₹ in Crore)

| Sl No. | Terminal Benefits   | Projected Actuarial Liability as at 31.03.2011 (Approved by OERC) | Projected actuarial Liabilities as at 31.03.2013 (as per actuarial valuation) | Additional fund Requirement |
|--------|---|---|---|-----------------------------|
|        | 1   | 2   | 3   | 4= (3-2)                    |
| 1      | Pension & Pension in Payment  | 885.10  | 1287.96   | 402.86                      |
| 2      | Gratuity  | 66.09   | 63.83   | 0                           |
| 3      | Leave Encashment  | 64.67   | 73.23   | 8.56                        |
| 4      | <b>Total</b>  | <b>1015.86</b>  | <b>1425.02</b>  | <b>411.42</b>               |
| 5      | Additional Gratuity liability towards revision of limit with retrospective effect |   |   | 8.20                        |
| 6      | Employer's Contribution for Non-Pensioners & New Pension Scheme                   |   |   | 1.00                        |
| 7      | <b>TOTAL LIABILITIES</b>  |   |   | <b>420.62</b>               |

The copy of the actuarial valuation report is submitted at **Annexure –I**.

**(b) Payment of differential Pension and Pensionary Benefit Liability:**

The Hon'ble Commission in the ARR and Transmission Tariff order for the FY 2011-12 at **Para 249** (page 70-71) has in-principle approved for calculating the pensionary benefits in respect of the absorbed Engineers with the following directions and observations:

- i) *The Commission agrees and approves in-principle for calculating the pensionary benefits of the absorbed engineers by taking into account the last Pay (including Grade Pay) drawn to be drawn from the transferee organization and the retirement from such organization and service rendered both under the State Govt. as well as under the Transferee organization for the limited purpose of protecting the loss of pension to those absorbed Engineers.*
- ii) *After deducting pension/revised pension being drawn/to be drawn by the absorbed engineers from the State Govt. in respect of the service rendered under the State Govt. up to the appointed date (i.e. 31.3.1997 AN) shall be deducted from the revised pension which is to be determined by taking into account the last pay including grade pay drawn from the transferee organization on the date of retirement from such organization and the service rendered both under the State Govt. and the Transferee organization.*

- iii) *The revised pension for the period rendered under the State Govt. would be calculated in respect of (a) those transferred/ absorbed engineers those who have retired or due to retire on or after 01.12.2008, or would retire in future (b) transferred/absorbed engineers those who have already retired before 01.01.2006 and (c) those who have retired on or after 01.01.2006 but before 01.12.2008.*
- iv) *Since the pension/revised pension would continue to be drawn from the State Govt. in respect of the service rendered under the State Govt., there is no occasion for refund of pension already drawn from the State Govt. nor there would be any occasion for the State Govt. to deposit the pensionary liabilities with the Transferee organization.*
- v) *For determining the enhanced differential pension of those absorbed engineers from the transferee organization and the revised pension from the state from time to time the procedure outlined from para 246 to 247 would be followed keeping in view the amendment that may be made by Finance Department from time to time for revision of pension from the State Govt. employees.*

Accordingly, the Commission provisionally allowed  **3.00 Crore** for the year 2011-12 pending determination of actual additional liabilities on account of enhanced pension arising out of taking into account the service rendered under State Govt. and the Transferee organisation together based on the methodology indicated at **Para 251** (page 71) of the Transmission Tariff order for the FY 2011-12. The salient features of the methodology are outlined below:

- i) The actual amount of pension including differential enhanced pension that would be paid during 2011-12 would be taken into account while assessing the requirement for 2012-13 and subsequent years, after making prudent check of the amount allowed by the Commission to the pension fund from year to year and the actual amount paid to the pensioners.
- ii) The pensionary liabilities being calculated from time to time is being allowed by the Commission in a staggered manner so that while the retired employees should not face any difficulties to get their pension (including revision) there is no substantial rise in tariff in one year.

In this regard necessary notification of the Finance Deptt., Govt. of Odisha for payment of differential liabilities is yet to come out. After the same is notified, OPTCL will work out the actual additional differential liabilities towards Pension, Commutation and Gratuity. It is expected that the initial amount required will be much higher than the amount allowed as the number of retired employees exceeds 225. In view of above, additional fund of ₹10.00 Crore may be provided on adhoc basis for FY 2012-13.

**Employee Cost including Terminal Benefits Liability** is proposed as ₹ 655.36 Crore as shown in the **Table-3** below:

**Table-3**

(₹ in Crore)

|  |               |
|--|---------------|
| Employee cost including Salaries, Dearness Allowance etc.  | 234.29        |
| Terminal Benefits Liability of Employees and Existing Pensioners                                 | 420.62        |
| Payment of Differential Pension and Pensionary Benefits to the absorbed Govt. Engineers in OPTCL | 10.00         |
| Less: Capitalization   | 9.54          |
| <b>Total</b>   | <b>655.36</b> |

## II. ADMINISTRATION AND GENERAL (A&G) EXPENSES: (TRF-15)

The A&G Expenses include property related expenses, communication, professional charges, conveyance and traveling, licence fee and material related expenses. The A&G Expenses of OPTCL have shown an increasing trend in recent years due to price rise and inflation and is on the higher side than the amount approved by the Hon'ble Commission. In view of the above, OPTCL proposes ₹ 39.11 Crore as A&G Expenses for FY 2012-13 by taking into account the annual escalation under different items.

The component wise details of the proposed A&G Expenses for FY 2012-13 are shown in the **Table-4** below:

**Table-4**

(₹ in Crore)

| Sl. No. | Particulars | FY 10-11 (Prov.) | OERC Approval for FY 11-12 | Estimation for FY 11-12 | Estimation/ Projection for FY 12-13 |
|---------|-------------|------------------|----------------------------|-------------------------|-------------------------------------|
|---------|-------------|------------------|----------------------------|-------------------------|-------------------------------------|

|   |                               |              |              |              |              |
|---|-------------------------------|--------------|--------------|--------------|--------------|
| 1 | Property related expenses     | 0.18         | <b>18.00</b> | 0.20         | 0.22         |
| 2 | Communication                 | 0.43         |              | 0.47         | 0.52         |
| 3 | Professional Charges          | 2.05         |              | 2.26         | 2.48         |
| 4 | Conveyance & Traveling        | 3.90         |              | 4.29         | 4.72         |
| 5 | Other Expenses                | 26.56        |              | 28.24        | 30.01        |
| 6 | Material related expenses     | 0.01         |              | 0.21         | 0.21         |
| 7 | OERC License Fee              | 1.00         |              | 1.00         | 1.00         |
| 8 | Sub-Total (1 to 7)            | 34.13        |              | 36.67        | 39.16        |
| 9 | Less: Expenses capitalized    | -            |              | 0.05         | 0.05         |
|   | <b>Total A&amp;G Expenses</b> | <b>34.13</b> |              | <b>36.62</b> | <b>39.11</b> |

The proposed A&G Expenses of OPTCL is  **39.11 Crore**, the details of which are depicted in TRF-15: XXXXXXXXXX

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### III. REPAIR AND MAINTENANCE (R & M) EXPENSES: (TRF-14)

The R&M works are undertaken in different streams like O&M, Telecom, Information Technology (IT) and Civil Works. The summary of proposed R&M Expenses of  **95.46 Crore** under these four heads are furnished in the **Table-5** next page:

**Table-5**

( in Crore)

| Particulars                                   | OERC<br>Approval<br>for FY 2010-<br>11 | OERC<br>Approval for<br>FY 2011-12 | OPTCL<br>Proposal FY<br>2012-13 |
|---|--|------------------------------------|---------------------------------|
| a) O&M  |  |                                    | 54.03                           |
| b) Telecom                                    |  |                                    | 13.60                           |
| c) Civil Works                                |  |                                    | 3.50                            |
| d) Information Technology                     |  |                                    | 4.33                            |
| e) Rolling Stock                              |  |                                    | 20.00                           |
| <b>Total R&amp;M Expenses<br/>(a+b+c+d+e)</b> | <b>60.00</b>                           | <b>75.00</b>                       | <b>95.46</b>                    |

**(a) R & M Expenses relating to O & M Wing:**

Currently, OPTCL owns 100 nos. grid sub-stations of different voltage classes and EHT transmission line of 11293.563 ckt. km. as shown in the **Table-6** below:

**Table-6**

| <b>Sub-Station and Line Details</b> |                         |             |
|-------------------------------------|-------------------------|-------------|
| 400/220/132/33 kV SS                |                         | 1           |
| 400/220 kV SS                       |                         | 1           |
| 220/132/33 kV SS                    |                         | 14          |
| 220/132 kV SS                       |                         | 1           |
| 220/33 kV SS                        |                         | 4           |
| 220 kV Sw.S                         |                         | 1           |
| 132 kV Sw.S                         |                         | 3           |
| 132 kV Industrial LILO              |                         | 13          |
| 132/33 kV SS                        |                         | 57          |
| 132/33/25 kV SS                     |                         | 1           |
| 132/33/11 kV SS                     |                         | 2           |
| 132/11 kV SS                        |                         | 2           |
| <b>Total No. of Sub-Stations</b>    |                         | <b>100</b>  |
| <b>Voltage Level</b>                | <b>Lines (ckt. km.)</b> | <b>Bays</b> |
| 400 kV                              | 521.935                 | 32          |
| 220 kV                              | 5483.925                | 223         |
| 132 kV                              | 5287.703                | 644         |
| 33 kV                               |                         | 719         |
| 25 kV                               |                         | 2           |
| 11 kV                               |                         | 30          |
| <b>Total</b>                        | <b>11293.563</b>        | <b>1650</b> |

There has been consistent rising trend of the loading pattern on the transmission system. The power transformers and EHT lines are now operating at such optimum loading levels that it is impossible to undertake maintenance work or attend breakdown job on those without load shedding. In addition to this, some of the EHT lines are pretty old and have outlived their useful life span. A large portion of the equipments which were imported during the inception of the old grid sub-stations are obsolete now and spares for such equipments are no longer available, making repair impossible.

Further, consistent expansion of EHT network with the addition of new lines & sub-stations due to rapid industrialization and rural electrification initiatives has resulted in higher fault levels at various EHT grid sub-stations for which some of the existing equipments like CBs, Isolators, CTs are now inadequate to handle the present system.

To operate the system effectively and to maintain uninterrupted, quality power supply in the state and to meet the performance standards set down by the Hon'ble Commission as well, it is absolutely necessary to undertake replacement of the old / obsolete equipments that have outlived their useful economic life. Also it is required to renovate and upgrade the equipments in the existing system to handle the increased load in the system.

With the above objectives, OPTCL proposes the R&M Expenses of ₹ **54.03 Crore** for FY 2012-13 under different items of **O&M Wing**, the details of which are shown in the **Table-7** below:

**Table-7**

| <b>R &amp; M EXPENDITURE PLAN OF O&amp;M WING FOR FY 2012-13</b> |  |                              |                 |                                |
|--|--|------------------------------|-----------------|--------------------------------|
| <b>Sl. No.</b>   | <b>Work/Equipment details</b>                              | <b>Unit Rate (In ₹ Lakh)</b> | <b>Quantity</b> | <b>Total Cost (in ₹ Crore)</b> |
| 1  | Circuit Breaker (Nos.)                                     |                              |                 |                                |
|  | a) 400kV   | 25                           | 3               | 0.75                           |
|  | b) 220kV   | 15.03                        | 14              | 2.10                           |
|  | c) 132kV   | 6.32                         | 30              | 1.90                           |
|  | d) 33kV  | 1.78                         | 50              | 0.89                           |
| 2  | Station Battery (Sets)                                     | 14.8                         | 5               | 0.74                           |
| 3  | Station Battery Charger                                    | 3.85                         | 3               | 0.12                           |
| 4  | C.T. (Nos.)  |                              |                 |                                |
|  | a) 400kV   | 8.9                          | 5               | 0.45                           |
|  | b) 220kV   | 4.03                         | 29              | 1.17                           |
|  | c) 132kV   | 1.18                         | 10              | 0.12                           |
|  | d) 33kV  | 0.33                         | 50              | 0.17                           |
| 5  | P.T. (Nos.)  |                              |                 |                                |
|  | a) 220kV   | 2.79                         | 5               | 0.14                           |
|  | b) 132kV   | 1.64                         | 5               | 0.08                           |
|  | c) 33kV  | 0.21                         | 5               | 0.01                           |
| 6  | L.A. (Nos.)  |                              |                 |                                |
|  | a)400kV  | 1.14                         | 6               | 0.07                           |
|  | b) 220kV   | 0.45                         | 20              | 0.09                           |
|  | c) 132kV   | 0.31                         | 30              | 0.09                           |
|  | d) 33kV  | 0.07                         | 30              | 0.02                           |
| 7  | Relays ( Diff types.)                                      | LS                           |                 | 1.00                           |
| 8  | Testing equipment (Different types )                       | LS                           |                 | 1.00                           |
| 9  | On Line Filter M/C   | 20                           | 6               | 1.20                           |
| 10   | Online Moisture Remover                                    | 50                           | 3               | 1.50                           |
| 11   | Off Line Fault Locator                                     | 25                           | 6               | 1.50                           |
| 12   | Control cable.(Assorted in km.)                            | 1                            | 30              | 0.30                           |
| 13   | SF-6 Gas Cylinders (50 kg.) in Nos.                        | 0.56                         | 50              | 0.28                           |
| 14   | Overhauling of CB  | LS                           |                 | 1.00                           |
| 15   | Illumination of Grid Substation with repair of ACDB panel. | LS                           |                 | 1.00                           |

|              |  |         |       |              |
|--------------|--|---------|-------|--------------|
| 16           | Spare for ERS system.  | LS      |       | 0.50         |
| 17           | AMC on Energy Metering System.   | LS      |       | 0.61         |
| 18           | Repair of defective Power Transformers   | LS      |       | 10.00        |
| 19           | Renovation of Earthing system of EHT lines & Grid S/s.   | LS      |       | 0.50         |
| 20           | ACMachine(In Nos)  | 0.250   | 50    | 0.13         |
| 21           | Civil Works  | LS      |       | 2.00         |
| 22           | Insulators (In Nos)  |         |       |              |
|              | a) 90 KN LR for 132kV  | 0.070   | 1000  | 0.70         |
|              | b) 90 KN Disc  | 0.005   | 2000  | 0.10         |
|              | c) 120KN Disc  | 0.007   | 1000  | 0.07         |
|              | d) 160KN Disc  | 0.007   | 500   | 0.04         |
|              | e) 90KN LR for 220 kV  | 0.100   | 700   | 0.70         |
|              | f) 160 KN LR for 220 kV  | 0.140   | 200   | 0.28         |
|              | g) 120KN LR for 132kV  | 0.080   | 200   | 0.16         |
| 23           | GI Earth Wire(7/3.15)(KM)  | 0.22    | 100   | 0.22         |
| 24           | a) Vibration damper(In Nos) (conductor)  | 0.006   | 200   | 0.01         |
|              | b) Vibration damper(In Nos)(Earth Wire)  | 0.004   | 200   | 0.01         |
| 25           | H/W Fitting(In Nos)  | LS      |       | 0.20         |
| 26           | Installation and commisioning of new Energy meters   | 0.11165 | 600   | 0.67         |
| 27           | Installation of 2nd Station Transformer (315KVA) in Grid S/s (Nos.)  | 6       | 25    | 1.50         |
| 28           | AMC on different types of Testing equipment  | LS      |       | 0.50         |
| 29           | Concreting of Switch Yard  | LS      |       | 0.50         |
| 30           | 33kV C/R Panel   | 2       | 4     | 0.08         |
| 31           | Misc. expenses for O&M field divisions such as; Painting of towers & Transformers, Switch yard cleaning, Transportation of trfs., Welding of tower members, AMC on A/c. machines, Gardening, Remetaling of Sub-Station, Strengthening of Towers & Sanitary works | LS      |       | 16.00        |
| 32           | Bus Augmentation   | LS      |       | 0.50         |
| 33           | Towers   |         |       |              |
|              | i) OA ( 4.22 MT) x 2   | 0.56    | 8.44  | 0.05         |
|              | ii) OB ( 6.53 MT) x 2  | 0.56    | 13.06 | 0.07         |
|              | iii) OC ( 9.513 MT) x 2  | 0.56    | 19.03 | 0.11         |
|              | iv) PA ( 3.14 MT) x 2  | 0.56    | 6.28  | 0.04         |
|              | v) PB ( 4.761 MT) x 2  | 0.56    | 9.52  | 0.05         |
|              | vi) PC ( 5.914 MT) x 2   | 0.56    | 11.83 | 0.07         |
| <b>Total</b> |  |         |       | <b>54.03</b> |

**(b) R & M Expenses relating to TELECOM Wing:**

The AMC of RTU under ULDC project/APS package/ Wideband communication package, procurement of different equipments for the purpose of R&M activities, Royalty Charges/ Licence Fees etc. have been envisaged in order to keep in place a healthy and efficient telecommunication system. A provision of ₹13.60 Cr is proposed during FY 2012-13 towards R&M expenses pertaining to **Telecommunication Wing**, the details of which are shown in the **Table-8** below:

**Table-8****R&M EXPENDITURE PLAN OF TELECOM WING FOR FY 2012-13**

| <b>SL No.</b> | <b>ITEM</b>  | <b>Amount<br/>(₹ In Crore)</b> |
|---------------|--|--------------------------------|
| <b>1</b>      | <b>AMC of RTU under ULDC project</b>   | <b>1.05</b>                    |
|               | a) Cost of AMC   | 0.12                           |
|               | b) Cost of new feeder/ element integration   | 0.18                           |
|               | c) Purchase of new RTU for replacement   | 0.75                           |
| <b>2</b>      | <b>AMC APS package</b>   | <b>0.22</b>                    |
|               | a) Cost of AMC   | 0.12                           |
|               | b) Cost of replacement/ repair of materials  | 0.10                           |
| <b>3</b>      | <b>AMC of Wideband Communication package</b>   | <b>0.78</b>                    |
|               | a) Cost of AMC   | 0.65                           |
|               | b) Cost of Spares (LS)   | 0.13                           |
| <b>4</b>      | Procurement of Outdoor coupling equipment (CVT, Wave traps)                                      | <b>2.00</b>                    |
| <b>5</b>      | Procurement of Test Instruments  | <b>0.35</b>                    |
| <b>6</b>      | Procurement of battery & battery charger   | <b>0.50</b>                    |
| <b>7</b>      | Procurement of AC machine with Srabilizer  | <b>0.13</b>                    |
| <b>8</b>      | Procurement of OPGW cable with hardware fittings(10 kms)   | <b>0.30</b>                    |
| <b>9</b>      | Procurement of spares for PLCC, PABX, Chargers, MCD-80, NSD- 50, NSK - 5 etc.                    | <b>1.00</b>                    |
| <b>10</b>     | Royalty charges/License fees payable to DOT for wideband communication system under ULDC project | <b>1.19</b>                    |
| <b>11</b>     | Insurance charges for ULDC equipment   | <b>0.20</b>                    |
| <b>12</b>     | Revival of carrier back up protection system (14 line in 1st phase)                              | <b>2.20</b>                    |
| <b>13</b>     | Provision of Logic earth and surge arrestor at different grid sub-stations(10 nos)               | <b>0.06</b>                    |
| <b>14</b>     | R & M of Telecom works at Divisional levels  | <b>2.50</b>                    |
| <b>15</b>     | License fee for walki- Talkie  | <b>0.07</b>                    |
| <b>16</b>     | Procurement of SVS/PIU unit  | <b>0.05</b>                    |
| <b>17</b>     | Procurement of Old version PLCC sets   | <b>1.00</b>                    |
|               | <b>Grand Total</b>   | <b>13.60</b>                   |

**(c) R & M Expenses relating to Civil Works:**

OPTCL proposes an expenditure of ₹ **3.50 Crore** towards civil works relating to major Repair & Maintenance of office buildings, associated colonies and grid sub-stations of OPTCL during FY 2012-13.

**(d) R & M Expenses relating to Information Technology (IT):**

A provision of ₹ **4.33 Crore** is made towards R&M expenses pertaining to IT works during FY 2012-13, the details of which are shown in the **Table-9** below.

**Table-9****R & M EXPENDITURE PLAN OF IT WING FOR FY 2012-13**

| Sl. No.  | ITEM   | Amount<br>₹ In Crore |
|----------|--|----------------------|
| <b>A</b> | <b>ERP</b>                                       | <b>0.92</b>          |
|          | 1 ERP-Linceses                                   | 0.62                 |
|          | 2 ERP-Implementation                             | 0.30                 |
| <b>B</b> | <b>Other IT (IT Consumables )</b>                | <b>0.25</b>          |
| <b>C</b> | <b>Primary Data Center</b>                       | <b>0.061</b>         |
|          | 2 Office Systems                                 |                      |
|          | a PCs & Pheripherals                             | 0.04                 |
|          | b Lap Tops (Hqrs)                                | 0.02                 |
| <b>D</b> | <b>Networking</b>                                | <b>3.09</b>          |
|          | 1 WAN  |                      |
|          | a Leased Lines Maint                             | 0.36                 |
|          | b Leased Lines Bandwith                          | 2.43                 |
|          | c VSAT   | 0.12                 |
|          | d LAN (ISP)                                      | 0.12                 |
| <b>E</b> | <b>FMS</b>                                       | <b>0.06</b>          |
| <b>F</b> | <b>Disaster Recovery (Electrical AC Systems)</b> | <b>0.011</b>         |
|          | <b>Total</b>                                     | <b>4.33</b>          |

**(e) Rolling Stock:**

A lump sum amount of ₹ 20 Crore has been projected for maintaining a Rolling Stock of 400kV/220kV/132kV ERS Towers and Transformers of different capacities (12.5MVA/20MVA/40MVA) to meet the exigencies arising out of natural calamities and breakdowns. Keeping in view the availability of space and location strategy, it is envisaged to keep the ERS Towers at Meramundali, Balasore and Therubali. The Transformers will be kept at Mancheswar, Katapalli, Baripada and Narendrapur.

Taking into account the proposed expenditure to be incurred towards manpower (Employee Cost including Terminal Benefit), Repair & Spares (R&M Expenses), towards consumables, insurance and overheads (A&G Expenses), OPTCL proposes the O&M Expenses as ₹ 789.93 Crore.

The summary of O&M Expenses for FY 2012-13 is shown in the **Table-10** below:

**Table-10**

| <b>Summary of O&amp;M Expenses for FY 2012-13</b> |                                |
|---|--------------------------------|
| <b>Particulars</b>                                | <b>Amount<br/>(Rs. in Cr.)</b> |
| (I) Employees Cost including Terminal Benefits    | 655.36                         |
| (II) A&G Cost                                     | 39.11                          |
| (III) R&M Cost                                    | 95.46                          |
| <b>Total O&amp;M Expenses</b>                     | <b>789.93</b>                  |

**O & M Expenses as per CERC Norms:**

CERC Regulations, 2009 relating to Inter-State Transmission O&M expenses [Regulation 19(g) of Chapter-3] deals with the norms for O&M expenses per ckt-km of transmission lines and per bay of sub-stations for the period 2009-10 to 2013-14. The CERC norms for O&M Expenditure are reproduced in the **Table-11** below :

**Table-11**

| <b>CERC Norms for O&amp;M expenditure for Transmission System</b> |                |                |                |                |                |
|---|----------------|----------------|----------------|----------------|----------------|
|   | <b>2009-10</b> | <b>2010-11</b> | <b>2011-12</b> | <b>2012-13</b> | <b>2013-14</b> |
| <b>Norms for Sub-Station ( ₹ Lakh per bay)</b>                    |                |                |                |                |                |
| 765 kV  | 73.36          | 77.56          | 81.99          | 86.68          | 91.64          |
| 400 kV  | 52.40          | 55.40          | 58.57          | 61.92          | 65.46          |

|   |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|
| 220 kV  | 36.68 | 38.78 | 41.00 | 43.34 | 45.82 |
| 132 kV and below  | 26.20 | 27.70 | 29.28 | 30.96 | 32.73 |
| <b>Norms for AC and HVDC lines ( ₹ Lakh per km)</b>                 |       |       |       |       |       |
| Single Circuit (Bundled conductor with four or more sub-conductors) | 0.537 | 0.568 | 0.600 | 0.635 | 0.671 |
| Single Circuit (Twin & Triple Conductor)                            | 0.358 | 0.378 | 0.400 | 0.423 | 0.447 |
| Single Circuit (Single Conductor)                                   | 0.179 | 0.189 | 0.200 | 0.212 | 0.224 |
| Double Circuit (Bundled conductor with four or more sub-conductors) | 0.940 | 0.994 | 1.051 | 1.111 | 1.174 |
| Double Circuit (Twin & Triple Conductor)                            | 0.627 | 0.663 | 0.701 | 0.741 | 0.783 |
| Double Circuit (Single Conductor)                                   | 0.269 | 0.284 | 0.301 | 0.318 | 0.336 |

Considering the above mentioned CERC norms, the O&M Expenses of OPTCL for FY 2012-13 is ₹ **581.52 Crore** as worked out in the **Table-12** below:

**Table-12**

| <b>O&amp;M Expenses as per CERC Norms for FY 2012-13</b>            |                   |                               |                                     |
|---|-------------------|-------------------------------|-------------------------------------|
| Segregation of Bays   | No. of Bays       | O&M expenses<br>Rs Lakh / bay | Total O&M<br>Expenses (Rs<br>in Cr) |
| 765 kV  | 0                 | 86.68                         | 0                                   |
| 400 kV  | 32                | 61.92                         | 19.81                               |
| 220 kV  | 223               | 43.34                         | 96.65                               |
| 132 kV and below  | 1395              | 30.96                         | 431.89                              |
| <b>TOTAL O&amp;M EXPENSES FOR BAYS</b>                              |                   |                               | <b>= 548.35</b>                     |
| Segregation of EHT lines  | Ckt km<br>of line | O&M expenses<br>Rs Lakh / km  | Total O&M<br>Expenses (Rs<br>in Cr) |
| Single Circuit (Bundled conductor with four or more sub-conductors) | 0                 | 0.635                         | 0.00                                |
| Single Circuit (Twin & Triple Conductor)                            | 245.201           | 0.423                         | 1.04                                |
| Single Circuit (Single Conductor)                                   | 3943.92           | 0.212                         | 8.36                                |
| Double Circuit (Bundled conductor with four or more sub-conductors) | 0                 | 1.111                         | 0.00                                |
| Double Circuit (Twin & Triple Conductor)                            | 276.734           | 0.741                         | 2.05                                |
| Double Circuit (Single Conductor)                                   | 6827.708          | 0.318                         | 21.71                               |
| <b>TOTAL O&amp;M EXPENSES FOR LINES</b>                             |                   |                               | <b>= 33.16</b>                      |
| <b>AGGREGATE O&amp;M EXPENSES FOR BOTH LINES &amp; BAYS</b>         |                   |                               | <b>= 581.52</b>                     |

Although the O&M Expenses as per CERC norms works out to ₹ **581.52 Crore**, OPTCL has proposed the O&M Expenses on the higher side as ₹ **789.93 Crore** in this application as explained and summarised in **Table –10** shown above.

#### A. 2) INTEREST ON LOAN CAPITAL (TRF-3):

Interest on Loan for FY 2012-13 has been projected as ₹ **102.54 Crore**. Details of interest on loan capital is shown in **TRF-3** and the abstract is presented in the **Table-13** next page:

**Table-13**

**Projection for Interest on loan for FY 2012-13** ₹ in Crore

| Sl. No.  | Particulars                    | Rate of Interest | Principal CB as on 31.03.12 | Loan to be received during 2012-13 | Principal repayment for 2012-13 | Interest payment for 2012-13 | Total Payment for 2012-13 |
|----------|--------------------------------|------------------|-----------------------------|------------------------------------|---------------------------------|------------------------------|---------------------------|
| <b>A</b> | <b>Govt. Loans</b>             |                  |                             |                                    |                                 |                              |                           |
|          | State Govt.(Cash Loan)         | 13.00%           | 2.00                        |                                    | 0.12                            | 0.26                         | 0.38                      |
|          | State Govt.(CRF)               | 0.00%            | 15.00                       |                                    |                                 |                              | 0                         |
|          | Central Govt. Loan             | 9.00%            | 11.26                       |                                    |                                 | 1.01                         | 1.01                      |
|          | GoO Bonds                      | 13.00%           | 400.00                      |                                    | 20.00                           |                              | 20                        |
|          | IBRD Loan                      | 13.00%           | 0.00                        |                                    |                                 |                              | 0                         |
|          | <b>Sub Total</b>               |                  | <b>428.26</b>               |                                    | <b>20.12</b>                    | <b>1.27</b>                  | <b>21.39</b>              |
| <b>B</b> | <b>Institutional Loans</b>     |                  |                             |                                    |                                 |                              |                           |
|          | REC Loan(12.25% w.e.f 28/3/11) | 12.25%           | 28.50                       |                                    | 2.03                            | 3.39                         | 5.42                      |
|          | REC Loan(New)                  | 11.75%           | 9.89                        |                                    | 0.70                            | 1.13                         | 1.83                      |
|          | REC Loan(New)                  | 12.75%           | 15.08                       |                                    | 1.02                            | 1.87                         | 2.89                      |
|          | REC Loan(New)                  | 11.50%           | 24.17                       |                                    | 1.61                            | 2.71                         | 4.32                      |
|          | REC Loan(New)                  | 11.00%           | 24.88                       |                                    | 0.41                            | 2.73                         | 3.14                      |
|          | PFC Loan                       | 11.25%           | 0.00                        |                                    |                                 |                              | 0                         |
|          | PFC Loan (New)                 | 11.25%           | 15.46                       |                                    | 1.23                            | 1.69                         | 2.92                      |
|          | <b>Sub Total</b>               |                  | <b>117.99</b>               |                                    | <b>7.00</b>                     | <b>13.52</b>                 | <b>20.52</b>              |
| <b>C</b> | <b>Secured Loan</b>            |                  |                             |                                    |                                 |                              |                           |
|          | Union Bank of India            | 8.25%            |                             |                                    |                                 | 0                            | 0                         |
|          | HUDCO                          | 8.25%            | 46.82                       |                                    | 28.87                           | 3.69                         | 32.56                     |
|          | UCO Bank                       | 9.00%            |                             |                                    |                                 |                              | 0                         |
|          | Oriental Bank of Commerce      | 8.75%            | 58.99                       |                                    | 28.57                           | 5.38                         | 33.95                     |
|          | <b>Sub Total</b>               |                  | <b>105.81</b>               |                                    | <b>57.44</b>                    | <b>9.07</b>                  | <b>66.51</b>              |

|          |  |               |               |               |              |               |               |
|----------|--|---------------|---------------|---------------|--------------|---------------|---------------|
| <b>D</b> | <b>OPTCL Bonds</b>                       |               |               |               |              |               |               |
|          | Open Market Loan                         | 11.50%        | 0.11          |               | 0.11         | 0             | 0.11          |
|          | Pension Trust Bond                       | 9.00%         |               |               |              | 0             | 0             |
|          | <b>Sub Total</b>                         |               | <b>0.11</b>   |               | <b>0.11</b>  | <b>0</b>      | <b>0.11</b>   |
| <b>E</b> | Deposit from EHT Consumers               |               |               |               |              |               |               |
|          | <b>Sub Total of Infrastructure Loan</b>  |               | <b>76.44</b>  |               | <b>0.02</b>  | <b>0</b>      | <b>0.02</b>   |
| <b>F</b> | <b>Loans for New Projects (PFC/REC)</b>  | <b>12.50%</b> | <b>275.19</b> | <b>795.96</b> |              | <b>66.95</b>  | <b>66.95</b>  |
| <b>G</b> | <b>Other Loans &amp; Finance Charges</b> |               |               |               |              |               |               |
|          | Employee Housing Loans                   | 12.00%        | 0.74          |               | 0.02         |               | 0.02          |
|          | Finance Charge                           |               | 0.00          |               |              | 11.73         | 11.73         |
|          | <b>Sub Total</b>                         |               | <b>0.74</b>   |               | <b>0.02</b>  | <b>11.73</b>  | <b>11.75</b>  |
| <b>H</b> | <b>Grand Total</b>                       |               | <b>927.36</b> | <b>795.96</b> | <b>84.67</b> | <b>102.54</b> | <b>187.21</b> |

### New Projects:

OPTCL proposes to spend ₹ **936.43 Crore** during FY 2012-13 as Capital Expenditure (CAPEX) on new projects in different streams of activities like O&M, Telecom, Information Technology (IT), Transmission Project & Construction (TP & Con.) and Civil Works. The summary of proposed CAPEX under various heads are furnished in the **Table-14** below:

**Table-14**

| <b>Projected CAPEX for FY 2012-13</b>        |                          |
|--|--------------------------|
| <b>Particulars</b>                           | <b>Amount (₹ in Cr.)</b> |
| a) Telecom                                   | 91.68                    |
| b) O&M                                       | 175.32                   |
| c) Information Technology (IT)               | 19.74                    |
| d) TP & Con. (Excluding Deposit Works)       | 612.50                   |
| e) Civil Works                               | 37.19                    |
| <b>Total Capital Expenditure (a+b+c+d+e)</b> | <b>936.43</b>            |

(a)

### CAPEX FOR TELECOM RELATED PROJECTS:

In order to have a dependable, safe and effective communication system, OPTCL has implemented its own Telecommunication Network through PLCC between each grid sub-station and generating stations and Microwave & Optic Fibre communication between Sub-LDC to SLDC, Bhubaneswar. The PLCC system adopted in OPTCL are generally

considered to be very much economic, reliable and dependable for voice, data and carrier back-up protection facility. Due to limitation of frequency band for PLCC equipment and because of gradual complex grid system, action is also under progress to provide SCADA interface points at all the 220kV Grid S/S of OPTCL through OPGW connectivity as per the provisions made under amended OGC Regulations, 2006 dated 29th August 2008. In the meantime, large number of industries are coming up in the state either having CGP or planning to draw power from OPTCL's network. For smooth management of power system, the industries are required to be integrated with OPTCL grid system as per the provisions of OGC Regulations by providing necessary Voice and Data communication to SLDC, Bhubaneswar. Further, the existing operating system is also required to be upgraded to suit to the present requirements because of large number of upcoming grid sub-stations. Keeping in view all such points, constant endeavour has been made to renovate and upgrade the existing telecommunication system under ULDC expansion scheme by way of integration of 30 nos. of existing grid sub-stations with the present ULDC system as well as software and hardware upgradation of main control centre at SLDC and establishment of back-up control centre at Meramundali. The work shall be executed through consultancy of PGCIL. Looking to the above aspects, the CAPEX for the FY 2012-13 in respect of Telecommunication Wing is summarised as follows:

1. Integration of 30 Grid S/S, Control Center hardware/software upgradation and establishment of back-up Control Centre at Meramundali for SLDC:

30 grid sub-stations have been identified by OPTCL for integration starting FY 2010-11. This project is likely to be completed within a time span of three years. The sub-stations covered under different Sub-LDCs are mentioned below:

**A. Bhubaneswar Sub-LDC:**

Balugaon, Jagatsinghpur, Nimapara, Salepur & Phulnakhara

**B. Meramundali Sub-LDC:** Bolani, Chandikhole, Jajpur Town, Jaleswar, Kalarangi, Nuapatna, Pattamundai, Polasponga & Soro

**C. Budhipadar Sub-LDC:** Brajarajnar, Chhend, Jharsuguda, Patnagarha, Rairakhol, Sonapur & Sundargarh

**D. Jayanagar Sub-LDC:** Digapahandi, Junagarh, Khariar, Mohana, Parlakhemundi, Phulabani, Saintala, Tentulikhunti & Balimela 220 kV Grid S/S

Apart from the above, integration of 6 nos. of grid sub-stations namely, (1) Nuapada (2) Balugaon (3) Kadampur (4) Kuchinda (5) Bhawanipatna (6) Boudh shall also be taken up in the project. The estimated cost has been calculated to be ₹. 36.00 Crore. The work is being executed through M/s PGCIL. The BoD of OPTCL in their 34th meeting has accorded administrative approval for this project. Hon'ble OERC has also approved the investment proposal. The initial advance of ₹. 7.172 Crore has already been released by OPTCL. M/s PGCIL in consultation with OPTCL has prepared the Technical Specification for NIT and the NIT has already been floated on dated 29.09.2010. All the tendering activities are complete and the orders shall be placed shortly to the eligible bidder. In addition to release of initial advance, there is requirement of fund to the tune of ₹. 10.227 Crore during the FY 2011-12 for which provision has already been made. An amount of ₹. 14.5 Crore shall be required towards the project against FAT and operational acceptance during the FY 2012-13 which is projected in the ARR for FY 2012-13. As PGCIL has not raised the invoices towards delivery of materials and the material is yet to be delivered, provisions have been made in the present ARR application. Hence, there is requirement of funds to the tune of ₹. **24.63 Crore** in the ARR for the FY 2012-13.

## **2. Provision of SCADA interface point at all 220 kV and above Grid S/S through OPGW:**

Hon'ble OERC has suggested to provide the SCADA interface point at all 220 kV Grid S/S under OPTCL through Optic Fibre link in all 220 kV line sections. Hence, the following line sections are to be provided with OPGW connectivity to have broadband communication network. This project is likely to be completed within a time span of three years, starting from the FY 2010-11. The circuit length of the 220KV line sections are computed to be 1324 Kms. and the details of line sections are given as hereunder for reference.

|       |                        |          |
|-------|------------------------|----------|
| i)    | Balasore - Bhadrak     | 78 Kms.  |
| ii)   | Duburi New - Bhadrak   | 68 Kms.  |
| iii)  | Paradeep – Duburi(New) | 114 Kms. |
| iv)   | TTPS – Meramandali     | 11 Kms.  |
| v)    | Joda – Palashpanga     | 51 Kms.  |
| vi)   | Palashpanga - Keonjhar | 45 Kms   |
| vii)  | Keonjhar – TTPS        | 95 Kms.  |
| viii) | Rengali PH – Kaniha    | 30 Kms.  |

|        |                                       |                      |
|--------|---------------------------------------|----------------------|
| ix)    | BolangirNew – Burla(New)              | 120 Kms.             |
| x)     | Burla PH – Burla (New)                | 15 Kms.              |
| xi)    | Burla(New) – Chiplima                 | 17 Kms.              |
| xii)   | Burla(New)–<br>Budhipadar,via:Lapanga | 62 Kms.              |
| xiii)  | Budhipadar – IB TPS                   | 26 Kms.              |
| xiv)   | Bolangir(New)-Kesinga                 | 72 Kms.              |
| xv)    | Kesinga-Theruvai.                     | 123 Kms.             |
| xvi)   | Jayanagar – Machhakund                | 43 Kms.              |
| xvii)  | Jayanagar – Upper Kolab               | 6 Kms.               |
| xviii) | Jayanagar – Balimela PH               | 93 Kms.              |
| xix)   | Theruvai – Indravati                  | 91 Kms.              |
| xx)    | Bhanjanagar – Nayagarh                | 69 Kms.              |
| xxi)   | Nayagarh – Mendhasal                  | 81 Kms.              |
| xxii)  | Bidanasi – Chandaka                   | 14 Kms.              |
|        | <b>Total</b>                          | <b>1324<br/>Kms.</b> |

As it has been decided by OPTCL management to execute the above work through M/s PGCIL, Powergrid were asked to submit the estimate for the work. In response, Powergrid has submitted the estimate for the work which is as follows:

- |   |                       |
|---|-----------------------|
| 1) Cost of Project                          | □. 59.60 Crores       |
| 2) Overhead charges @ 12%                   | □. 7.15 Crores        |
| 3) Service Tax on overhead charges @ 10.32% | □. <u>0.75 Crores</u> |

**Total.... □.67.50 Crores**

The total cost of the project is likely to be spent in 3 years starting FY 2010-11. There was provision of □.13.50 Crore during the FY 2010-11 to release the initial advance to M/s PGCIL to start the work. Further, there shall be requirement of funds to the tune of □.47.25 Crore during FY 2011-12 which has already been reflected in the ARR of 2011-12. As this amount is not likely to be spent during the current financial year 2011-12, there is requirement of □. **54.05 Crore** (□ 6.8 Cr. + □ 47.25 Cr) in the ARR of FY 2012-13.

### 3. Reframing of MW by Optic Fibre under ULDC project:

As per the decision of WPC, Ministry of Communication, Govt. of India, it is required to surrender the microwave frequencies operating within 2.3GHz to 2.4 GHz for use of Broad Band Access by Telecom. Operators. Hence, OPTCL has to go for alternate mode of communication i.e Optical Fibre Communication for which a sum of ₹ 39.00 Crore is required to be spent in three years out of which ₹.13.00 Crore is proposed in the ARR for the FY 2012-13 to meet the capital requirement.

In view of the above, the CAPEX requirement for Telecom. Projects (Capital Works) for FY 2012-13 is ₹. 91.68 Crore, the abstract of which is shown in the **Table-15** below.

**Table-15**

| <b>CAPEX for Telecom Project in FY 2012-13</b>         |                          |
|--|--------------------------|
| <b>ITEM</b>  | <b>Amount (₹. Crore)</b> |
| (a) Integration of 30 nos. RTU                         | 24.63                    |
| (b) Provision of SCADA inter face at 220KV & above S/S | 54.05                    |
| (c) Reframing of Microwave by Optic Fibre              | 13.00                    |
| <b>Total</b>   | <b>91.68</b>             |

#### (b) CAPEX FOR O&M RELATED PROJECTS:

An amount of ₹ 175.32 Cr has been proposed for the FY 2012-13 under CAPEX to meet the future load growth basically by way of transformer capacity augmentation / sub-station capacity enhancement by installing third transformers in the existing grid sub-stations of OPTCL, augmentation of transmission lines. Installation of capacitor banks in various grid sub-stations has been envisaged for voltage improvement in low voltage pockets. The details of item wise CAPEX for O&M related project are shown in the **Table-16** below.

**Table-16**

| <b>CAPEX for O&amp;M Projects in FY 2012-13<br/>(UPGRADATION / ADDITION OF TRANSFORMERS/LINE/CAPACITOR BANKS ETC.)</b> |
|--|
|--|

| Sl. No.      | Line/Equipment details  | Unit Rate (in ₹ lakh) | Quantity  | Total Cost (in ₹ Crore) |
|--------------|---|-----------------------|-----------|-------------------------|
| 1            | Power Trf. (Nos.)   |                       |           |                         |
|              | i) UPGRADATION & THIRD TRF.   |                       |           |                         |
|              | a) 220/132KV,160 MVA  | 650.000               | 1         | 6.50                    |
|              | b)132/33KV,63 MVA   | 300.00                | 14        | 42.00                   |
|              | c)132/33KV,40MVA  | 260.00                | 5         | 13.00                   |
|              | d) 132/33KV,20MVA   | 200.00                | 8         | 16.00                   |
| 2            | Estimated cost for third transformer Bays (220kV,132kV & 33kV) (Phase-I, II, & III)                     |                       |           | 15.90                   |
| 3            | Installation of Capacitor Bank (Total 275MVAR at 20 Nos. of grid S/S)                                   |                       |           | 6.91                    |
| 4            | Augmentation of Lines (in km.)  |                       |           |                         |
|              | a) Upgradation of conductor of 220kV Budhipadar-Tarkera DC Line by AAAC Zebra equivalent Conductor      | LS                    | 2 x 109   | 1.06                    |
|              | b) Upgradation of conductor of 132kV Chandaka-Mancheswar Ckt-II by HTLS Conductor                       | 100                   | 5.56      | 5.56                    |
|              | c) Upgradation of conductor of 132kV Chandaka-Ranasinghpur Line by HTLS Conductor                       | 100                   | 24.78     | 24.78                   |
|              | d) Upgradation of conductor of 132kV Tarkera-Chhend DC Line by HTLS Conductor                           | 100                   | 2 x 6.165 | 12.33                   |
|              | e) Replacement of conductor of 132kV TTPS-Chainpal DC Line by New AAAC ( Panther equivalent ) conductor | LS                    | 2 x 3.0   | 0.03                    |
|              | f) Upgradation of conductor of 132kV Burla PH-Budhipadar DC Line by AAAC Conductor                      | LS                    | 2 x 59.38 | 0.50                    |
|              | g) Upgradation of conductor of 132kV Chandaka-Nimapara Line ( Upto Badagada LILO ) by HTLS Conductor    | 100                   | 30        | 30.00                   |
|              | h) Upgradation of conductor of 132kV Chandaka-Khurda Line by AAAC Conductor                             | LS                    | 36.5      | 0.23                    |
|              | l) Upgradation of conductor of 132kV Bhanjanagar-Aska DC Line by AAAC Conductor                         | LS                    | 2 x 32.93 | 0.28                    |
|              | j) Upgradation of conductor of 132kV Khurda - Balugaon SC Line by AAAC Conductor                        | LS                    | 37        | 0.24                    |
| <b>TOTAL</b> |   |                       |           | <b>175.32</b>           |

**(c) CAPEX FOR INFORMATION TECHNOLOGY (IT) RELATED PROJECTS:**

Provision for an amount of ₹ **19.74Crore** is made for FY 2012-13 towards CAPEX for Infrastructure development of IT and automation related fields etc. as given in the **Table-17** below:

**Table-17**

|  |
|--|
| <b>CAPEX for IT Projects in FY 2012-13</b> |
|--|

| Sl. No.      | Detailed Head                     | □. In Crore  |
|--------------|-----------------------------------|--------------|
| <b>A</b>     | <b>ERP</b>                        | <b>3.87</b>  |
| 1            | ERP-Licenses                      | 1.04         |
| 2            | ERP-Implementation                | 2.83         |
| <b>B</b>     | <b>Portal services</b>            | <b>0.15</b>  |
| <b>C</b>     | <b>Disaster Recovery</b>          | <b>5.00</b>  |
| <b>D</b>     | <b>Primary Data Center</b>        | <b>6.89</b>  |
| 1            | Computing Infr.( Servers)         | 3.50         |
| 2            | Office Systems                    |              |
| a            | PCs & Pheripherals                | 3.14         |
| b            | Lap Tops (Hqrs)                   | 0.10         |
| 3            | Electrical (Power system)         | 0.09         |
| 4            | Furniture                         | 0.06         |
| <b>E</b>     | <b>Other IT</b>                   | <b>2.45</b>  |
| 1            | Document Mangement                | 0.10         |
| 2            | IT Security                       | 0.50         |
| 3            | e-Tendering                       | 0.25         |
| 4            | Digitization                      | 0.10         |
| 5            | SMS based MIS system              | 0.02         |
| 6            | Geographical Information System   | 0.50         |
| 7            | ERP Legacy Data entry             | 0.25         |
| 8            | Digital Logging and Local Display | 0.73         |
| <b>F</b>     | <b>Net working</b>                | <b>1.01</b>  |
| 1            | WAN (VSAT)                        | 0.88         |
| 2            | LAN                               | 0.13         |
| <b>G</b>     | <b>FMS (Out sourced Services)</b> | <b>0.36</b>  |
| <b>Total</b> |                                   | <b>19.74</b> |

**(d) CAPEX FOR TRANSMISSION PROJECT & CONSTRUCTION WING: (TRF-2)**

It has been planned to spend an amount of □ **651.50 Cr** on transmission related infrastructure during FY 2012-13 to increase the over all system capacity and to strengthen the transmission system network of the state, the details of which are shown in the **Table-18** below.

**Table-18**

(□. in Cr)

| SI.<br>No. | Loan / Scheme /<br>Contract-wise Capital Works | Expenditure During<br>FY 2011-12      |   |       | Projected<br>Expenditure<br>for<br>FY 2012-13 |
|------------|--|---------------------------------------|---|-------|---|
|            |  | Actuals<br>for First<br>Six<br>Months | Projection for<br>balance Six<br>Months | Total |   |
|            | (A) ONGOING SCHEMES                            |                                       |   |       |   |

| 1  | 2   | 3   | 4    | 5=3+4 | 6     |
|----|---|-----|------|-------|-------|
| 1  | 400/220kV S/S at New Duburi   |     | 1.00 | 1.00  | -     |
| 2  | 400/220kV S/S Mendhasal   |     | 1.40 | 1.40  | -     |
| 3  | 400 kV S/S at Meramundali   |     | 0.00 |       |       |
| 4  | 220/132kV S/S at Burla  |     | 0.50 | 0.50  |       |
| 5  | 220/132 kV S/S at IB  |     | 0.00 | -     |       |
| 6  | 220/33kV 2nd 20MVA trf. with associated 132 & 33 KV bays at Barkote           |     | 0.10 | 0.10  |       |
| 7  | 220/33kV s/s at Barkote by TPL  |     | 0.00 | -     |       |
| 8  | 220/33 kV s/s at Balimela   |     | 0.00 | -     |       |
| 9  | 2*100 MVA,220/132 kV S/S at Bhadrak & Associated LILO Line                    | 0.2 | 0.52 | 0.70  |       |
| 10 | Const. of 2Nos. 220 kv feeder bay at Balasore                                 |     | 0.00 | -     |       |
| 11 | Const. of 220/132 kv s/s Paradeep with associated line                        |     | 0.50 | 0.50  |       |
| 12 | 220/132kV s/s at Bolangir   | 0.2 | 0.77 | 1.00  |       |
| 13 | Construction of 4th Auto at Chandaka  | 0.0 | 0.27 | 0.30  |       |
| 14 | 132/33kV 40MVA trf. With associated 132 & 33 KV bays at Chhend s/s            |     | 0.00 | -     |       |
| 15 | 132/33kV,2x20 MVA s/s at Basta with associated 132KV Transmission lines       | 0.7 | 0.50 | 1.23  |       |
| 16 | Constn. Of 132/33 kV s/s at Karanjia with associated lines                    | 0.4 | 0.50 | 0.93  |       |
| 17 | 132/33kV S/S Badagada   | 0.0 | 0.49 | 0.50  |       |
| 18 | 132kV feeder bay extn at Hind Metals  | -   | 0.10 | 0.10  |       |
| 19 | 132/33kV s/s at Phulnakhara   |     | 0.25 | 0.25  |       |
| 20 | 132/33kV S/S at Anandpur alongwith Transmission Line (New)                    | 0.2 | 1.84 | 2.00  |       |
| 21 | 132/33 Grid S/s at Kendrapara   |     | 0.00 | -     |       |
| 22 | 132/33kV s/s at Barapalli with associated lines                               |     | 0.00 | -     |       |
| 23 | 2x12.5MVA,132/33 KV S/S at Akhusingh  |     | 0.28 | 0.28  |       |
| 24 | 40 MVA,132/33kV s/s at Bidanasi   | 0.0 | 0.78 | 0.80  |       |
| 25 | 2x12.5 MVA, 132/33 kv s/s at Nuapada with associated transmission line        | 1.1 | 6.92 | 8.00  | 23.00 |
| 26 | 2x12.5 MVA 132/33 kv s/s at Dabugaon with associated transmission line        | 0.8 | 7.23 | 8.00  | 11.00 |
| 27 | 2x12.5 MVA, 132/33 kv s/s at Padampur with associated transmission line       | 0.9 | 5.02 | 5.90  | 19.00 |
| 28 | 2x12.5 MVA, 132/33 kv s/s at Kuchinda with associated transmission line       | 0.6 | 8.36 | 9.00  | 9.00  |
| 29 | 2x12.5 MVA, 132/33 kv s/s at Bhawanipatna with associated transmission line   | 0.6 | 8.87 | 9.50  | 9.00  |
| 30 | 2x12.5 MVA, 132/33 kv s/s at Boudh with associated transmission line          | 1.1 | 8.94 | 10.00 | 23.00 |
| 31 | 2x12.5 MVA, 132/33 kv s/s at Purushottampur with associated transmission line | -   | 3.00 | 3.00  | 10.00 |
| 32 | 2x12.5 MVA, 132/33 kv s/s at Chandpur with associated transmission line       | 0.0 | 3.00 | 3.00  | 10.00 |
| 33 | 2x12.5 MVA, 132/33 kv s/s at Banki with associated transmission line          | 0.0 | 2.99 | 3.00  | 10.00 |

|    |   |             |               |               |               |
|----|---|-------------|---------------|---------------|---------------|
| 34 | 2x12.5 MVA, 132/33 kv s/s at Kalunga with associated transmission line  |             | 3.00          | 3.00          | 11.00         |
| 35 | 2x40 MVA, 220/33 kv s/s at Gopinathpur (Keonjhar) with associated lines   |             | 3.00          | 3.00          | 24.00         |
| 36 | 2x100 MVA, 220/132/33 kv s/s at Kuanrunda with LILO arrangement from existing 220 kv Budhipadar-Tarkera dc lines                                |             | 3.00          | 3.00          | 44.00         |
| 37 | 2x160MVA and 2x20MVA 220/132/33kv s/s at Lapanga with associated lines  | 2.2         | 5.00          | 7.21          | 48.00         |
| 38 | 2x40 MVA, 220/33 kv s/s at Bonai with associated transmission line  | 0.4         | 2.58          | 3.00          | 14.50         |
| 39 | 2x20 MVA, 132/33 kv s/s at Barbil with associated transmission line   | 0.7         | 9.25          | 10.00         | 6.00          |
| 40 | 400kv DC line Ib-Meramundali  | 9.5         | 5.00          | 14.49         |               |
| 41 | 400kv DC Line from Meramundali to Duburi  |             | 0.10          | 0.10          |               |
| 42 | 400kv DC Line from Meramundali to Mendhasal   |             | 0.02          | 0.02          |               |
| 43 | 220kv 2nd line from IB-Budhipadar   |             | 0.00          | -             |               |
| 44 | 220 kv line from Padmanvapur to Balasore  |             | 0.20          | 0.20          |               |
| 45 | 220 kv line from Narendrapur-Chandaka with bay at Chandaka  | 0.0         | 0.12          | 0.12          |               |
| 46 | 220kv line from Mendhasal to Bidanasi   | 0.0         | 0.75          | 0.76          |               |
| 47 | 220kv DC line Budhipadar-Bolangir   | 0.2         | 0.20          | 0.40          |               |
| 48 | 220kv DC Line Bidanasi-Cuttack  | 0.7         | 4.29          | 5.00          | 8.00          |
| 49 | 220kv DC line Bolangir to Kesinga   |             | 0.00          |               |               |
| 50 | 132kv line from Mancheswar to Badagada  |             | 0.10          | 0.10          |               |
| 51 | 132kv line from Badagada to Uttara  |             | 0.10          | 0.10          |               |
| 52 | 132kv line from Uttara to Sijua   |             | 0.10          | 0.10          |               |
| 53 | 132KV Line from Jagatsinghpur to Paradeep   | 2.5         | 2.47          | 5.00          | 8.00          |
| 54 | 132kv Hirakud LIIO Chipilima-Bergarh  | -           | 0.10          | 0.10          |               |
| 55 | Construction of 2nd Ckt from Loc. No. 116 of 132 kv Chandaka- Nimapada sc line to Nimapada grid with one no 132 kv bay extn.                    | 0.1         | 1.50          | 1.55          |               |
| 56 | Diversion of 132kv Line from Chandaka to Nimapara   | 0.1         | 0.32          | 0.39          |               |
|    | <b>TOTAL-A</b>  | <b>23.3</b> | <b>105.33</b> | <b>128.64</b> | <b>287.50</b> |
|    | <b>(B) PROPOSED SCHEMES</b>   |             |               |               |               |
| 1  | Conversion of 132/11 kv grid s/s to 2x40 MVA 132/33 kv s/s 2x40 MVA 132 kv s/s at Sarasmal at Jharsuguda  |             | 2.00          | 2.00          | 6.00          |
| 2  | 2x12.5 MVA, 132/33 kv s/s at Udala with LILO arrangement of Balasore- Baripada lines  |             | 4.00          | 4.00          | 12.00         |
| 3  | 132 kv SC line from Salipur to Kendrapara   |             | 1.00          | 1.00          | 8.00          |
| 4  | Constn. of 2x100 MVA 220/132 kv grid s/s at Cuttack, with 2 nos 220 kv feeder bay extn. at Bidanasi grid with linking arrangement at both ends. |             | 3.00          | 3.00          | 10.00         |
| 5  | Constn. of 2x20 MVA 132/33 kv s/s at Olaver and 2 nos 132 kv feeder bay extn. at Pattamundai with 132 kv DC line from Pattamkundai to Olaver    | 0.1         | 3.00          | 3.10          | 10.00         |

|    |   |     |      |      |       |
|----|---|-----|------|------|-------|
| 6  | Constn. of 2x40 MVA 132/33 kv s/s at Marshaghai ( Luna) by making LILO arrangement from 1 circuit of existing 132 kv Kendrapara -Paradeep DC line   | 0.1 | 1.91 | 2.00 | 6.00  |
| 7  | 2x100 MVA, 220/132/33 kv s/s at Dhamara with connectivity from Bhadrak s/s  | 0.1 | 5.88 | 6.00 | 15.00 |
| 8  | 2x160MVA ,220/132kv and 2x20MVA 132/33kv S/s at Karadagadia with associated lines   | 0.1 | 7.91 | 8.00 | 20.00 |
| 9  | 2x100MVA,220/132 KV S/s at Kesinga with 220DC line from Bolangir to Kesinga and one no. 220kv Bay Extension at Bolangir   | 0.0 | 0.10 | 0.10 | 12.00 |
| 10 | Construction of 2x40MVA 132/33kv s/s at Khajuriakata near Hindol Road with associated transmission lines  |     | 3.00 | 3.00 | 10.00 |
| 11 | 132kV LILO arrangement of 132kV SC line from Meramundali to Arati Steel to 132/33kv s/s , Nuapatna alongwith one no. of Feeder bay extension at Nuapatna  |     | 1.00 | 1.00 | 5.00  |
| 12 | 2x20 MVA ,132/33 KV s/s at Konark with associated lines & 132kV feeder bay extension at Nimapara  |     | 3.00 | 3.00 | 15.00 |
| 13 | Renovaion of existing 2/12.5 MVA , 132/33KV s/s at Ganjam   |     | 0.50 | 0.50 | 3.00  |
| 14 | 2x160MVA, 220/132kv s/s at existing 400kv s/s. Mendhasal  |     | 3.00 | 3.00 | 15.00 |
| 15 | Construction of 2*315MVA 400KV grid s/s at Lapanga with LILO of one circuit of 400kv Bisra -Raipur Line and Both circuit of IB -Thermal Meramundali 400kv Line at Lapanga   |     |      | -    | 15.00 |
| 16 | 2nos. 220KV feeders from 220/132/33kv s/s of OPTCL at Jayanagar to 400/220 kv s/s of PGCIL at Jayanagar with 2 nos. of 220kv bay extension at each end  |     | 2.00 | 2.00 | 10.00 |
| 17 | Conversion of 132kv switching station at Somanathpur , Balasore to 2x20 MVA , 132/33kv S/s.   |     | 1.00 | 1.00 | 6.00  |
| 18 | Construction of 2*100MVA & 2x40MVA , 220/132/33KV s/s at Puri with associated Line.   |     | 0.50 | 0.50 | 15.00 |
| 19 | Construction of 2*100MVA , 220/132/33KV s/s at Pratapsasan near Balakati with associated 220KV DC LILO line of Proposed 220 KV Cuttack-Jatani Line.132KV DC line from Pratap Sasan to Phulnakhara with 2 Nos. of Bay at Phulnakhara |     | 1.00 | 1.00 | 15.00 |
| 20 | 132kV Dc line fron Baripada PGCIL(Kuchei ) s/s to Jaleswar s/s with 2 nos. 132kv bay extension each at Baripada PGCIL ( Kuchei ) & ( Jaleswar)  |     | 0.10 | 0.10 | 10.00 |

|    |   |  |      |      |       |
|----|---|--|------|------|-------|
| 21 | Construction of 220/ 132/33kV s/s at Lahanda near Joda with construction of 132kV DC line from Lahanda to Barbil and two nos 132kV feeder bay extension at Barbil         |  | 0.10 | 0.10 | 5.00  |
| 22 | 2x40MVA ,132/33kV s/s at Baliguda with construction of 132kV SC line from Phulbani to Baliguda and one no. 132kV feeder bay extension at Phulbani                         |  | 0.10 | 0.10 | 5.00  |
| 23 | 2x20 MVA, 220/33 kv s/s at Narsinghpur with LILO arrangement of 1 circuit of existing 220kV Bhanjanagar-Meramundali DC Line   |  | 0.10 | 0.10 | 2.00  |
| 24 | one no. 220kV feeders from proposed 220/132kV s/s of OPTCL at Cuttack to proposed 400/220kV s/s at Uttara ( Jatni) with two nos.of 220kV feeder bay extension at each end |  | 0.20 | 0.20 | 4.00  |
| 25 | 132kV SC line to 132KV DC line from PGCIL s/s., Kuchei to 132/33kV s/s, Baripada  |  | 0.10 | 0.10 | 4.00  |
| 26 | 3x40 MVA 132/33kV s/s at Chhatabara with associated 220kV LILO lines  |  | 0.20 | 0.20 | 3.00  |
| 27 | 2X315MVA 400/220/33kV , 2x40MVA , 220/33kV s/s at Khuntini with associated transmission lines   |  | 2.00 | 2.00 | 20.00 |
| 28 | 1x315MVA , 400/220kV , 1X20MVA , 220/33kV s/s at Nisa near Angul with construction of 400KV DC line by LILO of 400kV IB-Meramundali Line                                  |  | 1.00 | 1.00 | 9.00  |
| 29 | 2x40MVA, 220/33kV s/s at Chhendipada with 220KV DC Line on Multi Circuit tower from proposed NISA S/S to Chhendipada  |  | 1.00 | 1.00 | 10.00 |
| 30 | 2x12.5 MVA, 132/33 KV S/S Bangiriposi with LILO 1 Circuit Kuchei-Rairangpur line. (20 Kms.)   |  | 0.10 | 0.10 | 2.00  |
| 31 | 2x12.5 MVA, 132/33 KV S/S at Potangi with S/C line on D/C tower for Sunabeda. (32 Kms.)   |  | 0.20 | 0.20 | 2.00  |
| 32 | 2x12.5 MVA, 132/33 KV S/S at Podagada with LILO Rayagada-Jeypore line. (10 Kms.)  |  | 0.20 | 0.20 | 2.00  |
| 33 | 2x20 MVA, 220/33 KV S/S at Govindpalli with LILO Balimela-Jayanagar line. (15 Kms.)   |  | 0.20 | 0.20 | 2.50  |
| 34 | 2x12.5 MVA, 132/33KV S/S at Umarkote with S/C line on D/C tower from Dabugaon to Umarkote. (30 Kms.)  |  | 0.20 | 0.20 | 2.00  |
| 35 | 2x12.5 MVA, 220/33 KV S/S at Kasipur with LILO one circuit Indravati-Theruvai 220kv D/C line. (2.0 Kms.)  |  | 0.20 | 0.20 | 3.00  |
| 36 | 2x20 MVA, 220/33kV S/s at Jaypatna with associated line. (14 Kms.)  |  | 0.20 | 0.20 | 2.00  |
| 37 | 132kV D/C line from Junagarh to Umerkote (40 Kms.)  |  | 0.00 | -    | 2.00  |

|          |  |  |            |              |              |
|----------|--|--|------------|--------------|--------------|
| 38       | 2x12.5 MVA, 132/33kV S/s at Kantabanji with S/C line on D/C tower from Khariar to Kantabanji. (35 Kms.)  |  | 0.20       | 0.20         | 2.00         |
| 39       | 2x12.5 MVA, 132/33kV S/s at Champua with LILO arrangement of existing Palaspanga- Rairangpur to Champua.   |  | 0.20       | 0.20         | 2.00         |
| 40       | 2x12.5 MVA, 132/33kV S/s at Ghatagaon with S/C line on D/C tower from Anandapur Grid S/S. (35 KMS.)  |  | 0.20       | 0.20         | 2.50         |
| 41       | 132kV S/C line on D/C tower from Baliguda to Kesinga (60 Kms.)   |  | 0.20       | 0.20         | 2.70         |
| 42       | Construction of 132 KV D/C line from proposed 220/132/33 KV S/S at Dhamara to proposed 132/33 KV S/S at Olavar & re-arrangement with proposed 132 KV D/C line from Pattamundai to Olavar to make 132 KV S/C line from Dhamara to Pattamundai & 132 KV S/C line from Olavar to Pattamundai. |  | 0.10       | 0.10         | 3.00         |
| 43       | 2X40 MVA 132/33kV Substation at CDA Cuttack with associated LILO line (4KM)  |  | 2.00       | 2.00         | 5.00         |
| 44       | Construction of 132kV SC line on DC tower for making 2nd Circuit interconnection between Kattapali and Bargarh with associated 132kV bays  |  | 0.10       | 0.10         | 1.30         |
| 45       | 2X20 MVA 132/33kV Substation at R.Udayagiri with 132kV line from Mohana with 132kV Bay extension at Mohana (40KM)  |  | 0.10       | 0.10         | 3.00         |
| 46       | 2X20 MVA 132/33kV Substation at Muniguda with 132kV line from Vedanta Lanjigarh a with 132kV Bay extension at Lanjigarh (25KM)   |  | 0.10       | 0.10         | 3.00         |
| 47       | 2X20 MVA 132/33kV Substation at Nandapur with 132kV line from Patangi with 132kV Bay extension at Patangi (35KM)   |  | 0.10       | 0.10         | 3.00         |
|          | <b>TOTAL-B</b>   |  | <b>0.4</b> | <b>53.30</b> | <b>53.70</b> |
| <b>C</b> | <b>DEPOSIT WORKS</b>   |  |            |              |              |
| 1        | 220 kV DC line from Budhipadar to Basundhara MCL (Deposit Work)  |  | -          | 2.00         | 2.00         |
| 2        | Shifting of 132kV Chandaka SC Line (CKT 1& 4) crossing through P.No.391,392 &4622 under Gadkon Mouza ) ( Deposit Work)   |  |            | -            |              |
| 3        | Rly traction line from Jagatsingpur to Gorakhnath (Deposit work)   |  |            | -            |              |

|    |  |             |               |               |               |
|----|--|-------------|---------------|---------------|---------------|
| 4  | Diversion of 132kV Lines from Loc.No.30 to Loc. No.39 PPT line ( Deposit Work)   |             |               | -             |               |
| 5  | Constn. of Tomka Railway line from B.C. Mohanty & sons Ltd (D.W)   | 0.4         |               | 0.43          | -             |
| 6  | Constn. of 132 kv LILO line from Khurda-Puri for power supply to Samuka Beach near s/s Puri (D.W)                              |             | 3.00          | 3.00          | 10.00         |
| 7  | 132kV s/s at IIT, Argul  |             | 3.00          | 3.00          | 21.00         |
| 8  | Diversion of 220 kv line from TTPS to Joda 4th crossing (D.W)  |             |               | -             |               |
| 9  | Diversion of Dhenkanal -Joranda road RTSS for clearance of right canal   |             |               | -             |               |
| 10 | Construction of 132KV SC line on DC tower from Theruvalli S/S to M/s. Utkal Alumina of Kuchipadar & B.E. At theruvalli ( D.W.) |             |               |               |               |
| 11 | Construction of 220KV DC line for Laxmipur S/s to Aditya Alumina kansariguda ( D.W.)   |             |               | -             |               |
| 12 | Construction of 220KV SC line on DC tower from laxmipur to M/s. Utkal Alumina At Doraguda ( D.W)                               |             |               |               |               |
| 13 | Construction of one no.220kV bay at Paradeep S/s for IOCL alongwith 220 kV transmission lines from Paradeep to IOCL            | 1.3         | 7.00          | 8.32          | 8.00          |
| 14 | Power supply to Bansapani RTSS from Joda grid s/s  | 0.4         |               | 0.39          |               |
| 15 | Power supply Keonjhar RTSS from Polasponga grid s/s  | 0.5         |               | 0.49          |               |
| 16 | Re-routing of 132kV DC Line from Chandaka to Sijua for AIIMS   |             |               | -             |               |
| 17 | Diversion of 2 nos line due to proposed Talcher- Bimalgarh Rly Line  |             |               | -             | -             |
| 18 | Diversion of DC line from Budhipadar to Jorabaga   |             |               | -             |               |
| 19 | Diversion of Paradeep-Haridaspur line ( Railway deposit )  | 2.9         | 5.00          | 7.87          |               |
| 20 | other deposit work & consumer contribution   |             |               | -             |               |
|    | <b>TOTAL-C</b>   | <b>5.5</b>  | <b>20.00</b>  | <b>25.50</b>  | <b>39.00</b>  |
|    | <b>TOTAL: (A+B+C)</b>  | <b>29.2</b> | <b>178.63</b> | <b>207.84</b> | <b>651.50</b> |

**(e) CAPEX FOR CIVIL WORKS:**

OPTCL proposes CAPEX of ₹ **37.19 Crore** on Civil works during FY 2012-13 for ongoing and new projects in its two Divisions i.e. Bhubaneswar and Burla. ₹ 29.10 Crore and ₹ 8.08 Crore have been proposed towards CAPEX for Bhubaneswar Division and Burla Division respectively.

### A. 3) DEPRECIATION: (TRF-23)

As per Regulation 17 (Chapter-III) of CERC Regulations, 2009, depreciation shall be computed in the following manner, namely:

- (1) The value base for the purpose of depreciation **shall be the capital cost of the asset admitted by** the Commission.
- (2) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.
- (3) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.
- (4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in **Appendix-III** to these regulations for the assets of the generating station and transmission system:  
Provided that, the remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the assets.
- (5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting the cumulative depreciation including Advance against Depreciation as admitted by the Commission upto 31.3.2009 from the gross depreciable value of the assets.
- (6) Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on *pro rata* basis.

The book value of the assets for FY 2012-13 is estimated as **₹ 3020.88 Crore** (₹.2793.54 Cr. as on 01.04.2011 + ₹. 227.34 Cr. projected addition during FY 2011-12). The Depreciation is estimated as **₹155.99 Crore** as per CERC Regulations, 2009 and **₹ 93.82**

**Core** as per pre-92 rate for FY 2012-13. The detailed Statement of Fixed Assets and block-wise computation of depreciation is shown in **Table-19** below:

**Table-19**

| <b>Block-wise computation of Depreciation</b> (□ in Core) |  |  |                                  |                                    |   |                                    |
|---|--|--|----------------------------------|------------------------------------|---|------------------------------------|
| <b>Particulars</b>  | Depreciation Rate prescribed by CERC Regln. 2009 | Depreciation @ Pre-92 Rate as per Gol Notification | Gross Block (01.04.2011) (Prov.) | Gross Block (01-04-12) (Projected) | Deprcn. for FY 12-13 as per CERC Regln. | Deprcn. for FY 12-13 @ Pre-92 Rate |
| Land and Rights   | 0.00%  | 0.00%  | 34.85                            | 37.69                              | 0.00                                    | 0.00                               |
| Buildings   | 3.34%  | 1.80%  | 78.14                            | 84.50                              | 2.82                                    | 1.52                               |
| Plant & Machinery (Other Civil works)                     | 3.34%  | 1.80%  | 4.29                             | 4.64                               | 0.15                                    | 0.08                               |
| Plant & Machinery   | 5.28%  | 3.80%  | 1275.54                          | 1379.34                            | 72.83                                   | 52.41                              |
| Plant & Machinery (Lines, Cables & Network Assets)        | 5.28%  | 2.57%  | 1387.49                          | 1500.40                            | 79.22                                   | 38.56                              |
| Vehicles  | 9.50%  | 12.86%   | 1.50                             | 1.62                               | 0.15                                    | 0.21                               |
| Furniture, Fixture  | 6.33%  | 4.55%  | 2.26                             | 2.45                               | 0.16                                    | 0.11                               |
| Office Equipment  | 6.33%  | 9.00%  | 9.47                             | 10.24                              | 0.65                                    | 0.92                               |
| <b>TOTAL</b>  |  |  | <b>2793.54</b>                   | <b>3020.88</b>                     | <b>155.99</b>                           | <b>93.82</b>                       |

If depreciation is allowed @ pre-92 rate, OPTCL will face severe financial crunch to meet its debt repayment obligation. Hence, OPTCL prays the Hon'ble Commission to allow □. **155.99 Core** towards depreciation in the ARR for FY 2012-13 in order to enable OPTCL to repay the loan availed for CAPEX in time.

The detailed computation of depreciation is shown in **TRF-23**.

#### **A. 4) SPECIAL APPROPRIATION:**

The Hon'ble Commission had allowed Special Appropriation of □.33.93 Core in the tariff order for FY 2011-12 to meet Debt Service Obligation since depreciation was allowed based on the pre-92 rate. For FY 2012-13, OPTCL has projected □.155.99 Core towards depreciation considering CERC Regulations, 2009 which will take care of the principal repayment obligation.

### A. 5) RETURN ON EQUITY: (TRF-12)

At the time of de-merger of GRIDCO effective from 01.04.2005, the equity share capital of OPTCL was stated at ₹.60.07 Crore, leaving the balance equity share capital with GRIDCO. The equity share capital issued to Govt. of Odisha was both in consideration of cash and other than cash. Further OPTCL has received ₹ 100 Crore (₹.23.05 Cr. during FY 2008-09 + ₹. 5.00 Cr. during FY 2009-10 + ₹. 71.95 Crore during FY 2010-11) from the State Govt. as equity contribution for setting up transmission projects in remote areas. Hence the original equity investment as well as the additional investment made in OPTCL out of the business cash flow works out to ₹. **160.07 Crore**, the details of which are shown in **TRF-12**.

OPTCL proposes Return on Equity (RoE) of ₹ **24.81 Crore** during FY 2012-13 @ 15.5% pre tax basis as per clause (3) of Regulation 15 of CERC regulations, 2009 on the original equity investment as well as additional investment made in the OPTCL out of the business cash flow i.e. on ₹.160.07 Crore.

Further, in view of the emerging scenario in transmission investment, RoE should be allowed for supporting counterpart funding of the equity component for future projects and expansion plans.

### A. 6) INTEREST ON WORKING CAPITAL:

As per norms of the CERC Regulations, 2009 for calculation of Interest on Working Capital, the Working Capital is estimated as ₹. **370.61 Crore**. The interest on working capital is proposed as ₹. **44.47 Crore**, the details are given in **Table-20** below.

**Table-20**

| <b>Calculation of Interest on Working Capital</b>       |                           |
|---|---------------------------|
| <b>Parameters</b>                                       | <b>Amount<br/>(₹.Cr.)</b> |
| (I) Receivables equivalent to two months of fixed cost. | 186.29                    |
| (ii) Maintenance Spares @ 15% of O&M expenses           | 118.49                    |
| (iii) Operation & Maintenance expenses for one month    | 65.83                     |
| <b>Total Working Capital</b>                            | <b>370.61</b>             |
| <b>Interest on Working Capital @ 12% per annum</b>      | <b>44.47</b>              |

## TRANSMISSION COST

By considering the proposed cost / expenses under different heads, the Transmission Cost of OPTCL for FY 2012-13 is worked out as ₹ **1117.74 Crore**. Details are shown in the **Table- 21** below:

**Table-21**

| <b>TRANSMISSION COST FOR FY 2012-13</b>   |                        |
|---|------------------------|
| <b>Particulars</b>                        | <b>Amount ₹ in Cr.</b> |
| Employee Cost including Terminal Benefits | 655.36                 |
| R&M Cost                                  | 95.46                  |
| A&G Cost                                  | 39.11                  |
| <b>Sub-Total O&amp;M Cost</b>             | <b>789.93</b>          |
| Interest on Loan Capital                  | 102.54                 |
| Depreciation                              | 155.99                 |
| Special Appropriation                     | 0.00                   |
| Return on Equity                          | 24.81                  |
| Interest on Working Capital               | 44.47                  |
| <b>Total</b>                              | <b>1117.74</b>         |

### **B) ADDITIONAL EXPENSES:**

#### **B.1) CONTINGENCY RESERVE: (TRF-22)**

The requirement of Contingency Reserve in a natural calamity prone State like Odisha need not be over emphasized. Investment towards Contingency Reserve relates to maintaining an emergency fund to meet expenses towards unforeseen calamities. Contingency Reserve is being kept in a separate Reserve Fund and invested in the specified securities.

For FY 2012-13 the provision for Contingency Reserve has been projected as ₹ **.15.10 Crore**. The details are shown in **TRF-22**.

## **B.2) PROVISION FOR BAD & DOUBTFUL DEBTS: (TRF-9)**

OPTCL envisages addition of ₹ **0.10 Crore** towards Bad and Doubtful Debts during FY 2012-13 the details of which are shown in **TRF-9.**

## **B. 3) GRID CO-ORDINATION COMMITTEE EXPENSES:**

As per provisions under Chapter 11 of Orissa Grid Code, OPTCL formed Grid Coordination Committee (GCC) under OPTCL. ₹ **0.30 Crore** has been projected as Annual GCC Expenses for FY 2012-13 in line with the said provisions.

## **B. 4) INCENTIVE FOR SYSTEM AVAILABILITY:**

The Regulation 25 to 29 under Chapter- 4 of CERC Regulations, 2009 specify the “Norms of Operation” applicable for generating stations (thermal and hydro) and transmission system for recovery of capacity charge, energy charge, transmission charge and incentive. The Regulation 25 (1) is reproduced below.

***“25. (1) Recovery of capacity charge, energy charge, transmission charge and incentive by the generating company and the transmission licensee shall be based on the achievement of the operational norms specified in this Chapter.”***

Regulation 28 specifies the Normative Annual Transmission System Availability Factor (NATAF) for the Transmission System for the purpose of recovery of transmission charge and incentive by the Transmission Licensee. The Regulation 28 is reproduced below.

***“28. Normative Annual Transmission System Availability Factor (NATAF) shall be as under:***

- (1) AC system: 98%*
- (2) HVDC bi-pole links: 92%*
- (3) HVDC back-to-back Stations: 95%”*

The system availability of its transmission network of OPTCL for FY 2010-11 has been worked out as **99.84%** and it has been duly certified by SLDC and countersigned by the Member Secretary, Grid Coordination Committee. The availability has been computed following the procedure laid down in Appendix -IV of CERC Regulations, 2009 and filed as **Annexure-II**. As submitted above, OPTCL is entitled to get incentive being able to make available the Transmission System more than 98% for the year 2010-11.

In pursuance of the CERC Regulations, 2009, PGCIL has been raising monthly transmission charges to its constituents including GRIDCO Ltd. This monthly charge includes the incentive for that month based on Transmission system Availability Factor for the calendar Month (TAFM). The transmission charge for the month is linked to TAFM calculated as per the procedure laid down in Appendix -IV of CERC Regulations, 2009.

The TAFM for OPTCL's network needs to be calculated taking into account outages of transmission line and auto-transformers for a particular month based on outage data shown for that month in the monthly System Performance Report prepared by SLDC. Hence, it is not possible to calculate TAFM month wise and accordingly prepare the monthly transmission charge bill including the incentive in the first week of the succeeding month.

In view of the difficulties indicated in the above Paragraph, OPTCL humbly submits that the incentive due to OPTCL for the year 2010-11 may be allowed in the ARR and Transmission Tariff order for FY 2012-13. The incentive is to be paid by the six long-term customers of OPTCL (Four DISCOMs, NALCO and IMFA) as per the calculation worked out in the **Table-22** below.

**Table-22**

**CALCULATION OF INCENTIVE CLAIMED BY OPTCL**

| <b>Name of the long-term customer</b>         | <b>Energy Wheeled by OPTCL During 2010-11 (MU)</b> | <b>Transmission Charge @ 23.5 P/U during 2010-11 (Rs. in Crore)</b> | <b>Transmission System Availability during 2010-11 for calculation of incentive</b> | <b>Transmission System Availability above 98%</b> | <b>Incentive claimed by OPTCL for 2010-11 (Rs. in Crore)</b> |
|---|--|---|---|---|--|
| <b>(1)</b>                                    | <b>(2)</b>   | <b>(3)</b>  | <b>(4)</b>  | <b>(5)=(4)- 98%</b>                               | <b>(6)=(3) x(5)</b>  |
| CESU  | 7074.59  | 166.25  | 99.84%  | 1.84%   | 3.06   |
| NESCO   | 5103.42  | 119.93  | 99.84%  | 1.84%   | 2.21   |
| WESCO   | 6489.30  | 152.50  | 99.84%  | 1.84%   | 2.81   |
| SOUTHCO                                       | 2559.70  | 60.15   | 99.84%  | 1.84%   | 1.11   |
| NALCO   | 314.29   | 7.39  | 99.84%  | 1.84%   | 0.14   |
| IMFA  | 216.94   | 5.10  | 99.84%  | 1.84%   | 0.09   |
| <b>Total Incentive Claimed (Rs. in Crore)</b> |  |   |   |   | <b>9.41</b>  |

It is further submitted that the incentive approved by the Hon'ble Commission would be utilised for enhancing motivation of employees of OPTCL in the manner as would be decided by OPTCL management.

### **C) PASS THROUGH EXPENSES:**

OPTCL started its commercial operation from 1<sup>st</sup> April 2005 and has completed audit of its accounts up to FY 2009-10. The audit of accounts for FY 2010-11 is in progress and is expected to be completed by January 2012. While approving the ARR and Transmission Tariff for the respective financial years, Hon'ble Commission has approved the costs and revenue on projected basis, which on completion of audit are found to be lower than the actual costs incurred. This has resulted in OPTCL incurring operational loss consistently from the year of its inception.

The Tariff Policy provides that the uncontrollable costs should be recovered speedily to ensure that the future consumers are not burdened with past costs. OPTCL, therefore, proposes a truing-up of the costs and revenue for the last five financial years starting FY 2006-07 based on audited accounts upto FY 2009-10 and provisional accounts for FY 2010-11. The summary of the truing up from FY 2006-07 to FY 2010-11 is enclosed at **Annexure-III**.

From the table at **Annexure-III**, it is evident that a sum of ₹. **205.81 Crore** is the excess net cost incurred over and above the cost allowed by the Hon'ble Commission which is required to be allowed as a pass through in the ARR of OPTCL for the FY 2012-13. Accordingly, a sum of ₹. **205.81 Crore** has been proposed to be recovered in the tariff as a pass through in the ARR of FY 2012-13.

### **OTHER INCOME AND COST / MISCELLANEOUS RECEIPT:**

Miscellaneous Receipt of OPTCL from different sources during 1<sup>st</sup> six months of FY 2011-12 is about ₹ **12.40 Crore**, the details are given in the **Table-23** below:

#### **Table-23**

**Miscellaneous Receipt during 1st six months of FY 2011-12**

| Source                                    | ₹. Crore     |
|---|--------------|
| Inter-State Wheeling                      | 1.50         |
| Intra-state ShortTerm Open Access         | 2.76         |
| Inter-state Short Term Open Access        | 2.34         |
| STU charges received from Energy Exchange | 0.94         |
| Supervision Charge                        | 4.86         |
| <b>Total</b>                              | <b>12.40</b> |

The beneficiaries such as Gujarat UVNL (GUVNL) and Madhyapradesh PTCL (MPPTCL) using OPTCL's network are not paying inter-state wheeling charges since long due to dispute raised by MPPTCL and the matter is subjudice now at Hon'ble Supreme Court of India. Other Utilities such as Chhatisgarh SPDCL, MSEDCL, Daman, Diu & DNH are paying at the rate of around 10 paise per unit against our billing rate of 17.5 paise per unit. The order in force as of now as per ATE is around 3.5 paise per unit. As there is a gap of about 14 paise per unit between the rate of billing and the rate in force, the income from inter-state wheeling cannot be assessed correctly for FY 2012-13.

In view of reducing revenue trend from Supervision Charge and uncertainty involved in revenue generation from other sources as well, OPTCL expects the Miscellaneous Receipt of ₹18.00 Crore during FY 2012-13.

Taking into account all the above, the summary of Annual Revenue Requirement of OPTCL for FY 2012-13 is shown in the **Table-24** below:

**SUMMARY OF ANNUAL REVENUE REQUIREMENT OF OPTCL FOR FY 2012-13**

| ITEMS  | Proposal for OPTCL<br>2012-13 |        |
|--|-------------------------------|--------|
| <b>(a) FIXED COST</b>                          |                               |        |
| O&M Expenses                                   |                               | 789.93 |
| (i) Employees Cost including Terminal Benefits | 655.36                        |        |
| (ii) R&M Cost                                  | 95.46                         |        |
| (iii) A&G Cost                                 | 39.11                         |        |
| Interest on Loan Capital                       |                               | 102.54 |
| Depreciation                                   |                               | 155.99 |
| Special Appropriation                          |                               | 0      |
| Return on Equity                               |                               | 24.81  |
| Interest on Working Capital                    |                               | 44.47  |

|  |      |                |
|--|------|----------------|
| <b>Sub-Total (a)</b>                               |      | <b>1117.74</b> |
| <b>b) Additional Expenses</b>                      |      | 24.91          |
| Contingency Reserve                                | 15.1 |                |
| Bad & doubtful debt Debts                          | 0.10 |                |
| GCC Expense  | 0.30 |                |
| Incentive for system availability                  | 9.41 |                |
| <b>Total Trans. Cost (a+b)</b>                     |      | <b>1142.65</b> |
| c) Pass Through Expenses                           |      | 205.81         |
| <b>d) Total Annual Revenue Requirement (a+b+c)</b> |      | <b>1348.46</b> |
| e) Less Misc. Receipts                             |      | 18.00          |
| f) ARR to be recovered from LTOA Customers (d-e)   |      | <b>1330.46</b> |
| <b>OPTCL's Annual Revenue Requirement</b>          |      | <b>1330.46</b> |

### TRANSMISSION LOSS:

The transmission loss is dependent on the location of generation sources, system configuration and power flow requirements at different load centres. In view of the increasing demand for power at an accelerated pace due to ongoing industrialization and implementation of central & state sponsored schemes like RGGVY, BGJY etc. in Odisha, there will be increased flow of power in the OPTCL transmission network contributing to increased transmission loss.

The Hon'ble Commission in the order dated 19.07.2010 in Case No. 51/2007 has approved the Business Plan of OPTCL for 5-years (FY 2008-09 to 2012-13) wherein at Para 84 (page 28-29), the transmission loss for FY 2012-13 has been approved as 3.80% against OPTCL's projection of 4%.

OPTCL has been able to reduce the transmission loss year over year by commissioning a number of new transmission projects and innovative schemes under Master Maintenance Plan during last few years. The actual transmission loss in the OPTCL's transmission system from April'11 to September'11 is **3.82%** against Commission's approval of 3.9% for the current FY 2011-12. OPTCL expects the loss level to remain around 3.9% in the current year. As approved in the Business Plan, OPTCL proposes **3.8%** transmission loss during FY 2012-13.

### ESTIMATION OF REVENUE RECEIPT AND DEFICIT OF ARR AT THE EXISTING TRANSMISSION CHARGE @ 25P/U

During FY 2012-13, OPTCL will earn revenue from the LTOA Customers in the following manner:

- (i) By charging the rate applicable on DISCOMs for wheeling of **23932 MU** from Generating Stations to the supply points of DISCOMs.
- (ii) By charging the rate applicable on CGPs like IMFA & NALCO for supply of **100 MU** Emergency Power & Back-up Power to their CGPs and load centres located elsewhere in Odisha.
- (iii) By charging the rate applicable on CGPs like IMFA & NALCO for wheeling of their surplus power of **300 MU** (excluding Transmission Loss) from their CGPs to load centres located elsewhere in Odisha.

The revenue to be earned by OPTCL from wheeling of **24332 MU** at the existing transmission tariff of 25 P/U will be ₹. **608.59 Crore**. The details of the same are given in the **Table-25** below:

**Table-25**

| <b>Calculation of Revenue at the existing Transmission Charge @ 25 P/U</b> |                                  |                         |                   |                              |                                      |                            |
|--|----------------------------------|-------------------------|-------------------|------------------------------|--------------------------------------|----------------------------|
| <b>Sl. No</b>  | <b>Customer</b>                  | <b>MU to be handled</b> | <b>Rate (P/U)</b> | <b>Transmission Loss (%)</b> | <b>Energy handled including Loss</b> | <b>Amount (in ₹ Crore)</b> |
| 1  | CESU                             | 8532.67                 | 25                | 0                            | 8532.67                              | 213.32                     |
| 2  | NESCO                            | 5469.18                 | 25                | 0                            | 5469.18                              | 136.73                     |
| 3  | WESCO                            | 6500                    | 25                | 0                            | 6500                                 | 162.50                     |
| 4  | SOUTHCO                          | 3430                    | 25                | 0                            | 3430                                 | 85.75                      |
|  | <b>Total DISTCOs</b>             | <b>23932</b>            |                   |                              | <b>23932</b>                         | <b>598.30</b>              |
| 5  | Emergency Sale to CGPs           | 100                     | 25                | 0                            | 100                                  | 2.50                       |
| 6  | Wheeling to industries from CGPs | 300                     | 25                | 3.8                          | 311.85                               | 7.80                       |
|  | <b>Total</b>                     | <b>24332</b>            |                   |                              | <b>24344</b>                         | <b>608.59</b>              |

The Hon'ble Commission in the order dated 19.07.2010 in Case No. 51/2007 has approved the Business Plan of OPTCL for 5-years (FY 2008-09 to 2012-13) wherein at Table-19 under Para 87 (page 29-30), the summary of system demand of DISCOMs (as approved in their Business Plan) has been indicated as 23521 MU (CESU-7868MU, NESCO-5770MU, WESCO-6800MU, SOUTHCO-3083MU). However, OPTCL in the present application has taken the recent realistic demand projection of DISCOMs dated 25.11.2011/26.11.2011 for FY 2012-13. The demand projection figures of DISCOMs have been received by OPTCL from GRIDCO.

### **Excess / Deficit of Revenue Requirement**

OPTCL will be having revenue deficit of ₹. **721.87 Crore** considering the ARR proposed and the revenue to be earned from wheeling of **24332 MU** at the existing transmission tariff of 25 P/U, the details of which are shown in **Table-26** next page.

**Table-26**

(₹. in Crore)

| <b>Deficit of Revenue requirement @ 25 P/U present tariff rate</b>                          |                |
|---|----------------|
| Total Annual Revenue Requirement  | 1330.46        |
| Less: Revenue earned from Long Term Open Access Customer                                    | 608.59         |
| <b>Deficit of Revenue requirement for FY 2012-13 at the existing Wheeling Rate @ 25 P/U</b> | <b>-721.87</b> |

### **Proposal for revision of Transmission Tariff/ Wheeling Charges**

OPTCL, with its present transmission tariff, cannot meet its proposed revenue requirement and will suffer revenue deficit of ₹. **721.87 Crore** at the existing transmission tariff of 25 P/U. In order to meet the deficit, OPTCL submits this application before Hon'ble Commission with humble request to approve its proposed ARR, the Transmission Tariff and Transmission Loss for FY 2012-13 to be effected from 01.04.2012.

**Computation of Transmission Tariff based on Rs./ Unit approach to meet the proposed ARR for FY 2012-13**

OPTCL proposes Transmission Tariff @ **54.68 P/U** to recover the proposed ARR of **₹.1330.46 Crore**, the details of which are shown in the **Table-27** below:

**Table-27**

| <b>Items</b>                                    | <b>OPTCL Proposal</b> |
|---|-----------------------|
| (a) Total Annual Revenue Requirement in ₹ Crore | 1330.46               |
| (b) Total Million Units proposed for Wheeling   | 24332                 |
| (c) Proposed Transmission Tariff in P/U = (a/b) | 54.68                 |

**OPEN ACCESS CHARGES:**

**Long Term Open Access Charges in terms of ₹./ MW/ Day**

The Hon'ble Commission has notified the Open Access Regulation under section 42 (2) of the Electricity Act, 2003. Consumers availing open access shall be required to pay the transmission charges for use of the transmission lines and substations of OPTCL. The Long Term Transmission Charge on the basis of MW flow by adopting the formula as provided in the OERC (Determination of Open Access Charges) Regulations 2006 dated 06.06.2006 is:

$$LT \text{ Rate} = \frac{\text{Net proposed Transmission Cost (NTPC)}}{\text{Average Demand in the State (MW)} \times 365}$$

### **Short Term Open Access Charges in terms of Rs./MW/Day**

The revenue from Short Term Open Access Charges earned from Short Term Open Access Customers is uncertain and therefore, OPTCL has not factored the same in to the Miscellaneous Receipts proposed in this application. It is submitted that the Short Term Open Access Charges is proposed and that the same will be adjusted in the revenue as year-end-adjustments at the end of the year on actual basis. Therefore, OPTCL considers Short Term Access Charges as Nil in this Application.

As per Chapter II, Para4 (1) (viii), OERC (Determination of Open Access Charges) Regulations 2006 dated 06.06.2006 (in short "Regulations 2006"), the Short Term Open Access Charges is calculated as :

$$ST\ Rate = 0.25 \times \frac{Net\ proposed\ Transmission\ Cost\ (NTPC)}{365 \times Average\ Demand\ in\ the\ State\ (MW)}$$

Surcharge and/ or any other charge on Short Term Open Access, if any, as decided by the Hon'ble Commission will be leviable.

The transmission charges payable by a very short-term customer using the system for fraction of a day in case of uncongested transmission corridor shall be levied as under, namely: -

- (a) Up to 6 hours in a day in one block:  $\frac{1}{4}$ th of the ST\_rate
- (b) More than 6 hours and up to 12 hours in a day in one block:  $\frac{1}{2}$  of ST\_rate
- (c) More than 12 hours and up to 24 hours in a day in one block: equal to ST\_rate

The transmission charge payable by a short-term customer shall be for one day and in multiples of whole number of days.

The transmission licensee shall retain 25% of the charges collected from the short-term customers and the long-term customers shall adjust the balance 75% towards reduction in the transmission charges payable.

Wheeling charges shall be determined on the basis of same principles as laid down for intra-state transmission charges and in addition would include average loss compensation of the relevant voltage level as approved by OERC for the previous year subject to year-end adjustment.

In view of the above the estimated energy for transmission in OPTCL's system is **24332 MU**. Considering the methods shown above, the Long term Open Access Charges and Short term Open Access Charges in terms of ₹./MW/Day are proposed in the **Table-28** below considering the Annual Revenue Requirement of ₹. **1330.46 Crore**.

**Table-28**

| <b>ABSTRACT OF OA CHARGES PROPOSED BY OPTCL FOR FY 2012-13</b> |                                |
|--|--------------------------------|
| <b>DETAILS</b>   | <b>In ₹. Per Unit approach</b> |
| Net Annual Revenue Requirement (Rs. Crore)                     | 1330.46                        |
| Proposed Energy to be transmitted in OPTCL Network (MU)        | 24332                          |
| Proposed Transmission Tariff (P/U)                             | 54.68                          |
| Power Flow (Equivalent of 24332 MU) in MWs                     | 2778                           |
| Long term Open Access Charges in terms of Rs./MW/Day           | 13123                          |
| Short term Open Access Charges in terms of Rs./MW/Day          | 3281                           |

Besides above Charges, the Open Access customers are also required to pay any other charges as determined by Hon'ble Commission as per provisions under Chapter-II (CHARGES FOR OPEN ACCESS) of the Regulations 2006.

### **REACTIVE ENERGY CHARGES**

As per Regulation 4 (5) (i) under Chapter-II (CHARGES FOR OPEN ACCESS) of the Regulations 2006, the Hon'ble Commission shall separately determine charges for KVARh consumption from the grid in terms of paise /unit and the Open Access Customers shall pay the same.

### **PRAYER**

Based on the facts and submissions made in the foregoing paragraphs, OPTCL humbly prays before Hon'ble Commission to kindly approve the proposed ARR and Transmission Tariff for FY 2012-13 as under:

- (i) Annual Revenue Requirement of **₹.1330.46 Crore.**
- (ii) Recovery of Transmission Charge **@ 54.68 P/U.**
- (iii)** Transmission Loss for wheeling as **3.8%** on energy drawal

for which the applicant as in duty bound shall ever pray.

BY THE APPLICANT  
THROUGH

Bhubaneswar  
November , 2011

**General Manager (RT&C)**  
**Orissa Power Transmission Corporation Limited**

**BEFORE THE ORISSA ELECTRICITY REGULATORY COMMISSION  
BHUBANESWAR**

**Case No.-----  
Filing No. 1**

**IN THE MATTER OF:** An application for approval of Annual Revenue Requirement and Transmission Tariff for the Financial Year 2012-13 under Section 62, 64 and all other applicable provisions of the Electricity Act, 2003 read with relevant provisions of OERC (Terms and Conditions for

Determination of Tariff) Regulations, 2004 and OERC (Conduct of Business) Regulations, 2004, and other tariff related matters.

**AND**

**IN THE MATTER OF:** Orissa Power Transmission Corporation Limited, Janpath, Bhubaneswar-751022.

**... Applicant**

**Affidavit verifying the Application**

I, Ajay Kumar Mohanty, son of Late Kailash Chandra Mohanty, aged about 57 years, residing at Plot No. N-1/188, IRC Village, Nayapali, Bhubaneswar-751015, do solemnly affirm and say as follows:

1. That I am the General Manager, Regulation, Tariff and Commercial Wing, OPTCL, the Applicant and have been duly authorized by the said Applicant to make this affidavit on its behalf.
2. That the Statements made in paragraphs herein above are based on official information and I believe them to be true.

Bhubaneswar

November , 2011

**DEPONENT**



**Annexure – A**

**Proposed Schedule of Transmission Charge of OPTCL for FY 2012-13.**

**Transmission Charge**

This Charge is applicable for wheeling of GRIDCO power from generating points to the supply point of Distribution & Retail Supply Licensee and wheeling of power for CGPs. The total

charges shall be calculated by summation of following charges stated in Para (a) to (d) below as applicable:

**(a) Transmission Charge:**

- Transmission Charge @ **54.68 P/U** shall be applicable for transmission of power at 400 kV/ 220 kV/ 132 kV over OPTCL's EHT transmission system for the purpose of transmission of energy from generator end to the substation from where energy will be fed to DISCOMs and CGPs.
- Transmission Loss @ **3.8%** for the use of EHT transmission system and for the purpose of transmission of energy from a CGP to its industrial unit located at a separate place as well as for transmission of power from outside the state to an industry located inside the State.
- Long Term Open Access Customers & Short Term Open Access Customers shall pay the applicable Transmission Charges plus all other charges and losses as applicable thereon, as the case may be.

The Transmission Charge shall be applicable to the DISCOMs and CGPs, the Long Term Open Access Customers of GRIDCO for the respective month.

**(b) Rebate:**

- On payment of monthly bill, the Open Access Customer shall be entitled to a rebate of Two percent (2%) of the amount of the monthly bill (excluding arrears), if full payment is made within two working days (excluding holidays under N.I Act) of the presentation of the bill and 1% of the amount if paid within 30 days of the presentation of the bill.

**(c) Delayed Payment Surcharge:**

- The monthly charges as calculated above together with other charges and surcharge on account of delayed payments, if any, shall be payable within 30 days from the date of bill. If payment is not made within the said period of 30 days, delayed payment surcharge at the rate of 2% (two percent) per month shall be levied pro-rata for the period of delay from the due date, i.e. from the 31st day of the bill, on the amount remaining unpaid (excluding arrears on account of delayed payment surcharge).

**(d) Duty and Taxes:**

- The Electricity Duty levied by the Government of Orissa and any other statutory levy/ duty/ tax/ cess/ toll imposed under any law from time to time shall be charged over and above the tariff.