

# **ORISSA ELECTRICITY REGULATORY COMMISSION**

**BIDYUT NIYAMAK BHAWAN**

**UNIT-VIII, BHUBANESWAR - 751 012**

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**Present : Shri B.K. Das, Chairperson  
Shri K.C. Badu, Member  
Shri B.K. Miora, Member**

## **Case No. 20/2010**

M/s. OPTCL, Bhubaneswar  
Vrs

**.... Petitioner**

DoE, Govt. of Orissa

**.....Respondent**

**For the Petitioner:** Shri R.K. Mohapatra, GM(Telecom), OPTCL

**For the Respondent:** Shri S.C. Mohanty, Legal consultant.

**In the matter of : Investment proposal for implementation of OPTCL for Rs.67.48 Crore to be taken up from the fiscal year 2010-11 for provision of SCADA Interface points at all 220 KV Substations of OPTCL on availing loan assistance from PFC/REC/Nationalised Commercial Banks in compliance of the amendment dated 20.08.2008 of chapter IV of OGC Regulations, 2006.**

**Date of Hearing : 20.08.2010**

**Date of Order : 02.11.2010**

## **ORDER**

1. Sri R.K. Mahapatra, GM (Telecom), OPTCL stated that OPTCL has filed this petition for installation of the SCADA interface points at 21 nos. 220/132 KV sub-stations. Presently, M/s OPTCL – State Transmission Utility (STU) has implemented ULDC Scheme wherein provision of SCADA interface point has been made only at 10 nos. grid routing tele-metering data to SLDC through optic fibre connectivity. As per the mandate of OGC Regulations 2006, the provision of SCADA (Supervisory Control and Data Acquisition) interface points at all 220 KV sub-stations of the petitioner has become mandatory to route the data of various Industries/CGPs/IPPs connected or going to be connected with OPTCL system to SLDC.
2. After hearing the petitioner on 29.04.2010 and perusal of the case records, the Commission directed the petitioner to file detail about the following issues on or before 06.05.2010 serving copy to the DISCOMs:

- i) The objective of the proposal.
  - ii) Benefit expected after the investment of Rs. 67.48 crore required for installation of SCADA interface points at all its 220 KV sub-stations by laying OPGW (Optical Fibre Ground Wire) cable.
  - iii) Exact timeline for completion of the proposed projects (The estimate prepared by PGCIL to be cross checked).
  - iv) List of existing S/s and the new S/s to be added for installation of SCADA interface.
3. The respondent DoE, GoO was granted extension of time to file its reply on or before 07.05.2010 serving copy to the petitioner stating that whether Govt. has any proposal to provide any financial support for the proposed investment plan of OPTCL.
4. In compliance of the above, OPTCL has filed its reply on 09.06.2010 which is summarised below.

(i) **Objective of the Proposal**

The prime objectives of the investment proposal are as follows:

- (a) To provide SCADA interface points at all 220 KV grid sub-stations of OPTCL as per amendment dated 29.08.2008 in respect of Annexure-I to Chapter-4 of OGC Regulations, 2006.
- (b) The OPTCL transmission network has grown in complexity. For its effective monitoring and control by SLDC, it is imperative to have data and voice communication from 220 KV substations to the Control Centre using state-of-the-art technologies.
- (c) Remote operation of sub-stations would be possible by providing connectivity to them.
- (d) The upcoming industries and sub-stations would be integrated with this data network seamlessly and with less investment.

(ii) **Expected Benefits**

A dedicated and reliable communication network is essential for the real time monitoring of power system data for efficient operation of load dispatch activity. In the modern energy marketplace, in the ABT regime and in view of integration of grids across the nation, these systems are necessary to support energy transactions, power system reliability considering the security and reliability provided by the dedicated communication network.

**A. Operational Benefits**

- (a) **Improving Power System Reliability & Security:** The dedicated communication network set up by providing SCADA interface points at all 220 KV S/s shall enhance safety, security, reliability and stability in the operation of the grid, their real time monitoring and control. This shall help in reducing the outages and cutting down on the restoration time. The dedicated communication is more reliable as its operation and maintenance lies with the user.
- (b) **Supporting emerging technologies for dynamic monitoring of the Power System:** The existing SCADA/EMS provides the data which are not suitable for dynamic monitoring and control for the grid due to high degree of latency of tele-metered data. Emerging technologies like Phasor Measurement Unit (PMU), Wide Area Measurement (WAM) system facilitate such dynamic monitoring and control through features like Remedial Action schemes (RAS), System Integrated Protection Scheme (SIPS), Self-healing Grid etc. In the 11<sup>th</sup> Plan period, these emerging technologies are going to be deployed in the transmission network of the country. These technologies would require communication system with least latency. The optical fibre based communication system contemplated in this proposal would be most suitable for such applications.
- (c) **Operating Sub-Stations Remotely:** Remote operation of sub-stations can be achieved by utilizing the wide band

communication network. This will result in reduction of manpower.

- (d) **Leasing of fibre / bandwidth:** OPTCL requires maximum 6 fibres for the SCADA/EMS and IT usage including 2 fibres as spares. The remaining fibres / bandwidth can be leased out to telecom companies, ISPs etc.
- (e) **Supporting ERP and WAN:** OPTCL is in the process of implementing ERP (Enterprise Resource Planning) and WAN (Wide Area Network) in this financial year. This proposed communication network would not only support ERP and WAN but also provide internet and intranet services to various sub-stations.

**B. Commercial Benefits**

- (a) **Leasing of fibres:** By leasing out 4 nos. of fibres (stretching 1364 kms across the state) to telecom operators / ISPs, revenue to the tune of Rs.8.6 crore per annum can be earned as per the prevailing rate of Rs.15,792.66 approx. per fibre/km applicable to leasing of fibres.
- (b) **Remote operation of sub-stations:** OPTCL would save about Rs.2 crore per annum due to reduction of manpower [saving of approximately Rs.50 lakh/year/sub-station by operating 4 nos. of remote control sub-stations over manned sub-stations (8 persons consisting 4 executives and 4 non-executives)].
- (c) **Reduction in leasing charges:** OPTCL plans to save Rs.2 crore per annum towards hiring of bandwidth on lease from third party operators towards power system operation and other internal applications. This amount has been arrived at considering 2 nos. of E1 (2 Mbps) from each sub-station to the control centre as per the leasing charges fixed by TRAI.
- (d) **Reduction in charges due to non-usage of PLCC:** As proposed by OPTCL, it would save Rs. 3 crore by establishing its own dedicated FO (Fibre Optic) based network instead of PLCC based communication network.

Considering the above-mentioned commercial benefits at (a), (b) and (c), OPTCL proposes to save Rs.12.6 crore (Rs.8.6 cr + Rs.2 cr + Rs.2 cr) per annum.

Hence, the **pay back period** shall be 5 years [(Rs.67.48 cr – Rs.3 cr) / Rs.12.6 cr] approximately.

(iii) **Exact time line for completion of the proposed project**

The project is scheduled to be completed in 24-36 months from the date of signing of MoU or release of advance by OPTCL, whichever is later. The estimate and bill of materials submitted by Powergrid has been duly checked by OPTCL.

(v) **List of sub-stations having SCADA interface points and the new sub-stations where SCADA interface points would be installed**

The list of existing sub-stations where SCADA interface points are available and the new sub-stations where SCADA interface points would be made available after implementation of the project are enclosed at **Annexure**.

5. During the hearing of this case on 20.08.2010, the Commission, while accepting the investment proposal in principle, directed the parties to file written submission on or before 25.08.2010.
6. The State Govt. has filed its written submission as per the direction of the Commission regarding investment proposal of OPTCL on 19.10.2010 wherein the State Govt. has stated that it has examined the aspect of execution of the project regarding investment proposal of OPTCL in support of entrusting the work to PGCIL. The State Govt. is of the view that the Commission may approve the investment proposal of OPTCL after prudent check and the petitioner may be directed to take care to prevent any cost or time over run in execution of the project and the progress of the same may be reviewed by the Commission during performance review of OPTCL to achieving the defined result.
7. While accepting the views expressed by OPTCL in their written submission dated 09.06.2010, the Commission accords in principle approval of its investment proposal

and direct OPTCL to take care to prevent any cost or time overrun in execution of the project and the Commission may review the progress of the same in its performance review meeting .

8. Accordingly the case is disposed of.

**Sd/-**  
**(B.K. MISRA)**  
**MEMBER**

**Sd/-**  
**(K.C. BADU)**  
**MEMBER**

**Sd/-**  
**(B. K. DAS)**  
**CHAIRPERSON**