

# **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. Misra, Member

## **Case No.74/ 2008**

M/s. OPTCL

.... **Petitioner**

**In the matter of : Investment proposal of OPTCL for (1) construction of 132/33 KV s/s at Kalunga & Barbil & 220/33 KV s/s at Bonai (2) 220 KV Bidanasi-Cuttack DC line (3) Restoration of 220 KV Budhipadar-Burla-Bolangir DC line.**

For Petitioner: Mr. K. M. Parida, GM (TP & Con), Mr. N. R. Mandhata, GM (R&P), and Mr. L.R. Dash, Manager (TP & Con) of OPTCL.

**Date of Hearing: 05.08.2009**

**Dated of Order: 27.08.2009**

## **ORDER**

OPTCL had submitted an application for approval of an investment proposal of Rs.109.38 crores for the following five numbers of projects as per its Licence Condition 10 read with Clause 23.1 for approval of the Commission.

- (1) 2x20 MVA, 132/33 KV S/S at Kalunga along with associated transmission line.
- (2) 2x20 MVA, 132/33 KV S/S at Barbil along with associated transmission line.
- (3) 2x40 MVA, 220/33 KV S/S at Bonai along with associated transmission line.
- (4) Construction of new 220 KV Bidanasi-Cuttack D.C. line.
- (5) Restoration of 220 KV Budhipadar-Burla-Bolangir D.C. line.

The Licensee is required to furnish to the Commission (i) a DPR, (ii) project cost with cost benefit analysis, (iii) information regarding whether it is a new project or an expansion/ up-gradation, (iv) sanctions/ statutory clearance (v) phasing of investment and commissioning schedule, (vi) manner of capitalizing the investment in the revenue requirement, (vii) constraints in making investment, (viii) resource mobilization and financial plans, (ix) process of finalizing the

tender through Commission's approved transparent procedure, and (x) any other item as may be required by the Commission.

2. The said application of OPTCL was registered as Case No. 74/2008 and after hearing the petitioner on 30.12.2008 the Commission agreed in principle to above proposal of OPTCL and passed orders on 05.01.2009 directing the OPTCL to do the following:

- (a) To submit a comprehensive proposal mentioning specific time line for completion of above project.
- (b) To negotiate with lenders and finalize the funding required for the purpose.
- (c) To Approach the Commission with details for final approval, after getting a green signal from the PFC/lenders.
- (d) To submit a complete financial analysis of the above proposed projects.

3. In compliance to the above OPTCL had filed its reply on 05.05.2009 which are given below:

- (i) **2x20 MVA, 132/33 KV S/S at Kalunga along with associated transmission line:-**

The OPTCL Board approved the borrowing of a term loan of Rs.12.34 crore from PFC for this project. As intimated, OPTCL will execute the loan agreement and hypothecation shortly. The tri-partite Escrow agreement has already been done with PFC, Union Bank of India and OPTCL on 13.04.2009.

- (ii) **2x20 MVA, 132/33 KV S/S at Barbil along with associated transmission line:-**

OPTCL has sent a DPR to PFC to sanction loan on the projected cost of Rs.1496.164 lakhs on 05.01.2009. OPTCL has not received any reply from PFC on this project. REC has sanctioned Rs.1655.862 lakhs on 03.04.2009. The total cost of the project as proposed by OPTCL was Rs.17.4 crores.

Tehno-commercial evaluation has been completed and financial aspects are under scrutiny by OPTCL.

- (iii) **2x40 MVA, 220/33 KV S/S at Bonai along with associated transmission line:-**

OPTCL has sent the DPR on the projected cost of Rs.2483.474 Lakhs to PFC and the on the projected cost of Rs.2874.589 lakhs to REC on 05.01.2009. OPTCL has not received any reply either from PFC and REC. Techno-Commercial evaluation has been completed and financial aspects are under scrutiny by OPTCL.

(iv) **Construction of new 220 KV Bidanasi-Cuttack D.C. line:-**

PFC has sent the revised sanction order vide its Lr. Dtd. 18.03.2009 amounting to Rs.15.31 corer which would be placed to BOD of OPTCL for availing the loan with the present terms and conditions. The work order has been placed with M/s A K Das Associates on 08.12.2008.

Tehno-commercial evaluation have been completed and financial aspects are under scrutiny by OPTCL.

As intimated by OPTCL the probable date of completion of the projects are two years from the date of award.

(v) **Restoration of 220 KV Budhipadar-Burla-Bolangir D.C. line:-**

REC vide its Lr. Dtd. 03.04.2009 has sanctioned an amount of Rs. 2599.26 lakhs for this project. Restoration of this line is in progress and is expected to be completed in June, 2009.

4. On examination of the application of OPTCL, it is found that the investments have been justified for improvement of power supply system, reducing loading on certain line section of OPTCL's network and reducing the overall/ transmission losses. OPTCL has made the system study with the existing arrangement and the proposed arrangement for three investment proposals

(i) The present supply to Kalunga and its adjoining area is at 33 kV from 132/33 kV S/S, at Rourkela and Rajgangpur. One 33 kV feeder from Rourkela Grid S/S, namely industrial feeder is feeding power to industries with a connected load of 25 MW and another 33 kV feeder, namely IDC feeder is connected to 33/11 kV S/S at Kalunga with connected load of 18/20 MW. Further one more 33 kV feeder from Rajgangpur Grid S/S namely, Rorukela-II is extended to Kalinga Industrial area and supplying 4/5 MW to 2nos. of Rolling mills. The proposed Kalunga 132/33 kV S/Ss shall be connected to the system by drawing 2.671 KM of 132 kV LILO line on DC tower from CKT-I of 132 kV Budhipadar-Tarkera DC line. In order to improve the quality of power supply and to minimise losses, it is proposed to construct a 2X20 MVA, 132/33 kV S/S at Kalunga to meet the future industrial load growth and as such this Grid S/S is a necessity. OPTCL has estimated that around 25.2 MW of additional power shall be available for sale through the investment proposal no. 1 stated above.

(ii) The present supply to Barbil and its adjoining area is at 33 kV from 220/132/33 kV S/S at Joda. One 33 kV feeder from Joda Grid S/S namely Rugudi feeder is feeding power to industries and another 33 kV feeder namely Barbil is catering to the area load demand. At present both the 33 kV feeders have already reached the optimum loading capacity. The proposed Barbil 132/33 kV S/S shall be connected to the system by drawing 1.5 KM of 132 kV LILO line on DC tower from 132 kV Joda-Bolani S/C line. In order to improve the quality of power supply, to

minimise losses and to cater to the future demand expected from the upcoming industries, it is proposed to construct a 2X20 MVA, 132/33 kV S/S at Barbil. To meet the future industrial load growth this Grid S/S is a necessity. OPTCL has estimated that around 25.2 MW of additional power shall be available for sale through the investment proposal no. 2 stated above.

- (iii) At present Bonai and its adjoining area is receiving power at 33 kV from 132/33 kV S/S at Rourkela, which is around 70 KM away. This 33 kV feeder is routed through Rajamunda 33/11 kV /S and passing through hilly forest area. The voltage profile is very low. The proposed Bonai (Badapurunapani) 220/33 kV S/S shall be connected to the system by drawing 2.926 KM of 220 kV LILO line on DC tower from 220 kV Rengali-Tarkera D/C line. In order to improve the quality of power supply, to minimise losses and to cater to the future demand expected from the upcoming mineral based industries, it is proposed to construct a 2X40 MVA, 220/33 kV S/S at Bonai. OPTCL has estimated that around 50.4 MW of additional power shall be available for sale through the investment proposal no. 3 stated above.
- (iv) The present power supply system of the Cuttack 132 KV Grid sub-station is 58 km 132 KV SC line from the 220/132 KV sub-station Bidanasi via Chandaka S/S, Mancheswar S/S reserve bus. The Cuttack Grid is connected to Jagatsinghpur Grid through a 132 KV SC line of 35.11 km. The Mancheswar-Cuttack line is also going to be tapped for supplying to the Phulnakhara and Bargarh Grid S/S. The existing Mancheswar-Cuttack line with peak load of around 77 MW is of ACSR Panther Conductor, which may not carry more load if the load growth on Cuttack Grid S/S and feeding to Phulnakhara/Badagada Grid S/S take place. Hence, it is desirable that an additional line directly from Bidanasi S/S to Cuttack Grid is to be drawn at 220 kV level with ACSR Zebra conductor, which will meet the expected demand growth in Cuttack & Jagatsinghpur area.
- (v) Restoration of 220 KV Budhipadar-Burla-Bolangir D.C. line is required to improve the power situation in Bolangir, Kalahandi, Sonapur, Nuapada & Baragarh districts. This is the main trunk line required for feeding the power to the above districts. This is a project not completed and pending for a considerably long time due to rampant theft of materials at the time of execution of the project. Budhipadar- Burla portion of 220kV line of this project has been completed and energized on 17.09.2007. As it is a very crucial line and badly required for the transmission system, OPTCL in their Board meeting on 27.03.2008 decided to terminate the contract with the Contractor(M/s RPGTL) and restore the line from Burla-Bolangir line in three parts namely (i) Burla to Baragarh (ii) Baragarh to Barapalli (iii) Barapalli to Bolangir through other agencies.

5. OPTCL has made the techno-economic analysis which is summarized as below:

- (1) For 132/33 kV S/S at Kalunga, OPTCL has projected the reduction of average annual loss to the extent of 0.479 MW, which with consideration of Rs.2.17/ KWH, comes to Rs.35.48 lakh in momentary term. Expectation of additional 25.2 MW load growth with 4.5% transmission loss shall make available additional 1264.909 LU which shall cause OPTCL to earn additional annual revenue of Rs 265.631 lakhs at the wheeling cost of 21 paise. Thus, OPTCL expects total annual revenue from investment No. 1 to the tune of Rs. 301.111 lakhs. The average rate of annual return has thus been found to be 16.785%.
- (2) For 132/33 kV S/S at Barbil, OPTCL has projected the reduction of average annual loss to the extent of 0.565 MW, which with consideration of Rs.2.17/ KWH, comes to Rs.41.848 lakh in momentary term. Expectation of additional 25.2 MW load growth with 4.5% transmission loss shall make available additional 1264.909 LU which shall cause OPTCL to earn additional annual revenue of Rs 265.631 lakhs at the wheeling cost of 21 paise. Thus, OPTCL expects total annual revenue from investment No. 2 to the tune of Rs. 307.479 lakhs. The average rate of annual return has thus been found to be 17.661%.
- (3) For 220/33 kV S/S at Bonai, OPTCL has projected the reduction of average annual loss to the extent of 0.690 MW, which with consideration of Rs.2.17/ KWH, comes to Rs.51.106 lakh in momentary term. Expectation of additional 50.4 MW load growth with 4.5% transmission loss shall make available additional 2529.818 LU which shall cause OPTCL to earn additional annual revenue of Rs 531.262 lakhs at the wheeling cost of 21 paise. Thus, OPTCL expects total annual revenue from investment No. 3 to the tune of Rs. 582.368 lakhs. The average rate of annual return has thus been found to be 20.259%.
- (4) For construction of 220kV DC line from Bidanasi to Cuttack, OPTCL has projected the reduction of average annual loss to the extent of 3.040 MW, which with consideration of Rs.2.17/ KWH, comes to Rs.225.166 lakh in monetary term. Expectation of additional 30 MW of power with 4.5% transmission loss shall make available additional 1505.844 LU, which shall cause OPTCL to earn additional annual revenue of Rs 316.227 lakhs at the wheeling cost of 21 paise. Thus, OPTCL expects total annual revenue from investment No. 4 to the tune of Rs. 541.393 lakhs. The average rate of annual return has thus been found to be 32.935%.
- (5) For construction of 220kV DC line from Burla to Bolangir, OPTCL has projected the reduction of average annual loss to the extent of 21.290 MW, which with consideration of Rs.2.17/ KWH, comes to Rs.1576.898 lakh in monetary term. Thus, OPTCL expects total annual revenue from investment No. 5 to the tune of Rs. 1576.898 lakhs. The average rate of annual return has thus been found to be 20.394%.

6. From the phasing out of expenditures & project implementation schedules submitted in the DPRs, the projects (serial no. 1 to 4) have started from October, 2008 and are expected to be completed by December, 2010. The project in serial no. 5, have started from October, 2008 and is expected to be completed by March, 2009. .  
As stated by OPTCL, the above proposed projects do not have any adverse environmental impact. OPTCL has submitted the Environmental Impact Assessment (EIA) Study for the said five projects.
7. OPTCL has intimated that complete financial analysis for all the above projects would be done only after examining the terms and condition contained in the sanction letters to be received from PFC and REC. Decision for availing the loan will be made soon after receipt of the sanction letters in complete shape.
8. From the above submission of OPTCL it is observed that the lenders PFC/REC have agreed for giving loans for the projects indicated in item 1, 2, 4 and 5. For the projects indicated in item 3, the reply from PFC/REC is still awaited.
9. Hence, the Commission approves the aforesaid proposal of OPTCL and the investment sought for is hereby granted. OPTCL should submit the detailed PERT Chart of the project indicating the completion date and the designated milestone of the project. The Commission desires that OPTCL should strengthen its Project Management Group, for timely completion of the project. The effect of cost over-run, if any, due to time over-run will not be normally entertained by the Commission for giving credit in determination of Transmission tariff of the OPTCL. The management of OPTCL may identify the officer(s) concerned and make them accountable for timely completion with suitable incentive/penalty scheme for early commissioning/delay in the project. For this OPTCL is also directed to delegate adequate technical, administrative and financial powers to those officers entrusted with timely completion of the projects as stated above.
10. Accordingly, the matter is disposed of.

**(B.K. Misra)**  
**Member**

**(K.C. Badu)**  
**Member**

**(B.K. Das)**  
**Chairperson**