

**ODISHA ELECTRICITY REGULATORY COMMISSION**  
**BIDYUT NIYAMAK BHAWAN**  
**UNIT-VIII, BHUBANESWAR - 751 012**  
\*\*\*\*\*

Present :        Shri B. K. Misra, Member  
                      Shri S. P. Swain, Member

**Case No. 80/2012**

Odisha Power Transmission Corporation Limited,        ....        Petitioner  
Janpath, Bhubaneswar – 751 022  
Vrs.

WESCO & Others        .....        Respondents

**In the matter of:        Application under Clause 3.10(1) & (2) of Orissa Grid Code(OGC) Regulations,2006 seeking approval of the Commission to the Long Term Demand Forecast for the period 2011-12 to 2020-21.**

For Petitioner :        Shri C. Rakshit, Sr. General Manager (C.P.)

For Respondents:        Shri S.K.Routray,DMF (Com.& RA),SOUTHCO,  
                                  Shri Sudeep Mishra,DM (ABT),NESCO,  
                                  ShriSanjoy kumar Patra, DM (ABT),WESCO,  
                                  Shri P.K.Padhy,DGM (ABT),CESU,  
                                  Shri L.R.Padhy,DGM,CESU.  
                                  No body is present on behalf of DoE,GoO,M/s.IPCOL and GRIDCO.

**ORDER**

**Date of Hearing: 27.11.12**

**Date of Order : 14.12.2012**

As a part of statutory requirement with respect to the provisions as mentioned below under Orissa Grid Code Regulations, 2006 (OGC), Orissa Distribution Planning and Operation Code and Practice Direction issued by the Commission in this regard, STU is required to submit the electricity demand forecast annually to the Commission for approval. This should be based on the data/information furnished by the DISCOMs. The various important statutory requirement is as quoted below :

**Extracts of Orissa Grid Code Regulations,2006**

***“3.10 PLANNING RESPONSIBILITY***

- (1)        The primary responsibility of load forecasting within its area rests with each of the Distribution Companies. The Distribution Companies shall determine peak load and energy forecasts of their respective areas for each category of loads for each of the succeeding five years and submit the same annually by***

*31st December to the Transmission Licensee along with details of the demand forecasts, data, methodology and assumptions on which the forecasts are based. The load forecasts shall be made for each of the External Connection Points between the STU and User and shall include annual peak load and energy projections and daily load curve. The demand forecasts shall be updated annually or whenever major changes are made in the existing forecasts or planning. While indicating requirements of single consumer with large demands (5 MW or higher) the Distribution Company shall satisfy itself as to the degree of certainty of the demand materialising.*

- (2) *The STU is responsible for integrating the load forecasts submitted by each of the Distribution Companies and determining the long term (10 years) load forecasts for the State within ninety days of the date on which the distribution companies furnished all the required information consistent to provisions of the OGC. In doing so the STU may apply appropriate diversity factors, and satisfy itself regarding probability of materialisation of bulk loads of consumers with demands above 5 MW in consultation with that Distribution Company concerned.*
- (3) *The STU may also review the methodology and assumptions used by the Distribution Company in making the load forecast, in consultation with the Distribution Company. The resulting overall load forecast will form the basis of planning for expansion of generation and the Transmission System.*
- (4) *In the event, Distribution Companies failed to provide all the requisite information within the time frame and in accordance with the form provided by the STU, the STU shall approach to the Commission for a directive.”*

### **Extracts of Orissa Distribution (Planning and Operation) Code**

*3.4.1 The Licensee is required to forecast the demand for power within the Area of Supply annually or more frequently, if required by the Commission, in each of the succeeding 5 years. The Licensee shall, accordingly, prepare a demand forecast and generally follow the procedures laid herein.*

*xxx*

#### **3.4.3 Load Research**

*The Licensee may develop a load research programme with the objective of obtaining customer data and load profile data that shows the usage characteristics of specific appliances of different categories of consumers. The load research will facilitate obtaining data such as:*

- i. Demand according to end use at the hour of system peak, daily, monthly, seasonal or annual.*
- ii. Hourly end use demand for the day of the system peak, monthly, seasonal or annual.*
- iii. Hourly end use demand for the average day of the system peak, monthly, seasonal or annual.*
- iv. Category wise Diversity Factor or Coincidence Factors and Load Factors.*
- v. Total energy consumption for each category by day, month, season or year.*
- vi. Category wise non-coincident peak demands.*
- vii. Hourly demand for end use appliances*

*xxx*

*xxx*

#### **3.4.6 Forecast Methodology**

- i. The Licensee shall formulate its long term demand forecast taking the previous financial year ending on 31st March as Base Year and projecting the demand in the succeeding 5 years. While making the demand forecast, the Licensee shall review the status of loads materialising as per the previous load forecast.*
  - ii. Energy Sales in each tariff class shall be projected in the forecast period over the corresponding figures relating to the Base Year by adopting a suitable methodology.*
  - iii. The projections shall take into account assumed normal growth for non-specific loads, specific and identified loads of 1 MW and above, and effects, if any, due to Demand Side Management and energy conservation, if any.*
  - iv. The Licensee shall forecast the aggregate energy requirement and peak load at each of the Connection Points for each of the years in the forecast period accounting for losses.*
2. Earlier, the Commission had approved the Long Term Demand Forecast (LTDF) for the period 2009-10 to 2018-19 in Case No.121/2010, where-in the licensees were directed to develop the Demand Side Management (DSM) strategy on long term basis to optimise peak demand. Further, in the matter of approval of forecast for FY 2010-11 to 2011-20, since the Commission was expecting the publication of final 18<sup>th</sup> EPS report of CEA without according approval on the submission of OPTCL had directed OPTCL/DISCOM to submit their respective forecast within due time along with the relevant data/information including the additional information on DSM etc.
3. Initially, OPTCL, the STU has submitted the report on LTDF on 10.07.2012. The report primarily comprises of input data from DISCOMs for the first five years and extrapolation of the data for the next five years. In the matter of LTDF, OPTCL being the STU is responsible for integrating load forecast submitted by each DISCOM and satisfy itself as regards to probability of materialisation of bulk loads. After scrutiny of the submission, this office had asked OPTCL & DISCOMs to clarify certain aspects in their submission and also to submit some additional data/information. Thereafter, after receipt of some clarification on the matter, the Commission has decided to dispose the matters through a process of hearing, for which OPTCL has filed this formal petition involving DISCOMs, IPICOL and State Govt. as respondents.
4. Thereafter, the Commission vide its letter dt 03.11.2012 issued notice to WESCO, NESCO, SOUTHCO, CESU, GRIDCO, DoE, GoO & IPICOL to appear before the Commission on 27.11.2012 to furnish their considered views on the matter of demand forecasting of the state. In the hearing conducted on 27.11.2012 on the aforesaid

matter, the following persons on behalf of respondents were present and submitted their views.

i) Shri C. Rakhit, Sr. General Manager (C.P.), ii) Shri S.K.Routray, DMF (Com. & RA), SOUTHCO, iii) Shri Sudeep Mishra, DM (ABT), NESCO, iv) Shri Sanjoy kumar Patra, DM (ABT), WESCO, v) Shri P.K.Padhy, DGM (ABT), CESU, vi) Shri L.R.Padhy, DGM, CESU. No body is present on behalf of DoE, GoO, M/s.IPCOL and GRIDCO.

5. In the beginning Sri Rakhit, on behalf of OPTCL made a power point presentation on LTDF for the FY 2011-12 to 2020-21 for the State of Odisha and put forth the justification on load growth and explained the methodology being adopted for preparation of the forecast. The matter was heard at length in presence of above mentioned authorised representatives from OPTCL and DISCOMs. No representative from IPICOL & DoE, GoO was available to furnish their views on the matter.
6. The Commission while going through the submission/presentations asked about the methodology adopted, assumptions made and preparedness of licensees to meet the expected load growth. The licensees have stated that the report has been prepared with adoption of “End Use” methodology and submitted that the actual demand achieved during 2011-12 is nearly matching with forecasted demand and hence the methodology adopted can be relied upon for demand estimation for the future years. OPTCL has considered 2010-11 as the base year and 2011-12 as the initial year of forecast. It has integrated the submission of DISCOMs for initial five years (2011-12 to 2015-16) and then extrapolated it for next five years (2016-17 to 2020-21). The peak load at each interconnection point has been estimated by the DISCOMs after applying annual load factor as per data of Energy Billing Centre (EBC) of GRIDCO.
7. OPTCL has submitted that the following broad procedures /considerations are being adopted while preparing this LTDF report.
  - The forecast has been made for the following tariff categories of consumers i.e. domestic, commercial (general purpose), industrial LT, industrial HT/EHT, Public Water Works, Public Lighting, Railway Traction, Irrigation and Non-industrial (General Purpose, Public Institutions).
  - The actual energy sales for 2010-11 have been taken as the base year.
  - The energy demand for the initial forecast year has been deduced from the anticipated growth in number of consumers and their specific consumption.
  - The loss in energy has been worked out from the energy sales and demand for the base year.
  - For the subsequent years of forecasting i.e. from 2012-13 to 2020-21, the estimation of energy demand has been made by improving percentage of growth in consumers and their specific consumption pattern.

- The Diversity Factor (DF) as submitted by the DISCOMs are as follows :  
CESU:1.34, NESCO :1.11, SOUTHCO:1.30, WESCO:1.37
- The past growth rate has been considered to determine the number of consumers and their specific consumption.
- Specific consumption has been considered taking into account the past trends and the anticipated improvements in the standard of living wherein a rising trend is expected.
- The transmission loss has been considered as 3.8% of peak load for the initial year of forecast i.e.2011-12. The same has been freezed for the rest of the years i.e.2012-13 to 2020-21.
- The centrally sponsored RGGVY scheme & state sponsored BGJY scheme are envisaged to be completed by 2012. But the DISCOMs have considered some spill over work under both the schemes which are mostly to be completed by 2012-13 and the rest of the works are to be completed in 2012-14 and 2015-16. Accordingly, the growth rate of consumers for both the schemes afterwards have been taken as nil by the STU.

8. OPTCL has submitted the expected percentage growth in peak demand and energy demand of each DISCOM and total system in the manner as shown below :

	<u>SYSTEM</u>	<u>CESU</u>	<u>SOUTHCO</u>	<u>WESCO</u>	<u>NESCO</u>
% Peak Growth(MW)	6.455	9.072	5.755	3.886	5.434
%Energy Growth(MU)	6.660	9.274	5.781	4.198	5.673

9. CESU submitted that the methodology adopted by OPTCL is reliable and can be accepted. CESU has considered the data received from EBC of GRIDCO to arrive at the peak load of each inter connection point and diversity factor of each zone. Demand for the initial year of forecast i.e. FY 2011-12 has been found out after considering the anticipated growth in number of consumers and their specific consumption alongwith the reduction of loss. CESU has submitted that the loss is expected to decrease gradually from 36% during FY 2011-12 to 16% in 2020-21. CESU is also planning to have downstream evacuation network to cater the demand of its existing /future consumers. WESCO, NESCO, SOUTHCO are agreed to the LTDF submitted by OPTCL, the distribution loss of around 39%, 30% and 46% by WESCO, NESCO & SOUTHCO during the FY 2011-12 is expected to decrease gradually and expected to be around 28%,20% and 24% respectively during the FY 2020-21. DISCOMs stated that they are agreed to the submission of OPTCL, on which several round of discussions have been made, hence the LTDF may please be approved by the Commission.
10. During the hearing, in reply to the queries of the Commission about the adequacy of transmission and distribution infrastructure the licensees said that they are in the

process of construction of new lines /Substations and augmentation of the existing infrastructure to meet the need of the consumer. WESCO said that except one or places like Nuapada and Kalahandi, their distribution infrastructure is adequate enough to cater the demand of the consumers. However the Commission expressed its concern about the transmission and distribution infrastructure inadequacy due to receipt of various complaints on this issue directly from the consumers and directed the licensees to plan accordingly and execute the projects in time in order to meet the proposed demand growth. The licensees are required to identify the comparatively constrained pockets in their respective area and act appropriately.

11. Further, DISCOMs have submitted that only one month left for submission of next LTDF report (i.e. for FY 2012-13 to 2021-22) and also they are in the process of submission of Business plan considering the expected sale of energy etc. Hence, the Commission instead of approving this forecast may consider the next LTDF submission due for submission by 31<sup>st</sup> March 2013 by OPTCL for approval. OPTCL is also not having any objection to such submission by the DISCOMs.
12. The Commission heard the parties and considered the suggestions/views furnished by them. While comparing the energy requirement (MU), system peak demand (MW) forecasted by CEA in its draft 18<sup>th</sup> EPS report and submission of OPTCL, it has been opined that the forecast of CEA is in the higher side may be due to the expected unrestricted demand as well as to give clear signal for the requirement of development in other infrastructure sector like ports, road, coal, oil, gas and manufacturing sectors to meet the power requirements in the coming years.
13. The Commission opined that the objective of business plan and long term demand forecast is different. The business plan is an operational exercise while the later is done for infrastructure planning. The electrical energy forecast is primarily to access the electricity demand in each category of loads at various load centres so that the licensee can able to plan and arrange the electrical energy to meet the demand in full alongwith the augmentation/up-gradation of associated transmission and distribution network. The Commission further stressed for planning of required infrastructures for the flow of unrestricted power to meet the future demand of the consumers and as a whole for a sustainable growth of power sector in the State. The Commission feels that the decrease in expected growth in demand in comparison to the demand approved

in Case No.121 of 2010 may probably be due to the reason that most of the industries are relying on the power available from their own CGP's.

14. The Commission expressed its serious concern as regards to absence of representatives from DISCOMs during the hearing of Case no.79 of 2012 on 16.07.2012 in the matter of Intra State Transmission Plan. Primarily the infrastructure addition/augmentation/up-gradation proposed in the Intra State Transmission Plan is meant for DISCOMs hence the presence of authorised representatives of DISCOMs should be ensured on the next date of hearing to put forth their concerns/suggestions/views, if any on the matter. The proposed infrastructure addition by OPTCL should be adequate for smooth flow of power without any constraint/congestion and simultaneously DISCOMs should be ready with the associated distribution system for downward evacuation of power.
15. Considering the above facts into consideration and above views, the Commission hereby accords in-principle approval of the LTDF submitted by OPTCL basing on the data submitted by DISCOMs for the period from 2012-13 to 2020-21 as shown in table below :

<b>DEMAND FORECAST (MW / MU) UP TO THE YEAR ENDING 2021</b>											
<b>Sl. No</b>	<b>Name of Distribution Company</b>	<b>2012-13</b>		<b>2013-14</b>		<b>2014-15</b>		<b>2015-16</b>			
		Energy Demand (MU)	Peak Demand (MW)	Energy Demand (MU)	Peak Demand (MW)	Energy Demand (MU)	Peak Demand (MW)	Energy Demand (MU)	Peak Demand (MW)		
1	<b>CESU</b>	8429	1343	11060	1798	11704	1903	12554	2012		
2	<b>SOUTHCO</b>	3409	518	3638	553	3810	578	3976	603		
3	<b>WESCO</b>	6635	1022	7222	1106	7574	1156	7864	1199		
4	<b>NESCO</b>	5500	988	6045	1034	6471	1081	6860	1131		
<b>System Demand</b>		<b>23973</b>	<b>3871</b>	<b>27965</b>	<b>4491</b>	<b>29559</b>	<b>4719</b>	<b>31253</b>	<b>4945</b>		
<b>Sl.No</b>	<b>Name of Distribution Company</b>	<b>2016-17</b>		<b>2017-18</b>		<b>2018-19</b>		<b>2019-20</b>		<b>2020-21</b>	
		Energy Demand (MU)	Peak Demand (MW)	Energy Demand (MU)	Peak Demand (MW)	Energy Demand (MU)	Peak Demand (MW)	Energy Demand (MU)	Peak Demand (MW)	Energy Demand (MU)	Peak Demand (MW)
1	<b>CESU</b>	13186	2105	13835	2203	14551	2312	15346	2433	16232	2568
2	<b>SOUTHCO</b>	4116	625	4264	647	4419	670	4581	695	4751	721
3	<b>WESCO</b>	8087	1231	8319	1264	8562	1300	8816	1336	9081	1375
4	<b>NESCO</b>	7084	1171	7322	1212	7576	1255	7847	1300	8135	1346
<b>System Demand</b>		<b>32472</b>	<b>5132</b>	<b>33740</b>	<b>5327</b>	<b>35108</b>	<b>5537</b>	<b>36589</b>	<b>5763</b>	<b>38200</b>	<b>6009</b>

The Commission as per Regulation 3.10(3) of OGC Regulations, 2006 directs the licensees that the expected peak demands for future years may be considered for the purpose of transmission network planning and generation explain only.

16. The Commission further directs OPTCL and DISCOMs to adhere to the time as specified in the OGC 2006 as regards to submission of LTDF in future. The Commission directed DISCOMs to submit their respective forecast for the FY 2012-13 to 2016-17 to OPTCL latest by 31<sup>st</sup> December, 2012. Thereafter, OPTCL, the STU may review the methodology /assumptions used and complete the consultation process, if any and submit the LTDF for 10 years i.e. from 2012-13 to 2021-22 on or before 31<sup>st</sup> March, 2013 to the Commission for approval. OPTCL should take initiative in this regard and in the event, DISCOMs fail to provide all the requisite information within the time frame as mentioned above, it may approach the Commission, as per 3.10(4) of OGC, 2006 for a directive. DISCOMs should mention the Demand Side Management (DSM) measures, if any taken to reduce specific consumption in order to optimise demand in the backdrop of Standards & levelling provision under Energy Conservation Act, 2001 & PAT scheme. OPTCL should also contact IPICOL, State Govt. and discuss with bulk consumers like Railways etc. in this regard.

17. Accordingly the case is disposed of.

Sd/-  
**(S.P.Swain)**  
**Member**

Sd/-  
**(B.K.Misra)**  
**Member**