ODISHA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAWAN
UNIT-VIII, BHUBANESWAR - 751 012
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Present : Shri S. P. Nanda, Chairperson
Shri S. P. Swain, Member
Shri A. K. Das, Member

Case No. 77/2013

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

Vrs.

WESCO & Others …..... Respondents

In the matter of: Application under Clause 3.10(1) & (2) of Odisha Grid Code(OGC) Regulations,2006 seeking approval of the Commission to the Long Term Demand Forecast for the period 2012-13 to 2021-22.

AND

Case No. 56/2014

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

Vrs.

WESCO & Others …..... Respondents

In the matter of: Application under Clause 3.10(1) & (2) of Odisha Grid Code(OGC) Regulations,2006 seeking approval of the Commission to the Long Term Demand Forecast for the period 2013-14 to 2022-23.

For Petitioner : Shri Uttam Kumar Samal, Sr. General Manager (C.P.),OPTCL
Shri Sushanta Kumar Behera,DM (Tech.),OPTCL

For Respondents: Shri S. K. . Patra, DM (ABT),WESCO,
Shri Sudeep Mishra,DM (E),NESCO,
Shri S.K.Routray,DMF (Com.& RA),SOUTHCO,
Shri S.K.Sahu, Sr.G.M.(T), CESU
Shri P.K.Padhy,GM (ABT),CESU,
Ms. Niharika Pattnaik, ALO,DoE, GoO.
No body is present on M/s.IPCOL and M/s. GRIDCO Ltd.

ORDER

Date of Hearing: 30.09.2014 **Date of Order: 01.11.2014**

As a part of the statutory requirement with respect to provisions under Odisha Grid Code Regulations, 2006 (OGC), Odisha 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 requirements is as quoted below:

Extracts of Orissa(now Odisha) 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 Odisha 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.

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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

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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 2012-13 to 2020-21 in Case No.80/2012, where-in the licensees were directed to mention the Demand Side Management (DSM) measures, if any, taken to reduce specific consumption in order to optimise the demand on long term basis to optimise peak demand. Further, OPTCL has been directed to contact IPICOL, State Govt. and bulk consumers like Railways to finalise the requirement of demand in future years.

3. Initially, OPTCL, the STU had submitted the report on LTDF 2012-13 to 2021-22 on 31.10.2013. During scrutiny of the submission, OPTCL & DISCOMs were asked to clarify certain aspects of submission and also submit some additional data/information. Thereafter, after receipt of clarifications on the matter, the Case No.77 of 2013 was registered to dispose of the matter through a process of hearing.

4. During pendency of the above case, OPTCL, in continuation to their earlier submission has filed the LTDF report for the FY 2013-14 to 2022-23 on 09.09.2014. The Commission, while registering the matter in Case No.56 of 2014 has decided to club both the cases and conduct an analogous hearing on 30.09.2014. Thereafter, the Commission vide its letter dt.18.09.2014 issued notice to OPTCL. GRIDCO, WESCO, NESCO, SOUTHCO, CESU, IPICOL, DoE, GoO to appear before the Commission on 30.09.2014 to furnish their considered views on the matter of demand forecasting of the state. In the hearing conducted on 30.09.2014 on the aforesaid matter, the following persons on behalf of petitioner and respondents were present and submitted their views.

(i) Sri Utam Kumar Samal, Sr.G.M.(CP), (ii) Sri Susanta Ku.Behera, DM(CP), OPTCL, (iii) Sri S.K.Patra, DM(ABT), WESCO, (iv) Sri Sudeep Mishra D.M.(E), NESCO, (v) Sri Subrat Ku. Routray, DMF (Com & RA), SOUTHCO, (vi)Sri Santanu Kumar Sahoo, Sr.G.M.(T), CESU, (vii) Sri P.K.Padhy, G.M.(ABT), CESU and (viii) Ms Nibedita Pattnaik, ALO, DoE, GoO.

5. In the beginning Sri Samal, on behalf of OPTCL submitted that the long term demand forecast primarily comprise of input data received from DSCOMs for the first five years and extrapolation of the data for next five years. OPTCL being the STU has analysed the submission of DISCOM and interacted several times with DISCOMs to finalise the LTDF for the state. The forecast prepared by OPTCL is based on 'End Use" method. For this purpose, OPTCL has worked out the energy requirement for future years basing on the forecast submitted by DISCOMs and extrapolating the same with reference to the growth rate of consumers and pattern of consumption. OPTCL has estimated the peak load (MW) of each interconnection point after applying annual load factor as per the Energy Billing Centre (EBC) data of GRIDCO.

6. 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 2012-13 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 2013-14 to 2022-23, 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:1.47, NESCO :1.40, SOUTHCO:1.20, WESCO:1.41
- 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.2013-14. It has been considered as 3.75% for 2014-15 & 2015-16 and 3.7% for rest of the years i..e 2016-17 to 2022-23.

- The centrally sponsored RGGVY scheme & state sponsored BGJY scheme are expected to be completed by 2014-15. But, the DISCOMs have considered some spill over work under both the schemes which are mostly to be completed by 2016-17. Accordingly, the growth rate of consumers for both the schemes afterwards have been taken as nil by the STU.

7. 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 for each year :

	SYSTEM	CESU	SOUTHCO	WESCO	NESCO
% Peak Growth(MW)	5.371	7.035	5.703	3.692	4.569
%Energy Growth(MU)	5.821	7.365	5.789	4.145	5.311

8. The Commission while going through the submission asked about the methodology adopted, assumptions made for the forecast. The distribution licensees have stated that the report has been prepared with adoption of 'End Use' methodology and made several discussions in relation with data/information with OPTCL. They agreed to the submission of OPTCL as regards to the estimation of expected peak load at each interconnection point. The representative of DoE, Goo has also agreed to the submission

9. 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 18th EPS report and submission of OPTCL, it has been seen 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.

10. The Commission observed that the electrical energy forecast is primarily to asses the electricity demand in each category of loads at various load centres so that the licensee can be able to plan and arrange the electrical energy to meet the demand in full along with 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.80 of 2012 may probably be due to the reason that most of the industries are relying on the power available from their own CGP's and non-materialisation of some of the expected loads in EHT/HT category.

11. The Commission opined that 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.

12. Considering the above facts and views into consideration, the Commission hereby accords in-principle approval of the LTDF submitted by OPTCL basing on the data submitted by DISCOMs for the period from 2014-15 to 2022-23 as shown in table below :

PROBABLE DEMAND FORECAST (MW / MU) UP TO THE YEAR 2023											
Sl. No	**Name of Distribution Company**	**2014-15**		**2015-16**		**2016-17**		**2017-18**	
		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	CESU	8855	1556	10321	1765	11171	1920	11792	2009
2	SOUTHCO	3398	529	3862	600	4012	623	4184	649
3	WESCO	6939	1218	7334	1281	7749	1347	8193	1415
4	NESCO	5554	1002	5956	1054	6360	1109	6784	1158
System Demand(Grid End)		**24746**	**4304**	**27473**	**4700**	**29293**	**4998**	**30953**	**5231**

Sl. No	**Name of Distribution Company**	**2018-19**		**2019-20**		**2020-21**		**2021-22**		**2022-23**	
		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	CESU	12419	2107	13021	2201	13669	2301	14366	2409	15117	2526
2	SOUTHCO	4294	666	4409	684	4528	702	4651	722	4780	742
3	WESCO	8461	1456	8740	1499	9032	1544	9338	1590	9657	1639
4	NESCO	7061	1198	7353	1240	7661	1284	7986	1330	8328	1379
System Demand (Grid End)		**32235**	**5427**	**33523**	**5623**	**34890**	**5831**	**36340**	**6052**	**37881**	**6285**

13. 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 expansion only. The Commission further directs that DISCOMs should adopt the Demand Side Management (DSM) measures to reduce specific consumption in order to optimise demand. OPTCL should also contact IPICOL, State Govt. and discuss with bulk consumers like Railways etc. in this regard.

14. Accordingly both the cases are disposed of.

Sd/-
(A. K. Das)
Member

Sd/-
(S. P. Swain)
Member

Sd/-
(S. P. Nanda)
Chairperson