



Chhattisgarh State Electricity Regulatory Commission

Civil Lines, G.E. Road, Raipur – 492001

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Suo Motu Petition No. 01/2005

Chhattisgarh State Electricity Board, Raipur -

Respondent

ORDER **(Passed on 28.03.2005)**

The petition was last heard on 22nd March, 2005 and reserved for final orders for the 28th March, 2005, the date on which this order is passed.

2. The Chhattisgarh State Electricity Board (CSEB) is an integrated utility continuing as such under the transitional provisions contained in Sec. 172 of the Electricity Act, 2003 (the Act). As per these provisions, the CSEB is required to perform the duties and functions of a distribution licensee. Presently there is no other distribution licensee in Chhattisgarh and but for the captive power plants, the CSEB is the only provider of electricity in the State.

3. The CSEB was created on the 15th November 2000 under the provisions of the now repealed Electricity (Supply) Act 1948, with the creation of the new State of Chhattisgarh. The power position in the State was comfortable then. In fact, there was a surplus situation. The Board has 10 thermal generating units with a total installed capacity of 1280 MW and two hydel stations of 130 MW capacity. The peak load in 2001 was of the order of about 1300 MW varying between 1203 in July and 1382 in October, 2001. The existing installed capacity of the Board, together with the Central sector allocation (498 MW then) was more than sufficient to meet this load. However, the State Government with a view to promote industrialization granted concessional tariff to certain industries in 2001 and 2002. Concessional tariff was granted in the case of Ferro-alloys industries to revive this sick industry, and to other industries to encourage higher consumption. As many as 11 Ferro-alloys units which were closed were revived and this entailed an additional demand of 83 MVA. As many as 198 existing HT consumers increased their demand by 293 MVA to avail the concession offered for higher consumption. Besides, the normal growth in demand at 8.5% per year added to the load. As many as 232 new HT industrial consumers, 21,044 LT industrial consumers, 1.48 lakh new domestic connections and 36500 new agriculture consumers have been added during this period. All these have contributed to a substantial increase in peak demand since then, by 400-500 MW. The average demand projected for the current year is 1393 MW while the peak demand projected is 1785 MW. The unrestricted maximum demand has far exceeded these projections and was at 1989 MW, 1930 MW, 1972 MW, 1872 MW, 1922 MW and 1850 MW on the 17th, 18th and 20th, 21st, 22nd and 23rd of this month (March '05). The gap between total availability of power, including the Central share (which has since been reduced to 325 MW) and power purchased from captive power units, NVVN and PTC has fallen far short of demand. The total availability on the above six days was 1599 MW (-300), 1631 MW (-

299), 1639 MW (-333), 1517 MW (-218), 1654 MW (-235) and 1687 (-163) MW respectively.

4. The above no doubt is a very small and unrepresentative sample. But this situation has persisted over the last several months and the CSEB has been resorting to load-shedding every day, for durations varying between 2 to 4 hours and sometimes more, to obtain relief of about 100 MW or more every day, even after some overdrawal from the grid. With an average PLF of its thermal plants at 75% and with one or the other unit under forced outage, load-shedding goes up substantially (as higher as 297 MW on 17th March 2005).

5. An analysis of the monthly variation in loads over the last 4 years clearly indicates that the load peaks in the summer months of April, May and June (with early arrival of rains June may not be a critical month but with late arrival higher load may continue right upto in the month of July also). The demand peaks again in September, October and November. The limited purpose of the Commission's intervention at this point of time is to ensure that the Board manages the demand in the ensuing summer months of April, May and June in a manner which is in the best interest of the consumer and of the Board. The peak load projected for these months are: for April the demand in the month of March +50 MW, for May demand for March +100 MW and for June May's demand -50 MW (i.e. the same as in April). The concern of the Commission was that the unplanned load-shedding resorted to now will get further aggravated in the coming months. Unfortunately, the CSEB has no judicious plan for load-shedding and demand management to meet the situation. The Board was asked by the Commission as far back as on the 24th Dec. 2004 to look into the situation and come up with a load shedding plan so that the consumers are not inconvenienced and the Board minimizes its financial loss. Since no such plan was received and unplanned load-shedding continued, the Commission took suo motu cognizance and registered this petition for hearing.

6. Load shedding is not uncommon in most states of the country. However, many states have adopted purposeful measures of demand management to minimize its rigours on the consumers and to save the utility from losses. The manner in which load shedding has been resorted to by the CSEB is neither transparent nor equitable nor is it in the best interest of the utility. There is no plan of load-shedding which has been made known to the consumers. The main burden of load shedding has been on industries which contribute 60% of the revenues of the Board, and as a group is the most subsidizing consumer category. As per a rough estimate the unplanned load shedding and lack of demand management in the Board has cost it approx. Rs. 12.00 crore during the last three months. While it is true that any plan for load-shedding can never be revenue neutral, the effort should be to minimize the cost while causing least inconvenience to all consumers. The Commission considers it appropriate to intervene in this matter suo motu to enforce 'standards with respect to quality, continuity and reliability of service' by the licensee (Sec. 86 of the Act) and also to ensure that the Board follows commercial principles.

7. After much dilly-dallying the Board formulated a plan for load shedding and demand management and submitted it to the Commission on 22nd March '05. Even in the reply filed on this date, the CSEB asserts that with 100% thermal availability there is no shortage of power and load shedding is not required. This is not borne out by the daily reports of the State Load Despatch Centre. In fact, for the last about a week (17th to 23rd March 05) the thermal capacity on bar has been equal to the total installed capacity, even then load-shedding has been resorted to and on no day it is less than 100 MW. This does not show prudent demand forecasting or management by the CSEB. However, considering 75% thermal availability, the shortage at peak load during the morning hours (from 5.00 to 8.00 A.M.) has been assessed at 50 MW to 150 MW which may in some cases go up to 200 MW for a short while. Evening peak load shortage from 6.00 p.m. to 10.00 p.m. has been assessed at 200 MW to 400 MW. The plan for load-shedding submitted by the CSEB. is as follows:-

(1) Morning peak management:

The assessed load relief of 50 MW to 150 MW is proposed to be obtained as under:-

- (i) Staggering of holidays of HT & LT industries will provide relief of around 50 to 60 MW.
- (ii) Operating Group 5, 5(A), 6 and 6(A) feeders in rotation for half-an-hour each during the morning peak hours. This is expected to give relief upto 80 MW approximately.

Thus the total load-shedding proposed is of the order of $80\text{MW} + 50\text{MW} = 130\text{MW}$. However, further deficit, if any, is proposed to be made up by over-drawal from the grid, if permitted by WRLDC.

(2) Evening peak management:

The evening peak shortage of 200-400 MW is proposed to be managed as under:

- (i) Single phasing of 11 KV identified rural feeders. This load restriction will give a relief of about 165 MW.
- (ii) Restriction on supply to LT industries during peak load hours (6.00 to 10.00 P.M.) to yield 185 MW.

Thus, the total load relief obtained in the evening will be of the order of $165\text{MW} + 185\text{MW} = 350\text{MW}$. Further, marginal shortages, if any, are proposed to be made up through over-drawal, if permitted by WRLDC.

8. The details of load relief to be obtained by single phasing of rural feeders and supply restriction on LT industries during peak morning hours and the details of feeders under group 5, 5(A), 6 and 6(A), as submitted by the CSEB are enclosed as annexure A, B and C.

9. While the proposals regarding management of morning peak load demand appeared to be in order, the evening peak load management was not clear. The Board

informed the Commission that there are 903 rural feeders of which only 34 have single-phase AB switches. It was pointed out to the Board that installation of single-phase AB switches in all rural feeders would not be necessary; single-phase AB switches should be installed only in those feeders from which the desired load relief could be obtained. Such feeders need to be identified. It was mentioned during hearing that such feeders had already been identified by the Board and that in the past 650 single-phase AB switches were also purchased. The Board was asked to confirm this position. The Board has replied that the process of identification is on and will be completed as early as possible. Similarly, the manner in which evening peak restriction on use of power by LT industries was to be operated was not clear. The Commission was informed that this would be achieved by issuance of directions to the LT industries not to draw power during the peak hours and to enforce the directions through penal provisions. This has also been confirmed by the Board.

10. The Commission is satisfied that the load restrictions proposed by the Board would meet the peak load shortage situation in the ensuing summer months. In the interest of better load management and in the overall interest of the consumers the Commission orders as follows:

- (i) The load management plan submitted by the CSEB to the Commission on 22nd March 2005 is approved and shall be enforced w.e.f. 1st April 2005. All necessary instructions, including disincentive/penalty on LT industries for any use of power during restricted evening peak hours, shall be issued by the Board by the 30th March 2005 and reach it to all Circle offices.
- (ii) The Board shall take all steps as may be necessary for load management and keep the Load Despatch Centre informed of its plan. The Board shall identify the rural feeders on which AB switches are to be installed and install the switches urgently. This process should not take more than a fortnight. The CSEB shall confirm completion of this process to the Commission on the 15th April, 2005.
- (iii) The Board shall give wide publicity to its load-shedding plan through advertisement in the newspapers to be published by the 31st of March 2005 so that all consumers are aware of the plan.
- (iv) The Board shall keep the Commission informed of any plan for purchase of power from any source and obtain prior approval of the Commission for such purchase and inform the Commission of any change in the load management plan as a consequence thereof.

11. While an average growth 8.5% in the demand has been projected for the coming five years, there is no possibility of addition to the generation capacity of the Board before the new 500 MW thermal power plant at Korba is commissioned some time in 2006-07. Thus, the shortage situation in the State is not only likely to continue during the coming two years but with demand growth, is bound to be worsen. Even if the Board manages to procure power from PTC or some other sources, the quantum of such power is not likely to be adequate for the State's needs going by the prevailing position of power availability in the market. The Commission has been informed that applications for additional load of 200 MVA of new connections is already pending with the Board.

This also has to be taken into account in any load management plan. It would, therefore, be necessary for the CSEB to have an appropriate transparent and equitable load management plan for the coming two years taking into account realistic demand and supply projections during this period. Secondly, the Board should immediately Commission a demand management study which could suggest how the load curve can be flattened to an extent through demand side management. The Commission would consider TOD tariff mechanism with a view to better manage peak load while considering the tariff application for 2005-06 already submitted by the CSEB.

12. Copy of this order be made available to the Secretary, CSEB and Secretary, Government of Chhattisgarh, Department of Energy, Raipur.

Sd/-
(Sarat Chandra)
Member

Sd/-
(S.K. Misra)
Chairman