



Chhattisgarh State Electricity Regulatory Commission

Irrigation Colony, Shanti Nagar, Raipur - 492 001 (C.G.)

Ph.0771-4048788, Fax: 4073553

www.cserc.gov.in, e-mail: cserc.sec.cg@nic.in

Petition No. 22 of 2011(T)

IN THE MATTER OF

REVISION AND DETERMINATION OF TARIFF FOR THE PURCHASE OF ELECTRICITY GENERATED BY BIOMASS BASED POWER PLANTS IN CHHATTISGARH BY DISTRIBUTION LICENSEE IN CHHATTISGARH

Petitioners

1. Chhattisgarh Biomass energy Developers Association
2. Sudha Agro Oil & Chemical Industries Limited
3. Neeraj Power (P) Limited
4. Shivalik Power & Steel (P) Limited

Versus

Respondents

1. Chhattisgarh State Power Distribution Company Ltd.
2. Jindal Steel & Power Limited
3. Bhilai Steel Plant, Bhilai

**Present: Shri Manoj Dey, Chairman
Shri B K Sharma, Member**

ORDER

(Passed on December 28, 2011)

The Chhattisgarh Biomass Energy Developers Association (CBEDA, for short) and other three Sudha Agro Oil & Chemical Industries Limited, Neeraj Power (P) Limited, Shivalik Power & Steel (P) Limited (hereafter called petitioners) filed a petition before the Commission, which was registered as P No. 22 of 2011 (T) for revision and determination of tariff for power purchase by distribution licensees in Chhattisgarh from biomass-based power generating plants situated in Chhattisgarh with effect from the date of the petition for the financial years 2010-2011 and subsequent years.

The petitioners have pleaded that *"the revision of the tariff (both fixed cost and variable cost) has become necessary and imperative for the survival, viability and sustainability of such power plants by reason of the changes in the financial and economic environment, and in view of the experience of actual operating parameters by the biomass-based power generating plants which have commenced operation, amongst others."*

Energy charge has been revised in Order dated April 15, 2010 in petition No 25 of 2010, which is applicable for FY 2010-11. In this petition, the petitioner dropped the request for redetermination of fixed charges, but insisted to review energy charges on account of excessive increase in fuel cost.

2. As per the mandate and provisions of the Act, the Commission passed an order on November 11, 2005 "in the matter of determination of tariff and related dispensation for procurement of power from biomass-based generation projects" in a petition No.07/2005. The CBEDA and separately four members of the association filed an appeal before Hon'ble Appellate Tribunal for Electricity (Hon'ble ATE or Tribunal, for short) challenging the Commission's orders and seeking modification in the order in respect of tariff and some other issues. By its order dated September 07, 2006, passed in appeal No. 20 of 2006, the Hon'ble ATE set aside some parts of the order of this Commission and remanded the case back to this Commission with certain observations and directions. Aggrieved by this order of the Hon'ble ATE, the erstwhile Chhattisgarh State Electricity Board (CSEB, for short) filed an appeal before the Hon'ble Supreme Court (No. 12 of 2007). The Hon'ble Supreme Court has passed order on this appeal on January 15, 2007. The order reads as follows:

"As the matter has been remitted to the Commission, we are not inclined to interfere with the impugned order. Accordingly, the civil appeal is dismissed. However, we make it clear that the State would be at liberty to raise all the contentions before the Commission and the Commission shall decide the same, untrammelled by any observations made in the impugned judgment."

In the compliance with the order dated September 07, 2006 of the Hon'ble ATE and order dated January 15, 2007 of the Hon'ble Supreme Court, a revised order was passed on January 15, 2008 by the Commission in petition No. 07/2005.

3. In the order dated January 15, 2008, the Commission determined the tariff for biomass-based power generating plants / projects on following lines.

(1) Fixed charges from first year to tenth year of operation.

(2) Energy (Variable) charges.

a. For fuel mix of 75:25, energy charges from financial year 2005-06 to 2014-15.

b. For fuel mix of 85:15, energy charges from financial year 2007-08 to 2014-15.

4. In para 8 of the order dated January 15, 2008 (petition No. 07/2005), the Commission had ordered that *"these tariffs will be subject to review after five years from the base year on the request of either a biomass-based generator or the Board."*

In a note attached to the annexure of the order dated January 15, 2008 it was indicated that:

"All the parameters decided above shall be applied for the base year 2005-06 and shall be reviewed after 5 years from the base year except for O&M expenses which shall be reviewed after 3 years from the base year."

5. The petitioners further filed a petition on 2009 vide P No 25 of 2009(T) seeking review of fixed cost and energy charges determined vide Commission's order dated January 15, 2008. However, the petitioner withdrew the request for redetermination of fixed charges, but insisted to review energy charges on account of excessive increase in fuel cost. The Commission passed an order on April 15, 2010 in P No 25 of 2009(T). In the order dated April 15, 2010, the Commission re-determined the energy charges (variable charges) which is as under:

FY	Energy Charge, Rs/kWh
2009-10	2.19
2010-11	2.30
2011-12	2.41
2012-13	2.53
2013-14	2.66
2014-15	2.79

6. The CSPDCL (successor company of CSEB) filed an appeal before Hon'able ATE against order dated April 15, 2010. The Hon'able ATE's observations on the case are as follows:

" In course of hearing of the appeal, Smt. Suparna Srivastava, the learned Counsel for the Appellant solely and exclusively confined her arguments to the issue of retrospectivity of the order impugned giving up other contentions as were averred in the memorandum of appeal. In other words, the learned Counsel did not rather could not dispute the factual scenario that since the State generating utility (CSPGCL) itself procured rice-husk for their biomass based generating plant at Kawardha at Rs.1465/MT and Rs.1615/MT in the year 2007-08 and 2008-09 respectively. It was necessary for the Commission to revise the tariff for supply of power by biomass based generators to the distribution licensee. But it was adequately demonstrated before the Commission by Respondent No.1 that revision of energy charges was necessary due to phenomenal increase in the cost of fuel and as such the rate of power as was fixed by the Commission in its order dated 15.1.2008 was unviable. Although the petition of the Respondent No.1 before the Commission was comprehensive one praying for fixed charges and energy charges the Respondent No. 1 gave up the plea for determination of fixed charges as because such determination was a time consuming process and, accordingly narrowed down the scope of the petition to fixation of energy charges on account of rise in fuel price. In this appeal before us thus the learned Counsel for the Appellant has not questioned legality of the price rise with respect to energy charges and confined the Appeal to revision of tariff with retrospective effect i.e.1.4.09.

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27. Our considered view is that Commission committed no illegality in making the order retrospective."

7. On the basis of provisions mentioned in the various orders of the Commission, this petition has been accepted and registered after collecting the other information necessary to process the petition. As per the provisions of Chhattisgarh State Electricity Regulatory Commission (Details to be furnished by licensee or generating company for determination of tariff and manner of making application) Regulations, 2004, following regulatory process was initiated;

- i. Public notice published in the leading news papers (Dainik Bhaskar-Raipur, Nai Dunia-Raipur, Haribhumi-Bilaspur) on May 07, 2011 to invite objections and suggestion on the petition from the public and the stakeholders with sufficient time to respond.
- ii. Inviting comments from the members of State Advisory Committee vide letter no 22/2011(T)/2011/194 dated May 07, 2011
- iii. Posting the petitions on the Commission's website
- iv. Public hearing at the Commission's office on May 31, 2011 (list of persons those attended the Public Hearing is placed in Annexure 1)

8. The Commission has received written objections only from respondent Chhattisgarh State Power Distribution Company Ltd. (CSPDCL) vide letter no 02-02/RAC/533 dated May 23, 2011. CBEDA filed rejoinder on July 01, 2011 on objections raised by CSPDCL. Subsequently CSPDCL has again raised certain issues vide letter no 02-02/RAC/1061 dated July 13, 2011 on the rejoinder by the petitioner.

After going through the submissions, the Commission felt that for just and proper disposal of the petition, the Commission should invite objections/opinions/suggestions from the stakeholders and to conduct another public hearing in the matter on following additional issues;

- a. Whether O&M charges be fixed and revised on financial year basis irrespective of year of operation of the generating plants for the succeeding years.
- b. Whether 'Working capital schedule' which comprise of fuel cost, receivables and O&M cost be fixed and revised for the succeeding years on financial year basis taking into account the revision in energy charges specified vide order dated 15.04.2010 passed in petition no 25/2009(T)
- c. Whether interest rates be revised by applying correction factor on existing tariff structure for succeeding years.
- d. Whether fixed cost for plants which are already under operation be decided on principle adopted by Central Commission i.e. there may be different generic tariff for plants which became operational during the year 2005-06, 2006-07, 2007-08, 2008-09 and 2009-10.
- e. To govern the existing biomass based power generating plants by the Chhattisgarh State Electricity Regulatory Commission (Terms & Condition for determination of generation tariff an related matters for electricity generated by plants based on renewable energy sources) Regulation 2011, for which regulatory process has been completed and these are under finalisation.
- f. Any other points related to the disposal of the petition.

9. The Commission has received written objections/suggestions from respondent CSPDCL vide letter no 02-02/RAC/22(T)/2011/2310 dated November 11, 2011 and comments/suggestions from the petitioner CBEDA vide letter dated November 11, 2011 and these have been addressed in subsequent paragraphs.

10. Tariff for supply of power by biomass based power generating plants to distribution licensees of the State

As discussed, the tariff for supply of power by the biomass based generators to distribution licensee consists of two parts:

- (1) Fixed Cost
- (2) Energy Charges (Variable charges)

10.1 The Fixed Cost of a bio mass based power generating plant consist of the following components –

- a. Depreciation;
- b. Operation and maintenance expenses
- c. Interest on loan capital;
- d. Interest on working capital;
- e. Return on equity;

As the petition is for the redetermination of tariff, we do not find any justification to review capital cost of the projects and debt-equity ratio. We had taken into account 7.5 MW as the average size of a plant, for determination of tariff and norms were fixed keeping the technical and other parameters of this plant size in mind. We also do not find any justification for changing the average capacity of 7.5 MW for tariff determination purpose. The parameters considered vide order dated January 15, 2008 is examined and the observations are as follows:

- a. **Depreciation:** The petitioners have claimed depreciation at the rate of 7%. The CSPDCL has objected saying that biomass generating plants are also the thermal generation plants and use of biomass does not reduce the life span of the power plant.

Commission's View: In order dated January 15, 2008 the Commission has considered depreciation at the rate of 7%. As per the Chhattisgarh State Electricity Regulatory Commission (Terms and conditions for determination of generation tariff and related matters for electricity generated by plants based on non-conventional sources of energy) Regulations, 2008, the depreciation shall be calculated on annual basis, on straight line method over the useful life of the asset and at the rates as notified by the CERC. The Tariff Policy also prescribes that the depreciation rate notified by Central Commission shall be applicable in respect of power generating plants. As per the CERC Regulations, the depreciation rate for the first 10 years of the Tariff Period shall be 7% per annum and the balance depreciation shall be spread over the remaining useful life of the project from 11th year onwards. Depreciation at the rate of 7% per year is sufficient to repay the loan in full in 10 years. Since the rate of depreciation considered in order dated January 15, 2008 is equivalent to the

depreciation rates specified by CERC, so there is no justifiable reason to modify the same. The rate of depreciation, for calculation of tariff is therefore retained at 7% annually.

b. Operation and maintenance expenses: The petitioner has submitted that as per order dated January 15, 2008, the escalation of O & M expenses has been provided only for a period of three years, and need to be reviewed after three years. The petitioner has further submitted to allow the escalation of 5.72% to cover the inflation as per the provisions in CERC Regulations. CSPDCL opined that O & M expenses shall be governed through earlier tariff order. On further issue raised by the Commission CBEDA submitted that O&M Charges can be linked to financial year, but the age of the plant should also be considered while fixing the O&M charges as the repairs and maintenance expenditure of the older plants tends to be higher. O&M charges are also affected by the size of the plant, smaller plants tend to have more O&M costs in percentage or per MW basis. CSPDCL also stated that the repair and maintenance of the plant increases with the service life of plant therefore, the O&M expenses of the generating plant should be revised on the rendered service year basis.

Commission's View: In the order dated January 15, 2008, the Commission observed that O & M expenses considered for determination are on higher side and shall be reviewed after three year. As per CERC Regulations, the normative O&M expenses for the first year of the Control period (i.e. FY 2009- 10) shall be Rs. 20.25 Lakh per MW, which shall be escalated at the rate of 5.72% per annum. From point of view of reasonability, the Commission has considered the CERC specified O&M expenses and escalation factor to arrive at O&M for the biomass plants for the year 2011-12 and onwards as CERC has arrived at this cost after thorough study and vide consultation process. So for the year 2011-12, the O & M expenses have been considered as Rs. 22.63 lakh/MW (i.e. Rs. 1.7 Crore for 7.5 MW) and total escalation of 5.72% per annum for subsequent years.

c. Interest on loan capital: The petitioner has submitted that interest on term loan should be revised from 11.75% to 13.25% in accordance with CERC regulations to reflect the present cost of funds. The respondent CSPDCL has objected the proposed increase in interest rate and submitted that none of the

CBEDA members are borrowing new loan for installation of new power plant therefore, the loans tie-up are also quite old when the interest rates were quite low and insisted for true-up of actual expenses before considering further revision on any such account. In response to this the petitioner has submitted some certificates from financial institutions like Indiabulls Infrastructure Credit Ltd, State Bank of India, Andhra banks, UCO banks and chartered accountants as documentary evidences.

Commission's View: It is observed that the interest rates are varying. Different financing institutions offer different interest rates. The biomass based power plants are under operation since different period of time. The developers may have borrowed loan from different institutions. So the loan liability for each developer may vary. It is observed that the interest rates are not on continuous increasing trend as compared to what was considered in order dated January 15, 2008. Taking these aspects into consideration the interest rate approved vide order dated January 15, 2008 has been considered.

d. Interest on working capital: In the order dated November 11, 2005, the Commission had decided that for the purpose of working capital requirement, fuel stock of 3 months, O&M expenses of 1 month and receivables equivalent to 1.5 months will be considered. CBEDA has submitted that working capital requirement should be calculated in lines with CERC regulations and therefore fuel stock of 4 months, O&M expenses of 1 month and receivables of 2 months should be considered for calculating Working capital requirement.

CSPDCL has objected the claim of CBEDA saying that once it is accepted that the determination of tariff shall be governed by the Hon'ble Commission's orders dated November 11, 2005, January 15, 2008 and April 15, 2010 then, no claim on the basis of provisions under other than these orders should be accepted."

Commission's View: On further deliberations, CSPDCL and CBEDA agreed to revise the working capital based on the latest data available for fuel cost, tariff and receivables. The Commission has considered it appropriate to adopt the methodology of calculation of working capital and interest rate on the same as

per the relevant regulations of CERC. Therefore the working capital schedule and the interest rate specified in CERC Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 (CERC RE Tariff Regulations 2009) have been considered for revision in tariff of biomass plants. Accordingly the Working Capital requirement in respect of biomass power projects has been computed in accordance with the following:

- a) Fuel costs for the year 2011-12 (Rs 2018/MT) for four months and generation equivalent to normative PLF of 80%.
- b) Operation & Maintenance expense for one month;
- c) Receivables equivalent to 2 (Two) months of fixed and variable charges for sale of electricity calculated on the target PLF (80%);
- d) Maintenance spare @ 15% of operation and maintenance expenses

The interest on working capital specified by CERC for 2011-12 is 12.75% which is equivalent to as specified in order dated January 15, 2008. So the interest rate on working capital has been retained at 12.75% for the year 2011-12 and onwards.

e. Return on equity: The petitioner has submitted that Return of Equity of 16% is very low, considering the environment of ever changing fuel prices. A pre tax ROE of 19% for the first 10 years as proposed by CERC in its Regulations should be considered. The CSPDCL has commented that return of equity is not meant to compensate the cost of fuel for change in fuel prices. The VCA formula has already been proposed by the petitioner to take care of change in fuel price. Therefore, higher return on equity to compensate the variation in fuel cost is not a justifiable claim of CBEDA.

Commission's View: The plea of the petitioner that higher ROE shall be permitted due to increase in fuel cost does not appear appropriate. The ROE specified in the tariff order dated 31.03.2011 passed by the Commission for the year 2011-12, in respect of State utilities (Chhattisgarh State Power Generation Companies Ltd, Chhattisgarh State Power Transmission Commission Ltd and Chhattisgarh Power Distribution Company Ltd) is 19.36%. So as per existing order dated 15.01.2008, the biomass based power generating plants are permitted lesser ROE as compared to State utilities. Section 86(1)(e) mandates

the State Commissions to promote renewable energy sources. Keeping this spirit into consideration the Tariff Policy prescribes that the procurement of renewable power by the distribution companies shall be done at preferential tariffs determined by the Appropriate Commission. One of prime component of preferential tariff for promotion of renewable energy source is higher ROE as compared to fossil fuel based power generating plants and licensees. Taking this aspect into consideration the Commission had specified higher ROE in the order dated 15.01.2008. But now since the ROE permitted vide order dated 15.01.2008 is less than the ROE permitted to State utilities for the year 2011-12, the Commission decides that ROE of 19.98% shall be considered for biomass based power generating plants for the year 2011-12 and onwards.

f. Computation of net generation: Petitioner has submitted that as per the present practice insisted upon by the distribution licensee (CSPDCL) for connectivity to the grid for the purchase of energy, the energy is metered at the metering point located at the licensee's substation. The distance between the outgoing feeder gantry of the generating station and the metering point at the licensee's substation varies from one plant to another and could be as much as 15 km. Consequently, the line losses in delivering the energy to such a metering point at the licensee's substation could be as much as 4%. Such line losses have to be allowed as a pass through by allowing the same as a cost or as an allowance in computing the net delivered energy on which the licensee has to make payment. Alternatively, the metering point is to be shifted to the outgoing feeder gantry of the generating station. This would also be in accordance with the CEA and CERC Regulations for metering of energy which provides metering of the energy at the outgoing feeder gantry of the generating station. Further the petitioner has submitted that metering of exported energy should be at the outgoing feeder gantry of the generating station as there are other distribution licensees in the State who will also have an obligation to purchase energy generated from biomass-based generating plants. These other distribution licensees will be required to pay wheeling charges and/or transmission charges to other licensees through whom the energy purchased by them is delivered within the area of supply of such other distribution licensee.

The CSPDCL opines that meters should be available on both the ends of dedicated feeder and the actual losses can only be claimed. In the cases of dedicated lines the actual line loss cannot be more than 1%.

A copy of the meter reading of M/s. South Asian Agro has been set out as evidence of line loss by the petitioner. The meter reading was taken and signed by A.E. (MRT) & A.E. (O&M) of CSPDCL and they observed that the line losses were around 4%.The petitioner has considered this loss for computation of tariff.

Commission's view:

The CERC RE Tariff Regulations 2009, the Chhattisgarh State Electricity Regulatory Commission (Terms and conditions for determination of generation tariff and related matters for electricity generated by plants based on non-conventional sources of energy) Regulations, 2008 and the order passed by Hon'ble Tribunal specifies auxiliary consumption of 10%. Therefore, the auxiliary consumption of 10 % shall also be retained for computation of tariff.

It is true that the fixed cost is determined on the basis of net generation, which is derived after deducting auxiliary consumption from gross generation. As per the provisions under section 9 & 10 of the Act a generating station can construct, operate and maintain dedicated transmission lines. Considering the provisions of existing State Grid Code which is applicable for all generators including the generators based on renewable energy in the State, presently the Commission is not inclined to accept the submission of CBEDA in isolation.

Fixed Cost : Considering the revised parameters the Commission has decided fixed cost for the plants achieved CoD in years 2005-06, 2006-07 and 2007-08 and 2008-09 and is enclosed at Annexure 2. Following table shows the summary of fixed charge for the plants achieved CoD in years 2005-06, 2006-07 and 2007-08 and 2008-09 starting from first year of their CoD:

Year of CoD	Fixed Charges in Rs/kWh as par year of commercial operation (nth year)									
	1	2	3	4	5	6	7	8	9	10
Year 2005-06	1.78	1.75	1.73	1.68	1.63	1.58	1.62	1.59	1.57	1.55
Year 2006-07	1.78	1.75	1.73	1.68	1.63	1.67	1.65	1.63	1.61	1.59
Year 2007-08	1.78	1.75	1.73	1.68	1.72	1.70	1.68	1.66	1.64	1.63
Year 2008-09	1.78	1.75	1.73	1.77	1.75	1.73	1.71	1.69	1.68	1.66

For payment purpose, above revised fixed charge shall be applicable from FY 2011-12 onwards. The Commission shall review the fixed charges after the year 2014-15, 2015-16, 2016-17 and 2017-18 for the plants achieved CoD during the year 2005-06, 2006-07, 2007-08 and 2008-09 respectively.

Illustrations:-

(1) For the plant "A" which achieved CoD in FY 2005-06 in the month June 2005:-

Since July 2011 to June 2012 is the 7th year of operation of plant "A", the fixed charge for the plant "A" shall be Rs. 1.62/kWh from July 2011 to June 2012. As per order dated January 15, 2008 fixed charge for plant "A" for the period July 2011 to June 2012 was Rs. 1.53/kWh. The fixed charge already paid to plant "A" shall be adjusted accordingly. For the period April 2011 to June 2011, the fixed charge shall be Rs. 1.53/kWh as per the previous order. For 8th year of operation of plant "A" i.e. for period from July 2012 to June 2013 fixed charge shall be Rs. 1.59/kWh as per this order.

(2) For the plant "B" achieved CoD in FY 2006-07 in the month September 2006:-

Since October 2011 to September 2012 is the 6th year of operation of plant "B", the fixed charge for the plant "B" shall be Rs. 1.67/kWh from October 2011 to September 2012. As per order dated January 15, 2008 fixed charge for plant "B" for the period October 2011 to September 2012 was Rs. 1.58/kWh. The fixed charge already paid to plant "B" shall be adjusted accordingly. For the period April 2011 to September 2011, the fixed charge shall be Rs. 1.58/kWh as per previous order. For 7th year of operation of plant "B" i.e. for period from October 2012 to September 2013 fixed charge shall be Rs. 1.65/kWh as per this order.

10.2 Energy Charges (Variable charges):

a) Fuel Cost: The petitioner has pleaded that weighted average landed cost of fuel (rice husk and "F" Grade coal) comes out to around Rs. 2400 per MT for FY 2010-11 and submitted that merely 5% increase is not sufficient to adjust the fuel price hike. The petitioner has suggested to device appropriate fuel cost adjustment (FCA) formula. The CSPCL opines that once the VCA has been proposed by the petitioner, how the escalation of 5% on average cost of fuel can be claimed and considered.

b) Gross Calorific Value (GCV): Petitioner has submitted that it is impossible to obtain rice husk with an average calorific value of 3467 kcal/kg. The calorific value of the husk varies from supply to supply and from season to season and reduction in the calorific value by reason of natural and unavoidable degradation of the fuel in the course of storage before it is used. There is also varying contamination and moisture content of the rice husk. Experience has shown that the average calorific value of the fuel of the mix that is achievable is no more than 3105 kcal/kg (Considering 3040 kcal/kg for husk and 3300 kcal/kg for coal). Petitioner has pleaded to consider a gross calorific value for the fuel mix reasonably at 3105 kcal/kg and revise the GCV of Biomass fuel from 3467 kcal/kg to 3105 Kcal/kg to bring the specific fuel consumption closer to actual consumption of 1.25 kg/kWh. The CSPDCL has suggested to consider GCV of rice husk as per the applicable order of Commission dated January 15, 2008 or at actual.

c) Gross station heat rate: The petitioner has considered GSHR of 3800 kcal/kWh. But as per the petitioners the present specific fuel consumption of 1.1 kg/kWh is far too low and not achievable and on the basis of actual experience they have submitted to consider specific fuel consumption as 1.25 kg/kWh.

d) Auxiliary consumption and line losses: Petitioner has submitted auxiliary consumption as 10% and line losses as 4% for determining energy charges. Accordingly the petitioner has arrived variable cost as Rs. 3.40 per kWh and Rs. 3.57 per kWh for the year 2010-11 and 2011-12 respectively.

Commission's View: The Commission had revised the variable charges of biomass based power generating plant in order dated April 15, 2010 passed in P No 25 of 2009. It has been observed by CERC and the some other SERC's also, that the prices quoted by the various agencies for similar kind of biomass fuel vary widely. It has been clearly stated in previous orders that adoption of a fuel cost adjustment formula would not be practicable in case when the tariff determined is generic tariff. In the order dated April 15, 2010, the Commission had considered the energy charges determined by the Central Commission in P N 284/2009 "In the matter of Determination of generic levellised generation tariff under Regulation 8 of the CERC RE Tariff Regulations 2009. The tariff was made effective from April 01, 2009 and for subsequent years an escalation of 5 % was allowed. In the order, the parameters considered for energy charges by CERC were:

- (a) Heat rate – 3800 kcal/kWh
- (b) GCV of biomass – 3467 kcal/kg
- (c) Base price for 2009-10 - Rs.1797 per MT

The issue of line loss and auxiliary consumption has been discussed in preceding paragraphs. The reason for adoption of energy charges specified by CERC has been dealt in detail in order dated April 15, 2010. So at this point of time we do not find any justification to modify the parameters. The base price of fuel (biomass plus coal) was considered in order dated April 15, 2010 for the year 2009-10 was Rs 1797 per MT based on the fuel (biomass plus coal) by CERC for the year 2009-10. Applying 5% escalation on this fuel price the fuel price for the year 2010-11 and 2011-12 corresponds to Rs 1887 per MT and Rs 1981 per MT respectively. But the CERC has specified fuel cost indexation mechanism also. This mechanism takes care of the average annual inflation rate and wholesale price index (WPI). By considering the fuel cost indexation mechanism, the CERC has considered biomass fuel price applicable for FY 2011-12 as Rs 2017.65 per MT for other States which includes Chhattisgarh also. As per the CERC order dated 09.11.2010 passed in petition no 256/2010 (suo-motu) the energy charges determined for the year 2011-12 is 2.46 Rs/kWh. But if we consider the fuel cost and annual escalation of 5% as per the CERC's order passed in PN 284/2009, the energy charge for the year 2011-12 is 2.41 Rs/kWh. The

difference of 5 paise per unit in both the above orders of CERC is due to the reason that the fuel cost derived at an annual escalation of 5% in fuel price is less than as compared to cumulative effect of annual average inflation rate and WPI. The fuel cost indexation method adopted by CERC appears to be more reasonable which may take care of the interest of power developers on account of increase in fuel cost. **In such context, the Commission decides that the energy charges (variable cost) determined by the CERC for year 2011-12 for other States in Petition No. 256/2010 (suo-motu) dated November 09, 2010 which is Rs. 2.46 per kWh shall be made applicable for the year 2011-12. The energy charge for subsequent years will be as specified by the Central Commission for that financial year. The Central Commission is likely to notify a new RE Tariff Regulations, which may remain in force for the next control period starting from April 01, 2012. Accordingly the CERC may determine the generic tariff and the energy charges every year of the control period as per the norms specified in the new RE Tariff Regulations. Provided that if the energy charge for year 2012-13 or any subsequent years is not specified before the start of financial year by Central Commission, the provisional energy charge for supply of power by biomass power plants to distribution licensee shall be escalated to 5% on previous financial year's tariff. Upon issuance of final order (energy charge) by the Central Commission for respective years, the relevant energy charges specified by the Central Commission shall be adopted and shall be applicable from 1st April for that year. The energy charge, which is Rs. 2.46 per unit for the year 2011-12, shall be effective from April 01, 2011. The State Commission in a suo-motu or in any petition filed by any parties, may issue an Order for adoption of tariff (energy charge) specified by the Central Commission for that financial year or for fixing energy charges for the FY in case the CERC doesn't at all determine energy charges for that FY.**

11. Other issues:

11.1 Tariff for energy below 70% of scheduled energy and Force majeure: The petitioner has submitted that, even for energy below 70% of the scheduled energy, the fixed costs are invariably actually incurred and required to

be compensated and there should be some penalty on a power plant which exports considerably short of its scheduled power in any month, there ought to be some gradation of the denial of fixed charges. The petitioner has proposed to consider the payment also of 70% of the fixed cost if the energy is below 70% of the scheduled energy but more than 50% of the scheduled energy, or 50% of the fixed costs if the energy exported is below 50% of the scheduled energy. CBEDA has further submitted that there may be unforeseen circumstances beyond the reasonable control of the power plant and it should be recognized as a forced unforeseen closure for a period exceeding 3 days as a force majeure condition and allow for proportionate adjustment of the scheduled energy in such case.

CSPDCL has objected this submission of the petitioner and term this as force donation to the CBEDA members by the consumers of the State through CSPDCL and claimed that such liberalization shall facilitate the poor performance which was never be the intention of the Act or Tariff Policy behind promotional measures. The CSPDCL is of the view that if the allowed PLF for recovery of fixed cost is 70% then the power injected above 70% PLF should carry variable cost only.

Commission's view: The PLF considered for recovery of fixed cost is 80%. But at this point of time we would like to bring to notice of the petitioner that the biomass power developers are given a preferential treatment as they are able to get the full fixed charges even if the PLF exceeds 80% and the fixed cost is recovered totally. The Hon'ble Tribunal has also directed to consider PLF of 80% for recovery of fixed charges. The CERC Regulations 2009 and the CSERC Regulations 2008 also specifies PLF of 80% for computation of fixed charge. The PLF of 80 % also takes into account the forced and planned outages of power plants. The Commission would like to clarify that in our order dated November 11, 2005 we had specified that if the biomass generator supplies less than 70% or more than 105% of the monthly scheduled energy, tariff for such power will be at variable cost plus 30P/kWh. In para 25 of their judgement the Hon'ble Tribunal has directed that capping of 105% energy be relaxed and regulated in a manner that 'annual energy PLF does not exceed 100%' .The order dated

January 15, 2008 was passed as per directions of the Hon'able Tribunal and the same directions would be continued.

We therefore order that the supplier shall be paid normal tariff for supply of energy above 70% of the scheduled energy. Monthly billing shall be done on the basis of energy delivered at normal rate upto eleventh month. At the end of the year necessary adjustment may be made in the bill for the twelfth month of the year to ensure that energy delivered above 100% annual PLF is billed at the same rate as for supply below 70% of the scheduled energy. The PLF is to be calculated considering the installed capacity of the generating plant.

11.2 Regulations for biomass based generators:

The CSPDCL has stated that there are no Regulations available for determination of tariff for biomass based power generating plants and such projects are covered by Order dated November 11, 2005 and January 15, 2008. According to CSPDCL, the CBEDA members are not covered under any Regulations as a result CBEDA is free to choose cherries from all available frames and there is flexibility for the Commission also to accept the same.

Commission's view: We would like to refer to order dated Sept 2006 passed by Hon'able Tribunal. The para 12 says:

"Keeping in view the principle that the generation of electricity from renewable sources of energy needs to be promoted, we accept these operational norms as recommended by the CEA's report as basic norms and the Appropriate Commission to act upon them subject to minor adjustments relating to the local site conditions and further refinement after operational data of 5 years operation of biomass plants in the state aggregating to 100 MW is available."

As per the orders of the Hon'ble ATE, the scope for review of tariff was prescribed in order dated January 15, 2008 passed by the Commission. It can be seen from the order dated January 15, 2008 that almost all the parameters considered for determination of tariff were as per the orders and directions of Hon'able Tribunal. In the order dated April 15, 2010, the energy charges were considered at the rates specified by Central Commission which is governed through the Regulations. In this order, we have revised only the O&M expenses, interest on working capital and ROE, the reason for which is elaborated in para

10.1. The reason for review of energy charges is also explained in para 10.2. So although there are no specific Regulations for existing biomass generators, but still the parameters considered for computation of tariff are as per directions of Hon'able ATE and the relevant Regulations specified by Central Commission or CSERC, Regulations 2008. However, we agree that there must be Regulations for determination of tariff for all biomass based power generating plants. Accordingly, suitable provisions will be incorporated in the ensuing CSERC RE Tariff Regulations, 2012.

As per the directions of Hon'able Tribunal, the distribution licensees (CSDPCL, JSPL and BSP) or any biomass-based power generating plant will be entitled to apply for fixing of tariff for a specific biomass generating station in case they feel that the impugned tariff is more / less than what can legitimately be determined under the Act and the Regulations. The project specific tariff for biomass based power generating plant may be determined in accordance with norms and parameters likely to be specified in the CSERC RE tariff Regulations, 2012.

11.3 Truing up:

The CSPDCL has stated that CBEDA members have never filed true up petition since the determination of tariff. According to CBEDA it will not be possible to do a "True up exercise" as being suggested by the respondent as this is a class tariff and not an individual tariff. In case of a class tariff only norms can be fixed based on actual and a true up exercise is not possible.

Commissions view: The tariff for biomass based generating plant is a generic tariff for class of consumers which is based on normative parameters. Truing up of tariff may be impracticable in such case of generic tariff. In a cost plus approach of tariff determination there are "controllable items" and "uncontrollable items" in the ARR. The fuel cost, interest rates of financing institutions, average annual inflation rates, other taxes imposed by statutory authorities etc-are all uncontrollable items of ARR. As a principle, uncontrollable costs of generating companies have to be passed on the distribution licensees. As per the Regulations notified by the Commission, the power purchase cost of distribution licensee is required to be pass on to the consumers. The effect of truing up may be positive or negative. The CSPDCL should analyse the tariff

orders passed by the Commission for the State utilities. It cannot be denied that O & M cost, interest rates of financing institutions, taxes imposed by statutory authorities are on an upward trend for State utility. This has definitely resulted in increased cost of generation of State owned utilities. The same may be the case for the cost of generation for biomass based power generating plants. However, as already ordered by the Hon'ble Tribunal in appeal No 48 of 2007, the CSPDCL/distribution licensees and biomass power developers are entitled to apply for fixing of tariff for a specific biomass based power generating plant in case they feel that the impugned tariff is more/less than what can legitimately be determined under the provisions of Act and the Regulations. In case of true up of the plants, which shall opt for project specific tariff, the same principle will be adopted during the true up exercise also in the subsequent years. Accordingly we order that if the CSPDCL/distribution licensees and biomass based power generating plant feel that the actual tariff of biomass based generators is more/less than what has been determined through normative figures considered in order dated January 15, 2008, April 15, 2010 and this order, the CSPDCL/other distribution licensees or biomass power developers can file for project specific tariff and true up petition thereafter for such projects before this Commission.

11.4 Taxes and duties:

CBEDA has submitted that all or any taxes and/or duties and/or cess on, or in respect of, the electricity sold by the biomass-based power generating plants to the distribution licensees shall be a pass through and payable by the distribution licensees as an extra over and above the determined tariff.

Commission's view: The respondent did not object on the plea of the petitioner. The Commission agrees to the claim of the petitioner. All or any taxes and/or duties and/or cess on, or in respect of, the electricity sold by the biomass-based power generating plants to the distribution licensees shall be a pass through as an extra over and above the determined tariff.

12 Term of Power Purchase Agreement (PPA)

The relevant para of the Commission Order dated January 15, 2008 is reproduced below:

"12. The term of PPA for purchase of power from biomass plants by distribution licensees shall be for 20 (twenty) years, as in other States. Tariff is fixed by the Commission for 10 years; it shall be redetermined after this period. Since the life of a plant is 25 years, a PPA for 20 years will ensure long-term purchase of power of non-conventional energy sources by distribution licensees. This will also enable consumers to avail of such power at reasonable rates in later years."

The Provision of 20 years PPA is made for the reason stated in clause 10.1(a) of this order. Depreciation @ 7% has been permitted and 70% of the cost of project will be recovered in initial 10 years of operation and after 10 years, in the subsequent years the consumers should have cheaper power.

CSPDCL is directed to align the PPAs in line with above within six month of this order and submit the compliance report to the Commission.

13 Effective date of order: This order is revision of the previous orders dated January 15, 2008 and April 15, 2010. Any other issue which has not been dealt in this order shall be governed through order dated January 15, 2008 or as per the Regulations to be notified by the Commission.

The energy charges for the year 2011-12 shall be effective from April 01, 2011. The fixed cost shall be effective from FY 2011-12 as per the rates and illustrations mentioned in the para 10.1 of this Order depending on the year of operation. The licensee is directed to revise the fixed charge and energy charge and pay the difference of energy charge and fixed charge (if any) in installments within a period of three months from the issue of this order. Failing to this, the late payment surcharge at the rate of 1.25% per month shall be levied by the generating company after a lapse of three months.

The Commission may review/revise/modify any of the parameters, norms and provisions specified in this Order after following the necessary regulatory process.

Member

Chairman

List of persons who attended the public hearing on May 31, 2011

S. No.	Name	Organization/ Designation
1	E. Rajeev	Sec. CBEDA
2	A. Bhatnagar	SE CSPDCL
3	P. V. Sajeev	EE CSPDCL
4	A. K. Guha	SE CSPDCL
5	K. V. Rao	Raipur
6	N. K. Chandiramani	AGM-JSPL
7	R. S. Saxena	Sr. Manager SKSIPL
8	Arun Poddar	Godawari Power
9	Ajay Dubey	Alok Ferro Alloys
10	Ritesh Jindal	Real Power (P) Ltd.

List of persons who attended the public hearing on November 14, 2011

S. No.	Name	Organization/ Designation
1	E. Rajeev	Sec. CBEDA
2	Sunil Agrawal	Neeraj Power
3	Arun Poddar	Godawari Power
4	Ramesh Agrawal	Director, Real Power
5	Ritesh Jindal	Real Power (P) Ltd.
6	G. Gopalkrishna Rao	S.E. O/o. C. E. Commercial CSPDCL, Raipur

Annexure -2

1. Fixed cost of the biomass plants achieved CoD in the year 2005-06

Particulars	Year	1	2	3	4	5	6	7	8	9	10
Net Power Generation	MU	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30
Components of Fixed Cost											
O & M expenses	Rs Cr	2.10	2.21	2.32	2.32	2.32	2.32	1.70	1.79	1.90	2.01
Depreciation	Rs Cr	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
Interest on term loan	Rs Cr	2.47	2.22	1.97	1.73	1.48	1.23	0.99	0.74	0.49	0.25
Interest on Working Capital	Rs Cr	0.32	0.33	0.34	0.35	0.36	0.37	1.07	1.11	1.15	1.20
Return on Equity	Rs Cr	1.44	1.44	1.44	1.44	1.44	1.44	1.80	1.80	1.80	1.80
Total Fixed Cost	Rs Cr	8.43	8.30	8.17	7.93	7.69	7.46	7.65	7.54	7.44	7.35
Fixed Cost	Rs/kWh	1.78	1.75	1.73	1.68	1.63	1.58	1.62	1.59	1.57	1.55

2. Fixed cost of the biomass plants achieved CoD in the year 2006-07

Particulars	Year	1	2	3	4	5	6	7	8	9	10
Net Power Generation	MU	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30
Components of Fixed Cost											
O & M expenses	Rs Cr	2.10	2.21	2.32	2.32	2.32	1.70	1.79	1.90	2.01	2.12
Depreciation	Rs Cr	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
Interest on term loan	Rs Cr	2.47	2.22	1.97	1.73	1.48	1.23	0.99	0.74	0.49	0.25
Interest on Working Capital	Rs Cr	0.32	0.33	0.34	0.35	0.36	1.07	1.11	1.15	1.20	1.25
Return on Equity	Rs Cr	1.44	1.44	1.44	1.44	1.44	1.80	1.80	1.80	1.80	1.80
Total Fixed Cost	Rs Cr	8.43	8.30	8.17	7.93	7.69	7.90	7.79	7.69	7.60	7.51
Fixed Cost	Rs/kWh	1.78	1.75	1.73	1.68	1.63	1.67	1.65	1.63	1.61	1.59

3. Fixed cost of the biomass plants achieved CoD in the year 2007-08

Particulars	Year	1	2	3	4	5	6	7	8	9	10
Net Power Generation	MU	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30
Components of Fixed Cost											
O & M expenses	Rs Cr	2.10	2.21	2.32	2.32	1.70	1.79	1.90	2.01	2.12	2.24
Depreciation	Rs Cr	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
Interest on term loan	Rs Cr	2.47	2.22	1.97	1.73	1.48	1.23	0.99	0.74	0.49	0.25
Interest on Working Capital	Rs Cr	0.32	0.33	0.34	0.35	1.07	1.11	1.15	1.20	1.25	1.30
Return on Equity	Rs Cr	1.44	1.44	1.44	1.44	1.80	1.80	1.80	1.80	1.80	1.80
Total Fixed Cost	Rs Cr	8.43	8.30	8.17	7.93	8.14	8.04	7.94	7.84	7.76	7.69
Fixed Cost	Rs/kWh	1.78	1.75	1.73	1.68	1.72	1.70	1.68	1.66	1.64	1.63

4. Fixed cost of the biomass plants achieved CoD in the year 2008-09

Particulars	Year	1	2	3	4	5	6	7	8	9	10
Net Power Generation	MU	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30
Components of Fixed Cost											
O & M expenses	Rs Cr	2.10	2.21	2.32	1.70	1.79	1.90	2.01	2.12	2.24	2.37
Depreciation	Rs Cr	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
Interest on term loan	Rs Cr	2.47	2.22	1.97	1.73	1.48	1.23	0.99	0.74	0.49	0.25
Interest on Working Capital	Rs Cr	0.32	0.33	0.34	1.07	1.11	1.15	1.20	1.25	1.30	1.35
Return on Equity	Rs Cr	1.44	1.44	1.44	1.80	1.80	1.80	1.80	1.80	1.80	1.80
Total Fixed Cost	Rs Cr	8.43	8.30	8.17	8.39	8.28	8.18	8.09	8.01	7.93	7.87
Fixed Cost	Rs/kWh	1.78	1.75	1.73	1.77	1.75	1.73	1.71	1.69	1.68	1.66