

Sub : In the matter of compliance with judgment passed by the Hon'ble Appellate Tribunal for Electricity in Appeal No. 93 of 2012

Clubbed with SMP-08/2013

ORDER

(Date of hearing: 9th April, 2013)

(Date of order : 3rd May, 2013)

The Commission had issued a tariff order for procurement of power from Biomass based power plants on 02.03.2012. M/s Harvest Energy Private Ltd. filed an appeal before the Hon'ble APTEL against the aforesaid tariff order. By order dated 18.2.2013, the Hon'ble APTEL set aside the impugned tariff order and remanded back the matter to the Commission to decide the norms on capital cost, Gross Calorific Value, Station Heat Rate and price of biomass fuel based on the directions given in its judgment. Regarding ROE, the Hon'ble APTEL directed the Commission to allow not less than that allowed under its tariff regulations applicable to conventional generating stations. The Hon'ble APTEL also directed the Commission to redetermine the tariff and pass the consequential order.

2. Pursuant to the aforesaid directions of the Hon'ble APTEL, a public notice was issued on 01.03.2013 to obtain suggestions/comments on the above norms by 23.03.2013 and a public hearing was held on 09.04.2013. The following stakeholders filed their written submissions:

- (i) M/s Pragma Energy Pvt. Ltd., Jabalpur
- (ii) M.P. Biomass Energy Development Association, Bhopal
- (iii) M/s Orient Green Power Company Limited, New Delhi
- (iv) Dy. Commissioner, New and Renewable Energy, Bhopal

3. During the public hearing on 09.04.2013, the following stakeholders participated and submitted their comments:

- (i) M.P. Biomass Energy Developers Association, Bhopal
- (ii) M/s Orient Green Power Company Limited, New Delhi
- (iii) M/s Arya Energy Ltd.
- (iv) M/s ASN Industries.
- (v) New and Renewable Energy Department

4. The following submissions were made by various stakeholders on the normative parameters to be considered as per the order of the Hon'ble APTEL:

(i) Capital Cost:

- (a) M/s Pragma Energy Pvt. Ltd. submitted that the Commission had taken the capital cost at Rs. 4.25 Crores per MW. The cost of equipment etc. has increased substantially over the past 5 years and even applying the wholesale price index since 07.08.2007, the capital cost would have increased to beyond Rs. 5.5 Crores per MW. It

Sub : In the matter of compliance with judgment passed by the Hon'ble Appellate Tribunal for Electricity in Appeal No. 93 of 2012

also submitted that the actual capital cost of the power plant commissioned by them comes out to Rs. 5.5 Crores per MW and therefore the norm for capital cost needs to be revised.

(b) M.P. Biomass Energy Development Association, Bhopal filed copies of certificates issued by chartered accountants in respect of capital cost of some plants. According to these, the capital cost ranges from Rs. 5.54 Crores per MW to Rs. 7.30 Crores per MW for water cooled condenser based generating stations. The average capital cost worked out to Rs. 6.39 Crores per MW including cost of evacuation. The Association submitted that the capital cost for air cooled condenser based generating stations may be enhanced by Rs. 0.5 Crores per MW. Also, an appropriate linkage of the base year capital cost to an escalation factor based on the indexation formula as approved by the CERC may be allowed.

(c) M/s Orient Green Power Company Limited, New Delhi filed a copy of report on inputs to the Committee to undertake study on the performance/viability of biomass based plants operating in the country including the prevailing biomass prices along with its comments. In its written submissions, it mentioned that newer plants are facing continuous escalation on project cost and suggested that the capital cost be fixed at Rs. 6-6.5 Cr./MW even for the financial year 2012-13 with appropriate indexation for plants being commissioned in the financial year 2013-14.

(ii) Gross Calorific Value (GCV):

(a) M/s Pragya Energy Pvt. Ltd. submitted that in the biomass gasification technology of the petitioner's power plant fossil fuel like coal cannot be used. So, while calculating the GCV the calorific value of 15% of fossil fuel should not be considered. The GCV may be taken @ Rs. 2500 kCal./Kg.

(b) M.P. Biomass Energy Development Association proposed average GCV of fuel at 2655 kCal/kg considering 2500 kCal/kg as the average GCV for 85% biomass used and average GCV of coal of 3600 kCal/kg for the 15% coal usage allowed.

(c) M/s Orient Green Power Company Limited, New Delhi submitted that in view of the various factors affecting the GCV of fuel like moisture, sand and ash content of the biomass used, the GCV may be taken at 2800 kCal./kg.

(iii) Station Heat Rate (SHR):

(a) M.P. Biomass Energy Development Association submitted that based on CERC norms and the report of Expert Committee of CEA of September, 2005, Station Heat Rate of 4200 kCal/kWh may be allowed for biomass power projects.

(b) M/s Orient Green Power Company Limited, New Delhi also proposed Station Heat Rate as 4200 kCal/kWh considering the specific fuel consumption with calorific

Sub : In the matter of compliance with judgment passed by the Hon'ble Appellate Tribunal for Electricity in Appeal No. 93 of 2012

value of 2800 kCal/kg. on account of multiple fuels with different GCVs.

(iv) Price of Fuel:

(a) M/s Pragma Energy Pvt. Ltd. submitted that considering the unregulated and unorganized biomass fuel market and the cost involved in processing, handling, transportation, wastage & storage of biomass, average cost of the biomass fuel works out to Rs. 4500 per MT.

(b) M.P. Biomass Energy Development Association submitted that a minimum price of Rs. 3200 per tonne should be taken. This price would be escalated every year by a fuel price indexation or escalation factor as specified by CERC.

(c) M/s Oriental Green Power Company Limited, New Delhi proposed the fuel rate at Rs. 3200 per MT.

(d) The Department of New and Renewable Energy, M.P. submitted that they have carried out an exercise to work out the weighted average cost of biomass produce in respective districts. The average works out to Rs. 3009.40 per MT.

(v) Return on Equity (ROE):

(a) M/s Pragma Energy Pvt. Ltd. submitted that the Return on Equity for the biomass projects should be allowed at 20 % pre-tax.

(b) M.P. Biomass Energy Development Association submitted that the ROE should not be less than that allowed to conventional energy sources projects. In its written submission, it proposed ROE as approved by the CERC.

(c) M/s Oriental Green Power Company Limited, New Delhi proposed ROE at 20 % in view of the fact that promotional tariff needs to be fixed for RE generators.

5. During the public hearing on 09.04.2013, the stakeholders also submitted comments/suggestions on other issues like Plant Load Factor, Scheduling, Start-up power, Auxiliary Consumption etc.

6. After considering the comments/suggestions of various stakeholders and their written submissions, the Commission's views on various issues are as follows:

(i) Capital Cost:

In its written submissions, M.P. Biomass Energy Development Association

Sub : In the matter of compliance with judgment passed by the Hon'ble Appellate Tribunal for Electricity in Appeal No. 93 of 2012

submitted copies of certificates issued by chartered accountants for capital costs of some of the biomass power projects which range from Rs. 5.54 Cr/MW to Rs. 7.30 Cr/MW. With such a variation, it would be difficult to determine the generic capital cost applicable to all such type of projects. In its Regulation 34, the CERC has specified the normative capital cost for the biomass power projects based on Rankine cycle technology application using water cooled condenser as Rs. 445 Lakh/MW for FY 2012-13, which shall be linked to the indexation mechanism specified under Regulation 35 of the RE Tariff Regulations. In accordance with the above referred Regulations, the normative capital cost of biomass power projects based on Rankine cycle technology application using water cooled condenser shall be Rs. 463.336 Lakh/MW for FY 2013-14. In the absence of appropriate data of capital cost applicable for all projects, the Commission relies upon the CERC norms specified towards capital cost for the financial years 2012-13 and 2013-14 using indexation as above. Accordingly, the capital cost @ Rs. 445 Lakhs/MW and @ Rs. 463.336 Lakhs/MW shall be applicable to projects commissioned during FY 2012-13 and FY 2013-14 respectively.

(ii) Gross Calorific Value (GCV):

In the written submissions, various stakeholders suggested the Gross Calorific Value in the range of 2500 kCal/kg to 2800 kCal/kg. The Gross Caloric Value for determination of tariff depends upon the mix of biomass fuel available in any particular state. In absence of data for the quantum of crops in Madhya Pradesh and due to variation in the quantum of different fuels available in various parts of the state, it would be difficult to consider average GCV for the fuel mix throughout the state for determination of tariff applicable for all projects. The Commission is of the view that there is no established ground to determine the weighted average Gross Calorific Value of the fuel for the Madhya Pradesh. The Commission, therefore, consider it appropriate to take Gross Calorific Value at 3600 kCal/kg. for the purpose of determination of tariff.

(iii) Station Heat Rate (SHR):

The Station Heat Rate depends on several factors such as plant capacity, plant design and configuration, technology (type of boiler and pressure level etc.), plant operation and maintenance practices, quality of fuel and operational performance over varying load conditions. In its written submissions, M.P. Biomass Energy Development Association proposed the Station Heat Rate @ 4200 kCal/ kwh based on the report of CEA of September, 2005. Other stakeholders have also proposed the same Station Heat Rate. The Commission observes that the study was undertaken in the year 2005 and the latest CERC Regulations came in the year 2012 wherein Station

Sub : In the matter of compliance with judgment passed by the Hon'ble Appellate Tribunal for Electricity in Appeal No. 93 of 2012

Heat Rate @ 4000 kCal/kwh was considered. It may, therefore, be presumed that due to technological developments the SHR may be brought down from 4000 kCal./kwh. The Commission is also of the view that any biomass power plant may not run on single fuel and a mix of fuels shall be used. The biomass power projects were already allowed to use fossil fuel @15%. Thus, the Commission does not find reason to enhance the existing Station Heat Rate of 3800 kCal./kwh. for the purpose of tariff determination.

(iv) Price of Fuel:

In the written submissions, various stakeholders have proposed the price of fuel to be between Rs. 3009.40 per MT to Rs. 4500 per MT. The Commission observes that various constraints are being faced by the biomass power project developers in procuring biomass. The procurement of biomass fuel is in a highly unorganized sector and the prices are influenced by various local factors and therefore vary in wide range. There is no established mechanism to estimate the reasonable price of biomass. The Commission is of the view that the proposals of the stakeholders for higher price of fuel are not supported by valid reasons and cannot be accepted. In its Regulations of 2012, the CERC had considered the price of fuel for FY 2012-13 at Rs. 2476 per MT with the provision of escalation @ 5% per annum for other states including Madhya Pradesh. For FY 2013-14 an indexation mechanism is incorporated in the aforesaid Regulations. Keeping in view the aforesaid CERC Regulations, 2012, the Commission considers it appropriate to take into account the price of fuel as under:

- (a) Rs. 2476 per MT for the projects commissioned during FY 2012-13 with 5% escalation per annum.
- (b) Rs. 2653 per MT for the projects commissioned during FY 2013-14 with 5% escalation per annum.

(v) Return on Equity (ROE):

In the written submissions, various stakeholders suggested Return on Equity from 20% pre-tax to 20-24% pre-tax as per CERC Regulations, 2012. By order dated 18.02.2013, the Hon'ble Appellate Tribunal directed the Commission to redetermine the ROE at not less than that allowed to conventional power plants. The Generating company is being allowed ROE @ 15.5% which is grossed up with the tax rate. Considering that the generating company is paying minimum alternate tax @ 20.01 %, the Return on Equity would be less than 20%. The Commission, therefore, decides that the Return on Equity may be considered @ 20% pre-tax for tariff determination.

7. Regarding other issues, the Commission decides that these may be taken up while determining tariff for the next control period since the Hon'ble Appellate Tribunal for Electricity had set aside the tariff order dated 02.03.2012 on limited issues and directed the Commission to redetermine the tariff as per the directions given in the judgment dated 18.02.2013.

Sub : In the matter of compliance with judgment passed by the Hon'ble Appellate Tribunal for Electricity in Appeal No. 93 of 2012

8. Based on the foregoing assessment, the Commission has decided to adopt the revised parameters for tariff determination in FY 2012-13 and FY 2013-14 as hereinafter stated. The terms and conditions stated in the Commission's Tariff Order dated 02.03.2012 shall continue to apply to the projects commissioned in these two financial years with the following amendments:-

(i) In para 5.1 of the tariff order dated 02.03.2012 the following shall be deleted:

“5.1 The tariff decided in this order are two part tariff viz. Fixed tariff and Variable tariff. The Fixed tariff shall apply to all projects which are commissioned during the above mentioned control period and shall remain valid for the project life of 20 years. The variable tariff is determined for the period from the date of issue of this tariff order to 31st March, 2013. The Commission shall declare the Variable tariff for each year beyond 31st March, 2013 in the month of March of its preceding financial year after considering the fuel cost afresh.”

(ii) In para 6.26 of the tariff order dated 02.03.2012 the following shall be deleted:

“6.26 The Commission has also decided that the fuel cost for the subsequent period on year to year basis shall be determined in each year in the month of March preceding that financial year.”

S.No.	Parameters	Revised norms	
		FY 2012-13	FY 2013-14
1.	Capital Cost including cost of power evacuation (Rs. Lakhs/MW)	445	463.336
2.	Gross Calorific Value (kCal/kg)	3600	
3.	Station Heat Rate (kCal/kWh)	3800	
4.	Price of fuel (Rs./MT)with escalation @5% p.a.	2476	2653
5.	Return on Equity	20 % pre-tax	

9. Considering the above revised parameters, the Commission sets the year wise tariff for generation of electricity from new biomass energy projects as under:

(a) Commissioned on or after 02.03.2012 and during FY 2012-13

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
5.32	5.02	5.14	5.27	5.41	5.56	5.71	5.89	6.07	6.26
Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
6.14	6.42	6.72	7.03	7.36	7.70	8.06	8.44	8.84	9.26

(b) Commissioned during FY 2013-14

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
5.64	5.32	5.45	5.59	5.74	5.90	6.08	6.26	6.46	6.67
Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
6.55	6.85	7.16	7.50	7.84	8.21	8.60	9.00	9.43	9.88

Ordered accordingly.

(Alok Gupta)
Member

(A.B.Bajpai)
Member

(Rakesh Sahni)
Chairman