

**Before the Appellate Tribunal for Electricity  
(Appellate Jurisdiction)**

**Appeal no. 144 of 2013**

**Dated: 29<sup>th</sup> May, 2014**

**Present: Hon'ble Mr. Rakesh Nath, Technical Member  
Hon'ble Mr. Justice Surendra Kumar, Judicial Member**

**In the matter of:**

**1. M.P. Biomass Energy Developers ...Appellant (s)**

**Association**

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**Versus**

- 1. Madhya Pradesh Electricity Regulatory Commission ...Respondent(s)  
5<sup>th</sup> Floor, Metro Plaza  
E-5, Bittan Market, Bhopal – 462 023**
- 2. Madhya Pradesh Power Management Co. Ltd  
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Madhya Pradesh**

**Counsel for Appellant(s) : Ms. Swapna Seshadri  
Mr. Anand K. Ganesan**

**Counsel for the Respondent(s): Mr. C.K. Rai  
Mr. Manoj Dubey  
Mr. Mahipal**

## **JUDGMENT**

### **RAKESH NATH, TEHNICAL MEMBER**

The present Appeal has been filed by M P Biomass Energy Developers Association & Others against the order dated 3.5.2013 passed by Madhya Pradesh Electricity Regulatory Commission (“State Commission”) in *suo motu* Petition no. 8 of 2013 in the matter of compliance of the judgment passed by this Tribunal in Appeal no. 93 of 2012 dealing with the tariff of the biomass based projects for the control period from FY 2012-13 to FY 2013-14.

2. The Appellants are association of Biomass Energy Developers and some Biomass Energy Developers. The State Commission is the Respondent no.1. M P Power Management Company, the procurer of power on behalf of the distribution licensees, is the Respondent no.2.

3. The brief facts of the case are as under:-

i) The State Commission passed a tariff order dated 2.3.2012 determining the tariff for procurement of power by the distribution licensees from the biomass based projects for the control period 2012-14.

ii) The tariff order dated 2.3.2012 was challenged before this Tribunal in Appeal no. 93 of 2012 by biomass project developers. By judgment dated 18.2.2013, the Tribunal allowed the Appeal and

remanded the matter back to the State Commission for redetermination of tariff as per the directions given in the judgment.

iii) Pursuant to above, the State Commission issued public notice and also issued Explanatory Memorandum on the aspect of proposed variable/fuel cost. After public hearing, the State Commission passed the impugned order dated 3.5.2013 redetermining the tariff of biomass based projects for the control period 2012-14. Aggrieved by the impugned order, the Appellants have filed this Appeal.

4. The Appellants have raised the following issues:-

i) The State Commission has not complied with the directions issued by the Tribunal in judgment dated 18.2.2013 setting aside the biomass tariff order dated

2.3.2012. The State Commission has maintained the very same norms and parameters in the impugned order which had been set aside by this Tribunal.

ii) The State Commission has fixed the capital cost as per the Central Commission's Regulations, 2012 without considering the actual capital cost of the projects placed by the Appellants before the State Commission.

iii) The State Commission has maintained the Gross Calorific Value at 3600 kCal/kg which is almost the same as 3612 kCal/kg fixed by the State Commission in the tariff order dated 2.3.2012. The State Commission should have adjusted the GCV taking into account the moisture content which is unavoidable. The actual GCV normally varies between 2600 to 2900 kCal/kg.

iv) The State Commission has maintained the Station Heat Rate at 3800 kCal/kwh which had specifically been set aside by the Tribunal in judgment dated 18.2.2013. The actual variation in Heat Rate is between 4000 to 5000 kCal/kwh.

v) The State Commission has erred in fixing the biomass price at Rs. 2476 pwer MT for 2012-13 and Rs. 2653 per MT for 2013-14 in view of the contrary evidence of actual prices/quotations prevailing in the market which were placed by the Appellants before the State Commission. The actual price of biomass is in the range of Rs. 2900 to Rs. 3200 per MT. The State Commission instead of allowing escalation of 5% over the fuel cost for 2012-13 to devise the cost of fuel for FY 2013-14 should have determined the price of biomass fuel on year to year basis.

- vi) The Appellants have also referred to draft amendment to the Central Commission's Renewable Energy Regulations 2012 dated 6.12.2013 in which the Central Commission has proposed to relax the norms for capital cost and operational parameters for biomass based projects.
5. In reply to the contentions of the Appellants, the Respondent no.2 has filed reply and the State Commission has filed written submissions in support of the impugned order.
6. On the above issue we have heard Ms. Swapna Seshadri, Learned Counsel for the Appellants, Shri C K Rai, Learned Counsel for the State Commission and Shri Manoj Dube, Learned Counsel for the Respondent no.2.

7. In view of the contentions of the parties, the following questions would arise for our consideration.
- i) Whether the State Commission has erred in redetermining the capital cost of biomass projects on the basis of Central Commission's Regulations?
  - ii) Whether the State Commission has erred in redetermining the Gross Calorific Value of biomass fuel?
  - iii) Whether the State Commission has erred in maintaining the Station Heat Rate at 3800 kCal/kWh which had specifically been set aside by the Tribunal in the judgment dated 18.2.2013?
  - iv) Whether the State Commission has erred in redetermining the biomass fuel price?

8. Before taking up the above issues, let us examine the issues remanded by this Tribunal in Appeal no. 93 of 2012 and whether the State Commission has complied with the directions of the Tribunal.
  
9. According to the Appellants, the State Commission has maintained the very same norms and parameters in the impugned order which were set aside by the Tribunal in the Appeal against the original tariff order. The State Commission in the remand could not have given additional reasons to maintain the very same norms.
  
10. According to Learned Counsel for the State Commission, in the impugned order the State Commission has reconsidered the various norms and redetermined the tariff. Norms for capital cost, Gross Calorific Value and Price of Fuel have been revised along with Return on Equity. Accordingly, a higher tariff

has been determined for biomass projects in the impugned order.

11. The Respondent no.2 in its reply has stated that the Tribunal had partly set aside the State Commission's tariff order dated 2.3.2012 relating to some parameters for want of reasoned order in deciding the normative values and it was clarified by the Tribunal that it had not given any finding on the values to be adopted for the said parameters.

12. Let us now examine the findings of the Tribunal in judgment dated 18.2.2013 in Appeal no. 93 of 2012.

The summary of findings is as under.

***“i) On Capital Cost, Gross Calorific Value, Station Heat Rate and price of biomass fuel, we find that the State Commission has not passed a reasoned order in deciding the normative values. We, therefore, remand the matter to State Commission to decide these norms***

***based on the directions given in this judgment. We want to make it clear that we are not giving any finding on values to be adopted for the above normative parameters.***

- ii) Regarding Return on Equity, we find that the State Commission has allowed a higher ROE to the conventional power plants in its Tariff Regulations. Allowing a lower ROE to biomass based projects which are renewable source of energy is not in consonance with the provisions under Section 61(h) and 86 (1) (e) of the Act. We, therefore, direct the State Commission to allow ROE not less than that allowed under its Tariff Regulations as applicable to conventional generating stations.***

13. Thus, the Tribunal had observed that the State Commission had not passed a reasoned order on capital cost and certain operational norms and the Return on Equity allowed was lower than that allowed for conventional power plants. Therefore, the matter was remanded back to the State Commission to decide the norms after considering various data and information and Central Commission's Regulations. The Tribunal

made it clear that it was not giving any finding on values to be adopted for the normative parameters.

14. We find that the State Commission in the impugned order has reconsidered the norms and allowed ROE as per the directions of the Tribunal and accordingly re-determined the tariff. However, the Appellants have challenged the impugned order on merits which we shall consider in the following paragraphs.

15. The first issue is regarding capital cost.

16. According to the Appellants the State Commission has not considered the capital cost data for their projects furnished by them. Appellants have also referred to the Draft Amendment Regulations of the Central Commission in which capital cost of 540 lacs/MW to

630 lacs/MW for different types of biomass projects has been proposed.

17. According to Shri Rai, Learned Counsel for the State Commission, the State Commission has considered all the data submitted by various stakeholders and also the Central Commission's Regulations as per the direction of the Tribunal and then relied on the Central Commission's Regulations, 2012 to determine the generic capital cost. The capital cost furnished by the developers reflected huge variations and did not serve as a reliable basis for determination of the capital cost.
  
18. Let us examine the directions given by this Tribunal in the judgment dated 18.2.2013. The State Commission was directed to consider the audited data of component-wise project cost furnished by the project developer, Central Commission 's Regulations, the data

relied upon by the Central Commission, data submitted by the stakeholders and any other data that the Commission may call for and then decide the capital cost by giving valid reasons. The State Commission was also directed to determine the capital cost for the second year of the control period i.e. FY 2013-14 with cost indexation.

19. Let us now examine the impugned order. The State Commission has noted that the capital cost of some of the biomass projects furnished by the project developers varied from 5.54 crores/MW to Rs. 7.3 crores/MW. The Central Commission's Regulation of 2012 specify the capital cost of biomass projects with rankine cycle using water cooled condensers as Rs. 445 lacs/MW for FY 2012-13 with indexation mechanism for the capital cost for the subsequent years of the control period. The capital cost for FY

2013-14 after indexation as specified by the Central Commission, shall be Rs. 463.336 lacs/MW. In the absence of appropriate data for capital cost applicable for all projects, the Commission has relied on the Central Commission's Regulations to fix the capital cost.

20. Thus, the State Commission has determined the capital cost following the Central Commission's Regulations, 2012. We find that the Central Commission has determined the capital cost after detailed analysis and after considering the suggestions and objections of the stakeholders. We do not find any infirmity in the State Commission's order relying on the Central Commission's Regulations. The State Commission has also allowed indexation for determination of the capital cost for the second year of control period i.e. FY 2013-14 as directed by this Tribunal.

21. We are not inclined to accept the contention of the Appellants relying on the Draft Amendment Regulations, 2013 proposed by the Central Commission proposing amendment in capital cost and other operational norms based on the recommendations of the Committee constituted by the Central Commission. Firstly, because the submissions of the Report of July 2013 by the Committee of constituted by the Central Commission and the Draft Amendment Regulations, 2013 inviting suggestions and objections from the stakeholders is a subsequent event after the passing of the impugned order. Secondly, the Amendment is still at proposal stage on which suggestions and objections have been sought by the Central Commission.

22. Accordingly, the first issue is decided against the Appellants.
23. The second issue is regarding determination of Goss Calorific Value ('GCV').
24. According to the Appellant, the GCV has been maintained at 3600 Kcal/kg which is almost the same as 3616 Kcal/kg fixed in the original tariff order dated 2.3.2012. Here also the Appellants have relied on the draft amendment Regulations of the Central Commission.
25. According to the Learned Counsel for the State Commission, none of the stakeholders had provided district-wise data of availability of biomass with their GCV so that some reasonable assessment of average GCV may be worked out for the purpose of determination of generic tariff. However, the State Commission has duly considered all the details

submitted by the stakeholders and the Central Commission's norms and decided that in the absence of sufficient data, the GCV may continue to be considered at 3600 Kcal/Kg.

26. The findings of the Tribunal in the judgment dated 18.2.2013 are as under:

*“We notice that the State Commission has not given a reasoned order for allowing a higher GCV than what was allowed for the period immediately preceding the control period 2012-14. We, therefore, remand the matter to the State Commission to redetermine the GCV taking into account the Central Commission's Tariff Regulations, 2012 which are applicable for the period under consideration in this Appeal and the background material relied upon by the Central Commission in arriving at the GCV and any other material that the State Commission may like to consider and give a reasoned order uninfluenced by its finding in the impugned order.”*

27. The findings of the State Commission in the impugned order are as under:-

*“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.”*

28. We find that the State Commission has again not given a reasoned order to determine the GCV of biomass fuel. The State Commission has also not considered the Central Commission’s Regulations as directed by this Tribunal and has decided to retain GCV at 3600 Kcal/kg.

29. We find that the Central Commission in its tariff Regulations of 2012 has adopted GCV at 3300 kCal/kg based on the suggestions recovered from Ministry of New and Renewable Energy, study carried out by National Productivity Council and CEA study. The Central Commission has considered GCV of biomass at 3250 kCal/kg and after taking into account, use of 15% of coal (average coal GCV at 3600 kCal/kg), the weighted average GCV has been considered at 3300 kCal/kg.
30. We agree that the normative value of GCV has to be decided based on the types of biomass fuels used in the State. However, the State Commission has indicated that there is no established ground to determine the weighted average GCV. We find that neither the Appellants have furnished proper data giving the proportion of different biomass fuels used by

them nor the State Commission took assistance of the concerned State agencies to obtain the data on availability of different types of biomass fuels in the State. The State commission could take assistance from State Renewable Energy Agency, Agriculture Department to ascertain the availability of types of biomass fuels prominently in the State and assess the proportion of different biomass fuels. Data of GCV of different biomass fuels being available, it may be possible to determine the weighted average GCV of biomass fuel. Considering 15% use of coal and GCV of coal available in the State, the normative GCV may be determined. The Appellants are also directed to furnish data regarding actual use of different types of biomass fuel with the supporting documents to the State Commission for consideration.

31. Accordingly, we direct the State Commission to redetermine the GCV of fuel.
  
32. The third issue is regarding State Heat Rate (SHR).
  
33. According to Learned Counsel for the State Commission, as per the directions of this Tribunal the State Commission has considered the data submitted by the stakeholders and the Central Commission's Regulations. The Central Commission's Regulations provide for SHR of 4000 kCal/kWh. However, the State Commission felt that due to development in technologies, the SHR may be brought down to 3800 kCal/kWh.
  
34. In the judgment dated 18.2.2013, the Tribunal has discussed the Central Commission's Regulations of 2012 and the background material used by the Central

Commission for fixing the SHR norm at 4000 kCal/kWh. The Tribunal after observing that the State Commission has not given proper reasons for fixing SHR norms remanded the matter with directions to determine SHR taking into account the Central Commission's Regulations of 2012 and the background material relied upon by the Central Commission and any other material that the Commission may like to consider.

35. Let us examine the findings regarding SHR in the impugned order.

*“(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/ kg 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 Heat Rate @ 4000 kCal/kg was considered. It may, therefore, be presumed that due to technological developments the SHR may be brought down from 4000 kCal./kg. 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./kg. for the purpose of tariff determination.”*

We find that the State Commission has retained the SHR at the same level as decided in the original tariff order i.e. 3800 kCal/kWh (unit of SHR wrongly indicated in the impugned order as kCal/kg instead of kCal/kWh). The State Commission has decided to allow 5% reduction in heat rate on the Central Commission's norm of 4000 kCal/kWh as it presumed that due to technological developments the SHR may be brought down.

36. We find that the Central Commission in the Statement of Objects and Reasons of the 2012 Regulations has given detailed reason for adopting SHR at 4000 kCal/kWh as under:

*“The Commission is of the view that with biomass power generation projects based on Rankine cycle technology, essentially two types of boilers are being used, viz. travelling grate combustors (stokers) or atmospheric fluidised bed boilers. However, while fluidised boilers offer higher efficiency as compared to travelling grate, there are limitations in use of fluidised bed boilers due to fuel quality and fuel size requirements.*

*On the other hand, travelling grate type boilers offer flexibility as it can handle variety of type/quality of fuel without significant modifications. Further, it has been observed that biomass project developers, as industry practice have deployed predominantly travelling grate type boilers for biomass based power generation. Considering the same the Commission has decided to retain the norm of Station Head Rate at 4000 kCal/kWh and the same has been reflected in the final regulations.”*

37. We find that the State Commission without any detailed analysis of the use of new technology in the biomass based generation has decided 5% reduction in heat

rate over the norm specified by the Central Commission in its 2012 Regulations. The Regulations of the State Commission are also beginning from FY 2012-13 and cover the period of 2012-14. We find that the State Commission has reduced the SHR by 5% arbitrarily without any analysis. We therefore have to again remand the matter to the State Commission. We also direct the Appellants to furnish information regarding design heat rate, as certified by the manufacturer, factors affecting the SHR due to practical consideration and any other data that is relevant to decide the SHR to the State Commission and the State Commission shall consider the same. The State Commission shall consider the design heat rate for the technology used, variation to be allowed due to practical considerations, data submitted by the Appellants and any other relevant data. State Commission is an expert body and we expect it determine the norms based on some scientific

basis. Data can also be obtained from renewed manufacturers of equipment for biomass based generating plant. Accordingly, we again remand the matter to the State Commission with directions to re-determine SHR based on scientific analysis.

38. The fourth issue is regarding biomass price.
  
39. This Tribunal in Appeal no. 93 of 2012 had held that the State Commission had not given valid reasons for determining the fuel price and remanded the matter directing the State Commission to determine the biomass fuel price keeping in view the 2012 Regulations of the Central Commission, the background material considered by the Central Commission and other information that the Commission may call for.

40. According to the Appellants, the State Commission has not considered the evidence of actual prices/quotations prevailing in the market which were placed by the Appellants.
41. According to Shri Rai, Learned Counsel for the State Commission, the proposal of stakeholders for higher fuel price ranging from Rs. 3009 per MT to Rs. 4500 per MT was not supported by valid reasons.
42. Let us examine the impugned order. The relevant extracts are reproduced below:

*“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 there 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.”*

43. Thus, the State Commission not finding valid reasons in support of the fuel price data submitted by the stakeholders has decided to adopt the price of fuel as specified by the Central Commission. We find that the State Commission after considering the submission of the stakeholders decided to adopt the price as per

Central Commission's Regulations, 2012. We do not find any infirmity in the same as the Central Commission has determined the price of biomass fuel after detailed analysis. Accordingly, this issue is decided against the Appellants.

**44. Summary of our findings:**

- i) We do not find any infirmity in the findings of the State Commission regarding capital cost, and fuel price.**
  
- ii) We find that the State Commission has again not given a reasoned findings for Gross Calorific Value of fuel and Station Heat Rate. We again remand the matter to the State Commission to re-determine these norms.**

iii) In the interim period till redetermination of GCV and SHR, the distribution licensee will pay the generators at the tariff decided by the State Commission in the impugned order subject to adjustment on the final determination by the State Commission.

45. The Appeal is allowed in part to the extent as indicated above. The State Commission is directed to pass consequential order as per the directions given in this judgment as expeditiously as possible.

46. Pronounced in the open court on this 29<sup>th</sup> day of May, 2014.

(Justice Surendra Kumar)  
Judicial Member

(Rakesh Nath)  
Technical Member

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