

HARYANA ELECTRICITY REGULATORY COMMISSION

BAYS NO. 33-36, SECTOR 4, PANCHKULA

ORDER DATED: 3.10.2007

SH. BHASKAR CHATTERJEE	CHAIRMAN
ER. T.R. DHAKA	MEMBER
SH. T.S. TEWATIA	MEMBER

In the matter of review petitions filed by Chemicals International Ltd, Tecpro Systems Ltd., Gammon Bermaco Consortium, Starwire (India) Ltd., Haryana Vidyut Prasaran Nigam Ltd (HVPNL), Uttar Haryan Bijli Vitran Nigam Ltd. (UHBVNL) and Dakshin Haryana Bijli Vitran Nigam Ltd. (DHBVNL) against the Commission's order on Renewable Energy tariff & Other Issues for FY 2007-08 to FY 2012 -13 (Case No. HERC/PRO-10 of 2006) dated 15<sup>th</sup> May 2007.

**ORDER**

This order relates to the combined review petitions filed by the above mentioned petitioners including HVPNL, UHBVNL, DHBVNL and certain clarifications sought by the Wind Energy Association.

**Background**

As a follow – up to the Haryana Government policy for promoting generation of electricity through renewable energy sources vide Notification No. 22/69/2005-5P dated 23.11.2005, the Nodal agency Haryana Renewable Energy Development

Agency (HAREDA), sent a request to the Commission on 2/05/2006 to determine the percentage of energy to be procured from the renewable energy sources and also for determining wheeling charges and tariff for biomass, small hydro, cogeneration and wind energy based power projects. The Commission, in compliance with the statutory provision in the Electricity Act 2003 and the policy guidelines given in the Tariff Policy of the Government of India, tentatively indicated the parameters to be considered for determining the percentage of electricity from non – conventional sources, wheeling charges and tariff vide order dated 31/01/2007 and invited suggestions / objections from all stakeholders. The Commission subsequently held a public hearing on 24/04/2007 at Panchkula to provide an opportunity to make further submissions as construed appropriate by them.

After careful examination of the objections / suggestions filed by the stakeholders and their oral submissions during the hearing as well as additional data / information filed by them, the Commission passed the order dated 15<sup>th</sup> May 2007 on Renewable Energy Tariff & Other Issues for FY 2007-08 to FY 2011-12.

#### **Review Petitions Filed by Biomass Based project Developers:**

Aggrieved by the above order of the Commission Chemicals International Ltd, Tecpro Systems Ltd., Gammon Bermaco Consortium and Starwire (India) Ltd filed a combined petition seeking review of the order dated 15<sup>th</sup> May 2007 with reference to Biomass based projects. The Commission decided to give benefit of hearing to all the petitioners who had submitted their objections/suggestions and attended the public hearing held on 24/04/2007. The hearing on the review petitions were held on

29/08/2007. The issues raised by the petitioners and the Commission's decision on the same are presented below.

1. Advocate Shri. Sanjeev Pabbi of the Punjab & Haryana High Court appearing on behalf of the petitioners 1) Chemicals International Ltd, 2) Tecpro Systems Ltd., 3) Gammon Bermaco Consortium and 4) Starwire (India) Ltd. confined his arguments (with respect to Biomass projects) to the issues mentioned below:-
  - a) Cost of Fuel
  - b) Depreciation Rate
  - c) O&M Cost
  - d) Annual Escalation.
  - e) Return on Equity
  - f) Interest Cost on Term Loan & Working Capital.
  - g) Carbon Credit.

On the issue of fuel cost (biomass), Shri.Pabbi submitted that the Commission without giving any reasons in its order under review has considered cost of Rs. 1.60/Kg as against Rs.1.80/Kg claimed by the petitioners. He reiterated that cost of fuel in Haryana is not comparable to the cost of rice husk in other States. Consequently, for determining tariff for biomass projects the same should be considered at Rs. 1.80/Kg.

The Commission, solicited HAREDA's view on the issue of cost of biomass in Haryana . They admitted that the tariff approved by the Commission (which includes fuel cost) @ of Rs. 4.0 / unit is adequate and no other state has offered a better rate than Haryana. The Commission is of the view that biomass - an agriculture waste is in the domain of un-organized sector. As of now there is no authentic data to take a view on pricing of biomass mix. Thus, the cost of biomass ( rice husk, cotton stalk, rice straw) considered by the Commission is based on the weighted average of the costs provided by HAREDA vide their

memo no. DRE/HAREDA/2007/881 dated 9/05/2007 at the time of passing the order under review. The Commission acknowledges the fact that as and when the biomass based projects are commissioned in Haryana, which could take up to three years from now, there could be upward pressure on the prices. Consequently, in case the fuel cost at that time varies considerably, the issue shall be re-visited based on facts and figures on mix and prices of biomass available from different sources. The Commission directs HAREDA, the nodal agency, to monitor and collect such data for consideration of the Commission. As of now, the Commission is of the considered view that reviewing fuel cost at this stage is pre – mature.

On the issue of depreciation rate and O&M cost Shri Pabbi sought relief based on the judgments of the Hon'ble Appellate Tribunal in appeal no. 20 of 2006, 129 of 2005 and 41 of 2006 against the order passed by Chhattisgarh State Electricity Regulatory Commission and Karnataka Electricity Regulatory Commission. He sought a depreciation rate of 7.84% and O&M to be worked out on the basis of 7% of the capital cost. The Commission has adopted standard method for computing the rate of depreciation. To promote non conventional power projects, it has considered accelerated depreciation corresponding to an average loan repayment period of 12 years; consequently, depreciating the project to the extent of 90% over 12 years, the SLM depreciation (Straight Line Method) rate works out to 7.5%. As far as O&M is concerned, in the absence of actual data on O&M cost and practices for such projects, the Commission considered O&M @ 6% of the Capital Cost, which is in line with the norms adopted elsewhere in the country.

Shri Pabbi further submitted that his clients be allowed at least 10% annual escalation in biomass tariff based on the prevailing rate of inflation as against 2% allowed by the Commission. The Commission is of the view that all tariff components do not get impacted by inflation. The average rate of Inflation in India for the last few years is hovering around 4% levels. Consequently, the Commission finds no justification for seeking 10% escalation per annum in tariff.

It was further submitted that the petitioners are entitled to a return of 18.04% on equity and the Commission has not taken into account the Minimum Alternate Tax (MAT) in this regard. A return of 18.04% pre-tax would work out to 16% post – tax return. The Commission is of the view that in order to promote such projects it has allowed a better Return on Equity @ 16% than allowed to conventional fuel based projects. The allowed percentage is applied to the amount of owner’s capital (equity) to the extent of 30% of the project cost which goes into computation of tariff. This is in line with the national norms.

On the issue of interest rate Shri Pabbi argued that the interest rates both on term loan as well as working capital loans are hardening by the day. Consequently, his clients should be allowed interest rates at 12% & 13% respectively as claimed by them. The rate of interest considered by the Commission was based on the latest rates available from lending institutions for such projects i.e. 11.5% & 12% respectively. The Commission is of the view that in the medium to long term with more and more integration of global financial markets and low domestic inflation rates there would be downward pressure on the rate of interest. Consequently, the review sought on this issue is not justifiable.

On the issue of carbon credit, it was argued that the order of the Hon'ble Commission is not consistent with the concept of carbon credits available to the developers who set up environment friendly projects and hence carbon credit earned by the petitioners should be only to their (petitioner’s) account. He further referred to the clause 18 of agreement with HAREDA dated 8/12/2006. The Commission is of the view that as there is lot many uncertainties involved in (earning) carbon credit in which international agencies are involved, the issue is ‘open’ as the Commission in its order has not said that carbon credit earned shall necessarily be appropriated equally amongst all stakeholders. The Commission shall take into account the provision of tariff policy of the Government of India that provides “tariff fixation for all electricity projects (generation, transmission & distribution) that result in lower Green House Gas (GHG) emission than the

relevant base line should take into account the benefits obtained from Clean Development Mechanism (CDM) into consideration, in a manner so as to provide adequate incentive to the project developer”. The Commission also makes it very clear that agreements/letters of HAREDA cannot supersede the Commission’s order.

2. Shri H.C. Gaba appearing on behalf of Turboatom – TPS Projects Limited submitted that the tariff for biomass based power projects approved by the hon’ble Commission @ Rs. 4.00/kWh with annual escalation of 2% is inadequate. At this rate the developer will incur losses to the tune of Rs. 10.94324 million in the first year of Operation at PLF of 70% and a loss of Rs.98,669 in the second year. The developer will not be able to recoup these losses even in the subsequent six years of operations. Consequently, they be allowed a tariff of Rs. 4.50 / unit with an escalation of 5%.

On the issue of carbon credit, he submitted that biomass based power plant involves a number of risk factors such as seasonal availability of biomass, wide price fluctuation, highly combustible nature of biomass etc. Consequently, CDM benefits should be availed in full by the developers.

The Commission is of the view that some of the assumptions i.e. PLF, Depreciation, O&M expenses etc. attributed to it by the petitioner are incorrect. Thus, the negative cash – flow in the first two years of Operations may not turn out to be negative at all. The issues of fuel price and carbon credit have already been discussed by the Commission in the preceding paragraphs.

3. Shri Rakesh Kakkar representing the Wind Energy Association sought clarification regarding tariff in the sixth year as the Commission in its order dated 15/05/2007 has determined tariff for a period of 5 years up to FY 2011-12. He also urged the Commission to clearly spell out the ‘control period’ and change the same from five years to three years.

The Commission is of the view that the velocity of wind on which the entire economy of wind energy generation depends varies from state to state. In Haryana except the region around Morni Hills and a few areas adjacent to Rajasthan, there seems to be little prospects and even for these areas no details are presently available. Resultantly, the Commission did not take a long – term view on tariff. It is expected that in five years time with all surveys / assessment having been conducted, a clearer picture would emerge for the Commission to take a view on tariff in the sixth year and beyond. It is clarified that the control period for five years shall be from FY 2007-08 to FY 2011-12 as against FY 2007-08 to FY 2012 –13 inadvertently mentioned in the order dated 15<sup>th</sup> May 2007.

4. Shri S.L. Singh appearing on behalf of Saraswati Sugar Mill (Yamuna Nagar) submitted that bagasse based co-generation, with about 30 months of gestation period, should be given priority in ‘off take’ over energy from fossil fuel. The Commission is well aware of this fact and the other uncertainties involved in non – conventional fuel based energy generation and hence determined the minimum percentage of electricity from non – conventional sources to be procured by the distribution licensee(s) in Haryana. Given the total consumption of energy and the rate at which it is growing, the minimum percentage determined by the Commission will be enough to ensure off take of energy generated by all non – conventional sources.
5. Shri Kaura appearing on behalf of the Gammon - Bermaco Consortium submitted that they calculated tariff of Rs. 4.77/kWh based on various guidelines and orders of the Commission. He also submitted that even if we go by the normal inflation index an escalation of 5% per annum should have been allowed. More so, as more and more projects are planned competition for biomass would drive up the rate, availability too would also become questionable as the volume of available biomass remains the same while new usages are being added every year. Further, with passage of time the cost of O&M also increase, resultantly, at least

5% annual escalation in tariff be allowed instead of 2%. The issue has already been dealt with by the Commission on similar submissions made by Advocate Shri Pabbi and no further comments are needed here.

6. The Director / Finance UHBVNL submitted that the tariff approved by the Commission is on the higher side. On being queried about alternative tariff and assumptions, she submitted that as compared to states like Andhra Pradesh, Punjab, Madhya Pradesh, Rajasthan, Maharashtra etc. the tariff is on the higher side. As far as alternative rates are concerned she submitted that the tariff indicated in Commission's order dated 31/01/2007 vide which suggestions / objections were invited from all the stakeholders are acceptable. A reference was also made to the lower tariff allowed by the Commission for bagasse based Co-generation at Gohana and Sonapat as well as the fact that even when compared to Government of India Rate (MNES) i.e. Rs.2.25/Kwh for 1994-95 with escalation of 5% every year for a period of 10 years, works out to be lower than the rates allowed by the HERC. Concluding her arguments she proposed that the tariffs should be rationalized to avoid extra burden on the consumers.

The Commission is of the view that parameters including project cost, cost of land, civil works required, price of fuel etc. are state specific. The Commission after considering the situation obtaining in Haryana determined the tariff which cannot be compared with any other state. Consequently, the Commission rejects the review plea based on the premises that other states have different tariff. Further, the Commission is of the view that the reference made to the tariff allowed to Gohana & Sonapat are not relevant as they are incidental cogeneration projects operating during the limited sugar cane crushing period and cannot not be compared to a bagasse based co – generation projects operating for full year with plant and machinery designed to operate on other biomass after the conclusion of the crushing season of the sugar mills.

7. Shri. V.K. Goel CE / PPM HPGCL submitted that the wheeling charges allowed by the Commission at 2% of the energy fed to the grid will increase the element of cross – subsidy and hence violate section 61 of the Electricity Act 2003 which stipulates that Cross – subsidy should be gradually reduced and finally eliminated. Consequently, he submitted that the transmission charges should be levied at the normal rate in terms of Paisa/unit as decided by the HERC in its order on Transmission & SLDC ARR of HVPNL.

On grid connectivity Shri Goel submitted that the cost should be borne by the Power Utilities and in such cases tariff at generators bus – bar should be reduced. On being queried by the Commission about the situation obtaining in the case of Cogeneration at Gohana & Sonapat, he informed that the entire cost is borne by the utilities.

The Commission is of the view that NES power is a decentralized power, mostly going to be consumed at the load centers of Haryana thereby reducing the overall transmission losses of HVPN. Hence wheeling charges allowed @ 2% of the energy fed in the grid is appropriate and in line with the national policy.

On the issue of Grid Connectivity, the Commission is of the view that as per Section 40(a) of the Electricity Act 2003 the duties of a transmission licensee include, “ to build, maintain and operate an efficient, co-ordinated and economical inter-state transmission system or intra – state transmission system, as the case may be”. Consequently, grid connectivity in the instant case is a statutory requirement. However, given the limited financial resources of the power utilities the Commission has allowed cost sharing beyond a particular distance for erection of transmission lines.

8. Depositing on behalf of the Nodal Agency HAREDA Shri Yadav submitted as under:

The cost of fuel (biomass) allowed by the Commission @ 1.60/Kg needs to be viewed in the light of DPRs of the projects received by them. They need some more time to comment on this.

As far as grid connectivity is concerned the practice followed in sugar mills (Gohana & Sonapat) i.e. all arrangements to be made by power utilities, may be agreed upon by the HERC as this will promote NES projects in the State of Haryana in place of cost sharing mechanism.

On the issue of allowing transmission losses raised by HVPNL, he submitted that NES projects will help HVPNL reduce its transmission losses, as these plants are located at load centers i.e. 1 unit of power fed to the grid by NES projects is equivalent to 1.3 units supplied by HVPNL. Consequently, such power reduces the T&D losses in the State Grid.

On the issue of 10% per annum escalation in tariff demanded by the IPPs, he submitted that most of the biomass power plants will be commissioned in the year 2009-10, thus the tariff and escalation as per the Commission's order is appropriate and would be unwise to revise the same. Similarly, the issue of carbon credit raised by the IPPs is premature. Further, 16% ROE has been considered by all other Electricity Regulatory Commission in India and the same should be retained.

On the issue of 10 to 20 years tariff fixation raised by the wind developers it was submitted by him that continuity of adequate tariff after initial period of 5 years needs to be maintained to encourage investors to set up projects. Return on Investment (ROI) to the project developers needs to be ensured till the loan repayment period.

The Commission has examined all the issues raised by the parties while filing their review applications and submissions made by them at the time of public hearing. In the preceding paragraph we have given our observations on all the points separately. Summing up, the Commission is of the considered view that the order passed by us for fixing the tariff and the percentage of energy to be

procured from the Renewable Energy Sources does not call for any revision at this stage. We have also taken note of the similar tariff order passed by the different Electricity Regulatory Commissions in the country. The Commission will be revisiting both the issues again after lapse of 5 years. At that time the IPPs and other stakeholders are most welcome to narrate their experiences and make presentation before the Commission requesting for revision of order and fix different rates for the subsequent years. Five years period for the validity of the order has been fixed by the Commission keeping in view the fact that there are very few number of plants based on non-conventional energy which have already come into operation and other proposals pending at the Government/HAREDA level for consideration.

To allay the fear from the mind of the IPPs, the Commission would like to clarify at this stage that the rate of return on equity, capital cost, debt – equity ratio already mentioned in the Commission's order and accelerated depreciation at the rate of 7.5% will be honoured in the subsequent years as well for the projects attaining financial closure during the validity period of the tariff determined by the Commission i.e. FY 2007-08 to FY 2011 – 2012. With regard to other parameters of expenditure to be taken into account for calculation of tariff the same will be considered after hearing all the stakeholders and examining the submissions to be made by them. However, for the projects attaining financial closure after the said period the Commission will examine all the cost components afresh to determine the tariff(s) applicable beyond FY 2011 - 2012. With these observations the Commission rejects all the review applications.

T. R. Dhaka  
(Member)

Bhaskar Chatterjee  
(Chairman)

In regard to Para 1 (Fuel Cost) and Carbon Credit, I express difference of opinion as under:-

The Commission while determining fuel cost @ 1.60/Kg for computing tariff with respect to biomass based project relied on the data provided by HAREDA at the

time of passing the Commission's order dated 15th May 2007 i.e. order under review. While working out the weighted average rate the Commission seems to have erred on to counts i.e. 1) It took into consideration the average rate of fuel mix (rice husk, cotton stalk, rice straw) provided by HAREDA which was in turn attributed to data gathered from the district administration. 2) The Commission applied an equal weightage to rice husk, cotton stalk as well as rice straw to arrive at the weighted average of Rs. 1.60/Kg. As far as the first premise is concerned the nodal agency HAREDA , at the time of hearing on the instant review petition held on 29 / 08 / 2007, backed out from authenticating the data supplied by it on biomass and is on record pleading that they are not in a position to comment till they have examined the DPR (Detailed Project Reports) available to it from different promoters. Consequently, the very foundation of the Commission's assumption of Rs. 1.60/Kg proved to be wrong. Secondly, it is a well known fact that cost of rice husk is just the double of rice straw i.e. around Rs. 2.0 / Kg against 0.75/Kg and cotton stalks is priced between the two i.e. around Rs.1.75/Kg. The available mix of this biomass in Haryana considering the cropping pattern and seasonal availability would be in favour of cotton stalks, rice husk and wheat straw all more or less evenly priced. Resultantly, giving equal weightage to all the above has skewed the fuel cost on the lower side i.e. Rs. 1.60/kg. When, by way of the review petition this has been brought to the notice of the Commission, the same should have been corrected to grant some relief on this issue. More so, the prices indicated now does not take into consideration the competitive pressure that would emerge for biomass from power projects using agric – waste fired boilers and rice husk / wheat straw based paper mills in and around Haryana. Further, the cost of storage (requiring huge area) as well as cost of collection( in the absence of Government notified area for the movement of such agric – waste as in the case of sugarcane) has not been factored in while computing the rate i.e. Rs. 1.60/kg. As a result, I am of the considered view that unless fuel cost is adequately provided for, such non – conventional power project developer will be starting with a handicap and would find it difficult to justify their

project as bankable and hence may fail to raise resources to the extent of 70% of project cost to set up the plant based on biomass.

On the issue of carbon credit, the Commission has not made its stand adequately clear. Thus, exposing the promoters to regulatory risks. It is appropriate to point out that the Commission while computing capital cost based tariff did not factor in the cost of registering a project as CDM project. The cost, in relation to per MW cost of generation, can be substantial. As this involves meeting strict international norms for the entire process of generation and practices within the plant including accounting and human resources. Thus, the carbon credit earned by the developers should be allowed to be retained by them as an incentive and encouragement for setting up generation projects that reduce emission of Green House Gas.

Summing up, the biomass based non – conventional generation project, which in India would fall under new technology, faces the risk of low plant load factor as the Commission has assumed 80% PLF, uncertain fuel cost, interest and cost of man-power, thus it would be appropriate not to load them with uncertainties on account of carbon credit and low fuel cost right at the beginning.

T.S. Tewatia  
Member

### **ORDER**

In terms of Section 92 (3 & 4) of the Electricity Act 2003 (Act 36 of 2003), the majority view of Shri. Bhaskar Chatterjee, Chairman and Shri. T.R. Dhaka, Member, will be the order of the Commission.

This order is signed, dated and issued by the Haryana Electricity Regulatory Commission on 3/10/ 2007.

Date: 3/10/2007

Place: Panchkula

**T. S. Tewatia**  
**(Member)**

**T. R. Dhaka**  
**(Member)**

**Bhaskar Chatterjee**  
**(Chairman)**