

Before

UTTARANCHAL ELECTRICITY REGULATORY COMMISSION

In the matter of: Paper on “Approach to Initial Tariff for Generating Stations with capacity upto 1 MW” circulated on 08.09.2005.

And

In the matter of: Tariff determination for hydro generating stations having installed capacity upto 1 MW under section 62(1)(a) of the Electricity Act, 2003.

Coram

Sri Divakar Dev Chairman

Date of Order 10th November 2005

ORDER

The Electricity Act, 2003 (hereinafter referred to as “Act”) in section 62 (1) (a) requires the State Commission to determine the tariff for sale of electricity by a generating company to a distribution licensee. In this connection, no exception based on capacity of a generating station has been made. Therefore, even if a small hydro generating station having capacity upto 1 MW sells electricity to the distribution licensee, the tariff for such sale has to be determined by the Commission under this section. The Commission has already notified the Uttaranchal Electricity Regulatory

Commission (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2004 on 14th May 2004, hereinafter referred to as “Regulations”. These Regulations were initially made applicable to Hydro Power stations with installed capacities above 25 MW located in Uttaranchal. Pending notification of separate Regulations for Small Hydro Power (SHP) stations, these Regulations were made applicable to SHP stations, with the Commission intending to make such relaxations that may be required.

2. The Uttaranchal Renewable Energy Development Agency (UREDA) and some others had represented to the Commission that small hydro generating stations having capacities upto 1 MW have peculiar features necessitating an approach different from the approach spelt out in the above Regulations. Some such special features were said to be their inaccessible locations resulting in high capital costs, wide fluctuations in water availability resulting in wide variations in generation and local demand being limited essentially to peak hours and primarily for lighting purposes. Recognising the merit of some of these submissions, the Commission got a paper prepared on **Approach to Initial tariff for Micro Hydel Generating Stations with Capacity upto 1 MW**. The said paper was floated for responses and suggestions on 08.09.2005. In addition, copies of the said paper were specifically sent to:

- i) All State Electricity Regulatory Commissions
- ii) All Small hydro generating companies in the State
- iii) All members of the State Advisory Committee
- iv) Principal Secretary Finance, Secretaries Energy, Industry and Planning, Government of Uttaranchal (GoU)
- v) Chairman & Managing Director, Uttaranchal Power Corporation Ltd. (UPCL)
- vi) Chairman & Managing Director, Uttaranchal Jal Vidyut Nigam Ltd. (UJVNL)
- vii) Selected Financial Institutions (FIs)

3. In all, eight responses to the above paper were received. Individuals and organisations that have sent their responses are as given below:

- i) G.M. (SHP), UJVNL
- ii) Dr. R.K. Garg, Advocate
- iii) Director, Uttaranchal Renewable Energy Development Agency (UREDA)
- iv) Head of Alternate Hydro Energy Centre (AHEC), IIT, Roorkee
- v) Secretary, Energy & Irrigation, Uttaranchal Government.
- vi) Secretary, Orissa Electricity Regulatory Commission
- vii) Secretary, U.P. Electricity Regulatory Commission
- viii) Secretary, Kerela State Electricity Regulatory Commission

4. The State Government in their response dated 13.10.2005 have conveyed their no objection to the proposals contained in the Approach Paper. Other responses/suggestions received are discussed below:

- i) *In view of remote and difficult locations of such projects, application of Regulations framed for large hydro projects (LHPs) on them would not be correct.*

The above contention is stating the obvious. It is precisely for this reason that relaxation in the Regulations had been envisaged and further an approach paper on the subject has been circulated.

- ii) *The prevalent tariff rates for these projects have legal protection under section 185 of the Act read with section 43 of the Electricity Supply Act, 1948.*

This contention is contrary to unambiguous provisions of the Act and can not be accepted and seems to be based on incorrect interpretation of law.

- iii) *The avoided cost of power envisaged in the approach paper should not be the weighted average cost but the marginal cost of power purchased.*

The suggestion, that the avoided cost should be the marginal cost that is the cost of power purchase of which has actually been avoided due to supply from such SHPs, may be theoretically sound but almost impossible to implement. Schedules for power generation and purchases are made in advance on daily basis for time slots of 15 minutes each. For implementing this suggestion, avoided cost will have to be computed for each such time slot. This would necessarily require correct and reliable information on the demand, availability of power from each source listed as per the merit order for power purchase and above all availability of power for sale to UPCL from each SHP generating station. All this information will be required for each time slot of 15 minutes every day for 365 days in a year. These are run-of-the river plants and their generation is dictated mainly by the water availability and not by licensee's requirement. Further, these plants are rightly using their generation first to meet the local requirement and only the surplus left thereafter is sold to the licensee. Such surplus will be available at different times of the day or the year and the marginal cost of power available to the licensee during such periods will go on varying. This can be captured accurately only by working out the marginal cost of purchase for each time slot of 15 minute. However, wide fluctuation in demand being met directly by these SHPs, compounded by their limited resources result in such stations not being in a position to prepare in advance elaborate schedules for sale of electricity to UPCL. Therefore, a simpler and practical approach is required even if it means making some compromise on precision. Weighted average cost of power available for purchase from Central Generating Stations (CGS) offers a reasonably accurate and workable solution to this problem. The Commission is, therefore, of the view that the avoided cost should be as envisaged in the Approach Paper, that is the weighted average cost of power available to UPCL from various Central Generation Stations.

- iv) *Technical losses of the northern region and those of Power Transmission Corporation of*

Uttaranchal Ltd. (PTCUL) should be added to arrive at the correct value of the avoided cost.

This presupposes that the electricity injected into the State Grid from any Central Generating Station and flowing upto the point of consumption would always suffer greater loss compared to the small quantities of electricity injected by these remotely located tiny generation stations. This is not always the case. Similarly, it is not necessary that the load centre or the voltage of supply relating to consumption of the energy whose purchase has been avoided would always be disadvantageous to the relevant central generating station. It is not possible to determine the point of consumption for each unit of energy that is injected into the system. Further, losses are a constituent of the distribution cost and, therefore, have bearing on retail tariff and not on the purchase price. Therefore, for the present exercise the cost that matters is the cost of purchase from the CGS at the source without loading on it any part of the transmission or distribution costs, including losses.

- v) *The tariff so determined should be subject to revision if external factors undergo change.*

Changes in the external factors, if any, will affect the CGS also and since the tariff proposed is derived from the tariffs of CGS the effect of such changes would automatically get reflected in it.

- vi) *The connectivity of such stations with the grid being mostly at low voltage of 11 kV the same tends to be unstable. A mechanism for compensating the generator in such situations is required.*

This is already taken care of and provided for in the Uttaranchal Electricity Regulatory Commission (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2004 and no relaxation in the same has been proposed.

- vii) *Any benefits arising out of carbon trading should be available to the generator over and above the tariff.*

Since carbon trading mechanism is still in a nascent stage, these benefits are not being taken into account for the time being.

5. As stated earlier, Commission's approach for determining tariff of any hydro generating station selling electricity to Uttaranchal Power Corporation Ltd. (UPCL) is spelt out in the Regulations already notified. The approach in these Regulations conforms largely to the Cost plus approach for tariff determination, the deviations being on account of normative ceilings specified for some crucial elements of the generating station's Annual Fixed Charges (AFC). Alternatives to this approach are the Benchmark pricing approach and Avoided cost based approach. The merits and shortcomings of each of the possible approaches have been discussed and dealt with in the Approach paper.

6. After carefully going through the paper on Approach to Initial Tariff for Micro Hydel Generating Stations with capacity upto 1 MW circulated earlier and after considering the responses and suggestions received from the various respondents, the Commission hereby orders that for determining tariffs for sale of electricity generated in hydro generating stations of generation capacity of 1 MW or less, such generators will have the following options:

- i) Relaxing the requirements of Uttaranchal Electricity Regulatory Commission (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2004 read with Commission's notification no. F-9(3)RG/UERC/2004/842 dated 03.01.2005, their tariff will be determined as the weighted average cost of power allocated to the State from central generating stations. All other related provisions of these Regulations will continue to be applicable.

- ii) However, if a generator or any other stakeholder so chooses he will be free to seek determination of his tariff in accordance with the provisions of the Uttaranchal Electricity Regulatory Commission (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2004 read with Commission's notification no. F-9(3)RG/UERC/2004/842 dated 03.01.2005, without any relaxations.

(Divakar Dev)
Chairman