

BEFORE CENTRAL ELECTRICITY REGULATORY COMMISSION
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(Tele No. 24361051)

**Comments on the proposed further amendment of the Central Electricity
Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004**
March 5, 2008

By – Centre for Water Policy, c/o 86-D, AD block, Shalimar Bagh, Delhi 88

1. **Submission from Centre for Water Policy** This submission is in response to the Public notice by the Commission dated February 8, 2008 inviting comments/ suggestions/ objections on the draft of the proposed further amendment of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004 about the hydropower projects. The comments were to be sent to the CERC latest by 7.3.2008.

This submission is being filed on behalf of Centre for Water Policy, an informal group of people working on water policy issues, including issues of related to hydropower projects. The submission is done in general public interest.

2. **Hydrological Risks** We welcome the CERC's move to ensure that the hydropower generators bear the costs of hydrological risks. The hydropower projects are justified and get clearance based on certain hydrological projections. Based on these hydrological projections, the developers promise to generate certain power at 90% dependability. Till now, even if the projects do not generate at the promised 90% dependability, there are no consequences for the developers and they recover all their costs. This can and is leading to projects with non optimum parameters like the installed capacity, storage capacity and so on. This in turn could mean additional social, environmental and economic costs, which is borne by the communities in the project area, the society in general. The additional economic costs are borne by the consumers. This is not good for either the economy or for the society. This is certainly not good for the power consumers as they have to bear the unjustified costs for no fault of theirs, but for which the developers are responsible.
3. **88.5% of the hydropower projects (25214 MW) do not achieve the projected 90% dependable generation** Our analysis of the 208 (total installed capacity of 30740.3 MW) of the 228 operating hydropower projects (for 20 stations we could not get the required data) in India as on March 31, 2007 (the end of the last financial year) shows that power generation at 184 of these projects (that is 88.5% of the 208 projects for which we could get data) was below the design 90% generation figure. The total installed capacity of these 184 projects is 25214 MW. [This analysis was based on generation figures for the hydropower projects from 1985-86 to 2006-07 and the design 90% dependability figures, both obtained from the Central Electricity Authority. If the Commission so desires, we can submit the details of this analysis.] In fact, the actual 90% dependable power generation achieved by 90 of these 184 projects is less than half of the design 90% dependable power generation. This shows the extent to which the projects have been under performing compared to the design generation. It is possible if the projects were based on more realistic hydrological projections, they would have been more appropriately designed, lowering the economic, social and environmental costs. One way to achieve more optimum designs of hydropower projects would be to make the project developers responsible for the underperformance below the design power generation by fixing the tariffs so that they recover the full costs plus 14% return on equity when they generate at design levels. If they generate at above the design levels, they would get additional income. This should typically happen in 90% of the years if the design is optimal. If they generate below the design levels, they would make some losses, depending on underperformance below the design generation levels. This should happen in 10% of the years if the design is optimal.

4. **Hence we would suggest that the tariffs should be so designed that the developers pay for the underperformance below the design energy levels.**
5. **Peaking Power** We welcome the CERC's move to encourage hydropower developers to achieve maximum possible peaking power. One of the main justifications for setting up hydropower projects is supposed to be that they are able to providing peaking power. However, there is little effort to ensure that hydropower projects in fact achieve that objective to the maximum possible extent. When we had asked the Central Electric Authority (under the Right to Information Act, 2005), about the estimate of how much of the power generated by hydropower projects is during peaking hours, CEA wrote back to us saying that they do not have these estimates. When we raised this issue recently with the Joint Secretary (Hydro) at the Union Power ministry, he agreed that such a study would be important. This only shows that we have little information on this crucial aspect. If we have such a study, we can see if and how the hydropower projects can be operated to achieve maximum possible generation during peaking hours. Without this crucial information, serious questions would arise about the justification for putting up more hydropower projects in the name of generating peaking power. In fact it would be good if the hydropower stations were to report their generation figures to show how much of the power generated by them is peaking power and how much is non peaking power.

6. Prayers

In light of the above we have following prayers to the commission:

1. The tariffs should be so designed that the developers pay for the underperformance below the design energy levels (90% dependability figures). This can be achieved by fixing the tariffs so that they recover the full costs plus 14% return on equity when they generate at design levels. If they generate above the design levels, they would get additional income. If they generate below the design levels, they would make some losses, depending on underperformance below the design generation levels. This is on the lines of the CERC proposal.
2. CERC should direct CEA or other appropriate body to do a study about the extent of power generation from hydropower projects is during peaking hours and what can be done to achieve more peaking power from the existing hydropower projects.
3. We request the Commission to allow us to be present during the hearings and also allow us to make additional submission, if any.

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