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JHARKHAND STATE ELECTRICITY REGULATORY COMMISSION, RANCHI

**(TERMS AND CONDITIONS OF TARIFF DETERMINATION, SMALL HYDRO POWER
GENERATION) REGULATION, 2007**

The 3rd July, 2007

No-200--In exercise of the powers conferred under Section 61 of the Electricity Act, 2003 (hereinafter referred to as the Act), and all other powers enabling in this behalf, the Jharkhand State Electricity Regulatory Commission (hereinafter referred to as the JSERC or the Commission) hereby makes the following regulations.

1 Short title, extent and commencement

- 1.1 These Regulations may be called the **JSERC (Terms and Conditions of tariff determination, Small Hydropower Generation) Regulation, 2007**.
- 1.2 These Regulations shall extend to the entire state of Jharkhand and to all matters within the jurisdiction of the Commission.
- 1.3 These Regulations shall come into force from the date of their publication in the Official Gazette.

2 Definitions

Unless the context otherwise requires for the purpose of this chapter,

- i. 'Act' means the Electricity Act, 2003 (36 of 2003).
- ii. 'Auxiliary Energy Consumption' in relation to a period means the quantum of energy consumed by auxiliary equipment of the generating station and shall be expressed as a percentage of the sum of gross energy generated at generator terminals of all the units of the generating station.
- iii. 'Beneficiary' in relation to a generating station means the person buying power generated at such a generating station.
- iv. 'Capacity Utilization Factor' means the energy likely to be generated as a percentage of maximum energy that could have been generated with full capacity utilization of the installed capacity of the project.
- v. 'Commission' means Jharkhand State Electricity Regulatory Commission.
- vi. 'Date of Commercial Operation or COD' in relation to a unit means date declared by the generator after demonstrating the Maximum Continuous Rating (MCR) or Installed Capacity (IC) through a successful trial run, after notice to the beneficiaries, and in relation to the generating station the date of commercial operation means the date of commercial operation of the last unit of the generating station.
- vii. 'Installed Capacity' means the summation of the nameplate capacities of the units in the generating station or the capacity of the generating station (reckoned at the generator terminals) as approved by the Commission from time to time.
- viii. 'Maximum available capacity' means the maximum capacity in MW, the generating station can generate with all units running, under the prevailing conditions of water levels and flows.
- ix. 'Operation and Maintenance Expenses' or 'O&M Expenses' means the expenditure incurred in operation and maintenance of the power station facilities, including the expenditure on manpower, repairs, spares, consumables, insurance, overheads and any associated transmission system (if any) built by the developer.
- x. 'Project' means a generating station and includes the complete small hydro power generating facility covering all components such as weir, intake, water conductor systems, power station facilities and any associated transmission system (if any) built by the developer.
- xi. 'Small Hydropower Plant' means a generating station based on hydro resource with installed capacity between 1 to 25 MW which can either be a Canal based power station or a Run-of-river power station.
- xii. 'State Government' means the Government of Jharkhand.
- xiii. 'Year' means a financial year.

3 Scope and extent of application

3.1 These regulations shall apply in those cases where tariff for Small Hydro Power generating stations with installed capacity between 1 to 25 MW located in Jharkhand to be determined by the Commission.

3.2 Notwithstanding anything contained in these Regulations, the Commission shall adopt the

generation tariff if such tariff has been determined through a transparent process of bidding in accordance with the guidelines issued by the Central Government under Section 63 of the Act.

4 Tariff determination

4.1 The tariff in respect of a generating station under these regulations shall be determined on the basis of benchmarked capital cost and capacity utilization factor (CUF) which shall be notified by the Commission from time to time and the operational and financial norms as specified in clause 4.2.

Provided, till such time that the Commission notifies benchmarks, the tariff shall be determined on a case-to-case basis, subject to the norms specified in clause 4.2.

4.2 The Commission has considered the following norms for the operational and financial parameters:

Parameter	Norm
Auxiliary Consumption	0.5%
O&M Expense	<ul style="list-style-type: none"> o 2.5% of benchmarked capital cost as admitted by the Commission for first year of operation with 4% escalation per annum for subsequent years. o Provided that the annual escalation factor shall be reviewed by the Commission after a period of three years or as and when it is deemed appropriate.
Debt Equity Ratio	70:30
Return on Equity	16% per annum
Interest on Loan	Based on the interest rates offered by various financial institutes and prevailing policy of financial institutes to offer the rates above or below the Prime Lending Rate depending upon the Commission's assessment of the risk mitigation parameters of the project developer.
Interest on Working Capital	Based on short-term Prime Lending Rate of State Bank of India as on 1.4.2004 or on 1 st April of the year in which the generating station is declared under commercial operation, whichever is later
Working Capital	<ol style="list-style-type: none"> 1. Operation and Maintenance expenses for one month; 2. Maintenance spares @ 1% of the historical cost escalated @ 4% per annum from the date of commercial operation, and 3. Receivables equivalent to two months sale of electricity.
Useful life of Project	20 years
Depreciation	Straight Line Method over the useful life of the asset

Computation of Benchmark Tariff

The tariff for sale of electricity from a small hydro power plant shall comprise of only Energy Charges (single-part tariff) and shall be computed in accordance with the following formula:

$$\text{Rate of Energy Charge} = \frac{\text{Annual Fixed Charge}_{\text{(as benchmarked)}}}{\text{Annual Saleable Energy}}$$
$$\text{Annual Saleable Energy} = 365 \times \text{Installed Capacity (kW)} \times \text{Capacity Utilization Factor}_{\text{(as benchmarked)}} \times (1 - \text{Auxiliary Consumption})$$

5.2 The Annual Fixed Charges (AFC) shall consist of:

- (a) Interest on Loan Capital
- (b) Depreciation
- (c) Return on Equity
- (d) Operation & Maintenance expenses
- (e) Interest on Working Capital

5.3 The annual fixed charges shall be determined as per the norms specified in regulation 4.2.

6 Miscellaneous

6.1 Cost Recovery for Transmission Facility

6.1.1 In case the developer is required to provide the cost of facility for interconnection of his station to the nearest grid-point, the same shall be determined by the Commission on a case-to-case basis keeping in view terrain, line length, etc.

6.2 Savings

6.2.1 Nothing in these regulations shall, expressly or impliedly, bar the Commission dealing with any matter or exercising any power under the Act for which no regulations have been framed, and the Commission may deal with such matters, powers and functions in a manner, as it considers just and appropriate.

6.2.2 Powers to Remove Difficulties

If any difficulty arises in giving effect to these regulations, the Commission may, of its own motion or otherwise, by an order and after giving reasonable opportunity to those likely to be affected by such order, make such provisions, not inconsistent with these regulations, as may appear to be necessary for removing the difficulty.

6.2.3 Powers to Relax

The Commission, for reasons to be recorded in writing, may relax or vary any of the provisions of these regulations on its own motion or on an application made before it by an interested person.

By the order of the Commission.

A.K. Mehta

Secretary

Jharkhand State Electricity Regulatory Commission

Ranchi