



# CERC(Terms and Conditions of Tariff) Regulations, 2024 (Emphasis on Hydro)

for the period 2024-29



## Regulation 3 (12), 3 (56) & 36 (2) (d)(Capital Spares & O&M Expenses)

### CERC Draft Tariff Regulations, 2024

The Hon'ble Commission vide its order dated 07.09.2021 while approving the Tariff of Nathpa Jhakri HPS for the period 2014-19 has recorded following while dealing with the expenditure related to Capital Spares:

*.....The term capital spares, in our view, is a piece of equipment, or a spare part, of significant cost that is maintained in inventory for use in the event that a similar piece of critical equipment fails or must be rebuilt. Keeping in view the principle of materiality and to ensure standardised practices in respect of earmarking and treatment of insurance/capital spares, only insurance/capital spares of value exceeding Rs.1 (one) lakh, on prudence check of the details furnished by the Petitioner, have been considered for the purpose of tariff. The Commission is also of the view that spares of value less than Rs. one lakh would normally form part of normal repair and maintenance expenses.....*

**Spares individually costing above Rs 1 (One) lakh and maintained above the initial spares may be considered as Capital Spares. Accordingly, clause may be incorporated in Additional Capitalisation and O&M expenses**

## ***Regulation 19 (6) (e) (Capital Cost)***

### **CERC Draft Tariff Regulations, 2024**

*(6) The following shall be excluded from the capital cost of the existing and new projects:*

*(e) Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy;*

As per Govt. directions, RE plants are being commissioned at various Operational plant. These solar plant are not grid connected and being captive use in the Hydro power stations for reduction of auxiliary energy consumption as well as for Residential/Non-residential colony purpose.

Commission may not exclude proportionate Cost of land used for establishment of generating station on Renewable energy from the capital cost of the existing and new projects to promote the same.

## Regulation (26) (Additional Capitalisation beyond the original scope)

### CERC Draft Tariff Regulations, 2024

Additional clause may be added under Additional Capitalisation:

- ❖ Capital cost of Installation of Re Power Plants (solar power plant) at Hydro power stations, in line with MOP, GOI directions, is not covered in additional capitalisation.
- ❖ As per existing as well as draft Tariff Regulations, the gain on account of reduction in Auxiliary consumption is being shared with the beneficiaries on 1:1 basis.
- ❖ O&M expenses is also being reduced by not taking power from State Electricity Board to some extent.
- ❖ Thus, there is a double deduction of cost/tariff on the part of the generating stations.

Any claim of additional capitalisation by installation and commissioning of Renewable Power plant at Hydro/thermal generating station project site for reduction of Auxiliary Energy Consumption or for reduction of O&M expenses. Claim shall be substantiated with justification and cost benefit analysis

## Regulation 22(Controllable and Uncontrollable Factors):

### CERC Draft Tariff Regulations, 2024

- ❑ Rehabilitation and Resettlement (R&R) is one of the major issues causing time and cost overrun.
- ❑ Hydro Generating company does not have sufficient control over the above factor, as it is implemented by State Authorities where project is located.
- ❑ Tremendous local resistance related to R&R activity, which is beyond the control of the generating company.

Commission may consider R&R also as “Uncontrollable Factor”

## Regulation 3(17) (Cut -off -date)

### CERC Draft Tariff Regulations, 2024

Construction period of Hydro Generating stations are higher than the Thermal Generating stations due to the various reasons:

- ❖ Law & Order / Militancy Problems.
- ❖ Lack of Support from State Authorities.
- ❖ Delay In Private Land Acquisition
- ❖ Resettlement and Rehabilitation issues

Due to above factors, construction period of Hydro Power stations are comparatively more. Therefore, considering 3 years cut- off -date may be less for completing the pending works for hydro power stations.

**Cut-off-date for hydro generating stations may be considered as the last day of the financial year closing after 60 months( 5 years) from the date of commercial operation of the project or % of O&M expenses for New project may be considered on higher side.**

# Regulation 3(88) (Useful Life)

## CERC Draft Tariff Regulations, 2024

### **a) Useful life for existing hydro Generating stations may be considered as 40 years.**

As, many of the Hydro generating stations may have completed 10-12 years of useful life. Such generating stations may be considered differently as they were conceived based on the policy/regulatory environment and technology available at that time.

### **b) Useful life of new Hydro generating stations may be considered as 50 years:**

Civil structure of HPS has life more than 50 years. Accordingly, while framing various terms and conditions for Electro Mechanical component useful life of 50 years may be considered for giving award to the contractor. Tariff of new Hydro generating is comparatively higher due to higher initial cost. For reduction of tariff of Hydro project(s) and making the project viable, useful life of new hydro generating stations including pumped storage plant may be considered as 50 years.

Commission may consider useful life of 40 years for existing HPS and 50 years for new HPS.

## Regulation 21 (5) (Interest During Construction (IDC) and Incidental Expenditure during Construction (IEDC))

### CERC Draft Tariff Regulations, 2024

Provided that in case of activities like obtaining forest clearance, NHA Clearance, approval of Railways, and acquisition of government land, where delay is on account of delay in approval of concerned authority, in such cases maximum condonation shall be allowed up to 90% of the delay associated with obtaining such approvals or clearances.

Delay in obtaining statutory approval for the project except where the delay is attributable to the project developer, is a force majeure event. Further, as per Regulation 22 (2), "Force Majeure Events" are included in Uncontrollable factors.

condonation may be allowed for the full delay period irrespective of the authority concerned being an Uncontrollable factor.



# Regulation 23 (Initial Spare)

## CERC Draft Tariff Regulations, 2024

Provision of initial spare of 4 % is kept for Hydro generating stations including pumped storage hydro generating station as a percentage of the Plant and Machinery cost excluding IDC, IEDC, Land Cost and Cost of Civil Works, which is not sufficient to take care the plant affected from high silt.

### Proposal:

Segregation for initial spare for plant affected by silt in a similar way as given relief for NAPAF for silt affected plants. Therefore, following is proposed for initial spare for Hydro generating stations:

- a) Hydro generating stations not affected from High silt: 4% of the Plant and Machinery cost excluding IDC, IEDC, Land Cost and Cost of Civil Works.
- b) Hydro generating stations affected from high Silt: 8 % of the Plant and Machinery cost excluding IDC, IEDC, Land Cost and Cost of Civil Works.

# Regulation 71 (Norms of Operation for Hydro Generating Stations):

## CERC Draft Tariff Regulations, 2024

(A) Normative Annual Plant Availability Factor (NAPAF): (1) The following normative annual plant availability factor (NAPAF) shall apply to hydro generating station:

(c) Pondage type plants where plant availability is significantly affected by silt: 85%.

(4) Based on the above, the Normative annual plant availability factor (NAPAF) of the hydro generating stations already in operation shall be as follows:

Station	Type of Plant	Plant Capacity No. of Units x MW	NAPAF (%)
Nathpa Jhakri	Pondage	6x250	90
Rampur	Pondage	6X68.67	85

- ❖ NJHPS and Rampur HPS is located on Satluj Basin, which is encountering abnormally high silt during high inflow season. Protocol signed among NJHPS, Rampur HPS and Karcham Wangtoo HPS for co-ordinated generation reduction during High silt period.
- ❖ During high inflow season, plants are being shut down every year for few days due to high silt. Also, silt flushing of Reservoir at Nathpa is being done every year.
- ❖ Extensive Annual Plant Maintenance is being done every year by plants.

# Regulation 71 (Norms of Operation for Hydro Generating Stations):

## CERC Draft Tariff Regulations, 2024

- ❖ Hon'ble CERC in recent IEGC Regulations, 2023, effective from 01.10.23 onwards has restricted hydro Power plants for declaring declared capacity limited to ex-bus installed capacity except in case of spillage of water during high inflow season. This would be resulting into reduction of Actual Plant availability Factor of generating stations by 6.67 % ( 8months out of 12 months).
- ❖ Design Energy of Central Hydro generating station has been approved by CEA/CERC in consideration of quantum of energy which can be generated in 90 % dependable year with 95 % installed capacity of the generating stations. That means 5 % forced outages is considered for calculation of Design Energy.
- ❖ Extensive Annual Plant Maintenance is being done every year around 60 days (10 days for each unit) by both the plants, due to which PAF loss is for 60 days approx. corresponding to one unit.
- ❖ Nathpa Jhakri HPS was commissioned in the year 2004-05 and around 20 years useful life has be surpassed by the plant. During the control period (2024-29), a significant life of plant would be crossed and therefore probability of Annual Plant maintenance would be increased from 60 days every year in comparison to new plants.
- ❖ As Rampur HPS is running in tandem with upstream NJHPS, therefore Rampur HPS would be shut down in case of non-availability of unit of NJHPS. Considering 5 % of forced outage of upstream NJHPS, NAPAF of Rampur HPS may be fixed as 5 % lower than the NAPAF of NJHPS.

Commission may consider NAPAF of Nathpa Jhakri HPS and Rampur HPS as 85 % and 80 % respectively

## Regulation 36 (Operation & Maintenance Expenses )(2):

### CERC Draft Tariff Regulations, 2024

- ❖ Actual normalised O&M expenses derived from Fy 2018-19 to Fy 2022-23, while deducting namely ex gratia, incentives, productivity linked incentives and performance related pay, donations, provisions, community development expenses, CSR expenses, and loss of stores expenses.
- ❖ O&M expenses derived for FY 2023- 24, by taking the five- years average of actual normalised O&M expenses of Fy 2018-19 to Fy 2022-23 and thereafter escalation of 5.10% per annum. The derived O&M expense for the base year FY 2023-24 is further escalated by 5.86% for deriving the O&M Expenses for Fy 2024-25 to Fy 2028-29.
- ❖ Inflation rate works out to 5.89% per annum considering the 60:40 weightages for WPI and CPI from FY 2018- 19 to FY 2022-23. However, Commission has considered escalation rate of 5.10 % per annum for Fy 2023-24 and 5.86 % per annum for Fy 2024-25 to Fy 2028-29.
- ❖ Commission while calculating the normalised expenses has deducted number of expenses as well as capital spare less than Rs 20 lakh would be considered under O&M expenses. This amount would become higher on Y-O-Y basis from Fy 2024-25 onwards.
- ❖ There is exorbitant increase in insurance premium for Hydro Power station after submergence of 1,200 MW Teesta Stage-III Hydro Power Project in Sikkim due to glacial lake outburst flood (GLOF). Insurance companies has increased the significant premium to all Hydro Power stations located in India.

## Regulation 36 (Operation & Maintenance Expenses )(2):

CERC Draft Tariff Regulations, 2024

- ❖ Hydro generating stations has reduced Man/MW ratio significantly in comparison to previous years. Commission may consider the benchmark on Man/MW ratio and can pass on benefit to those hydro power stations, who have less Man/MW ratio in comparison to Standard practice for Hydro Stations.
- ❖ Change in Law or Force Majeure event are un -controllable events and are not within the control of the generator. It is, therefore, proposed that overall impact of such change in law event more than 5% of normative O&M expenses for the year for claiming O&M expenses may not be justifiable.

### *Proposal:*

1. A separate clause may be consider to allow the increase in Insurance premium on Y-O-Y basis, as given for security expenses and Capital spare.
2. Commission may allow ex gratia, incentives, productivity linked incentives and performance related pay expenses under Normative O&M expenses to those Hydro Power stations, who have lower Man/MW ratio in comparison to best industry practices.
3. Escalation rate in O&M expenses for Hydro Power Station is considered only 5.86 % on Y-O-Y basis. In case, Capital spare up to Rs. 20 lakh is considered under O&M expenses, then escalation rate may be revised to 1.5 % higher than the market inflation rate of 5.89 %.
4. No limit for Change in Law or Force Majeure event under Normative O&M expenses.

# Regulation 65 (7) (Computation and Payment of Capacity Charge and Energy

## Charge for Hydro Generating Stations):

CERC Draft Tariff Regulations, 2024

*Quote:*

(4) *In addition to the AFC entitlement as computed above, the hydro generating station shall be allowed an incentive of up to 4% of the Capacity Charge approved for a given year which shall be billed monthly as per the following.*

$$\text{Incentive} = (4\% \times \beta \times \text{CCy})/12$$

*Where,  $\beta$  = Average Monthly Frequency Response Performance for that generating station, as certified by RPCs, which shall be computed by considering primary response as per the methodology prescribed by the NLDC and shall range between 0 to 1.*

*Submission:*

- ❖ CERC in IEGC Regulations, 2023 has imposed restriction on Thermal and Hydro generating stations from declaring declared capacity over and above MCR( 5 % over MCR in Thermal generating stations and 10 % over MCR in case of Hydro generating stations ) for better Grid Management.
- ❖ This restriction has resulted in commercially impact on Hydro generating stations in terms of reduction of Plant availability factor by around 6.67 %.

# Regulation 65 (7) (Computation and Payment of Capacity Charge and Energy

## Charge for Hydro Generating Stations):

CERC Draft Tariff Regulations, 2024

- ❖ Incentive is given up to 4 % of the Capacity Charges in the draft Regulation based on Average Monthly Frequency Response performance of the generating station, as certified by RPCs.
- ❖ Methodology for calculation of  $\beta$  may take some time, till that time Provisional REA may be pending at RPC end and bill may not be raised by generating stations to the beneficiaries in the first week of month.

It is proposed that value of  $\beta$  may be fixed by the Commission till finalisation of methodology. Moreover, incentive, as proposed may be enhanced to 6.67 % of capacity charges.

## Regulation 34(d) (Interest on Working Capital):

### CERC Draft Tariff Regulations, 2024

- ❖ The components for computation of IoWC considered are primary fuel and secondary/liquid fuel cost and stock (for coal/lignite/gas-based generating stations only), O&M expenses, maintenance spares (linked to O&M expenses) and receivables.
- ❖ Some other major expenses viz water cess/water usage charges which is directly recovered from the beneficiaries is not covered in IoWC.
- ❖ Presently, several states viz Uttarakhand, Himachal Pradesh, Jammu and Kashmir, and Sikkim had imposed Water Cess on Hydropower Generation and passed in their State Legislative Assembly.
- ❖ The amount of water cess is in Hundreds of crores, which is being imposed based on Inflow as well as Head.

water cess/water usage charges levied by various states to be included in Interest on working capital calculations, as there is an interest loss when the payment is realised from DISCOMs 45 days after payment made to the home state





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