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Uttar Pradesh Electricity Regulatory Commission

NOTIFICATION No.: UPERC/Secy/Generation Regulations, 2019/343A
Lucknow, Dated: 11.09.2019

In exercise of powers conferred under Section 181 read with Section 61 of the Electricity Act, 2003, and all other powers enabling in this behalf, the Uttar Pradesh Electricity Regulatory Commission hereby makes the following Regulations, namely:

CHAPTER 1

GENERAL

1. Short title and commencement:

- (1) These Regulations may be called the Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation tariff) Regulations, 2019.
- (2) These Regulations shall be applicable for the period from 01.04.2019 to 31.03.2024.
- (3) Words and expressions used in these Regulations and not defined herein but defined in the Act shall have the meaning assigned to them under the Act.
- (4) The Regulations namely "Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions for determination of Generation tariff), Regulations, 2014 notified on 16/12/2014 and read with all amendments thereto, as applicable to the subject matter of these Regulations are hereby superseded.

2. Scope and extent of Application:

- (1) These Regulations shall apply in all cases where tariff for a generating station or a unit thereof is required to be determined by the Commission under Section 62 of the Act read with Section 86 thereof.
- (2) These Regulations shall not apply for determination of tariff in case of the following:
 - (a) generating station whose tariff has been discovered through tariff based Competitive Bidding in accordance with the Guidelines issued by the Central Government and adopted by the Commission under Section 63 of the Act;



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- (b) generating station based on Renewable Sources of Energy whose tariff is determined in accordance with the UPERC (Captive and Non-Conventional Energy generating stations) Regulations, 2019 as amended from time to time or any subsequent enactment;
- (3) The generating company may adopt Clean Development Mechanism, for generating stations approved and commissioned on or after 1.4.2019, and the proceeds of carbon credit from approved CDM project shall be shared in the following manner, namely
- (a) 100% of the gross proceeds on account of CDM to be retained by the Project Developer in the first year after the date of commercial operation of the generating station;
 - (b) In the second year, the share of the beneficiaries shall be 10% which shall be progressively increased by 10% every year till it reaches 50%, where after the proceeds shall be shared in equal proportion, by the generating company and the Beneficiaries.
- (4) In case of any conflict between provisions of these Regulations and a Power Purchase Agreement signed between a generating company and Distribution Licensee(s)/beneficiary (ies), the provisions of these Regulations shall prevail.

Provided that in case of Projects where parameters have been agreed to in the Power Purchase Agreement or determined through earlier Regulations prior to 1.4.2019, for any hardship due to discrepancy/ inconsistency with parameters given in these Regulations, the Commission may be approached and parameters in such cases may be determined by the Commission at the time of tariff determination of concerned generating station.

- (5) Availability Based tariff (ABT) in respect of projects whose tariff is determined by the Commission shall be implemented as per Regulations 36 of this Regulations.
- (6) Yearly energy audits for each generating Unit defined for a generating station shall be compulsory under Section 61(c) of the Act read with Schedule of the Energy Conservation Act 2001, clause 5.9 of the National Electricity Policy and Clause 8(b) of Power Policy 2003, of GoUP. The Energy Audit result shall be declared in the manner provided under the Energy Conservation (form and manner and time for furnishing information with regard to energy consumed and action taken on recommendations of accredited energy auditor) Rules, 2008.
- (7) The generating company shall submit timely Report to the Commission under Section 10(3) (a) of the Act in the format given in **Appendix I** to these Regulations.



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- (8) The generating station, under Section 10(3)(b) of the Act, shall co-ordinate with the State Transmission Utility for Transmission of electricity generated by it according to the provisions made in the Grid Code.
- (9) The generating station/ company shall abide by the Provisions of the Act, Rules, Codes, Regulations, Orders and Directions of the appropriate Authority/ Commission issued from time to time regarding Generation and Evacuation of electricity.

3. **Definitions:**

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

- (1) 'Act' means the Electricity Act, 2003 as amended from time to time along with UP-Electricity Reforms Act- 1999, so far not being inconsistent with the Act-2003,;
- (2) 'Additional Capitalization' means the Capital Expenditure incurred, or projected to be incurred after the date of commercial operation of the Project and admitted by the Commission after prudence check, in accordance with provisions of these Regulations;
- (3) 'Auditor' means an Auditor appointed by a generating company in accordance with the provisions of Sections 224, 233B and 619 of the Companies Act, 1956 (1 of 1956)], as amended from time to time or Chapter X of the Companies Act, 2013 (18 of 2013) or any other Law for the time being in force;
- (4) 'Authority' means Central Electricity Authority referred to in Section 70 of the Act;
- (5) 'Auxiliary Energy Consumption' or 'AUX' in relation to a period in case of a generating station means the quantum of energy consumed by auxiliary equipment of the generating station, such as the equipment being used for the purpose of operating station and machinery including switchyard of the generating station and the Transformer Losses within the generating station, expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station:

Provided that Auxiliary Energy Consumption shall not include energy consumed for supply of power to housing colony and other facilities at the generating station and the power consumed for construction works at the generating station;

Provided further that Auxiliary Energy Consumption for compliance of environmental emission standards shall be considered separately.



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- (6) **'Availability'** in relation to a Thermal generating station for any period means the average of the daily average Declared Capacities (DCs) for all the days during that period expressed as a percentage of the Contracted Capacity (CC) of the generating station minus normative Auxiliary Consumption in MW, and shall be computed in accordance with the following formula:

$$\text{Availability (\%)} = 10000 \times \frac{\sum_{i=1}^N \text{DC}_i}{\{N \times \text{CC} \times (100 - \text{AUX}_n)\}} \%$$

Where,

CC = Contracted Capacity of the generating station in MW,

DC_i = Average Declared Capacity for the ⁱth day of the period (in MW),

N = Number of days during the period, and

AUX_n = Normative Auxiliary Energy Consumption as a percentage of gross generation;

- (7) **'Bank Rate'** means one-year Marginal Cost of Lending Rate (MCLR) of the State Bank of India issued from time to time, or any replacement thereof for the time being in effect, plus 350 basis points;
- (8) **'Beneficiary'** in relation to a generating station covered under clauses (a) and (b) of Sub- Section 1 of Section 86 of the Act, means a Distribution Licensee who is purchasing electricity generated at such generating station through a Power Purchase Agreement either directly or through a Trading Licensee on payment of fixed charges and by scheduling in accordance with the Grid Code:

Provided that where the Distribution Licensee is procuring power through a Trading Licensee, the arrangement should be secured through back to back Power Purchase Agreement and Power Sale Agreement:

- (9) **'Block'** in relation to a combined cycle Thermal generating station includes combustion turbine – generator(s), associated waste heat recovery boiler(s), connected steam turbine – generator and auxiliaries;
- (10) **'Change in law'** means occurrence of any of the following events:
- (a) Bringing into effect or promulgation of any new Indian law or Indian enactment
 - (b) adoption, amendment, modification, repeal or re-enactment of any existing Indian law; or



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- (c) change in interpretation or application of any Indian law by a competent Court, Tribunal or Indian Governmental Instrumentality which is the final authority under law for such interpretation or application;
 - (d) change by any competent statutory authority, in any condition or covenant of any consent or clearances or approval or License available or obtained for the project; or
 - (e) coming into force or change in any bilateral or multilateral agreement/treaty between the Government of India and any other Sovereign Government having implication for the generating station regulated under these Regulations.
- (11) '**Commission**' means the Uttar Pradesh Electricity Regulatory Commission as per Section 82 of the Act;
- (12) '**Competitive Bidding**' means a transparent process for procurement of equipment, services and works in which bids are invited by the project developer by open advertisement covering the scope and specifications of the equipment, services and works required for the project, and the terms and conditions of the proposed contract as well as the criteria by which bids shall be evaluated, and shall include domestic competitive bidding and international competitive bidding;
- (13) '**Contracted Capacity**' or '**CC**' means the capacity of power (in MW) contracted between the Seller and the Procurer(s) at the Interconnection Point as provided in the Power Purchase Agreement (PPA).
- (14) '**Cutoff Date**' means the last day of the calendar month after thirty-six months from the date of commercial operation of the project;
- (15) '**Date of Commercial Operation**' or '**COD**' shall have the same meaning as defined in the Indian Electricity Grid Code (IEGC) as amended from time to time;
- (16) '**Day**' means a calendar day consisting of 24 hours period starting at 0000 hour;
- (17) '**De-capitalisation**' for the purpose of the tariff under these Regulations, means reduction in Gross Fixed Assets of the project as admitted by the Commission corresponding to inter-unit transfer of assets or the assets taken out from service;
- (18) '**Declared Capacity**' or '**DC**' means the capability of the generating station to deliver ex-bus electricity in MW declared by such generating station in relation to any time block of the day or whole of



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the day as per Grid Code duly taking into account the availability of fuel or water, as the case may be;

- (19) **'Existing Project'** means a project declared under commercial operation from a date prior to 01.04.2019;
- (20) **'Expenditure incurred'** means the fund, whether the equity or debt or both, actually deployed and paid in cash or cash equivalent, for creation or acquisition of a useful asset and does not include commitments or liabilities for which no payment has been released;
- (21) **'Extended Life'** means the life of a generating station or unit thereof beyond the period of useful life, as may be determined by the Commission on case to case basis;
- (22) **'Force Majeure'** for the purpose of these Regulations means the event or circumstance or combination of events or circumstances including those stated below which partly or fully prevents the generating company to complete the project within the time specified in the Investment Approval, and only if such events or circumstances are not within the control the generating company and could not have been avoided, had the generating company taken reasonable care or complied with prudent utility practices:
- (a) Act of God including lightning, drought, fire and explosion, earthquake, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, geological surprises, or exceptionally adverse weather conditions which are in excess of the statistical measures for the last hundred years; or
 - (b) Any act of war, invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, terrorist or military action; or
 - (c) Industry wide strikes and labour disturbances having a nationwide impact in India;
 - (d) Delay in obtaining statutory approval for the project except where the delay is attributable to project developer including its contractors/ suppliers/ agents;
- (23) **'generating station'** shall have the same meaning as defined under sub-Section 30 of Section 2 of the Act and for the purpose of these Regulations shall also include stages or blocks or units of a generating station;
- (24) **'generating Unit' or 'Unit'** in relation to a thermal generating station (other than combined cycle thermal generating station) means steam



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generator, turbine-generator and auxiliaries, or in relation to a combined cycle thermal generating station, means turbine generator and auxiliaries or combustion turbine-generator, associated waste heat recovery boiler, connected steam turbine- generator and auxiliaries, and in relation to a hydro generating station means turbine-generator and its auxiliaries;

- (25) '**Grid Code**' means the UP-Electricity Grid Code 2007 as amended from time to time or subsequent re-enactment thereof;
- (26) '**Gross Calorific Value**' or '**GCV**' in relation to a thermal power generating station means the heat produced in kCal by complete combustion of one kilogram of solid fuel or one litre of liquid fuel as the case may be;
- (27) '**GCV as received**' means the GCV of coal as measured at the unloading point of the thermal generating station through collection, preparation and testing of samples from the loaded wagons, trucks, ropeways, Merry-Go-Round (MGR), belt conveyors and ships in accordance with the IS 436 (Part-1/ Section 1)- 1964:

Provided that the measurement of coal shall be carried out through sampling by third party to be appointed by the generating companies in accordance with the guidelines, if any, issued by Central Government;

Provided further that samples of coal shall be collected either manually or through hydraulic augur or through any other method considered suitable keeping in view the safety of personnel and equipment:.....

Provided also that the generating companies may adopt any advance technology for collection, preparation and testing of samples for measurement of GCV in a fair and transparent manner;

- (28) '**Gross station Heat Rate**' or '**GSHR**' means the heat energy input in kCal required to generate one kWh of electrical energy at generator terminals;
- (29) '**Implementation Agreement**' means the agreement, contract or memorandum of understanding, or any such covenant, entered into between transmission licensee and generating station for the execution of project in coordinated manner;
- (30) '**Infirm Power**' means electricity generated for injection into the grid prior to commercial operation of the unit of a generating station;



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- (31) **'Installed Capacity' or 'IC'** means the summation of the name plate capacities of all the units of the generating station or the capacity of the generating station (reckoned at the generator terminals) as may be approved by the Commission from time to time;
- (32) **'Interconnection Point'** mean the point where the power from the power station switchyard bus of the Seller is injected into the interstate/ intrastate transmission system (including the dedicated transmission line connecting the power station with the interstate/intrastate transmission system);
- (33) **'Investment Approval'** means approval by the Board of the generating company or any other competent authority conveying administrative sanction for the project including funding of the project and the timeline for the implementation of the project;
- Provided that the date of Investment Approval shall reckon from the date of the resolution of the Board of the generating company where the Board is competent to accord such approval and from the date of sanction letter of competent authority in other cases;
- (34) **'Kilowatt-Hour' or 'kWh'** means a unit of electrical energy, measured in one kilowatt or one thousand watts of power produced or consumed over a period of one hour;
- (35) **'Landed Fuel Cost'** means the total cost of coal (including biomass in case of cofiring), lignite or the gas delivered at the unloading point of the generating station and shall include the base price or input price, washery charges wherever applicable, transportation cost (overseas or inland or both) and handling cost, charges for third party sampling and applicable statutory charges;
- (36) **'Maximum Continuous Rating' or 'MCR'** in relation to a unit of the thermal power generating station means the maximum continuous output at the generator terminals, guaranteed by the manufacturer at rated parameters, and in relation to a unit or block of a combined cycle thermal power generating station means the maximum continuous output at the generator terminals, guaranteed by the manufacturer with water/steam injection (if applicable) and corrected to 50 Hz grid frequency and specified site conditions;
- (37) **'New Project'** means the project achieving COD or anticipated to be achieving COD on or after 1.4.2019;
- (38) **'Operation and Maintenance Expenses' or 'O&M Expenses'** means the expenditure incurred on operation and maintenance of the generating station, including part thereof, and includes the

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expenditure on manpower, repairs and maintenance, maintenance spares, consumables, insurance and overheads;

- (39) **'Original Project Cost'** means the capital expenditure incurred by the generating company within the original scope of the project up to the cut-off date as admitted by the Commission;
- (40) **'Plant/station Load Factor' or 'PLF'** for a given period, means the total sent out energy corresponding to scheduled generation during the period, expressed as a percentage of sent out energy corresponding to installed capacity in that period and shall be computed in accordance with the following formula:

$$PLF (\%) = 10000 \times \frac{\sum_{i=1}^N SG_i}{\{N \times IC \times (100 - AUX_n)\}} \%$$

where,

IC = Installed Capacity of the generating station in MW,
SG_i = Scheduled Generation in MW for the ith time block of the period,
N = Number of time blocks during the period, and
AUX_n = Normative Auxiliary Energy Consumption as a percentage of gross generation;

- (41) **'Power Purchase Agreement' or 'PPA'** means the agreement to be entered into between the Procurer(s) and the Seller pursuant to which the Seller shall supply power to the Procurer(s) as per the terms and conditions specified therein.
- (42) **'Project'** means:
- (i) in case of thermal generating station, all components of the thermal generating station and do not include mining if it is a pit head project and dedicated captive coal mine;
 - (ii) in case of hydro generating station, all components of the hydro generating station and includes dam, intake water conductor system, power generating station, as apportioned to power generation.
- (43) **'Prudence Check'** means scrutiny of reasonableness of capital expenditure incurred, financing plan, use of efficient technology, cost and time over-run and such other factors as may be considered appropriate by the Commission for determination of tariff. While carrying out the Prudence Check, the Commission shall look into whether the generating company has been careful in its judgments and decisions for executing the project or has been careful and vigilant in executing the project;



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- (44) **'Run-of-river power station'** means a hydroelectric power generating station which has no upstream pondage;
- (45) **'Run-of-river power station with pondage'** means a hydroelectric power generating station with sufficient pondage for meeting the diurnal variation of power demand;
- (46) **'Scheduled Commercial Operation Date or 'SCOD'** shall mean the date(s) of commercial operation of a generating station or generating unit or block thereof as indicated in the Investment Approval or as agreed in power purchase agreement whichever is earlier;
- (47) **'Scheduled Generation' or 'SG'** at any time or for any period or time block means ex-bus generation schedule in MW given by the State Load Despatch Centre;
- (48) **'Start Date or Zero Date'** means the date indicated in the Investment Approval for commencement of implementation of the project and where no date has been indicated, the date of investment approval shall be deemed to be Start Date or Zero Date;
- (49) **'Thermal generating station'** means a generating station or a unit thereof that generates electricity using fossil fuels such as coal, gas, liquid fuel or combination of these as its primary source of energy;
- (50) **'Trial Run' or 'Trial Operation'** in relation to a generating station shall have the same meaning as specified in Clause (3) of Regulation 6.3 A of Indian electricity Grid Code (IEGC) under these Regulations;
- (51) **'Unloading Point'** means the point within the premises of the coal or lignite based thermal generating station where the coal or lignite is unloaded from the rake or truck or any other mode of transport;
- (52) **'Useful life'** in relation to a unit of a coal/lignite based generating station from the COD shall be for 25 years and in relation to a unit of a Hydro generating station shall mean 40 years from COD;
- (53) **'Year'** means a financial year starting from 1st April of a year to 31st March of the next year.

4. Operational norms to be ceiling norms:

The operational norms specified under these Regulations are the ceiling norms and this shall not preclude the generating company and Distribution Licensee or any other person, as the case may be, from agreeing to improved Norms of operation. In case the improved Norms are agreed to, such Norms shall be applicable for determination of tariff.

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5. Deviation from ceiling tariff:

tariff for sale of electricity by a generating company may also be determined in deviation of the norms specified in these Regulations subject to the conditions that:

- (a) The levelised tariff of electricity over the useful life of the Project, calculated on the basis of the norms in deviation does not exceed the per unit tariff calculated on the basis of the norms specified in these Regulations and after the generator submits complete workings along with assumptions at the time of filing of the tariff Application; and
- (b) Any such deviation shall come into effect only after approval by the Commission.

Explanation: For the purpose of calculating the levelised tariff referred to in Sub clause (a), the discounting factor shall be as notified by the CERC from time to time.

6. Core Business:

For the purpose of these Regulations, Core Business means the regulated activity of Generation of electricity only and does not include any other business or activity of the generating company.

7. Tax on Income:

- (1) Tax on the income streams of the generating company from its core Business, shall be computed as an expense and shall be recoverable from Beneficiaries. Any income stream other than the Core Business, as defined above, shall not constitute a passthrough component in tariff and tax on such other income shall be payable by the generating company.

Provided that the generating station-wise profit before tax of the generating company, as estimated for a year in advance, shall constitute the basis for distribution of the corporate tax liability to all the generating stations.

Provided also that the benefits of tax- holidays as applicable in accordance with the provisions of the Income-Tax Act, 1961 as amended from time to time, shall be passed on to the Beneficiaries.

Provided further that Income- Tax allocated to the Beneficiaries shall be recovered in the proportion of Annual Fixed Charges in the case of thermal generating stations and in the proportion of Annual Capacity Charges in case of Hydro generating station.

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- (2) Notwithstanding anything contained in Sub- Regulation (1), total Income Tax payable by beneficiaries to generating company, in any year, shall be lower of the following:
- (a) Actual payment made;
 - (b) Return on Equity allowed in that year X MAT (%) or Return on Equity allowed in that year X Corporate Tax (%), whichever is applicable.
- (3) Any under-recoveries or over-recoveries of Tax on income shall be adjusted every year on the basis of income- tax assessment under the Income-Tax Act, 1961, subject to Sub-Regulation (2) above, as certified by the Statutory auditors.

8. Tax Escrow Account:

There shall be an account, in a scheduled Bank called Tax Escrow Account to be maintained by the Licensee or any person, hereinafter referred to as Beneficiary, who has purchased the capacity from a generating station. Such Licensee shall maintain in this account a deposit equivalent to two months Tax liability as informed to them by the generating company prior to commencement of the Year.

The generating company shall be authorized to withdraw the amount for settling the tax liability on presentation to the Escrow holder, a certificate from Company's Statutory Auditor, that such amounts are immediately due to be paid to the Tax authorities. Such generating Companies shall pay back any refund received from tax authority to such Tax Escrow Account.

9. Hedging of Foreign Exchange Rate Variation (FERV):

The generating company may hedge foreign exchange exposure in respect of the interest on foreign currency loan and repayment of foreign currency loan taken for the generating station.

10. Recovery of Income-tax and hedging cost of FERV:

Recovery of Income-tax and cost of hedging only towards FERV shall be done directly by the generating company from the Beneficiaries without making any application before the Commission.

Provided that in case of any objections by the Beneficiaries to the amounts claimed on account of Income- tax or cost of hedging towards FERV, the generating company may make an appropriate application before the Commission for its decision.



11. Power 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 a 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.

12. Power to Relax:

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



CHAPTER 2

Commercial Operation

13. Date of Commercial Operation:

1. Date of commercial operation in case of

- a. a generating Unit or Block of the Thermal generating station shall mean the date declared by the generating company after demonstrating the unit capacity corresponding to its Maximum Continuous Rating (MCR) or the Installed Capacity (IC);
- b. a generating unit of hydro generating station including pumped storage hydro generating station shall mean the date declared by the generating company after demonstrating peaking capability corresponding to the Installed Capacity of the generating station;

through a successful trial run after getting clearance from the respective RLDC or SLDC, as the case may be, and in case of the generating station as a whole, the date of commercial operation of the last unit of the generating station:

Provided that

- (i) Where the beneficiaries / long term customers have been tied up for purchasing power from the generating station, the trial run shall commence after a notice of not less than seven days by the generating company to the beneficiaries/ long term customers and concerned RLDC or SLDC, as the case may be and the scheduling shall start from 00:00 hrs after completion of the trial run.
- (ii) Where the beneficiaries / long term customers have not been tied up for purchasing power from the generating station, the trial run shall commence after a notice of not less than seven days by the generating company to the concerned RLDC or SLDC, as the case may be and the scheduling shall start from 00:00 hrs after completion of the trial run.
- (iii) The generating company shall certify that:
 - (a) The generating station meets the relevant requirements and provisions of the technical standards of Central Electricity Authority (Technical Standards



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for Construction of Electrical stations and Electric Lines) Regulations, 2010 and the Grid Code, as applicable:

- (b) In case of a thermal generating station, the main plant equipment and auxiliary systems including Balance of station, such as Fuel Oil System, Coal Handling station, DM plant, pre-treatment plant, fire-fighting system, Ash Disposal system and any other site specific system have been commissioned and are capable of full load operation of the units of the generating station on sustained basis; and
- In case of hydro generating station, the main plant equipment and auxiliary systems including Drainage Dewatering system, Primary and Secondary cooling system, LP and HP air compressor, Firefighting system, etc. have been commissioned and are capable for full load operation of units on sustained basis.
- (c) Permanent electric supply system including emergency supplies and all necessary instrumentation, control and protection systems and auto loops for full load operation of unit have been put in service.
- (iv) The certificates as required under clause (iii) above shall be signed by the CMD/CEO/MD of the generating company subsequent to its approval by the Board of Director(s) and a copy of the certificate shall be submitted to the Member Secretary of the concerned Regional Power Committee and the concerned RLDC / SLDC before declaration of COD.
- (v) Trial run shall be carried out in accordance with Regulation 14(2) of these Regulations.
- (vi) In case a hydro generating station with pondage or storage is not able to demonstrate the peaking capability corresponding to the installed capacity for the reasons of insufficient reservoir or pond level, the date of commercial operation of the last unit of the generating station shall be considered as the date of commercial operation of the generating station as a whole, and it will be mandatory for such hydro generating station to demonstrate peaking capability equivalent to installed capacity of the generating station or unit thereof as the case may be, as and when such reservoir/pond level is achieved:
- (vii) If a run-of-river hydro generating station or a unit thereof is declared under commercial operation during lean inflows period when the water inflow is insufficient for such demonstration of peaking capability, it shall be mandatory



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for such hydro generating station or unit thereof to demonstrate peaking capability equivalent to installed capacity as and when sufficient water inflow is available. In case of failure to demonstrate the peaking capacity, the unit capacity shall be de-rated to the capacity demonstrated with effect from the COD.

2. **Trial Run or Trial Operation:** Trial Run or Trial Operation in relation to a thermal generating station or a unit thereof shall mean successful running of the generating station or unit thereof on designated fuel at Maximum Continuous Rating or Installed Capacity for a continuous period of 72 hours and in case of a hydro generating station or a unit thereof for a continuous period of 12 hours:

Provided that Units of thermal and hydro generating stations shall also demonstrate capability to raise load upto 105% or 110% of the Maximum Continuous Rating or Installed Capacity.



CHAPTER 3

Tariff Determination

14. Determination of tariff:

- (1) tariff in respect of a generating station under these Regulations shall be determined Stage-wise, Unit-wise or for the whole generating station, as the case may be. However, on completion of projects the tariff may be determined for the whole station.
- (2) For the purpose of tariff, the Capital Cost of the Project shall be broken up into Stages and by distinct Units (in case part of Units are functional) forming part of the generating station. Where the Stage-wise, Unit-wise, breakup of the Capital Cost is not available and in case of on-going projects, the common facilities shall be apportioned on the basis of the installed capacity of the Units. In relation to Multi- Purpose Hydroelectric generating stations, with irrigation, flood control and power components, the Capital Cost chargeable to the Power component of the generating station shall only be considered for determination of tariff. 'Project' as said above shall include a generating station.

15. Application for determination of tariff:

- (1) The generating company shall make an application for fixation of tariff in respect of the completed units of the generating station in such forms and such manners as prescribed in these Regulations and Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations, 2004 as amended from time to time or any statutory reenactment thereof.

Provided that the applications for determination of tariff shall be filed covering the period for which the terms and conditions of tariff shall remain in force.

- (2) In case of a generating station declared under commercial operation on or after the date of commencement of these Regulations, an Application for fixation of tariff shall be made as per **Appendix II** to these Regulations, for determination of Provisional tariff within 180 days prior to the anticipated date of commercial operation based on the Capital Expenditure actually incurred up to the date of making of the Application or a date prior to making of the Application, duly audited and certified by the Statutory Auditors, and the provisional tariff shall be charged from the date of commercial operation of the respective Unit of the generating station.
- (3) The generating company shall make a fresh Application as per **Appendix II** to these Regulations, for determination of Final tariff based on actual Capital Expenditure incurred up to the date of commercial operation of the generating station, duly audited and certified by the Statutory Auditors.



Provided further that over or under recovery of charges by the generating company on account of Provisional tariff shall be subject to retrospective adjustment on the basis of final tariff determined by the Commission. The generating company, on the basis of such Final tariff, shall calculate the amount of under or over recovery of charges and bill such amount to be recovered or paid by it from or to the beneficiary (ies), for the period the Provisional tariff remained effective, within six months of determination of final tariff, along with simple interest calculated at rate equal to Bank Rate as on 1st April of the relevant year.

- (4) Where application for determination of tariff of a new project has been filed before the Commission in accordance with clause 16 (2) of these Regulations, the Commission may consider to grant provisional tariff up to 90% of the Annual Fixed Cost of the project claimed in the Application subject to adjustment as per proviso to clause 16(3) of these Regulations after the final tariff order has been issued.

Provided that recovery of Capacity Charges and Energy Charges, as the case may be, in respect of the existing or new project for which provisional tariff has been granted shall be made in accordance with the relevant provisions of these Regulations.

16. Truing up of Capital Expenditure and tariff for the period 2019-24:

- (1) The Commission shall carry out Truing up exercise along with the tariff Petition filed for the next tariff period, for the following, after prudence check.:
- (a) Capital Expenditure including Additional Capital Expenditure incurred up to 31.03.2024.
 - (b) Capital Expenditure including Additional Capital Expenditure incurred up to 31.03.2024, on account of uncontrollable factors.
- (2) The generating company shall make an Application, in hard and soft copy in specified formats as per **Appendix II** to these Regulations, for carrying out Truing up exercise in respect of the generating station or any of its units or block of units thereof by 30.11.2024.
- (3) The generating company shall submit for the purpose of Truing up, details of Capital Expenditure and additional capital expenditure incurred duly audited and certified by the Auditors.

Provided the Commission may appoint a separate independent auditor who, under the supervision of the Commission, shall undertake technical and financial audit of the generating station at any time.



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- (4) Where after the Truing up, if the tariff recovered exceeds the tariff approved by, the Commission under these Regulations, the generating company shall refund to the Beneficiaries, the excess amount so recovered along with simple interest at the rate equal to the Bank Rate prevailing as on 1st April of the relevant Year.
- (5) Where after the Truing up, if the tariff recovered is less than the tariff approved by the Commission under these Regulations, the generating company shall recover from the Beneficiaries, the under-recovered amount along with simple interest at the rate equal to the Bank Rate, prevailing as on 1st April of the relevant Year.
- (6) The amount under-recovered or over-recovered, along with simple interest at the rate equal to the Bank Rate as on 1st April of the relevant Year, shall be recovered or refunded by the generating company, in six equal monthly installments starting within three months from the date of the tariff Order issued by the Commission after the truing up exercise.



CHAPTER 4

Capital Cost and Structure

17. Capital Cost:

- (1) Subject to prudence check by the Commission, the actual expenditure incurred on completion of the project shall form the basis for determination of final tariff for new and existing projects.
- (2) The final tariff for a new project shall be determined based on the admitted capital cost which shall include:
 - (a) the expenditure actually incurred up to the date of commercial operation of the project;
 - (b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
 - (c) Increase in cost in contract packages as approved by the Commission;
 - (d) Interest during construction and incidental expenditure during construction as computed in accordance with these Regulations;
 - (e) Capitalised initial spares subject to ceiling norms of 4% (as a percentage of the station and Machinery cost) upto cut-off date (excluding IDC, IEDC, Land Cost and cost of civil works);

Provided where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Central Electricity Regulatory Commission and are adopted by the Commission for prudence check, such norms shall apply to the exclusion of the norms specified above;

Provided where the generating station has any transmission equipment forming part of the generation project, the ceiling norms for initial spares for such equipment shall be as per the ceiling norms specified by the Commission for transmission system from time to time.

- (f) Expenditure on account of additional capitalization and de-capitalisation determined in accordance with these Regulations;



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- (g) Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under these Regulations;
- (h) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;
- (i) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.

Provided that for all MoU route projects which are under PPA, the agreed ceiling capital cost between the generating company and the beneficiary shall be brought to the Commission for approval and the approved cost shall be a part of PPA. The actual capital cost, if it is equal to the approved ceiling capital cost, shall form the basis for prudence check and determination of tariff by the Commission. If the actual cost is lower, then the lower cost would be taken subject to prudence check and if it is higher, then the additional cost would first be verified and agreed between the generating company and the beneficiary then shall be taken up by the Commission for consideration and approval subject to prudence check.

- (3) The final tariff for an existing project shall be determined based on the admitted capital cost which shall include:
 - (a) The capital cost admitted by the Commission prior to 01.04.2019 duly trued up by excluding liability, if any, as on 01.04.2019;
 - (b) Additional capitalization and de-capitalization for the relevant year of tariff as determined in accordance with these Regulations;
 - (c) Expenditure on account of Renovation and Modernization as admitted by this Commission in accordance with these Regulations;
 - (d) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;
 - (e) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.
- (4) The capital cost in case of existing or new hydro generating station shall also include cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity with National R&R Policy and R&R package as approved.

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(5) The following shall be excluded or removed from the capital cost of the existing and new projects:

- (a) The assets forming part of the project, but not in use;
- (b) De-capitalised Assets after the date of commercial operation on account of replacement or removal on account of obsolescence or shifting from one project to another project:

Provided further that unless shifting of an asset from one project to another is of permanent nature, there shall be no de-capitalization of the concerned assets.

- (c) In case of hydro generating stations, any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State Government by following a transparent process;
 - (d) The proportionate cost of land which is being used for generating power from generating station based on renewable energy;
 - (e) Any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment.
- (6) **Prudence Check of Capital Cost:** The following principles shall be adopted for prudence check of capital cost of the existing or new projects:

- (a) Prudence check of capital cost may be carried out taking into consideration the benchmark norms specified/to be specified by the Central Electricity Regulatory Commission from time to time:

Provided that, Prudence check may include scrutiny of the capital expenditure, financing plan, interest during construction, incidental expenditure during construction for its reasonableness, use of efficient technology, cost over-run and time over-run, competitive bidding for procurement and such other matters as may be considered appropriate by the Commission for determination of tariff. While carrying out the Prudence Check, the Commission shall look into whether the generating company has been careful in its judgments and decisions for executing the project or has been careful and vigilant in executing the project;

Provided that any capital expenditure incurred on the project through any related parties, as defined in the Companies Act, 2013, without prior approval of the procurer shall be excluded from the Capital cost.



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Provided further that the generating company shall submit the reasons for exceeding the capital cost from benchmark norms to the satisfaction of the Commission for allowing cost above benchmark norms.

- (b) The Commission may issue new guidelines or adopt the guidelines prescribed by the Central Electricity Regulatory Commission for vetting of capital cost of projects by an independent agency or an expert and in that event the capital cost as vetted by such agency or expert may be considered by the Commission while determining the tariff for the generating station.
- (c) The Commission may issue new guidelines or adopt the guidelines prescribed by the Central Electricity Regulatory Commission for scrutiny and approval of commissioning schedule of the projects which shall be considered for prudence check.
- (d) Where the power purchase agreement entered into between the generating company and the beneficiaries provides for ceiling of actual capital expenditure, the Commission shall take into consideration such ceiling for determination of tariff for prudence check of capital cost.
- (e) The generating company shall furnish the capital cost for execution of the existing and new projects as per Appendix -II to these Regulations along with tariff petition for the purpose of creating a database of benchmark capital cost of various components.

18. Interest during Construction (IDC), Incidental Expenditure during Construction (IEDC):

- (1) Interest during construction (IDC) shall be computed corresponding to the loan from the date of infusion of debt fund, and after taking into account the prudent phasing of funds up to SCOD.
- (2) Incidental expenditure during construction (IEDC) shall be computed from the zero date and after taking into account pre-operative expenses upto SCOD:

Provided that any revenue earned during construction period up to SCOD on account of interest on deposits or advances, or any other receipts may be taken into account for reduction in incidental expenditure during construction.

- (3) In case of additional costs on account of IDC and IEDC due to delay in achieving the SCOD, the generating company shall be required to furnish detailed justifications with supporting documents for such delay including prudent phasing of funds in case of IDC and details of IEDC during the



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period of delay and liquidated damages recovered or recoverable corresponding to the delay;

Provided that if the delay in achieving the SCOD is not attributable to the generating company and is due to uncontrollable factors as specified in these Regulations, IDC and IEDC beyond SCOD may be allowed after due prudence check and the liquidated damages, if any, recovered from the contractor or supplier or agency shall be adjusted in the capital cost of the generating station:

Provided further that only IDC on actual loan may be allowed beyond the SCOD, to the extent the delay is found beyond the control of generating company after due prudence and taking into account prudent phasing of funds.

- (4) In case of delay in achieving the COD is attributable either in entirety on in part to the generating company or its contractor or supplier or agency, in such cases, IDC and IEDC beyond SCOD may be disallowed after prudence check either in entirety or on pro-rata basis corresponding to the period of delay not condoned and the liquidated damages, if any, recovered from the contractor or supplier or agency shall be retained by the generating company and shall be taken into account for computation of capital cost.

19. **Controllable and Uncontrollable factors:**

The following shall be considered as controllable and uncontrollable factors leading to time over-run, cost escalation impacting Contract Prices, IDC and IEDC of the project:

- (1) The "**Controllable factors**" shall include but shall not be limited to the following:
 - (a) Efficiency in the implementation of the project not involving approved change in scope of such project, change in statutory levies or change in Law or force majeure events; and
 - (b) Delay in execution of the project on account of contractor, supplier or agency of the generating company.
- (2) The "**Uncontrollable factors**" shall include but shall not be limited to the following:
 - (a) Force Majeure events; and
 - (b) Change in law.

Provided that no additional impact of time overrun or cost over-run shall be allowed on account of non-commissioning of the generating system or



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associated transmission system by SCOD, as the same should be recovered through Implementation Agreement between the generating company and the transmission licensee:

Provided further that if the generating station is not commissioned on the SCOD of the associated transmission system, the generating company shall bear the IDC or transmission charges, if the transmission system is declared under commercial operation;

Provided also that if the transmission system is not commissioned on SCOD of the generating station, the transmission licensee shall arrange the evacuation from the generating station at its own arrangement and cost till the associated transmission system is commissioned.

20. Additional capitalization:

- (1) The additional capital expenditure in respect of a new project or an existing project, on the following counts within the original scope of work as per Detailed Project Report (DPR), actually incurred after the date of commercial operation and up to the cutoff date may be admitted by the Commission, subject to prudence check:
 - (i) Deferred liabilities;
 - (ii) Works deferred for execution;
 - (iii) Procurement of initial capital spares in the original scope of work, subject to ceiling specified in these Regulations;
 - (iv) Liabilities to meet award of arbitration or for compliance of the Directions or Order of any statutory authority or Order or decree of a Court;
 - (v) On account of change in law; and
 - (vi) Force majeure events:

Provided that original scope of work along with estimates of expenditure shall be submitted along with the application for provisional tariff.

Provided that in case of any replacement of the assets, the additional capitalization shall be worked out after adjusting the gross fixed assets and cumulative depreciation of the assets replaced on account of de-capitalization.

Provided further that a list of the deferred liabilities and works deferred for execution shall be submitted along with the application for final tariff after the date of commercial operation of the generating station.

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- (2) Subject to the provisions of clause (3) of this Regulation, the capital expenditure of the following counts for new or existing projects actually incurred after the cutoff date may be admitted by the Commission, subject to prudence check:
- (i) Liabilities to meet award of arbitration or for compliance of the directions or Order of any statutory authority, or Order or decree of a Court;
 - (ii) Change in Law;
 - (iii) Force majeure events;
 - (iv) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;
 - (v) Deferred works relating to ash pond or ash handling system in the original scope of work;
- Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M), or repairs and maintenance under (O&M) expenses, same expenditure cannot be claimed under this Regulation.
- (vi) Raising of ash dyke as a part of ash disposal system;
 - (vii) Liability for works executed prior to the cut-off date;
 - (viii) Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;
- (3) In case of de-capitalisation of the assets of a generating company, the original cost of such asset as on the date of de-capitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place, duly taking into consideration the year in which it was capitalised.
- (4) Additional capitalisation on account of Renovation and Modernization (R&M)
- (a) The generating company, for meeting the expenditure on renovation and modernization (R&M) for the purpose of extension of life beyond the useful life of the generating station or a unit thereof, shall make an application before the Commission for approval of the proposal with a Detailed Project Report giving complete scope, justification, cost-benefit analysis, estimated life extension from a reference date, financial package, phasing of expenditure,



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schedule of completion, reference price level, estimated completion cost including foreign exchange component, if any, record of consultation with beneficiaries and any other information considered to be relevant by the generating company;

Provided that in case of coal-based thermal generating station, the generating company, may, in its discretion, avail of a "special allowance" in accordance with the norms specified in clause (d), as compensation for meeting the requirement of expenses including Renovation and Modernization beyond the useful life of the generating station or a unit thereof, and in such an event revision of the capital cost shall not be considered and the applicable operational norms shall not be relaxed but the special allowance shall be included in the Annual Fixed Cost;

Provided also that such option shall not be available for a generating station or unit for which Renovation and Modernization has been undertaken and the expenditure has been admitted by the Commission before commencement of these Regulations, or for a generating station or unit which is in a depleted condition and operating under relaxed operational and performance norms.

- (b) Where the generating company makes an application for approval of its proposal for Renovation and Modernization, the approval shall be granted after due consideration of reasonableness of the proposed cost estimates, financing plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, expected duration of life extension consent of the beneficiaries, if obtained, and such other factors as may be considered relevant by the Commission.
- (c) Any expenditure incurred or projected to be incurred and admitted by the Commission after prudence check based on the estimates of Renovation and Modernization expenditure and life extension, and after deducting the accumulated depreciation already recovered from the original project cost, shall form the basis for determination of tariff.
- (d) A generating company, on opting for the alternative in the first proviso to clause (a) of this Regulation, for a coal-based thermal generating station, shall be allowed special allowance @ Rs. 9.0 lakh/MW/year for the tariff period 2019-24;

Provided that in respect of a unit in commercial operation for more than 25 years as on 01.04.2019, this allowance shall also be admissible from the year 2019-20.

- (e) In the event of granting special allowance by the Commission, the expenditure incurred or utilized from special allowance shall be maintained separately by the generating station and details of same shall be made

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available to the Commission as and when directed to furnish details of such expenditure.

- (f) The provisions specified in clause (a) shall apply provided the generating company shall ensure to plan R&M of at least one unit of each generating station every year for life extension and improvement in performance, wherever due, after due techno economic studies and approval from the Commission to facilitate R&M or phase out.
- (g) Any expenditure admitted by the Commission for determination of tariff on R&M and life extension shall be serviced on normative debt-equity ratio specified in these Regulations after writing off the original amount of the replaced assets from the original project cost. The generating company, for the purpose of R&M and life extension of the plant, shall be guided by the guide lines issued by the Commission from time to time.
- (h) Impact of additional capitalisation in tariff revision may be considered by the Commission each year in a tariff period, including revision of tariff after the cutoff date.

Note 1:

Any expenditure admitted on account of committed liabilities within the original scope of work and the expenditure deferred on techno-economic grounds but falling within the original scope of work shall be serviced in the normative debt-equity ratio specified in these Regulations.

Note 2:

Any expenditure admitted by the Commission for determination of tariff on account of new works not in the original scope of work shall be serviced in the normative debt-equity ratio specified in these Regulations.

21. Sale of Infirm Power:

Supply of infirm power shall be accounted for deviation in accordance with CERC (Deviation Settlement Mechanism and Related matters) Regulations, 2014, as amended from time to time till DSM Regulations of the Commission are notified;

Provided that any revenue earned by the generating company from supply of infirm power after accounting for the fuel expenses shall be applied in adjusting the capital cost accordingly;

Provided also that the startup power drawn by the generating station from the grid shall be adjusted with ex-bus energy and such energy shall be billed to its beneficiaries in the proportion of contracted capacities.



22. Debt-Equity Ratio

- (1) In case of all generating stations, debt-equity ratio as on the date of commercial operation shall be 70:30 for determination of tariff. Where equity employed is more than 30%, the amount of equity for determination of tariff shall be limited to 30% and the balance amount shall be considered as the normative loan.

Provided that

- (i) The generating company shall submit the resolution of the Board of the company regarding infusion of fund from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station.
- (ii) In case of a generating station where actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff;
- (iii) The equity invested in foreign currency shall be designated in Indian rupees on the date of each investment; and
- (iv) Any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.
- (v) The debt and equity amount arrived at in accordance with clause (1) shall be used for calculating interest on loan and return on equity.
- (vi) Any expenditure incurred on or after 01.04.2019 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and Renovation and Modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.



CHAPTER 5

TARIFF STRUCTURE

23. Components of tariff:

- (1) The tariff for supply of electricity from a generating station shall comprise of two parts, namely, capacity charge (for recovery of annual fixed cost consisting of the components) and energy charge as specified in these Regulation.
- (2) The Capacity charges shall be derived on the basis of annual fixed cost. The Annual Fixed Cost (AFC) of a generating station shall consist of the following components:
 - a. Return on equity;
 - b. Interest on loan capital;
 - c. Depreciation;
 - d. Interest on working capital and;
 - e. Operation and maintenance expenses

Provided that special allowance in lieu of Renovation and Modernisation (R&M) where opted in accordance to these Regulations wherever applicable shall be recovered separately and shall not be considered for computation of working capital.

- (3) The energy (variable) charges of a thermal power generating station shall be derived on the basis of landed fuel cost (LFC) and shall constitute the following cost:
 - (a) Landed fuel cost of primary fuel; and
 - (b) Cost of secondary fuel oil

Provided that any refund of taxes and duties along with any amount received on account of penalties from fuel supplier shall have to be adjusted in fuel cost.

(4) Landed Fuel Cost of Primary Fuel:

- (i) The landed fuel cost of primary fuel for any month shall consist of base price or input price of fuel corresponding to the grade and quality of fuel and shall be inclusive of statutory charges as applicable, washery charges, transportation cost by rail or road or any other means and loading, unloading and handling charges:



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Provided that procurement of fuel at a price other than Government notified prices may be considered, if it is based on competitive bidding through transparent process;

Provided further that landed fuel cost of primary fuel shall be worked out based on the actual bill paid by the generating company including any adjustment on account of quantity and quality.

Provided also that in case of coal-fired based thermal generating station, the Gross Calorific Value shall be measured by third party sampling and the expenses towards the third-party sampling facility shall be reimbursed by the beneficiaries.

- (ii) For the purpose of determination of tariff, the landed fuel cost of primary and secondary fuel shall be based on actual weighted average cost of primary fuel and secondary fuel of the three preceding months, and in the absence of landed costs for the three preceding months, latest procurement price of primary fuel and secondary fuel for the generating station, before the start of the tariff period for existing stations and immediately preceding three months in case of new generating stations shall be taken into account.

24. Capacity (Fixed) Charge:

- a) The capacity charges of thermal generating stations shall be computed on the following basis and their recovery shall be related to target availability in case of all existing as well as new generating stations:

Provided full capacity charges shall be recoverable at target availability specified in these Regulations. Recovery of capacity (fixed) charges below the level of target availability shall be on *pro rata* basis. At zero availability, no capacity charges shall be payable;

Provided also that the payment of capacity charges shall be on monthly basis in proportion to the allocated capacity.

- b) The fixed cost of a hydro generating station shall be computed on annual basis, based on norms specified under these Regulations, and shall be recovered on monthly basis under capacity charge (inclusive of incentive) which shall be payable by the beneficiaries in proportion to their respective allocation in the saleable capacity of the generating station, i.e., in the capacity excluding the free power to the home State.

(i) Return on Equity:

Return on equity shall be computed in rupee terms on the equity base determined in accordance with these Regulations @ 15% per annum;



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Provided that the rate of return of a new project shall be reduced by upto 1% for such period as maybe decided by the Commission, if the generating station is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO) or Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch center or protection system based on the report submitted by SLDC;

Provided also that as and when any of the above requirements are found lacking in an existing generating station based on the report submitted by the SLDC, RoE may be reduced by up to 1% for such period as may be decided by the Commission;

Explanation: The premium raised by the generating company while issuing share capital and investment of internal resources created out of free reserve of the generating company, if any, for the funding of the project, shall also be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilized for meeting the capital expenditure of the generating station and forms part of the approved financial package.

(ii) Interest on loan capital

- (a) Interest on loan capital shall be computed loan wise on the loans arrived at in the manner indicated in these Regulations.
- (b) The loan outstanding as on 1st April 2019 shall be worked out as the gross loan as per these Regulations minus cumulative repayment as admitted by the Commission up to 31st March 2019. The repayment for any financial year during the tariff Period shall be deemed to be equal to the depreciation allowed for that financial year.

In case of de-capitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered up to the date of de-capitalisation of such asset.

- (c) The rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each financial year and shall be adjusted based on actual loan each financial year accordingly.
- (d) If there is no actual loan for a particular financial year but normative loan is still outstanding, the last available weighted average of interest shall be considered.



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- (e) The generating company shall make every effort to re-finance the loan as long as it results in net benefit to the beneficiaries. The costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company in the ratio of 50:50. The above facts shall be certified by statutory Auditor.
- (f) The changes to the loan terms and conditions shall be reflected from the date of such re-financing and benefit passed on to the beneficiaries.
- (g) In case any moratorium period is availed of by the generating company, Depreciation provided for in the tariff during the years of moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly.
- (h) In case, the generating company has contracted floating/ variable rate of interest on loan resetting at certain interval of time the impact of change in rate of interest shall be assessed by the generating company on account of such resetting duly certified by statutory auditor and the capacity charge of the relevant financial year shall be adjusted for such impact and billed accordingly to beneficiary without approaching the Commission for change in tariff on this account.

Provided if the generating company does not have actual loan or have re-financed the loan resulting in no specific loan attributable to the generating station then the weighted average rate of interest of the generating company as a whole shall be considered.

Provided also in case of dispute, any party to such dispute may approach the Commission with proper application and it shall be ensured that the payment to the generating company is not withheld during pendency of the dispute.

(iii) Depreciation:

For the purpose of tariff, depreciation shall be computed in the following manner, namely:

- (a) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof. In case of the tariff of all the units of a generating station for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station taking into consideration the depreciation of individual units or elements thereof.



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Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station for which single tariff needs to be determined.

- (b) The value base for the purpose of depreciation shall be the capital cost of the asset as admitted by the Commission. In case of multiple units of a generating station weighted average life for the generating station shall be applied. Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis.
- (c) The residual life of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset. Land other than the land held under lease shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of asset.

Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the station.

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff.

- (d) In case of new projects, depreciation shall be calculated annually, based on straight line method over the useful life of the asset and at the rates prescribed in **Appendix III** to these Regulations.

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

Provided also that any depreciation disallowed on account of lower availability of the generating station shall not be allowed to be recovered at a later stage during the useful life and the extended life.

- (e) In case of the existing projects, the balance depreciable value as on 01.04.2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2019 from the gross depreciable value of the assets. The rate of depreciation shall be continued to be charged at the rate specified in **Appendix III** till cumulative depreciation reaches 70%. Thereafter the remaining



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depreciable value shall be spread over the remaining life of the asset such that the maximum depreciation does not exceed 90%.

Provided also that any depreciation disallowed on account of lower availability of the generating station shall not be allowed to be recovered at a later stage during the useful life and the extended life.

- (f) The generating company shall submit the details of proposed capital expenditure during the fag end of the project (five years before the completion of useful life) along with justification and proposed life extension. The Commission, based on prudence check of such submissions, shall approve the depreciation on capital expenditure during the fag end of the project.
- (g) In case of de-capitalization of assets in respect of generating station or unit thereof the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the decapitalized asset during its useful services.

(iv) Operation and maintenance expenses:

- (a) For Coal-based generating stations except those covered under clause (b):

(in Rs lakh/ MW)

Financial Year	Upto 200/210/250 MW sets	300/330/350 MW sets	500 MW sets	600 MW & above sets
2019-20	32.96	27.74	22.51	20.26
2020-21	34.12	28.71	23.30	20.97
2021-22	35.31	29.72	24.12	21.71
2022-23	36.56	30.76	24.97	22.47
2023-24	37.84	31.84	25.84	23.26

- (b)

(in Rs lakh/ MW)

Financial Year	Harduaganj (U#7)	Parichha (U#2)
2019-20	64.80	38.80
2020-21	67.07	40.16
2021-22	69.43	41.57



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Financial Year	Harduaganj (U#7)	Parichha (U#2)
2022-23	71.86	43.03
2023-24	74.39	44.54

- (c) For the generating stations having combination of 200/210/250/300/330//500/600/660 MW and above sets, the weighted average value for operation and maintenance expenses shall be adopted.
- (d) In case of partial utilisation of expenditure, unutilised amount may be allowed to meet the increased requirement of Operation & Maintenance expenditure in subsequent years.
- (e) The normative values of operation and maintenance expenses including insurance, for the existing hydro generating stations shall be as approved by the Commission in the tariff order based on the expenses approved in the previous control period, escalation rate of 4.47% per annum and any other factor as considered appropriate by the Commission.
- (f) The water charges for thermal generating stations shall be allowed separately.
Provided that water charges shall be allowed based on water consumption depending upon type of plant and type of cooling water system, subject to prudence check. The details regarding the same shall be furnished along with the petition;
- (g) In case of the hydro generating stations declared under commercial operation on or after the date of commencement of these Regulations, the base operation and maintenance expenses shall be fixed at 3.50% and 5.0% of the original project cost (excluding cost of rehabilitation & resettlement works, IDC and IEDC) for first year of commercial operation for stations less than 200 MW projects and for stations more than 200 MW respectively and shall be subject to annual escalation of 6.64% per annum for the subsequent years.
- (h) The generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.
- (v) **Interest on Working Capital**
- (a) Working capital shall be allowed on a normative basis and for coal based generating stations shall include:



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- (i) Cost of coal towards stock for 10 days for pit-head generating stations and 20 days for non-pit-head generating stations, corresponding to the Target Availability or maximum coal stock storage capacity, whichever is lower
 - (ii) Advance Payment for 30 days towards Cost of coal for generation corresponding to the Target Availability;
 - (iii) Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
 - (iv) Operation and Maintenance expenses, including water charges, for one month;
 - (v) Maintenance spares @ 20% of operation and maintenance expenses; and
 - (vi) Receivables equivalent to 45 days of capacity charges and energy charges for sale of electricity calculated on the target availability.
- (b) The cost of fuel in cases covered under sub-clauses (i) and (ii) of clause (a) of this Regulation shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the generating company and gross calorific value of the fuel on 'as received basis' for the three months preceding the first month of the period for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period.
- (c) Working Capital for hydro generating stations shall cover:
- (i) Operation and Maintenance expenses for one month;
 - (ii) Maintenance spares @ 15% of operation and maintenance expenses; and
 - (iii) Receivables equivalent to 45 days of Annual fixed cost.
- (d) Rate of interest on working capital shall be on normative basis and shall be considered as the Bank Rate as on 01.04.2019 or as on 1st April of the year during the tariff period 2019-24 in which the generating station or a unit thereof is declared under commercial operation, whichever is later.

Provided that in case of truing-up, the rate of interest on working capital shall be considered at bank rate as on 1st April of each of the financial year during the tariff period 2019-24.



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- (e) Interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken loan for working capital from any outside agency.



CHAPTER 6

COMPUTATION OF CAPACITY AND ENERGY CHARGES

25. Billing and Payment of Capacity Charges

Billing and payment of capacity charges shall be done on a monthly basis in the following manner:

- (i) For a thermal generating station, each beneficiary shall pay the capacity charges in proportion to its percentage share in Installed Capacity of the generating station.
- (ii) For a hydro generating station, each beneficiary shall pay the capacity charges in proportion to its percentage share in total saleable capacity of the generating station. Saleable capacity shall mean total capacity minus free capacity to home state(s) in case of IPP, if any.

Note-1

Allocation of total capacity of State sector generating stations is made by State Government from time to time.

Note-2

The beneficiaries may propose surrendering part of their allocated share. In such cases, depending upon the technical feasibility of power transfer and specific agreements reached by the generating company with other States within/outside the state for such transfers, the shares of the beneficiaries may be re-allocated by the State Government for a specific period. When such re-allocations are made, the beneficiaries who surrender the share shall not be liable to pay capacity charges for the surrendered share. The capacity charges for the capacity surrendered and reallocated as above shall be paid by that beneficiary to whom the surrendered capacity is allocated. Except for the period of reallocation of capacity as above, the beneficiaries of the generating station shall continue to pay the full fixed charges as per allocated capacity shares.

- (iii) The beneficiaries shall have full freedom for negotiating any transaction for utilisation of their capacity shares. In such cases, the beneficiary having allocation in the capacity of the generating station shall be liable for full payment of capacity charges and energy charges (including that for sale of power under the transaction negotiated by him) corresponding to his total allocation and schedule respectively.
- (iv) If any capacity remains un-requisitioned during day-to-day operation, the State Load Despatch Centre shall advise all beneficiaries in the state and the other States/Regional Load Despatch Centers so that such capacity



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may be requisitioned through bilateral arrangements either with the concerned generating company or with the concerned beneficiary(ies) under intimation to the State Load Despatch Center.

The information regarding un-requisitioned capacity will also be made available by the other State Load Despatch Center through their respective websites.

- (v) (a) The total capacity charge payable for a thermal generating station shall be shared by its beneficiaries as per their respective percentage share / allocation in the capacity of the generating station. The capacity charge payable to a thermal generating station for a calendar month shall be calculated in accordance with the following formulae:

$$\begin{aligned} \text{CC1} &= (\text{AFC}/12) (\text{PAF1} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC}/12) \\ \text{CC2} &= ((\text{AFC}/6)(\text{PAF2} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC}/6)) - \text{CC1} \\ \text{CC3} &= ((\text{AFC}/4) (\text{PAF3} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC}/4)) - \\ &\quad (\text{CC1} + \text{CC2}) \\ \text{CC4} &= ((\text{AFC}/3) (\text{PAF4} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC}/3)) - \\ &\quad (\text{CC1} + \text{CC2} + \text{CC3}) \\ \text{CC5} &= ((\text{AFC} \times 5/12) (\text{PAF5} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC} \times \\ &\quad 5/12)) - (\text{CC1} + \text{CC2} + \text{CC3} + \text{CC4}) \\ \text{CC6} &= ((\text{AFC}/2) (\text{PAF6} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC}/2)) - \\ &\quad (\text{CC1} + \text{CC2} + \text{CC3} + \text{CC4} + \text{CC5}) \\ \text{CC7} &= ((\text{AFC} \times 7/12) (\text{PAF7} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC} \times 7/12)) \\ &\quad - (\text{CC1} + \text{CC2} + \text{CC3} + \text{CC4} + \text{CC5} + \text{CC6}) \\ \text{CC8} &= ((\text{AFC} \times 2/3) (\text{PAF8} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC} \times 2/3)) - \\ &\quad (\text{CC1} + \text{CC2} + \text{CC3} + \text{CC4} + \text{CC5} + \text{CC6} + \text{CC7}) \\ \text{CC9} &= ((\text{AFC} \times 3/4) (\text{PAF9} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC} \times 3/4)) - \\ &\quad (\text{CC1} + \text{CC2} + \text{CC3} + \text{CC4} + \text{CC5} + \text{CC6} + \text{CC7} + \text{CC8}) \\ \text{CC10} &= ((\text{AFC} \times 5/6) (\text{PAF10} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC} \times 5/6)) \\ &\quad - (\text{CC1} + \text{CC2} + \text{CC3} + \text{CC4} + \text{CC5} + \text{CC6} + \text{CC7} + \text{CC8} + \text{CC9}) \\ \text{CC11} &= ((\text{AFC} \times 11/12) (\text{PAF11} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC} \times \\ &\quad 11/12)) - (\text{CC1} + \text{CC2} + \text{CC3} + \text{CC4} + \text{CC5} + \text{CC6} + \text{CC7} + \text{CC8} \\ &\quad + \text{CC9} + \text{CC10}) \\ \text{CC12} &= ((\text{AFC}) (\text{PAFY} / \text{NAPAF}) \text{ subject to ceiling of } (\text{AFC})) - (\text{CC1} + \text{CC2} \\ &\quad + \text{CC3} + \text{CC4} + \text{CC5} + \text{CC6} + \text{CC7} + \text{CC8} + \text{CC9} + \text{CC10} + \\ &\quad \text{CC11}) \end{aligned}$$

Provided that in case of generating station or unit thereof or as the case may be, under shutdown due to Renovation and Modernisation, the generating company shall be allowed to recover part of AFC which shall include O&M expenses and interest on loan only.

Where,



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AFC Annual fixed cost specified for the year, in Rupees

NAPAF = Normative annual plant availability factor in percentage.

PAFM = Percent station availability factor achieved upto the end of the nth month.

PAFY = Percent station availability factor achieved during the Year

CC1, CC2, CC3, CC4, CC5, CC6, CC7, CC8, CC9, CC10, CC11 and CC12 are the Capacity Charges of 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th and 12th months respectively.

(b) PAFM upto the end of a particular month and PAFY shall be computed in accordance with the following formula:

$$\text{PAFM or PAFY} = 10000 \times \sum_{i=1}^N \text{DCi} / \{N \times \text{IC} \times (100 - \text{AUX})\} \%$$

Where,

AUX=Normative auxiliary energy consumption in percentage.

DCi = Average declared capacity (in ex-bus MW), for the ith day of the period i.e. the month or the year as the case may be, as certified by the concerned load dispatch centre after the day is over.

IC = Installed Capacity (in MW) of the generating station
N= Number of days during the period.

Note

DCi and IC shall exclude the capacity of generating units not declared under commercial operation. In case of a change in IC during the concerned period, its average value shall be taken.

- (vi) (a) The capacity charges for a hydro generating station (inclusive of incentive) shall be paid by the beneficiary(ies) including those outside the state/region to the generating company, every month in accordance with the following formula and in proportion to their respective shares in the concerned generating station for a calendar month and shall be equal to:

$$\text{AFC} \times 0.5 \times \text{NDM} / \text{NDY} \times (\text{PAFM} / \text{NAPAF}) \text{ (in Rupees)}$$

Where,

AFC = Annual fixed cost specified for the year, (in Rupees)



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NAPAF = Normative plant availability factor (in percentage)

NDM = Number of days in the month

NDY = Number of days in the year

PAFM = station availability factor achieved during the month, (in %)

- (b) PAFM upto the end of a particular month shall be computed in accordance with the following formula:

$$PAFM = 10000 \times \sum_{i=1}^N DC_i / \{N \times IC \times (100 - AUX)\} \%$$

Where,

AUX=Normative auxiliary energy consumption (in percentage).

DC_i = Declared capacity (in ex-bus MW) for the ith day of the month which the station can deliver for at least three (3) hours, as certified by the nodal load dispatch Centre after the day is over.

IC = Installed Capacity (in MW) of the complete generating station

N= Number of days in the month.

- (vii) The generating company shall submit data of cost, expenditure and operation as specified in **Appendix I** to these Regulations in the month of September & March of each year.

26. Norms of operation for Thermal generating stations

- (i) Target Availability (NAPAF) for recovery of full Capacity (Fixed) charges

- (a) For all thermal power generating stations except those covered under clause (b)- 85%

Provided that in view of shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the target availability for recovery of fixed charges may be reduced to 83% based on the submissions made by the generating station and approval of the Commission.

- (b)

S.No	Name of station	Target Availability
1	Obra- B TPS	80%
2	Harduaganj TPS	65%
3	Parichha TPS	75%



Note -1

Recovery of capacity (fixed) charges below the level of target availability shall be on *pro rata* basis. At zero availability, no capacity charges shall be payable.

Note-2

In case of non-availability of unit(s) due to Renovation and Modernization or deletion of capacity or deration of capacity, the effective capacity left after discounting capacity of such unit(s), shall be considered for the purpose of calculation of plant availability.

Note-3

In case of thermal backing instruction, the capacity(fixed) charges shall be payable on the basis of availability.

(ii) Target station Load Factor for Incentive

(a) All thermal power generating stations except those covered under clause (b) -85%

(b)

S. No	Name of station	Target PLF
1	Obra- B TPS	75%
2	Harduaganj TPS	60%
3	Parichha TPS	70%

(iii) Gross station Heat Rate (GSHR)

(a) In case of coal-based thermal power generating station having achieved COD before 01.04.2014 except those covered under clause (b):

Below 200 MW Sets	200/ 210/ 250/ 300/ 330/ 350 MW Sets	500 MW	Above 500 MW Sets
2840 kCal/kWh	2430 kCal/kWh	2390 kCal/kWh	2270 kCal/kWh

Note 1

In respect of 500 MW and above units where the boiler feed pumps are electrically operated, the gross station heat rate shall be 40kCal/kWh lower than that indicated above.

Note 2

④

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For the generating stations having combination of 200/210/250/300/330/350 MW sets and 500 MW and above sets, the normative gross station heat rate shall be the weighted average gross station heat rate of the combinations.

(b)

S.No	Name of station	GSHR
1	Obra- B TPS	2755
2	Harduaganj TPS	2625
3	Parichha TPS	2980

(c) In case of coal-based thermal power generating station achieving COD on or after 01.04.2014

Gross station Heat Rate = 1.05 X Design Heat Rate (kCal/kWh)

Where the Design Heat Rate of a generating unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero percent make up, design coal and design cooling water temperature/back pressure.

Provided that the design heat rate shall not exceed the following maximum design, unit heat rates depending upon the pressure and temperature ratings of the units:

Pressure Rating (Kg/cm ²)	150	170	170	247	247	270	270
SHT/RHT (°C)	535/535	537/537	537/565	537/565	565/593	593/593	600/600
Type of BFP	Electrical Driven	Turbine Driven	Turbine Driven	Turbine Driven	Turbine Driven	Turbine Driven	Turbine Driven
Max Turbine Heat Rate (kCal/kWh)	1955	1950	1935	1900	1850	1810	1800
Min. Boiler Efficiency							



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Pressure Rating (Kg/cm ²)	150	170	170	247	247	270	270
Sub-Bituminous Indian Coal	0.86	0.86	0.86	0.86	0.86	0.865	0.865
Bituminous Imported Coal	0.89	0.89	0.89	0.89	0.89	0.895	0.895
Max Design Unit Heat Rate (kCal/kWh)							
Sub bituminous Indian Coal	2273	2267	2250	2222	2151	2105	2081
Bituminous Imported Coal	2197	2191	2174	2135	2078	2034	2022

Provided further that in case pressure and temperature parameters of a unit are different from the above ratings, the maximum design unit heat rate of the nearest class shall be taken;

Provided also that where unit heat rate has not been guaranteed but turbine cycle heat rate and boiler efficiency are guaranteed separately by the same supplier or different suppliers, the unit design heat rate shall be arrived at by using guaranteed turbine cycle heat rate and boiler efficiency;

Provided also that where the boiler efficiency is below 86% for Sub-bituminous Indian coal and 89% for bituminous imported coal, the same shall be considered as 86% and 89% respectively for Sub-bituminous Indian coal and bituminous imported coal for computation of station heat rate;

Provided also that maximum turbine cycle heat rate shall be adjusted for type of dry cooling system;

Provided also that if one or more generating units were declared under commercial operation prior to 01.04.2019, the heat rate norms for those generating units as well as generating units declared under commercial operation on or after 01.04.2019 shall be lowest of the heat rate norms considered by the Commission during tariff period 2014-19 or those arrived at by above methodology or the norms as per these Regulations.



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Note

In respect of generating units where the boiler feed pumps are electrically operated, the maximum design unit heat rate shall be 40 kCal/kWh lower than the maximum design unit heat rate specified above with turbine driven Boiler Feed Pump.

(iv) Secondary fuel oil consumption (SFOC)

(a) For all Coal-based generating stations except those covered under clause (b)- 0.5 ml/kWh

(b)

S.No	Name of station	SFOC
1	Obra- B TPS	2.1
2	Harduaganj TPS	2.5
3	Parichha TPS	2.6

(v) Auxiliary Energy Consumption (AUX)

(a) Coal-based generating stations except those covered under clause (b):

S. No.	generating station	With Natural Draft cooling tower or without cooling tower
(i)	Upto and including 200 MW series	
	Steam driven boiler feed pumps	8.5%
	Electrically driven boiler feed pumps	
(ii)	300/330/350 MW series	
	Steam driven boiler feed pumps	5.75%
	Electrically driven boiler feed pumps	8.0%
(iii)	500 MW and above series	
	Steam driven boiler feed pumps	5.75%
	Electrically driven boiler feed pumps	8.0%

Provided further that for thermal generating stations with induced draft cooling towers and where tube type coal mill is used, the norms shall be further increased by 0.5% and 0.8% respectively:

Provided further that for thermal generating stations up to 50 MW on CFBC technology, the norms shall be further increased by 1%:

Provided also that Additional Auxiliary Energy Consumption as follows may be allowed for plants with Dry Cooling Systems:



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Type of Dry Cooling System	(% of gross generation)
Direct cooling air cooled condensers with mechanical draft fans	1%
Indirect cooling system employing jet condensers with pressure recovery turbine and natural draft tower	0.5%

(b)

S.No	Name of station	AUX
1	Obra- B TPS	9.7
2	Harduaganj TPS	9.5
3	Parichha TPS	10.7

(vi) Compensation for Part load operation

Part load operation below 75%, may be compensated for the change in operating norms as per Grid Code, as amended from time to time.

27. Norms for Hydro Power generating stations

(i) Normative Annual station Availability Factor for recovery of full capacity charges

- Storage and Pondage type plants with head variation between Full Reservoir Level (FRL) and Minimum Draw Down Level (MDDL) of up to 8%, and where plant availability is not affected by silt: 90%
- In case of storage and pondage type plants with head variation between full reservoir level and minimum draw down level is more than 8% and when plant availability is not affected by silt, the month wise peaking capability as provided by the project authorities in the DPR (approved by CEA or the State Government) shall form basis of fixation of NAPAF.
- Pondage type plants where plant availability is significantly affected by silt: 85%.
- Run-of-river type plants: NAPAF to be determined plant-wise, based on 10-day design energy data, moderated by past experience where available/ relevant.

Note-1



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There shall be pro rata recovery of capacity charges in case the generating station achieves NAPAFA below the prescribed normative levels. At Zero NAPAFA, no capacity charges shall be payable to the generating station.

Note-2

In case of non-availability of unit (s) due to Renovation and Modernization, the effective capacity left after discounting such capacity, shall be considered for the purpose of calculation of NAPAFA.

(ii) Auxiliary Energy Consumption (AUX):

Type of station	AUX (% of energy generated)
Surface	
Rotating Excitation	0.7%
Static Excitation	1.0%
Underground	
Rotating Excitation	0.9%
Static Excitation	1.2%

28. Energy Charges:

(i) Coal & fired thermal generating stations

Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:—

$$ECR = \{[(GSHR - SFC \times CVSF) \times LPPF / GCVPF + SFC \times LPSFi + LC \times LPL] \times 100 / (100 - AUX)\}$$

Where,

AUX	Normative auxiliary energy consumption (in percentage).
GCVPF	(a) Weighted Average Gross calorific value of coal as received, in kCal per kg for coal- based stations less 85 Kcal/Kg on account of variation during storage at generating station;
	(b) Weighted Average Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic meter, as applicable for lignite based stations.



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	(c) In case of blending of fuel from different sources, the weighted average Gross calorific value of primary fuel shall be arrived in proportion to blending ratio.
CVSF	Calorific value of secondary fuel, in kCal per ml.
ECR	Energy charge rate, in Rupees per kWh sent out.
GSHR	Normative gross station heat rate, in kCal per kWh.
LC	Normative limestone consumption in kg per kWh.
LPL	Weighted average landed price of limestone in Rupees per kg.
LPPF	Weighted average landed price of primary fuel, in Rupees per kg during the month. (In case of blending of fuel from different sources, the weighted average landed price of primary fuel shall be arrived in proportion to blending ratio).
SFC	Normative Specific fuel oil consumption, in ml per kWh.
LPSFi	Weighted Average Landed Price of Secondary Fuel in Rs/ ml during the month.

(ii) **Adjustment of rate of energy charge (ECR) on account of variation in price or heat value of fuels**

- (a) Initially, Gross Calorific Value of coal shall be taken (on as received basis) of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal received and landed cost incurred by the generating company for procurement of coal or oil, as the case may be. No separate petition need to be filed with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission.
- (b) The generating company shall provide to the beneficiaries of the generating station the details of parameters of GCV and price of fuel i.e. domestic coal, imported coal, e-auction coal, etc., as per the forms prescribed at **Appendix II** to these Regulations;

Provided that the details of blending ratio of the imported coal with domestic coal, proportion of e-auction coal and the weighted average GCV of the fuels as received shall also be provided separately, along with the bills of the respective month;

Provided further that copies of the bills and details of parameters of GCV and price of fuel i.e. domestic coal, imported coal, e-auction coal, lignite, etc., details of blending ratio of the imported coal with domestic coal, proportion of e-auction coal shall also be displayed on the website of the



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generating company. The details should be available on its website on monthly basis for a period of three months.

(iii) Landed Cost of Coal

The landed cost of coal shall mean the Landed fuel cost as defined in these Regulations and for the purpose of computation of energy charges, quantity of coal shall be arrived at after considering normative transit and handling losses as percentage of the quantity of coal dispatched by the coal supply company during the month as given below:

Pit head generating stations : 0.2%

Non-Pit head generating stations : 0.8%

Any other charges incurred by the generating company in handling of coal at generating station shall be deemed to have been included in O&M expenses.

Provided that in case of pit head stations if coal is procured from sources other than the pit head mines which is transported to the station through rail, transit and handling loss of 0.8% shall be applicable;

Provided further that in case of imported coal, the transit and handling losses shall be 0.2%.

(iv) Cost of alternative coal supply

In case of part or full use of alternative source of fuel supply by coal based thermal generating stations other than as agreed by the generating company and beneficiaries in their power purchase agreement for supply of contracted power on account of shortage of fuel or optimization of economical operation through blending, the use of alternative source of fuel supply shall be permitted to generating station;

Provided that the weighted average price of use of alternative source of fuel shall not exceed 30% of base price of fuel computed as per clause (v) of this Regulation; or

Provided also that where the energy charge rate based on weighted average price of use of fuel including alternative source of fuel exceeds 30% of base energy charge rate as approved by the Commission for that year or energy charge rate based on weighted average price of use of fuel including alternative sources of fuel exceeds 20% of energy charge rate based on weighted average fuel price for the previous month, whichever is lower shall be considered;



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and in either event, prior consent of the beneficiary shall be taken by the generator by serving a notice upon the beneficiary in writing not later than seven working days in advance; and

Provided further that if the beneficiary does not respond to the notice given by the generator in writing within the above stipulated time, the beneficiary shall be liable for payment of fixed charges to generator.

Note

Alternative coal supply from CIL (Coal India Limited) beyond the FSA (Fuel Supply Agreement) must be done through e-auction route and for procurement of domestic open market coal and imported coal the generating companies shall follow a transparent competitive bidding process so as to identify a reasonable market price.

(v) Base energy charge rate for thermal generating stations

The Commission through the specific tariff orders to be issued for each generating station shall approve the energy charge rate at the start of the tariff period. The energy charge so approved shall be the base energy charge rate at the start of the tariff period. The base energy charge rate for subsequent years shall be the energy charge computed after escalating the base energy charge rate approved at the start of the tariff period by escalation rates for payment purposes as notified by CERC from time to time for under competitive bidding guidelines.

(vi) Energy charges for hydro- generating stations

- a) The energy charge shall be payable by every beneficiary for the total energy scheduled to be supplied to the beneficiary, excluding free energy, if any, during the calendar month, on ex power plant basis, at the computed energy charge rate. Total Energy charge payable to the generating company for a month shall be:

$$= (\text{Energy charge rate in Rs. / kWh}) \times \text{Scheduled energy (ex-bus) for the month in kWh} \times (100 - \text{FEHS}) / 100$$

- b) Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis, for a hydro generating station, shall be determined up to three decimal places based on the following formula, subject to the provisions of clause (c):

$$\text{ECR} = \text{AFC} \times 0.5 \times 10 / \{ \text{DE} \times (100 - \text{AUX}) \times (100 - \text{FEHS}) \}$$

Where,



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DE = Annual design energy specified for the hydro generating station, in MWh, subject to the provision in clause (c) below.

FEHS = Free energy for home State, in percent and shall be taken as 12% or actual, whichever is less.

Provided that in cases where the site of a hydro project is awarded to a developer, by the State Government by following a two-stage transparent process of bidding, the "free energy" shall be taken as 12%,

- c) In case the actual total energy generated by a hydro generating station during a year is less than the design energy for reasons beyond the control of the generating station, the following treatment shall be applied on a rolling basis on an application filed by the generating company:

In case the energy shortfall occurs within ten years from the date of commercial operation of a generating station, the ECR for the year following the year of energy shortfall shall be computed based on the formula specified in clause (b) with the modification that the DE for the year shall be considered as equal to the actual energy generated during the year of the shortfall, till the energy charge shortfall of the previous year has been made up, after which normal ECR shall be applicable:

Provided that in case actual generations from a hydro generating station is less than the design energy for a continuous period of 4 years on account of hydrology factor, the generating station shall approach CEA with relevant hydrology data for revision of design energy of the station.

In case the energy shortfall occurs after ten years from the date of commercial operation of a generating station, the following shall apply:

Explanation: Suppose the specified annual design energy for the station is DE MWh, and the actual energy generated during the concerned (first) and the following (second) financial years is A1 and A2 MWh respectively, A1 being less than DE. Then, the design energy to be considered in the formula in clause (b) for calculating the ECR for the third financial year shall be moderated as $(A1 + A2 - DE)$ MWh, subject to a maximum of DE MWh and a minimum of A1 MWh.

Actual energy generated (e.g. A1, A2) shall be arrived at by multiplying the net metered energy sent out from the station by $100 / (100 - \text{AUX})$.



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- d) In case the energy charge rate (ECR) for a hydro generating station, computed as per clause (b) exceeds one hundred twenty (120) paise per kWh, and the actual saleable energy in a year exceeds $\{DE \times (100 - AUX) \times (100 - FEHS) / 10000\}$ MWh, the Energy charge for the energy in excess of the above shall be billed at one hundred twenty (120) paise per kWh only



CHAPTER 7

Scheduling, Accounting, Billing and Payment

29. Scheduling:

- (1) The methodology of scheduling and availability shall be as specified in the Grid Code as notified by the Commission from time to time. However, hydro power plants of capacity below 25 MW shall not be subject to scheduling.
- (2) Declaration of available capacity shall also include limitation on generation during specific time periods, if any, on account of restriction(s) on water use due to irrigation, drinking water, industrial, environmental considerations, etc.
- (3) For run-of-river power stations without pondage, since variation of generation in such stations may lead to spillage, these shall be treated as must run stations. The maximum available capacity, duly taking into account the over load capability, must be equal to or greater than that required to make full use of the available water.
- (4) For run-of-river power station with pondage and storage type power stations, since, these hydro stations are designed to operate during peak hours to meet system peak demand, maximum available capacity of the station declared for the day shall be equal to the installed capacity including overload capability, minus auxiliary consumption and transformation losses, corrected for the reservoir level. The State Load Despatch Centre shall ensure that generation schedules of such type of stations are prepared and the stations dispatched for optimum utilization of available hydro energy except in the event of specific system requirements/constraints.

30. Demonstration of Declared Capability:

- (1) The generating company may be required to demonstrate the declared capability of its generating station as and when asked by the State Load Despatch Centre. In the event of the generating company failing to demonstrate the declared capability, the capacity charges due to the generator shall be reduced as a measure of penalty.
- (2) The quantum of penalty for the first mis-declaration for any duration/block in a day shall be the charges corresponding to two days' fixed charges. For the second mis-declaration the penalty shall be equivalent to fixed charges for four days' and for subsequent mis-declarations, the penalty shall be multiplied in the geometrical progression.
- (3) The operating log books of the generating station shall be available for review by the State Load Despatch Centre. These books shall keep record of machine



operation and maintenance, and reservoir level and spillway gate operation, in case of hydro generating stations.

31. Metering and Accounting:

Metering arrangements, including installation, testing and operation and maintenance of meters and collection, transportation and processing of data required for accounting of energy exchanges and average frequency on 15-minute time block basis shall be organized by the State Transmission Utility in consultation with State Load Despatch Centre. All concerned entities (in whose premises the special energy meters are installed), shall fully cooperate with the State Transmission Utility/State Load Despatch Centre and extend the necessary assistance by taking weekly meter readings and transmitting them to the State Load Despatch Centre. The State Load Despatch Centre, on the basis of processed data of meters along with data relating to declared capability and schedules etc., shall issue the State Accounts for energy on monthly basis as well as deviation charges on weekly basis. Deviation settlement procedures shall be governed by the orders of the Central Electricity Regulatory Commission, till UPERC DSM Regulations are notified.

32. Billing and payment of Charges:

Bills shall be raised for capacity charge and energy charge by the generating company on monthly basis in accordance with these Regulations, and payments shall be made by the beneficiaries directly to the generating company;

Provided that the physical copy of the Bill in Original at the office of the Authorised Person of the beneficiary or the scanned copy of Original Bill through official email ID of the Authorised Signatory of the generating company shall be recognized as valid mode of presentation of Bill;

Provided further that Authorized Signatory or Signatories (official designation only) shall be notified in advance by the Managing Director or Chief Executive Officer of the company and any change in the list of Authorised Signatory for the purpose, shall be communicated in the same manner.

33. Recovery of Application fee and Statutory Charges:

The generating company shall be allowed recovery of statutory charges imposed by the State and Central Government such as electricity duty, water cess and payment to the pollution control board in addition to Application fee, subject to prudence check by the Commission. The details regarding the same shall be furnished along with the petition;

In case of the electricity duty is applied on the auxiliary energy consumption, such amount of electricity duty shall apply on normative auxiliary energy



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consumption of the generating station (excluding colony consumption) and apportioned to each of the beneficiaries in proportion to their schedule dispatch during the month.



CHAPTER 8

Miscellaneous Provisions

34. Sharing of Benefits

- (1) The generating company shall also work out gains based on the actual performance of following controllable parameters:
 - (a) Gross station Heat Rate;
 - (b) Secondary Fuel Oil Consumption;
 - (c) Auxiliary Energy Consumption; and
 - (d) Re-financing of Loan.
- (2) The financial gains, computed as per following formulae in case of generating station (other than hydro generating station), on account of the above operational parameters contained in Clause (1) (a) to (1)(c), shall be shared in the ratio of 60:40 between the generating company and the Beneficiaries:

$$\text{Net Gain} = (\text{ECR}_N - \text{ECR}_A) \times \text{Scheduled Generation};$$

Where,

ECR_N is Normative Energy Charge Rate computed on the basis of Norms specified/ approved for Gross station Heat Rate, Auxiliary Consumption and Secondary Fuel Oil Consumption.

ECR_A is Actual Energy Charge Rate computed on the basis of actual Gross station Heat Rate, Auxiliary Consumption and Secondary Fuel Oil Consumption for the month.

Provided that in case of hydro generating stations, the net gain on account of Actual Auxiliary Energy Consumption being less than the Normative Auxiliary Energy Consumption, shall be computed as per following formulae provided the saleable scheduled generation is more than the saleable design energy and shall be shared in the ratio of 50:50 between generating station and beneficiaries.:

(i) When saleable scheduled generation is more than saleable design energy on the basis of normative auxiliary energy consumption and less than or equal to saleable design energy on the basis of actual auxiliary energy consumption:

$$\text{Net gain (Million Rupees)} = [(\text{Saleable Scheduled generation in MUs}) - (\text{Saleable Design energy on the basis of normative auxiliary energy consumption in MUs})] \times [1.20 \text{ or } \text{ECR}, \text{ whichever is lower}]$$

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(ii) When saleable scheduled generation is more than saleable design energy on the basis of actual auxiliary energy consumption:

Net gain (Million Rupees) = {Saleable Scheduled generation in MUs - [(Saleable Scheduled Generation in MUs x (100-normative AEC in %)/ (100-actual AEC in %)]} x [1.20 or ECR, whichever is lower]

Provided that in case of financial gains on account of parameter contained in Clause (1) (d) above shall be shared in accordance with these Regulations;

- (3) Financial gains on account of controllable parameters shall be shared between the generating company and the beneficiaries on annual basis within thirty (30) days of the adoption of audited annual accounts.

In case of any dispute in sharing of gains within the stipulated time, the procurer or generator can approach the Commission for resolution within sixty (60) days of the adoption of the audited annual accounts. In specific instances the Commission may relax this period of limitation.

- (4) The financial gains and losses by the generating company on account of uncontrollable parameters shall be passed on to beneficiaries of the generating company, after prudence check, if required, and approval of the Commission at the time of Truing up

35. Incentive:

Incentive to all thermal power stations, shall be payable at a flat rate of 65 paise/ kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to target plant load factor.

36. Deviation Charges:

- (1) Variations between actual net injection and scheduled net injection for the generating stations, and variations between actual net drawl and scheduled net drawl for the beneficiaries shall be treated as their respective deviations and charges for such deviations shall be governed by the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related matters) Regulations, 2014, till DSM Regulations of the Commission are notified.
- (2) Actual net deviation of every generating station and Beneficiary shall be metered on its periphery through special energy meters (SEMs) installed by the State Transmission Utility (STU), and computed in MWh for each 15-minute time block by the State Load Despatch Centre.



37. Rebate:

- (1) For payment of bills of capacity charges and energy charges through a letter of credit on presentation, or through NEFT/RTGS within a period of 5 days of presentation of bills by the generating company, a rebate of 1.50% shall be allowed.
- (2) Where payments are made on any day after 5 days and within a period of 30 days of presentation of bills by the generating company, a rebate of 1% shall be allowed.
- (3) No rebate beyond a period of 30 days of presentation of bills by the generating company shall be payable.

Explanation: In case of computation of 5 days, the number of days shall be counted consecutively without considering any holiday. However, in case the last day or 5th day is official holiday, the 5th day for the purpose of Rebate shall be construed as the immediate succeeding working day (as per the official State Government's calendar, where the Office of the Authorised Signatory or Representative of the Beneficiary, for the purpose of receipt or acknowledgement of Bill is situated).

38. Late Payment Surcharge:

In case the payment of bills of capacity charges and energy charges by the beneficiary (ies) is delayed beyond a period of 45 days from the date of billing, a late payment surcharge at the rate of 1.50% per month shall be levied by the generating company.

39. These Regulations are made in English & translated into Hindi. In case of any dispute, English version shall prevail.

40. Nothing in these Regulations shall be deemed to limit or otherwise affect the inherent powers of the Commission to make such orders as may be necessary for ends of justice to meet or to prevent abuse of the process of the Commission.

41. Nothing in these Regulations shall bar the Commission from adopting, in conformity with the provisions of the Act, a procedure, which is at variance with any of the provisions of this Regulation, if the Commission, in view of the special circumstances of a matter or class of matters and for reasons to be recorded in writing, deems it necessary or expedient for dealing with such a matter or class of matters.

42. 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



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Regulations have been framed, and the Commission may deal with such matters, powers and functions in a manner it deems fit.

By Order of the Commission

Secretary

