

**Telangana State Electricity Regulatory Commission**  
**(Terms and Conditions of Generation Tariff)**  
**Regulations, 2019**



## **TELANGANA STATE ELECTRICITY REGULATORY COMMISSION**

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## **TELANGANA STATE ELECTRICITY REGULATORY COMMISSION**

(Terms and Conditions of Generation Tariff) Regulations, 2019

**No. TSERC / 1 / 2019**

Dated 04.01.2019.

### **Regulation No. 1 of 2019**

#### **Introduction**

Section 62 and Section 86(1) (b) of the Electricity Act, 2003, require the Commission to determine the tariff for supply of electricity by a Generating Entity to a Distribution Licensee and to regulate electricity purchase and procurement process of Distribution Licensees including the price at which electricity shall be procured, from the Generating Entities or Licensees or from other sources through agreements for purchase of power for distribution and supply within the State. Section 61 of the Act requires the Commission to specify the terms and conditions for such determination of tariff. Accordingly, the Commission in exercise of the powers conferred by section 181(2) (zd) read with section 61 of the Electricity Act, 2003 (36 of 2003) thereof and all other powers enabling it in this behalf, hereby, makes the following Regulation.

#### **1. Short title, commencement and extent**

- 1.1. These Regulations shall be called the Telangana State Electricity Regulatory Commission (Terms and Conditions for Determination of Generation Tariff) Regulations, 2019;
- 1.2. These Regulations shall come into force with effect from the date of its publication in the Telangana State Gazette and shall remain in force till

amended or repealed by the Commission:

Provided that for all purposes, including the review matters pertaining to the period till FY 2018-19, the issues related to determination of Aggregate Revenue Requirement shall be governed by the provisions of the Andhra Pradesh Electricity Regulatory Commission (Terms and conditions for determination of tariff for supply of electricity by a generating company to a distribution licensee and purchase of electricity by distribution licensees) Regulation, 2008, including amendments thereto, as may be applicable.

1.3 These Regulations shall extend to the entire state of Telangana.

1.4 These Regulations shall be applicable to all existing and future Generating Entities and their successors, if any for determination of Aggregate Revenue Requirement within the state of Telangana in all matters covered under these Regulations from 1 April, 2019 to 31 March, 2024.

## **2. Definitions and interpretation**

In these Regulations, unless the context otherwise requires

2.1. "**ABT Mechanism**" means availability based tariff mechanism.

2.2. "**Accounting Statement(s)**" means for each Financial Year, the following statements, namely:

2.2.1. balance sheet, prepared in accordance with the form contained in the Companies Act, 2013 as amended from time to time, as applicable;

2.2.2. profit and loss account, complying with the requirements contained in the Companies Act, 2013, as amended from time to time, as applicable, cash flow statement prepared in accordance with the applicable Accounting Standards of the Institute of Chartered Accountants of India

2.2.3. report of the statutory auditors;

2.2.4. cost records prescribed by the Central Government under the Companies Act, 2013, as applicable together with notes thereto, and such other supporting statements and information as the Commission may direct:

Provided that separate Accounting Statements shall be prepared and submitted to the Commission for each Licensed Business in accordance with the License conditions, and for each regulated business:

Provided further that, in case separate Accounting Statements are not submitted for each Licensed Business in accordance with the License conditions and for each regulated business for the FY 2018-19 onwards, the petitions filed by the Generating Entity, may be rejected by the Commission after giving the Petitioner a reasonable opportunity of being heard:

Provided also that the Generating Entity shall submit the statutory auditor's comments, observations and notes to accounts, along with the Accounting Statements, and a summary of the key issues highlighted by the statutory auditor and the steps taken to address them:

2.3. "**Act**" means the Electricity Act, 2003 (36 of 2003), as amended from time to time

2.4. "**Aggregate Revenue Requirement (ARR)**" means the annual revenue requirement for each financial year comprising of allowable expenses and return on capital pertaining to the Generating Entity, for recovery through tariffs and charges, in accordance with these Regulations;

2.5. "**Allocation Statement**" means for each Financial Year, a statement in respect of each of the separate businesses of the Generating Entity, showing the amounts of any revenue, cost, asset, liability, reserve or provision etc., which has been either:

2.5.1. determined by apportionment or allocation between different businesses of the Generating Entity including the Licensed Business, together with a description of the basis of the apportionment or allocation; or

2.5.2. charged from or to each such Other Business together with a description of the basis of that charge

Provided further that, separate Unit-wise and Station-wise Accounting Statements for Generation Business shall be prepared and submitted to the Commission wherever possible.

2.6. "**Applicant**" or "**Petitioner**" means a Generating Entity, who has made an application for determination of tariff in accordance with the Act and these Regulations and includes a Generating Entity whose tariff is the subject of a review by the Commission on suo-motu basis or as part of a truing- up exercise.

2.7. "**Auxiliary Energy Consumption (AUX)**" in relation to a period, in case of a Generating Station or Unit, means the quantum of energy consumed by auxiliary equipment of the Generating Station, such as the equipment being used for the purpose of operating plant and machinery, including switchyard of the Generating Station and the transformer losses within the Generating Station, and shall be 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 the Auxiliary Energy Consumption shall not include the 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;

2.8. "**Availability**" in relation to a Thermal Generating Station/Unit for any period means the average of the daily average declared capacities as certified by the State Load Despatch Centre (SLDC) for all the Days

during that period, expressed as a percentage of the Installed Capacity of the Generating Station/Unit minus the normative Auxiliary Consumption in Megawatts (MW), as specified in these Regulations, and shall be computed in accordance with the following formula

In relation to a Thermal Generating Station/Unit

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

where,

N = number of Time Blocks in the given period

DC<sub>i</sub> = Average Declared Capacity in MW for the i<sup>th</sup> Time Block in such period

IC = Installed Capacity of the Generating Station/Unit in MW

AUX<sub>n</sub> = Normative Auxiliary Consumption in MW, expressed as a percentage of gross generation in MW

- 2.9. **“Bank Rate”** shall mean the “One-year Marginal Cost of Funds-based Lending Rate” (MCLR) declared by State Bank of India and in effect on April 1<sup>st</sup> of the Financial Year of the date of petition / application.
- 2.10. **“Beneficiary or Beneficiaries”** in relation to a Generating Station means the purchaser of electricity generated at such Station whose tariff is determined under this Regulation.
- 2.11. **“Block”** in relation to a combined cycle Thermal Generating Station includes combustion turbine-generators, associated waste heat recovery boiler, connected steam turbine-generator and auxiliaries;
- 2.12. **“Books of Accounts”** includes records maintained by the Generating Station in respect of all sum of money received and expended; all sales and purchases of goods and services; the assets and liabilities; and any other cost/revenue items or financial transactions;

2.13. **“Capital Cost”** means the capital cost of a Project or its Unit or Stage as the case may be as determined by the Commission after prudence check in accordance with clause 7 of this Regulation.

2.14. **“Capacity Index”** in relation to a Hydro power generating stations means the average of the daily capacity indices over one year excluding those days on which Maximum Available capacity is Zero due to non-availability of water

$$\text{Capacity Index} = \frac{\text{Sum of Capacity indices for all the days of the year}}{\text{Number of days in the year when the Maximum Available Capacity is non-zero}}$$

2.15. **“CEA”** means Central Electricity Authority referred to in Section 70 of the Act.

2.16. **“CERC”** means the Central Electricity Regulatory Commission referred to Section 76 of the Act;

2.17. **“CERC Regulations”** means the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 as amended from time to time.

2.18. **“Change in Law”** means occurrence of any of the following events :—

2.18.1. enactment, bringing into effect or promulgation of any new Indian law ; or

2.18.2. adoption, amendment, modification, repeal or re-enactment of any existing Indian law ; or

2.18.3. 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 ; or

2.18.4. change of any condition or covenant by any competent statutory

authority in relation to any consent or clearances or approval or Licence available or obtained for the Project ; or

2.18.5.coming into force or change in any bilateral or multilateral agreement or treaty between the Government of India and any other Sovereign Government having implications for the Generating Station regulated under this Regulation ; or

2.18.6.any change in taxes or duties, or introduction of any taxes or duties levied by the Central or any State Government

2.19. **“Commission”** means the Telangana State Electricity Regulatory Commission;

2.20. **“Competitive Bidding”** means a transparent process for procurement of equipment, services and works in which bids are invited by the Project developer through open advertisement/e-procurement covering the scope and specifications of the equipment, services and works required for the Project, the terms and conditions of the proposed contract, the criteria by which the bids shall be evaluated, and shall include domestic as well as international Competitive Bidding.

2.21. **“Conduct of Business Regulations”** means the Telangana State Electricity Regulatory Commission (Conduct of Business) Regulations, 2015, as amended from time to time;

2.22. **“Control Period”** means the period comprising five Years from April 1st, 2019 to March 31st, 2024, as the Second control period and as may be extended by the Commission.

2.23. **“Cut-off Date”** means the 31<sup>st</sup> March of the Year ending after two (2) Years of the Year of start of commercial operation of a Project and, in case a Project is declared to be under commercial operation in the last quarter of a Year, it shall mean the 31<sup>st</sup> March of the Year ending after three Years of the Year of start of such commercial operation.



- 2.24. **“Date of Commercial Operation”** (or “COD”) shall have the meaning as assigned in clause 5 of this Regulation;
- 2.25. **“Day”** means the 24 hour period starting at 00:00 hour(s)
- 2.26. **“De-capitalisation”** means reduction in gross fixed assets of the Project corresponding to the removal of assets as admitted by the Commission;
- 2.27. **“Declared Capacity” (or “DC”)** in relation to a Generating Station means, the capability to deliver ex-bus electricity in MW declared by such Generating Station in relation to any Time-Block of the Day as defined in the Grid Code or whole of the Day, duly taking into account the availability of fuel or water, and subject to further qualification in the relevant Regulation
- 2.28. **“Design Energy”** means the quantum of energy which can be generated in a 90% Dependable Year with 95% Installed Capacity of the hydro Generating Station;
- 2.29. **“Detailed Project Report” (or “DPR”)** means a capital expenditure report with projected Capital Cost exceeding the limits specified in these Regulations, for which the Generating Entity is required to obtain prior in-principle approval by submitting a Detailed Project Report (DPR) in accordance with the Guidelines of the Commission for in-principle Clearance of proposed investment schemes;
- 2.30. **“Distribution Licensee”** means a Licensee authorised to operate and maintain a distribution system for supplying electricity to consumers in its area of supply.
- 2.31. **“End of Control Period Review”** means a review to be undertaken in accordance with the clause 3.13 of this Regulation;
- 2.32. **“Existing Project”** means a Project which has been declared under commercial operation on a date prior to commencement of the Control

Period;

2.33. **“Expected Revenue from Tariff and Charges”** means the revenue estimated to accrue to the Generating Entity from the regulated business at the prevailing level of tariff and charges.

2.34. **“Extended Life”** means the life of a Generating Station or Unit thereof beyond the period of Useful Life, as may be approved by the Commission on a case to case basis

2.35. **“Force Majeure Event”** means, with respect to any party, any event or circumstance, or combination of events or circumstances, which is not within the reasonable control of, and is not due to an act of omission or commission of that party and which, by the exercise of reasonable care and diligence, could not have been prevented ; and, without limiting the generality of the foregoing, shall include the following events or circumstances :—

2.35.1. acts of God, including but not limited to lightning, storm, action of the elements, earthquakes, flood, torrential rains, drought and natural disaster ;

2.35.2. acts of war, invasion, armed conflict or act of foreign enemy, insurrections, riots, revolution, terrorist or military action ;

2.35.3. unavoidable accident, including but not limited to fire, explosion, radioactive contamination and toxic chemical contamination ;

2.35.4. any shutdown or interruption of the grid, which is required or directed by the concerned Load Despatch Centre

2.36. **“Generation Business”** means the business of production of electricity from a Generating Station for the purpose of:

2.36.1. giving supply to any premises or enabling supply to be so given, or

- 2.36.2. supply of electricity to any Distribution Licensee in accordance with the Act and the rules and Regulations made there under, or
- 2.36.3. subject to the Regulation made under sub-section (2) of Section 42 of the Act, supply of electricity to any consumer
- 2.37. **“Generating Entity”** means any company or body corporate or association or body of individuals, whether incorporated or not, or artificial juridical person, which owns or operates or maintains a Generating Station.
- 2.38. **“Generating Station(s)” (or “Station(s)”** means a Station for generating electricity, including any building and plant with step-up transformer, switchgear, switch yard, cables or other appurtenant equipment used for that purpose and the site thereof ; a site intended to be used for a Generating Station, and any building used for housing the operating staff of a Generating Station,
- Further provided that where electricity is generated by water-power, includes penstocks, head and tail works, main and regulating reservoirs, dams and other hydraulic works, but does not include any sub-station.
- 2.39. **“Generating Unit(s) or Unit(s)”** in relation to a Thermal Generating Station (other than combined cycle Thermal Generating Station) means steam generator, turbine-generator and auxiliaries, or in relation to a combined cycle Thermal Generating Station, means turbine generator and auxiliaries; in relation to a hydro generating station means turbine generator and its auxiliaries;
- 2.40. **“Grid”** means the high voltage backbone system of inter-connected transmission lines, sub-stations and Generating Stations;
- 2.41. **“Grid Code”** means the Indian Electricity Grid Code specified by the Central Commission or the Telangana State Electricity Regulatory

Commission (State Grid Code) Regulations whichever is applicable as amended from time to time or subsequent re-enactment thereof;

- 2.42. **“Gross Calorific Value” (or “GCV”)** in relation to a Thermal Generating Station means the heat produced in kilocalories (kcal) by complete combustion of one kilogram (kg) of solid fuel or one litre of liquid fuel or one standard cubic meter of gaseous fuel, as the case may be.
- 2.43. **“Gross Station Heat Rate” (or “GSHR”)** means the heat energy input in kcal required to generate one kilo Watt hour (kWh) of electrical energy at generator terminals of a Thermal Generating Station.
- 2.44. **“Implementation Agreement”** means the agreement, contract or memorandum of understanding, or any such covenant, entered into between the Generating Station and transmission licensee for the execution of associated transmission system in coordinated manner.
- 2.45. **“Infirm Power”** means electricity injected into the Grid prior to the COD of a Unit or Block of the Generating Station;
- 2.46. **“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;
- 2.47. **“Kilowatt-Hour” (or “kWh”)** means a unit of electrical energy, measured in one (01) kilowatt or one thousand watts (1,000) of power produced or consumed over a period of one (01) hour;
- 2.48. **“License”** means license granted under section 14 of the Act;
- 2.49. **“Licensed Business”** means the functions and activities, which are required to be undertaken by the Licensee, in terms of the License granted under the Act;
- 2.50. **“Licensee”** means a person who has been granted a License.

- 2.51. **"Maximum Continuous Rating" (or "MCR")** in relation to a Generating Unit of the Thermal Generating Station means the maximum continuous output at the generator terminals, guaranteed by the manufacturer at rated parameters, and in relation to a Block of a combined cycle Thermal Generating Station means the maximum continuous output at the generator terminals, guaranteed by the manufacturer with water or steam injection (if applicable) and corrected to 50 Hz Grid frequency and under specified site conditions;
- 2.52. **"Mid-term Review"** means a review to be undertaken in accordance with the clause 3.12 of this Regulation;
- 2.53. **"New Generating Unit/Station"** means a generating unit/station declared under commercial operation on or after the date of coming into force of these Regulations.
- 2.54. **"Ninety (90) % Dependable Year"** shall mean the Year in which the annual energy generation has the probability of being equal to or in excess of 90% of the expected period of operation of the Station.
- 2.55. **"Non-DPR Scheme"** means a capital expenditure scheme with projected Capital Cost within the limits specified in these Regulations, for which the Generating Entity is not required to obtain prior in principle approval of the Commission.
- 2.56. **"Non-Tariff Income"** means the income relating to the regulated business other than from tariff, excluding any income from Other Business.
- 2.57. **"Normative Annual Plant Availability Factor" (or "NAPAF")**, in relation to a Generating Station means the availability factor as specified in clause 17.3 and 18.3 of these Regulations for Thermal Generating Station and hydro Generating Station respectively.
- 2.58. **"Officer"** means an officer of the Commission.

- 2.59. **“Operation and Maintenance expense” (or “O&M expense”)** in respect of a Generating Entity means the expenditure incurred on operation and maintenance of the Generating Station or Unit of a Generating Entity, or part thereof, and includes the expenditure on manpower, repairs, spares, consumables, insurance and overheads, but excludes fuel expenses and water charges and shall be as determined in clause 19 of this Regulation.
- 2.60. **“Original Project Cost”** means the capital expenditure incurred by a Generating Entity within the original scope of the Project, up to the Cut-Off Date as admitted by the Commission
- 2.61. **“Original Scope of Work”** means the activities to be performed under a contract or sub-contract in the completion of Project or scheme as approved by the Commission;
- 2.62. **“Other Business”** means any business undertaken by the Generating Entity, other than generation of electricity;
- 2.63. **“Pit head”** refers to the top of a mining pit or coal shaft that is immediately adjacent to the Generating Station
- 2.64. **“Plant Availability Factor” (or “PAF”)** ,in relation to a Generating Station for any period means the average of the daily Declared Capacities (DCs) for all the Days during the period expressed as a percentage of the Installed Capacity in MW less the normative Auxiliary Energy Consumption.
- 2.65. **“Plant Load Factor” (or “PLF”)**, in relation to a Thermal Generating Station for a given period, means the total sent-out energy corresponding to actual generation during such 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 :—
- 2.65.1. In relation to a to a Thermal Generating Station/Unit

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

where,

N = number of Time Blocks in the given period;

SG<sub>i</sub> = Scheduled Generation in MW for the i<sup>th</sup> Time Block of the period;

IC = Installed Capacity of the Generating Station/Unit in MW;

AUX<sub>n</sub> = Normative Auxiliary Consumption in MW, expressed as a percentage of gross generation in MW;

N

∑ = Summation from i = 1 to N;  
i=1

2.66. **"Primary Energy"** in relation to a hydro power generating station means the quantum of energy generated up to the design energy on per year basis at the generating station;

2.67. **"Project"** means a Generating Station

Provided that in case of a hydro Generating Station includes all components of generating facility such as dam, intake water conductor system, power Generating Station and generating units of the scheme, as apportioned to power generation.

Further provided that in case of Thermal Generating Stations it does not include mining if it is a Pit Head Project and dedicated captive coal mine.

2.68. **"Prudence Check"** means the scrutiny of reasonableness of expenditure incurred or proposed to be incurred, financing plan, use of

efficient technology, cost and time overrun and such other factors as may be considered appropriate by the Commission for determination of Aggregate Revenue Requirement and tariff.

- 2.69. **“Pumped Storage Hydro Generating Station”** means a hydro station which generates power through energy stored in the form of water energy, pumped from a lower elevation reservoir to a higher elevation reservoir.
- 2.70. **“Reform Act”** means the Andhra Pradesh Electricity Reform Act, 1998.
- 2.71. **“Run-of-river Generating Station”** means a hydro Generating Station, which does not have upstream pondage.
- 2.72. **“Run-of-river Generating Station with pondage”** means a hydro Generating Station with sufficient pondage for meeting the diurnal variation of power demand.
- 2.73. **“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.
- 2.74. **“Scheduled energy”** means the quantum of energy scheduled by the concerned load despatch center to be injected into the grid by a generating station for a given time period.
- 2.75. **“Scheduled generation”** at any time or for a time block or any period means schedule of generation in MW or MWh ex-bus given by the concerned Load Dispatch Centre;
- 2.76. **“Secondary Energy”** in relation to a hydro power generating station means the quantum of energy generated in excess of the design energy on per year basis at the generating station;



- 2.77. **“Small Gas Turbine Generating Station”** means and includes open cycle gas turbine or combined cycle Generating Stations with gas turbines in the capacity range of 50 MW or below.
- 2.78. **“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 the Start Date or Zero Date.
- 2.79. **“State”** means the state of Telangana.
- 2.80. **“State Grid Code”** means the Code specified by the Commission under clause (h) of sub-section (1) of section 86 of the Act;
- 2.81. **“Storage-type Power Station”** means a hydro power Generating Station associated with large storage capacity to enable variation in generation of electricity according to demand.
- 2.82. **“Straight Line Method”** means the method where depreciation results in a constant charge over the Useful Life if the asset’s residual value does not change.
- 2.83. **“Time-Block”** means a time block of fifteen (15) minutes or any such shorter duration as may be notified by CERC and Commission, for which specified electrical parameters and quantities are recorded by special energy meter, with first time block starting at 00.00 hours or such other period as the Commission may stipulate.
- 2.84. **“Terminal Liabilities”** means terminal benefits such as Death-cum-Retirement Gratuity, Pension, Commuted Pension, Leave Encashment, LTC, Dearness relief, Interim relief, Medical reimbursement including fixed medical allowance in respect of pensioners.
- 2.85. **“Thermal Generating Station”** means a Generating Station or a Unit thereof that generates electricity using fossil fuels as its primary source

of energy.

- 2.86. **“Trial Run or Trial Operation”** means the successful running of the Generating Station or Unit thereof at MCR or Installed Capacity for continuous period of 72 hours in case of Unit of a Thermal Generating Station or Unit thereof and **3** hours in case of a Unit of a hydro Generating Station or Unit thereof;

Provided that:

- 2.86.1. The short interruptions, for a cumulative duration of 4 hours, shall be permissible with a corresponding increase in the duration of the test. Cumulative Interruptions for more than 4 hours shall call for repeat of Trial Operation or Trial Run.
- 2.86.2. Partial loading may be allowed with the condition that average load during the duration of the Trial Run shall not be less than Maximum Continuous Rating or the Installed Capacity or the Name Plate Rating excluding period of interruption and partial loading but including the corresponding extended period.
- 2.86.3. Units of thermal and hydro Central Generating Stations and inter-State Generating Stations shall also demonstrate capability to raise load up to 105% or 110% of this Maximum Continuous Rating or Installed Capacity or the Name Plate Rating as the case may be.
- 2.87. **“Unit”** in relation to a Thermal Generating Station (other than combined cycle Thermal Generating Station) means steam generator, turbine-generator and auxiliaries or, in relation to a combined cycle Thermal Generating Station, means turbine-generator and auxiliaries; and, in relation to a hydro Generating Station, means turbine-generator and its auxiliaries.
- 2.88. **“Useful life”** means in relation to a Unit of a Generating Station, from the date of commercial operation shall mean the following, namely:-

- (i) Coal/Lignite based thermal generating Station: 25 years;
- (ii) Gas/Liquid fuel based thermal Generating Station: 25 years;
- (iii) Hydel Generating Station including Pumped Storage, Hydel Generating Station : 40 years

Provided further that the extension of life of the projects beyond the completion of their useful life shall be decided by the Commission.

2.89. **“Year” or “Financial Year (FY)”** means a financial year;

2.90. Words and expressions used and not defined in the Regulation but defined in the Act and Reform Act shall have the meanings assigned to them in the Act or Reform Act. Expressions used herein but not specifically defined in the Regulation or in the Act but defined under any law passed by a competent legislature and applicable to the electricity industry in the State shall have the meaning assigned to them in such law. Subject to the above, expressions used herein but not specifically defined in this Regulation or in the Act or any law passed by a competent legislature shall have the meaning as is generally assigned in the electricity industry.

In the interpretation of this Regulation, unless the context otherwise requires:

- (i) words in the singular or plural term, as the case may be, shall also be deemed to include the plural or the singular term, respectively;
- (ii) references herein to the ‘Regulation’ shall be construed as a reference to this Regulation as amended or modified by the Commission from time to time in accordance with the applicable laws in force;
- (iii) the headings are inserted for convenience and may not be taken into account for the purpose of interpretation of this Regulation;
- (iv) reference to the statutes, Regulations or guidelines shall be

construed as including all provisions consolidating, amending or replacing such statutes, Regulations or guidelines, as the case may be, referred to;

### **3. Applicability and General Principles**

3.1. This Regulation 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.

Provided that, Provisions of these Regulations shall not be applicable for the Determination of Tariff for the Generation of Electricity from Renewable Energy Sources.

3.2. The Commission shall be guided by the Regulations contained herein for determining the tariff for supply of electricity by a Generating Entity to a Distribution Licensee in the following cases:

3.2.1. where such tariff is pursuant to a power purchase agreement or arrangement entered into subsequent to the date of effectiveness of these Regulations; or

3.2.2. where such tariff is pursuant to a power purchase agreement or arrangement entered into prior to the date of effectiveness of this Regulation and either the Commission has not previously approved such agreement / arrangement or the agreement/ arrangement envisages that the tariff shall be based on the this TSERC Generation Tariff Regulations, 2019;

3.3. This Regulation shall not apply for determination of tariff in case of the following:

3.3.1. Generating Stations 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;

- 3.4. This Regulation shall be applicable to all existing and future Generating Entities and their successors, if any.
- 3.5. These Regulations supersede the “APERC Terms and Conditions for Determination of Tariff for Supply of Electricity by a Generating company to a Distribution Licensee and Purchase of Electricity by Distribution Licensees Regulation 1 of 2008”.

### **Multi-Year Tariff Framework**

- 3.6. The Commission shall determine the tariff for supply of electricity by a Generating Entity, except from renewable sources of energy to a Distribution Licensee under a multi-year tariff framework with effect from April 1, 2019.

Provided that where the Commission believes that a shortage of supply of electricity exists, it may fix the minimum and maximum ceiling of tariff for sale or purchase of electricity in pursuance of an agreement, entered into between a Generating Entity and a Distribution Licensee or between Distribution Licensees, for a period not exceeding one year to ensure reasonable prices of electricity.

Notwithstanding anything contained in this Regulation, the Commission shall adopt the tariff if such tariff has been determined through a transparent process of bidding in accordance with the guidelines issued by the Central Government pursuant to Section 63 of the Act.

- 3.7. The Multi-Year Tariff framework shall be based on the following elements, for determination of Aggregate Revenue Requirement and Expected Revenue from Tariff and Charges for Generating Entity:

3.7.1. The Applicant shall submit a detailed Multi-Year Tariff application comprising the following for each year of the Control Period:

- (a) the forecast of Aggregate Revenue Requirement for the entire Control Period

- (b) expected revenue from existing tariffs
- (c) proposed tariff
- (d) revenue gap

Provided that the performance parameters, whose trajectories have been specified in this Regulation, shall form the basis for projection of these performance parameters in the Aggregate Revenue Requirement for the entire Control Period;

3.7.2. Determination of Aggregate Revenue Requirement and tariff for the Generating Entity for each Financial Year within the Control Period by the Commission at the start of the Control Period;

3.7.3. Petition for Mid-term Review of operational and financial performance vis-a-vis the approved forecast for the first two years of the Control Period; and revised forecast of Aggregate Revenue Requirement, expected revenue from existing tariff, expected revenue gap, for the third, fourth and fifth year of the Control Period, shall be submitted by the Generating Entity;

3.7.4. True-up for the first year and second year of the Control Period based on audited accounts and provisional true-up for the third year of the Control Period of operational and financial performance vis-a-vis the approved forecast for the respective Years shall be submitted by the Generating Entity along with its Petition for Mid-term Review;

3.7.5. Determination of the revised Aggregate Revenue Requirement and tariff for Generating Entity by the Commission for the fourth and fifth year of the Control Period based on the Mid-term Review;

3.7.6. True-up for the first year and second year of the Control Period, provisional true-up for the third year of the Control Period of operational and financial performance vis-a-vis the approved forecast for the respective years, and categorisation of variation in performance as those caused by factors within the control of the

Petitioner (controllable factors) and by factors beyond its control (uncontrollable factors) by the Commission, along with the Mid-term Review

3.7.7. The mechanism for pass-through of approved gains or losses on account of uncontrollable factors as specified by the Commission in this Regulation;

3.7.8. The mechanism for sharing of approved gains or losses on account of controllable factors as specified by the Commission in this Regulation;

### **3.8. Petitions to be filed during the Second Control Period -**

The Petitions to be filed in the Second Control Period under these Regulations are as under:-

3.8.1. **Multi-Year Tariff Petition** shall be filed by April 1 2019, comprising :

- (a) Truing-up for FY 2014-18 to be carried out under the Andhra Pradesh Regulation 1 of 2008 - Terms and Conditions for Determination of Tariff for Supply of Electricity by a Generating Entity to a Distribution Licensee and Purchase of Electricity by Distribution Licensees or CERC Regulations as relevant.
- (b) Provisional Truing-up and truing up for FY 2018-19 to be carried out under the Andhra Pradesh Regulation 1 of 2008 - Terms and Conditions for Determination of Tariff for Supply of Electricity by a Generating Entity to a Distribution Licensee and Purchase of Electricity By Distribution Licensees or CERC Regulations as relevant.

Provided that the Commission may, if it considers appropriate, carry out the truing-up for the year FY 2018-19, along with the truing up for the first two years of the Control

Period FY 2019-24 during the Mid-Term Review.

- (c) Aggregate Revenue Requirement for each year of the Control Period under this Regulations;
- (d) Revenue from the sale of power at existing tariffs and projected revenue gap for each year of the Control Period under this Regulation;

### **3.8.2. Mid-term Review Petition**

- (a) Truing-up for the first and second year and provisional truing-up for third year of the Control Period to be carried out under these Regulations.
- (b) Revised forecast of Aggregate Revenue Requirement, expected revenue from existing tariff and charges and revenue gap for the fourth and fifth year of the Control Period.

Provided that a petition may be filed at any time during the Control Period in case of variation in uncontrollable factors that may result in sudden, steep, and sustained increase in tariff.

3.9. The Petitioner shall submit separate audited Accounting Statements along with the petition for determination of tariff and truing-up under these Regulations.

### **3.10. Multi-Year Tariff Petition**

3.10.1. The Multi-Year Tariff Petition shall include a forecast of Aggregate Revenue Requirement and expected revenue from tariff for each Year of the Control Period in the manner specified in these Regulations, and shall be accompanied by applicable fees.

3.10.2. The forecast of Aggregate Revenue Requirement may be based on assumptions relating to the behavior of individual variables during the Control Period, including capital investment plan, financing plan and physical targets, in accordance with guidelines and formats as may be prescribed by the Commission.



- 3.10.3. The capital investment plan shall show, separately, on-going Projects that will spill over into the Control Period, and new Projects that will commence in the Control Period but may be completed within or beyond it, for which relevant technical and commercial details shall be provided.
- 3.10.4. The forecast of Expected Revenue from Tariff and Charges shall be based on the following:
- (a) Estimates of quantum of electricity to be generated by each Unit/Station for each year of the Control Period.
  - (b) Prevailing tariff as on the date of filing of the petition/application or estimated tariff for the new generating unit/station
- 3.10.5. Based on the forecast of Aggregate Revenue Requirement and expected revenue from tariff the Generating Entity shall submit the proposed tariff (Unit and Station-wise) for each year of the Control Period, that would meet the gap, if any, in the Aggregate Revenue Requirement, including unrecovered revenue gaps of previous years to the extent proposed to be recovered.
- 3.10.6. Full details supporting the forecast shall be provided, including but not limited to details of past performance, proposed initiatives for achieving efficiency or productivity gains, technical studies, contractual arrangements and secondary research, to enable the Commission to assess the reasonableness of the forecast.
- 3.10.7. On receipt of the petition, the Commission shall either issue an Order approving the Aggregate Revenue Requirement and tariff for the Control Period, subject to such modifications and conditions as it may stipulate; or reject the petition for reasons to be recorded in writing, after giving the Petitioner a reasonable opportunity of being heard.

3.11. **Specific trajectory for certain variables** - The Commission, while approving the Multi-Year Tariff Petition, may stipulate a trajectory variables.

3.12. **Mid-term Review**

3.12.1. The Generating Entity shall file a petition for Mid-term Review and truing-up of the Aggregate Revenue Requirement and Revenue for FY 2019-20 and FY 2020-21, and provisional truing-up for the FY 2021-22, by November 30, 2021:

Provided that the Petition shall include information in such form as may be stipulated by the Commission, together with the Accounting Statements, extracts of Books of Account and such other details, including cost accounting reports or extracts thereof, as it may require to assess the reasons for and extent of any difference in operational and financial performance from the approved forecast of Aggregate Revenue Requirement and expected revenue from tariff.

3.12.2. The scope of the Mid-term Performance Review shall be a comparison of the actual operational and financial performance vis-a-vis the approved forecast for the first three years of the Control Period; and revised forecast of Aggregate Revenue Requirement, expected revenue from existing Tariff, expected revenue gap, for the fourth and fifth year of the Control Period.

3.12.3. Upon completion of the review under clause 3.12.2 herein, the Commission shall attribute any variations or expected variations in performance, for variables specified under clause 6.7 & clause 6.8, to factors within the control of the Petitioner (controllable factors) or to factors beyond its control (uncontrollable factors).

3.12.4. Any variations or expected variations in performance, for

variables other than those specified under clause 6.7 of this Regulation, shall not ordinarily be reviewed by the Commission during the Control Period and shall be attributed entirely to controllable factors:

3.12.5. Where the Petitioner believes, for any variable not specified under clause 6.7, that there is a material variation or expected variation in performance for any Year on account of uncontrollable factors, it may apply to the Commission for inclusion of such variable.

3.12.6. Upon completion of the Mid-term Review, the Commission shall pass an order recording:—

- (a) the approved aggregate gain or loss to the Generating Entity on account of controllable factors for the first two Years of the Control Period and provisional Truing-up for the third year of the Control Period, and the amount of such gains or such losses that may be shared in accordance with clause 6.10 of this Regulation.
- (b) The approved aggregate gain or loss to the Generating Entity account of uncontrollable factors for the first two years of the Control Period and provisional Truing-up for the third year of the Control Period, and the amount of such gains or such losses that were not recovered during the respective years and which may be shared in accordance with clause 6.9 of this Regulation.
- (c) The approved modifications to the Aggregate Revenue Requirement and Tariffs for the remainder of the Control Period.

### 3.13. **End of the Control Period Review**

3.13.1. The Generating Entity shall file a petition for End of the Control

Period Review and truing-up of the Aggregate Revenue Requirement and revenue for FY 2021-22 and FY 2022-23, and provisional truing-up for the FY 2023-24, by November 30, 2023.

Provided that the Petition shall include information in such form as may be stipulated by the Commission, together with the Accounting Statements, extracts of Books of Account and such other details, including cost accounting reports or extracts thereof, as it may require to assess the reasons for and extent of any difference in operational and financial performance from the approved forecast of Aggregate Revenue Requirement and expected revenue from tariff.

3.13.2. The scope of the End of Control Period Review shall be a comparison of the actual operational and financial performance vis-a-vis the approved forecast for the third, fourth and fifth Year(s) of the Control Period;

3.13.3. Upon completion of the review under clause 3.13.2 of this Regulation, the Commission shall attribute any variations or expected variations in performance, for variables specified under clause 6.7 & clause 6.8 of this Regulation, to factors within the control of the Petitioner (controllable factors) or to factors beyond its control (uncontrollable factors).

3.13.4. Any variations or expected variations in performance, for variables other than those specified under clause 6.7 of this Regulation, shall not ordinarily be reviewed by the Commission during the Control Period and shall be attributed entirely to controllable factors :

3.13.5. Where the Petitioner believes, for any variable not specified under clause 6.7, that there is a material variation or expected variation in performance for any Year on account of

uncontrollable factors, it may apply to the Commission for inclusion of such variable.

3.13.6. Upon completion of the End of Control Period Review, the Commission shall pass an order recording :—

- (a) the approved aggregate gain or loss to the Generating Entity on account of controllable factors for the third and fourth year of Control Period and provisional Truing-up for the fifth year of the Control Period, and the amount of such gains or such losses that may be shared in accordance with clause 6.10 of this Regulation.
- (b) the approved aggregate gain or loss to the Generating Entity account of uncontrollable factors for the third and fourth Year of the Control Period and provisional Truing-up for the fifth year of the Control Period, and the amount of such gains or such losses that were not recovered during the respective years and which may be shared in accordance with clause 6.9 of this Regulation.

3.13.7. Also, the Commission shall review the achievement of objectives and implementation of the principles of MYT laid down in these Regulations.

3.13.8. To meet the objectives of the Act, the National Electricity Policy and Tariff Policy, the Commission may revise the principles of MYT for the subsequent Control Period(s).

3.13.9. The end of a Control Period shall be the beginning of the subsequent Control Period. The Applicant shall follow the same procedure for the next Control Period unless required otherwise by the Commission.

3.13.10. The Commission shall analyse the performance with respect to the norms set out at the beginning of the Control Period in the MYT order and shall determine the base values for the next

Control Period, based on actual performance achieved, expected improvement and other relevant factors.

#### **4. Procedure for determination of tariff**

##### **4.1. Filing of Petition for determination of Tariff**

4.1.1. Petition for determination of tariff shall be filed in such form and in such manner as specified in this Regulation, and be accompanied by applicable fees.

4.1.2. The proceedings for determination of Tariff shall be undertaken by the Commission in accordance with the Regulations governing its Conduct of Business.

4.1.3. Notwithstanding anything contained in this Regulation, the Commission shall have the authority to determine the tariff, either suo-motu or on a Petition filed by the Generating Entity as per TSERC terms and conditions of generation tariff regulation.

##### **4.2. Petition for determination of tariff**

4.2.1. Tariff in respect of a Generating Station under this Regulations may be determined Stage-wise, Unit-wise or for the whole Generating Station.

Provided that the terms and conditions for determination of tariff for Generating Stations specified herein shall apply in like manner to Stages or Units, as the case may be, as to Generating Stations.

4.2.2. Where the tariff is being determined for Stage or Generating Unit of a Generating Station, the Generating Entity shall adopt a reasonable basis for allocation of Capital Cost relating to common facilities and allocation of joint and common costs across all Stages or Generating Units, as the case may be.

Provided that the Generating Entity shall maintain an Allocation Statement providing the basis for allocation of such costs, which shall be duly audited and certified by the statutory auditors and submit such audited and certified statement to the Commission along with the application for determination of tariff.

4.2.3. The Generating Entity shall file the application for determination of provisional tariff for new Generating Station, one hundred and eighty (180) Days prior to the anticipated COD of Generating Unit or Stage or Generating Station as a whole, as the case may be.

4.2.4. The Generating Entity shall make an application for determination of tariff based on capital expenditure incurred or projected to be incurred up to the COD and additional capital expenditure incurred, duly certified by the statutory auditors.

Provided that the application shall contain details of underlying assumptions for the projected capital cost and additional capital cost, wherever applicable.

4.2.5. In the case of new Projects, the Generating Entity may be allowed provisional tariff by the Commission from the anticipated COD, based on the projected capital expenditure.

4.2.6. If the COD is delayed the provisional tariff granted shall be applicable till the determination of tariff by the Commission. The generating entity shall file for determination of tariff within 180 days from the date of COD.

4.2.7. The Generating Entity shall file the application for determination of final tariff for new Generating Station within one hundred and eighty Days (180) from the COD of Generating Unit or Stage or Generating Station as a whole, as the case may be, based on the audited capital expenditure and capitalisation as on the COD.

#### **4.3. Determination of Tariff for Existing Generating Station**

4.3.1. Where the Commission has, at any time prior to April 1, 2019, approved a power purchase agreement or arrangement between a Generating Entity and a Distribution Licensee or has adopted the Tariff contained therein for supply of electricity from an existing generating Unit/Station, then the Tariff for supply of electricity by such Generating Entity to the Distribution Licensee shall be in accordance with the Tariff mentioned in such power purchase agreement or arrangement for such period as so approved or adopted by the Commission.

4.3.2. Where, as on April 1, 2019, the power purchase agreement or arrangement between a Generating Entity and a Distribution Licensee for supply of electricity from an existing Generating Unit/Station or the tariff therein has not been approved by the Commission, or where there is no power purchase agreement or arrangement, the supply of electricity by such Generating Entity to the Distribution Licensee after April 1, 2019 shall be in accordance with a power purchase agreement approved by the Commission.

Provided that the petition for approval of such power purchase agreement or arrangement shall be filed by the Distribution Licensee with the Commission within three months from the date of notification of these Regulations:

Provided further that the supply of electricity shall be allowed to continue under the present agreement or arrangement until such time as the Commission approves such power purchase agreement, and shall be discontinued forthwith if the Commission rejects it, for reasons to be recorded in writing.

#### **4.4. Determination of Tariff for New Generating Stations**

The Tariff for the supply of electricity by a Generating Entity to a Distribution Licensee from a New Generating Unit/Station shall be in accordance with the Tariff determined in accordance with these



Regulations.

#### **4.5. Tariff Order**

4.5.1. The Commission shall, within one hundred and twenty (120) Days from receipt of a complete petition, and after considering all suggestions and objections received from the public :—

(a) Issue a Tariff Order accepting the Petition with such modifications or conditions as may be stipulated in that Order.

(b) Reject the petition for reasons to be recorded in writing if such petition is not in accordance with the provisions of the Act and the rules and Regulations made thereunder or any other provisions of law, after giving the Petitioner a reasonable opportunity of being heard.

4.5.2. The Petitioner shall provide the approved tariff schedule on its internet website, and make available for sale a booklet containing such tariff to any person upon payment of reasonable reproduction charges. The approved tariff shall also be published in at least two English and two Telugu language daily newspapers having wide circulation in the area of supply of the Distribution Licensee to whom the electricity is proposed to be supplied in terms of the Tariff Order-

4.5.3. The Tariff so published shall be in force from the date stipulated in the Order and shall, unless amended or revised, continue to be in force for such period as may be stipulated therein.

#### **4.6. Adherence to Tariff Order**

4.6.1. No tariff or part of any tariff may ordinarily be amended more frequently than once in a Year, except in respect of any changes expressly permitted under uncontrollable factors as specified in

clause 6.7 of this Regulation.

- 4.6.2. If any Generating Entity recovers a price or charge exceeding the tariff determined under Section 62 of the Act and in accordance with these Regulations, the excess amount shall be payable to the person who has paid such price or charge, along with interest equivalent to the Bank Rate as defined in this Regulations, without prejudice to any other liability to which such Generating Entity may be subject to:

Provided that such interest payable to any party shall not be allowed to be recovered through the Aggregate Revenue Requirement of the Generating Entity.

Provided also that the Generating Entity shall maintain separate details of such interest paid or payable by it, and shall submit them to the Commission along with its Petition.

- 4.6.3. The Generating Entity shall submit periodic returns as may be required by the Commission, containing operational and cost data to enable it to monitor the implementation of its Order.

## **5. Date of Commercial Operation (COD)**

- 5.1. **Date of Commercial Operation (COD):** The date of commercial operation of a Generating Station or Unit or element thereof shall be determined as detailed in clauses 5.2 & 5.3 below.
- 5.2. **COD for Thermal Generating Station** - COD in case of a Generating Unit or Block of the Thermal Generating Station shall mean, the date declared by the Generating Entity after demonstrating the Maximum Continuous Rating (MCR) or the Installed Capacity (IC) through a successful Trial Run after notice to the Beneficiaries, if any, and in case of the Generating Station as a whole, the COD of the last Generating Unit or Block of the Generating Station:

Provided that:

5.2.1. Where the Beneficiaries have been tied up for purchasing power from the Generating Station, the Trial Run shall commence after seven Day notice by the Generating Entity to the Beneficiaries and SLDC and scheduling shall commence from 00:00 hour after completion of the Trial Run.

5.2.2. Where the Beneficiaries have not been tied up for purchasing power from the Generating Station, the Trial Run or each repeat of Trial Run shall commence after a notice of not less than seven Days by the Generating Entity to the SLDC.

5.2.3. The Generating Entity shall certify to the effect that:

- (a) The Generating Station meets the key provisions of the technical standards of Central Electricity Authority (Technical Standards for Construction of Electrical plants and electric lines) Regulations, 2010 as amended from time to time and Grid Code as amended from time to time.
- (b) The main plant equipment and auxiliary systems including Balance of Plant, such as Fuel Oil System, Coal Handling Plant, 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.
- (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.

5.2.4. Trial Run shall be in accordance with clause 2.81 of these Regulations.

5.2.5. The certificate required in clause 5.2.3 above shall be signed by the Chief Executive Officer/Chief Managing Director/Managing Director or the highest relevant authority of the Generating Entity and a copy of the certificate shall be submitted to the Member Secretary, (Southern Regional Power Committee) and SLDC before declaration of COD. The Generating Entity shall submit to the Commission the approval of Board of Directors to the certificates as required herein within a period of 3 months of the COD.

5.2.6. Where on the basis of the Trial Run, a Unit of the Generating Station fails to demonstrate the Unit capacity corresponding to Maximum Continuous Rating or Installed Capacity or Name Plate Rating, the Generating Entity has the option to de-rate the capacity or to go for repeat Trial Run. Where the Generating Entity decides to de-rate the Unit capacity, the demonstrated capacity in such cases shall be more or equal to 105% of de-rated capacity.

5.3. The SLDC shall convey clearance to the Generating Entity for declaration of COD within 7 Days of receiving the generation data based on the Trial Run as per the procedure laid down in the Indian Electricity Grid Code 2010 and TSERC State Grid Code. Further, if the SLDC notices any deficiencies in the Trial Run, it shall be communicated to the Generating Entity within seven (7) Days of receiving the generation data based on the Trial Run.

Provided that the communication system and data telemetry system is put into service after completion of COD certification by SLDC including test transfer of voice and data to respective control centre as certified by the State Load Dispatch Centre.

5.4. **Hydro Generating Station:** COD in case of a Generating Unit of a hydro Generating Station, including Pumped Storage Hydro Generating Station, the date declared by the Generating Station from 00:00 hour(s) after the scheduling process in accordance with the Indian Electricity Grid Code 2010 and TSERC State Grid Code is fully implemented, and in

relation to the Generating Station as a whole, the date declared by the Generating Entity after demonstrating peaking capability corresponding to the Installed Capacity of the Generating Station through a successful Trial Run and after obtaining clearance from the SLDC, and in relation to the generating station as a whole, the COD of the last generating Unit of the Generating Station:

Provided that:

5.4.1. where the Beneficiaries have been tied up for purchasing power from the Generating Station, scheduling process for a Generating Unit of the Generating Station or demonstration of peaking capability corresponding to the Installed Capacity of the Generating Station through a successful Trial Run or each repeat of Trial Run shall commence after at least seven(7) Day notice by the Generating Entity to the Beneficiaries and scheduling shall commence from 00:00 hours after completion of the Trial Run.

5.4.2. Where the Beneficiaries 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 Entity to the SLDC.

5.4.3. the Generating Entity shall certify to the effect that:

- (a) the Generating Station meets the key provisions of the technical standards of Central Electricity Authority (Technical Standards for Construction of Electrical plants and electric lines) Regulations, 2010 as amended from time to time and Grid Code as amended from time to time.
- (b) 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 Instrumentations Control and Protection Systems and auto loops for full load operation of the unit are put into service.
  - (i) The certificate required in clause 5.4.3 above shall be signed by the Chief Executive Officer/Chief Managing Director/Managing Director or the highest relevant authority of the Generating Entity and a copy of the certificate shall be submitted to the Member Secretary, (Southern Regional Power Committee) and SLDC before declaration of COD. The Generating Entity shall submit to the Commission the approval of Board of Directors to the certificates as required herein within a period of 3 months of the COD.
  - (ii) Trial Run shall be in accordance with clause 2.81 of this Regulation.
  - (iii) in case a hydro Generating Station with pondage or storage is not able to demonstrate peaking capability corresponding to the Installed Capacity for the reasons of insufficient reservoir or pond level, the COD of the last Unit of the Generating Station shall be considered as the COD 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 Unit or the Generating Station as and when such reservoir/pond level is achieved.
  - (iv) If a run-of-river hydro Generating Station or a Generating 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 for such hydro Generating Station or Generating Unit 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.

(v) Where on the basis of the Trial Run, a unit of the generating station fails to demonstrate the unit capacity corresponding to Maximum Continuous Rating or Installed Capacity or Name Plate Rating, the generating company shall have the option to either de-rate the capacity or to go for repeat Trial Run. If the generating company decides to de-rate the unit capacity, the demonstrated capacity in such cases shall be more or equal to 110% of de-rated capacity.

(vi) The SLDC shall convey clearance to the Generating Entity for declaration of COD within 7 Days of receiving the generation data based on the Trial Run. Further, if the SLDC notices any deficiencies in the Trial Run, it shall be communicated to the Generating Entity within seven (7) Days of receiving the generation data based on the Trial Run.

Provided that the communication system and data telemetry system is put into service after completion of COD certification by SLDC including test transfer of voice and data to respective control center as certified by the State Load Dispatch Centre.

## **6. Financial Principles Framework**

6.1. The Generating Entity shall manage its finances in an optimum and prudent manner.

6.2. In determining the Aggregate Revenue Requirement and tariff of the Generating Entity, the Commission shall assess the financial prudence exercised with regard to the following factors :—

6.2.1. revenue ;

6.2.2. revenue expenditure;

6.2.3. capital expenditure;

Provided that the Commission may disallow a part of the Aggregate Revenue Requirement, as efficiency measure, if it finds the exercise of such prudence to have been deficient.

6.3. The financial prudence with respect to revenue shall be assessed in terms of the following parameters

6.3.1. Billing efficiency measured as a percentage of the units billed by the Generating Entity to the total units injected into the transmission system.

6.3.2. Collection efficiency measured as a percentage of the amount collected by the Generating Entity to the total amount billed.

6.3.3. Reduction in arrears receivable from Beneficiaries.

6.3.4. Whether revenue collected is in line with the projections made in the Petition and approved by the Commission.

6.4. The financial prudence with respect to revenue expenditure shall be assessed in terms of the following parameters :—

6.4.1. Monitoring of the revenue expenditure as against the revenue earned, such that the expenses and payment obligations of the Generating Entity to other entities are met in a timely manner.

6.4.2. Mechanism put in place for monitoring adherence to the approved revenue expenditure, including schedule of interest payments for long-term loans and working capital.

Provided that, in case the excess of revenue expenditure over the revenue earned exceeds 5%, the Generating Entity shall submit detailed justification for the mismatch along with its Petition for true-up, including a comparison of the revenue expenditure and revenue estimated in the petition with the amounts approved by the Commission and with the actual amount of revenue expenditure and revenue, under



key heads:

Provided further that the Generating Entity shall submit a detailed cash flow statement for the respective business showing the various sources of revenue, the actual amount of cash collected against the amount billed, the comparison of the actual revenue expenditure and capital expenditure with the projected and approved revenue expenditure and capital expenditure.

Provided also that, in case its payment obligations to other entities are not regularly met, the Generating Entity shall provide justification for such shortfall with reference to its cash flow statement.

6.5. The financial prudence with respect to capital expenditure shall be assessed in terms of the following parameters:

6.5.1. Mechanism put in place for monitoring the physical progress of Projects with respect to their original schedule.

6.5.2. Optimum drawal of loans in accordance with the physical progress of the capital expenditure schemes, and efficient utilisation of such loans.

6.5.3. In case, the excess of actual capital expenditure or capitalisation exceeds 10% of that approved by the Commission, the Generating Entity shall submit detailed justification for such excess along with its petition for true-up.

6.5.4. In case any Project has not been commenced during the Year despite the Commission's approval, detailed justification shall be submitted along with the petition for true-up.

#### 6.6. **Uncontrollable factors**

The "uncontrollable factors" shall comprise the following factors, which were beyond the control of, and could not be mitigated by the Petitioner, as determined by the Commission:

- 6.6.1. Force Majeure events
- 6.6.2. Change in law
- 6.6.3. Variation in fuel cost on account of variation in price of primary and/or secondary fuel prices
- 6.6.4. Variation in market interest rates for long-term loan
- 6.6.5. Variation in freight rates
- 6.6.6. Non-Tariff Income

**6.7. Controllable factors**

Variations or expected variations in the performance of the Petitioner, which may be attributed by the Commission to controllable factors include, but are not limited to the following:

- 6.7.1. Variations in capitalisation on account of time or cost overruns or inefficiencies in the implementation of a capital expenditure scheme not attributable to an approved change in its scope, change in statutory levies or Force Majeure Events;
- 6.7.2. Variation in interest and finance charges, return on equity, and depreciation on account of variation in capitalisation as specified in clause 6.8.1 above;
- 6.7.3. Variation in performance parameters, such as Availability, Auxiliary Consumption, Secondary fuel oil consumption, Gross Station Heat Rate.
- 6.7.4. Variation in amount of interest on working capital;
- 6.7.5. Variation in Operation And Maintenance Expenses;
- 6.7.6. Variation in coal transit losses.

**6.8. Mechanism for pass-through of gains or losses on account of uncontrollable factors**

- 6.8.1 The uncontrollable cost shall be determined based on a petition

filed by the concerned Generating Entity.

6.8.2 The aggregate gain or loss to a Generating Entity on account of variation in cost of fuel from the sources considered in the Tariff Order, including blending ratio of coal procured from different sources, shall be passed through as an adjustment in its energy charges on a monthly basis, as specified in clause 21.6 of this Regulation.

6.8.3 The consequential impact of decisions of higher Courts or Tribunals or Review Orders passed by the Commission on the Generating Entity

(a) for the first and second Years of the Control Period shall be addressed in the Mid-term Review Order

(b) for the third, fourth or fifth Years of the Control Period shall be addressed in the End of Control Period Review Order

## **6.9 Mechanism for sharing of gains or losses on account of controllable factors**

6.9.1 The approved aggregate gain to the Generating Entity on account of controllable factors shall be dealt with in the following manner:

(a) Two-third (2/3<sup>rd</sup>) of the amount of such gain shall be passed on as a rebate in tariff over such period as may be stipulated in the Order of the Commission.

(b) The balance amount of such gain shall be retained by the Generating Entity.

6.9.2 The approved aggregate loss to the Generating Entity on account of controllable factors shall be dealt with in the following manner:

(a) One-third (1/3<sup>rd</sup>) of the amount of such loss may be passed

on as an additional charge in tariff over such period as may be stipulated in the Order of the Commission.

- (b) The balance amount of such loss shall be absorbed by the Generating Entity.

## **7. Business Plan and Capital investment plan**

### **a) Business Plan**

- 7.1. The Applicant shall file a business plan along with capital investment plan for its Generation Business on or before 1st April of the Year preceding the first Year of the Control Period for a duration covering at least the entire Control Period.
- 7.2. The business plan shall cover details such as Generation Planning and forecasts, Capex Investment Plan, future performance targets, proposed efficiency improvement measures, Compliance status of Environmental norms, Saving in operating costs. The Business Plan shall also include, financial statements such as balance sheet, profit and loss statement and cash flow statement for the Control Period duration, any other new measures to be initiated for the Generation Business, e.g. automation, IT initiatives etc.

### **b) Capital Investment Plan**

- 7.3. The Capital Investment Plan submitted along with Business Plan shall include the details of purpose of investment, broad technical specifications of the proposed investment and supporting details. It shall also include capital structure, capitalization schedule with milestones for completion, financing plan with sources of investment, physical targets, Cost-benefit analysis, prioritization of proposed investments etc.
- 7.4. The capital investment plan during the Control Period shall be commensurate with the requirement of existing capacity.
- 7.5. In case, the Commission approves lesser amount of capital expenditure than filed by the Applicant for approval, the Commission may allow the respective Applicant to determine the priority of schemes to be

considered within the approved amount.

7.6. The capital investment plan for Renovation and Modernization shall be submitted with all information/data for approval of the Commission with a Detailed Project Report (DPR) elaborating the following elements:

- i. Complete scope and justification;
- ii. Estimated life extension of the asset;
- iii. Improvement in performance parameters;
- iv. Cost-benefit analysis;
- v. Phasing of expenditure;
- vi. Schedule of completion with milestones;
- vii. Reference price level;
- viii. Estimated completion cost;
- ix. Other relevant aspects.

7.7. In the normal course, the Commission shall not revisit the approved capital investment plan during the Control Period. However, during the Mid-Term Review, the Commission shall monitor the Year-wise progress of the actual capital expenditure incurred by the Applicant vis-a-vis the approved capital expenditure.

Provided that the actual capital expenditure incurred shall be only as per the approved capital investment plan.

7.8. In case the capital expenditure is required for emergency work which has not been approved in the capital investment plan, the respective Applicant shall submit an application (containing all relevant information along with reasons justifying emergency nature of the proposed work) seeking approval by the Commission. The Applicant shall take up the work prior to the approval of the Commission provided that the emergency nature of the scheme has been approved by its Board of Directors:

Provided that the Applicant shall submit the pending details

required as per clause 7.1 within 10 Days of the submission of the application for emergency work.

Provided that for the purpose of this clause, such approved capital expenditure shall be treated as a part of actual capital expenditure incurred by the Applicant as well as the approved capital expenditure by the Commission.

7.9. The Commission shall approve the capital investment plan within 90 Days from the date of its filing or submission of complete information, whichever is earlier, after considering all suggestions and objections of all stakeholders.

### **Computation of Capital Cost**

7.10. The capital cost admitted by the Commission after Prudence Check shall form the basis for determination of tariff.

Provided that Prudence Check may include scrutiny of the reasonableness of the capital expenditure, financing plan including the choice and manner of funding, interest during construction, use of efficient technology, cost over-run and time over-run, and such other matters as may be considered appropriate by the Commission for determination of tariff.

7.11. Capital cost for a capital investment Project shall include:

7.11.1. The expenditure incurred or projected to be incurred up to the date of commercial operation of the project as admitted by the Commission after Prudence Check.

7.11.2. 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.

- 7.11.3. The interest during construction and financing charges, on the loans as admitted by the Commission after Prudence Check in accordance with clause 7.21 & 7.22 of this Regulation.
- 7.11.4. Capitalised initial spares subject to the ceiling rates specified in clause 7.12 this Regulation.
- 7.11.5. Additional capitalisation determined under this Regulation clause 7.14
- 7.11.6. Any gain or loss on account of foreign exchange rate variation pertaining to the loan amount availed up to COD, as admitted by the Commission after Prudence Check.
- 7.11.7. Adjustment of revenue on account of sale of Infirm Power by Generating Station in excess of fuel cost prior to the COD as specified under this Regulation at clause 8 of this Regulation.
- 7.11.8. Increase in cost in contract packages subject to Prudence Check and approved by the Commission.

Provided that in case the actual capital cost is lower than the approved capital cost, the actual capital cost, subject to Prudence Check and in accordance with the conditions and methodology specified herein for the capital cost of New Generating Unit/Station, shall be considered for determination of tariff of the Generating Entity

Provided that any gain or loss on account of foreign exchange rate variation pertaining to the loan amount availed up to COD shall be adjusted only against the debt component of the capital cost:

Provided further that the capital cost of the assets forming part of the Project but not put to use or not in use, shall be

excluded from the capital cost:

Provided also that the Generating Entity shall submit documentary evidence in support of its claim of assets being put to use:

Provided also that any capital expenditure incurred based on the specific requirement of a Generating Entity shall be substantiated with necessary documentary evidence of such request and undertaking received.

- 7.12. The actual capital expenditure as on COD for the Original Scope of Work based on audited accounts of the Generating Entity or Project, as the case may be, shall be considered subject to Prudence Check by the Commission.
- 7.13. Truing up of the capital cost for the new Generating Station shall be done by the Commission based on Prudence Check of the audited capital expenditure and capitalisation as on COD.
- 7.14. Where the actual capital cost incurred on Year to Year basis is lesser than the capital cost approved for determination of tariff by the Commission on the basis of the projected capital cost as on the COD or on the basis of the projected additional capital cost, by five percent (5%) or more, the Generating Entity shall refund to the Beneficiaries as approved by the Commission, the excess tariff realized corresponding to excess capital cost, along with interest at 1.20 times of the Bank Rate plus 250 basis points, as prevalent on the first Day of April of the respective Financial Year.
- 7.15. Where the actual capital cost incurred on Year to Year basis is higher than the capital cost approved for determination of tariff by the Commission on the basis of the projected capital cost as on the COD or on the basis of the projected additional capital cost, by five (5%) percent or more, the Generating Entity shall, subject to the approval of the



Commission, be entitled to recover from the Beneficiaries the shortfall in tariff corresponding to such decrease in capital cost along with interest at 0.80 times of the Bank Rate plus 150 basis points, as prevalent on the first Day of April of the respective Financial Year.

7.16. In relation to multi-purpose hydroelectric Projects, with irrigation, flood control and power components, the capital cost chargeable to the power component of the Project only shall be considered for determination of tariff.

7.17. The capital cost may include initial spares capitalised as a percentage of the plant and machinery cost up to the Cut-Off Date, subject to the following ceiling norms :-

Coal based Generating Stations	4.0%
Gas turbine/combined cycle Generating Stations	4.0%
Hydro Generating Stations, including Pumped Storage Hydro Generating Stations	4.0%

Provided that:

7.17.1. Where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the CERC Regulations, such norms shall apply to the exclusion of the norms specified above.

7.17.2. Where the Generating Station has any transmission equipment forming part of the Project, the ceiling norms for initial spares for such equipment shall be as per the ceiling norms specified for transmission system under CERC Regulations.

7.17.3. For the purpose of computing the cost of initial spares, plant and machinery cost shall be considered as Project cost as on Cut-Off Date excluding IDC, IEDC, Land Cost and cost of civil

works.

7.18. The impact of revaluation of assets shall be permitted provided it does not result in increase in tariff of the Generating Entity.

Provided that any benefit from such revaluation shall be passed on to persons who share the capacity charge in case of a Generating Entity at the time of Multi Year Tariff determination or Mid-term Review or End of the Control Period Review, as the case may be.

**7.19. Additional Capitalisation**

7.19.1. The capital expenditure actually incurred or projected to be incurred, on the following counts within the Original Scope Of Work, after the COD and up to the Cut-Off Date, may be admitted by the Commission subject to Prudence Check. Any additional capitalization after COD needs prior approval of the Commission:-

- (a) Un-discharged liabilities recognised to be payable at a future date;
- (b) Works deferred for execution;
- (c) Procurement of initial capital spares within the Original Scope of Work in accordance with clause 7.12 of these Regulations;
- (d) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;
- (e) Change in law or compliance of any existing law;
- (f) Any expenses to be incurred on account of need for higher security and safety of the Station/Unit as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal

security;

- (g) Deferred works relating to ash pond or ash handling system and coal handling in the Original Scope of Work
- (h) Any capital expenditure found justified after Prudence Check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialisation of coal supply corresponding to full coal linkage in respect of Thermal Generating Station as result of circumstances not within the control of the Generating Station.
- (i) Any liability for works executed prior to the Cut-Off Date, after Prudence Check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments, etc.

Provided that in case of such liabilities, the details and relevant Board of Director approvals shall be submitted along with the Petition for determination of final Tariff after the COD of the Generating Unit/ Station.

- (j) Any liability for works admitted by the Commission after the Cut-Off Date to the extent of discharge of such liabilities by actual payments.
- (k) Any additional capital expenditure which has become necessary for efficient operation.

Provided that the claim shall be substantiated with the technical justification duly supported by documentary evidence like test results carried out by an independent agency in case of deterioration of assets, damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as

increase in fault level.

- (l) An additional capital expenditure for complying with statutory norms for Environment in accordance with the appropriate notifications of Ministry of Environment, Forest and Climate Change.

Provided that, the Generating Company shall approach to the Commission for change in operational parameters such as change in normative Auxiliary Consumption on account of technology changes in the Generating Plant for e.g. installation of Flue Gas Desulfurization (FGD).

- (m) In case of hydro Generating Stations, any expenditure, which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the Generating Entity) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation.

7.19.2. The details of works included in the Original Scope of Work along with estimates of expenditure, liabilities recognised to be payable at a future date and the works deferred for execution shall be submitted along with the petition for determination of final tariff after COD of the Generating Unit/Station.

7.19.3. Any expenditure, which has been claimed under renovation and modernisation (clause 7.16 of this Regulation) or repairs and maintenance under O&M expenses (clause 19 of these Regulation), shall not be claimed under this clause.

7.19.4. Impact of additional capitalisation on tariff, if any, shall be considered during Mid-term Review or tariff determination for

the next Control Period as the case may be.

7.19.5. Any expenditure on miscellaneous items/assets like normal tools and tackles, personal computers, furniture, air-conditioners, voltage stabilizers, refrigerators, fans, coolers, TV, washing machines, heat-convectors, carpets, mattresses etc. brought after the Cut-Off Date shall not be considered for additional capitalisation for determination of tariff. The said items are illustrated and may include any other similar items.

## 7.20. **De-Capitalisation**

7.20.1. In case of De-Capitalisation of asset, the original cost of such asset shall be deducted from the value of gross fixed assets (GFA), on and from the date when that asset has been removed from GFA block and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year of De-Capitalisation.

7.20.2. Loss or Gain due to De-Capitalisation of asset based on the directions of the Commission due to technological obsolescence, wear & tear, etc. or due to change in law or force majeure, which cannot be re-used, shall be adjusted in the ARR of the Generation Entity in the relevant Year.

7.20.3. Loss or Gain due to De-Capitalisation of asset proposed by the Generation Entity itself for the reasons not covered under clause 6.7 of this Regulation shall be to the account of the Generation Entity.

7.20.4. Loss or Gain due to De-Capitalisation of asset after the completion of Useful Life of asset shall be to the account of the Generation Entity.

7.20.5. Principles for treatment of capital asset which has been removed from GFA before completion of its Useful Life with prior

approval of the Commission and such removed asset is held in reserve for a continuous period of more than six months for its reuse later shall be as follows:

- (a) In case the asset has been depreciated more than 70% of its book value, depreciation shall not be allowed on such asset from the date of De-Capitalisation to the date such asset is put to re-use;
- (b) In case the asset has been depreciated less than 70% of its book value, depreciation shall be allowed up to 70% of the total value of asset from the date of De-Capitalisation to the date such asset is put to re-use;
- (c) In case such asset has been put to re-use, differential of maximum permissible depreciation, as per CERC Regulations, and actual accumulated depreciation, shall be allowed from the date such asset is put to re-use;
- (d) The Generating Entity shall be allowed return on equity, interest on loan on the written down value of the de-capitalised asset from the date such asset is put to re-use.

## **7.21. Renovation and Modernisation for Life Extension**

7.21.1. The Generating Entity shall file a petition towards the fag end (5 years before) of the Useful Life before the Commission for approval of the proposal with a Detailed Project Report (DPR) detailing the complete scope, justification, cost-benefit analysis, estimated life extension from a reference date, financial package, phasing of expenditure, schedule of completion, reference price level, estimated completion cost including foreign exchange component, if any, and any other information considered to be relevant by the Generating Entity for meeting the expenditure on renovation and modernisation

(R&M) for the purpose of extension of life beyond the originally recognised Useful Life as specified in CERC Regulations.

- 7.21.2. The Commission may grant approval for additional capital cost on account of R&M after due consideration of reasonableness of the cost estimates, financing plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, and such other factors as may be considered relevant by the Commission.

Provided that any expenditure included in the R&M on consumables and cost of components and spares which is generally covered in the O&M expenses shall be suitably deducted after due Prudence Check from the R&M expenditure to be allowed.

- 7.21.3. Any expenditure on replacement, renovation and modernisation or extension of life of old fixed assets, as applicable to Generating Entities, shall be considered after writing off the net value of such replaced assets from the original capital cost, and shall be computed as follows:-

Net Value of Replaced Assets = OCRA - AD

Where,

OCRA: Original Cost of Replaced Assets

AD: Accumulated depreciation pertaining to replaced assets

Provided that, in case the original capital cost of the replaced asset is not available for any reason, it shall be considered by the Commission on a case-to-case basis.

Provided further that the amount of insurance proceeds received, if any, towards damage to any asset requiring its replacement shall be first adjusted towards outstanding actual

or normative loan ; and the balance amount, if any, shall be utilised to reduce the capital cost of such replaced asset, and any further balance amount shall be considered as Non-Tariff Income.

7.21.4. In case of gas/ liquid fuel based open/ combined cycle Thermal Generating Station, any expenditure which has become necessary for renovation of gas turbines/steam turbine after twenty five (25) years of operation from its COD and an expenditure necessary due to obsolesce or non-availability of spares for efficient operation of the Stations shall be allowed.

Provided that any expenditure included in the R&M on consumables and cost of components and spares which is generally covered in the O&M expenses during the major overhaul of gas turbine shall be suitably deducted after due prudence from the R&M expenditure to be allowed.

7.21.5. Any expenditure incurred or projected to be incurred and admitted by the Commission after Prudence Check based on the estimates of R&M 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.

## **7.22. INTEREST DURING CONSTRUCTION (IDC)**

7.22.1. Interest during construction shall be computed corresponding to the loan as specified in from the date of infusion of debt fund, and after taking into account the utilisation of funds up to SCOD.

7.22.2. In case of additional costs on account of IDC due to delay in achieving the SCOD, the Generating Entity, shall be required to furnish detailed justifications with supporting documents for such delay including prudent phasing of funds.



7.22.3. IDC shall be allowed during the delay period only on payment basis and not accrual basis.

7.22.4. The Commission shall be guided by the following principles for the purpose of determining cost due to time over run:

- (a) The entire cost due to time over run has to be borne by the Generating Entity in case the causes for over-run are entirely attributable to the Generating Entity. For example imprudence in selecting the contractors / suppliers and in executing contractual agreements including terms and conditions of the contracts, delay in award of contracts, delay in providing inputs like making land available to the contractors, delay in payments to contractors/ suppliers as per the terms of contract, mismanagement of finances, slackness in project management like improper coordination between the various contractors, etc.,
- (b) The Commission shall examine on a case to case basis of the additional cost incurred due to time over-run on account of factors beyond the control of the Generating Entity e.g., delay caused due to Force Majeure like natural calamity. The Generating Entity shall clearly establish, beyond any doubt that there has been no imprudence on the part of the Generating Entity in executing the Project.

Provided that the consumers should get full benefit of the Liquidated Damages (LDs) recovered from the contractors/suppliers of the Generating Entity and the insurance proceeds, if any, to reduce the capital cost.

Provided that in case of natural calamities, the Generating Entity shall provide a certificate of the event and the delay duration (in Days) due to such calamity within 3 months of the occurring of such calamity.

## **7.23. INCIDENTAL EXPENDITURE DURING CONSTRUCTION (IEDC)**

- 7.23.1. Incidental expenditure during construction shall be computed from the Zero Date and after taking into account the following:
- (a) Pre-operative expenses and additional expenditure when IDC is admissible necessary to be incurred upto COD as set out herein;
  - (b) Adjustment for any revenue earned during construction period up to COD on account of interest on deposits or advances;
  - (c) Adjustment for any other receipts during construction.
- 7.23.2. In case of additional costs on account of IEDC due to delay in achieving the COD, the Generating Entity shall be required to furnish detailed justification with supporting documents including necessary Board of Directors approvals for such delay including the details of incidental expenditure during the period of delay and liquidated damages, if any, recovered or recoverable corresponding to the delay.
- 7.23.3. Any additional cost on account of IEDC due to delay in achieving the COD shall be examined by the Commission on case to case basis.
- 7.23.4. In case the time over-run beyond scheduled COD is not admissible after due prudence check, the increase of capital cost on account of cost variation corresponding to the period of time over-run shall be excluded from capitalisation irrespective of price variation provisions in the contracts with supplier or contractor of the Generating Entity.
- 7.23.5. No additional impact of time over-run or cost over-run shall be admissible on account of non-commissioning of the Generating

Station by scheduled COD, as the same should be recovered through Implementation Agreement.

7.23.6. Initial spares shall be capitalised as a percentage of the plant and machinery cost up to Cut-off Date, subject to the norms specified at clause 7.12 of this Regulation.

## **8. Sale of Infirm Power**

Treatment to the infirm power shall be in accordance with the provisions of the TSERC (Deviation Settlement Mechanism and Related Matters) Regulations as and when specified by the Commission.

Provided that any revenue earned by the Generating Entity from supply of Infirm Power after accounting for the fuel expenses shall be adjusted towards reduction in the capital cost based on provisional claims made.

Provided also that the start-up 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.

## **9. Debt Equity Ratio**

9.1. For determination of Tariff, the debt-equity ratio for any Project under commercial operation shall be considered as 70:30 of the amount of capital cost approved by the Commission under clause 7 of this Regulation, after Prudence Check for determination of Tariff:

Provided that:

9.1.1. Where equity actually deployed is less than 30% of the capital cost of the capitalised assets, actual equity shall be considered for determination of Tariff.

9.1.2. Where equity actually deployed is more than 30% of the capital

cost, equity in excess of 30% shall be treated as notional loan of the Generating Entity.

Provided further that the Generating Entity shall submit documentary evidence for the actual deployment of equity and explain the source of funds for the equity.

9.1.3. The equity invested in foreign currency shall be designated in Indian rupees using the closing exchange rate at the date of each investment.

9.1.4. Any grant/contribution/deposit obtained for the execution of the Project shall not be considered as a part of capital structure for the purpose of debt: equity ratio.

9.2. The premium, if any, raised by the Generating Entity while issuing share capital and investment of internal resources created out of its free reserves, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the Generating Entity, and are within the ceiling of 30% of capital cost approved by the Commission.

9.3. The debt and equity amount arrived at in accordance with clause 9.1 above shall be used for calculating interest on loan, return on equity, and foreign exchange rate variation.

9.4. The Generating Entity shall submit the audited statement regarding reconciliation of equity required and actually deployed to meet the capital expenditure of the Project with documentary evidence approved by relevant authority:

Provided that the reconciliation statement shall indicate the movement of equity with details of return on equity, incentive/disincentive, additional equity infused, distribution of dividend, normative loan etc.

- 9.5. In case of the Generating Station declared under commercial operation prior to 1 April, 2019, debt equity ratio allowed by the Commission for determination of tariff for the period ending 31 March, 2019 shall be considered.
- 9.6. In case of the Generating Station declared under commercial operation prior to 1 April, 2019, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31 March, 2019, the Commission shall approve the debt-equity ratio based on actual information provided by the Generating Entity.
- 9.7. Any expenditure incurred or projected to be incurred on or after 1 April, 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 9.1 of this Regulation.

## **10. Depreciation**

- 10.1. Depreciation shall be computed from the COD 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 COD of the Generating Station taking into consideration the depreciation of individual Units or elements thereof.

Provided that effective COD shall be worked out by considering the actual COD and installed capacity of all the Units of the Generating Station for which single tariff needs to be determined.

- 10.2. The value base for the purpose of depreciation shall be the capital cost of the asset 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 commercial operation.

10.3. In case of commercial operation of the asset is for part of the Year, depreciation shall be charged on pro-rata basis.

Provided that, where the Generating Entity does not furnish sufficient information to compute depreciation on pro-rata basis, depreciation shall be allowed at the discretion of the Commission.

10.4. **Salvage value:** The salvage value 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:

Provided that in case of hydro Generating Station, if the salvage value provided in the agreement signed by the developers with the State Government for development of the Plant is less than 10%, same shall be considered:

Provided also that any depreciation disallowed on account of lower availability of the Generating Station or Generating Unit, shall not be allowed to be recovered at a later stage during the Useful Life and the Extended Life.

10.5. **Land:** Land other than the land held under lease and the land for reservoir in case of hydro Generating Station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset:

Provided further that the depreciable value of land under lease shall be the aggregate of lease payments as per the lease agreement.

10.6. Depreciation shall be calculated annually, based on Straight Line Method and at rates specified in CERC (Terms and conditions of Tariff) Regulations, 2014, as amended from time to time for the assets of the Generating Entity.

Provided that the remaining depreciable value as on 31<sup>st</sup> March of the Year closing after a period of twelve (12) Years from the effective COD

of the Station shall be spread over the balance Useful Life of the assets or Extended Useful Life, as provided in this Regulation.

Provided further that in case of repayment of entire loan is earlier than the period of twelve (12) Years from the effective COD, the remaining depreciable value as on 31<sup>st</sup> March of the Year of repayment, shall be spread over the balance Useful Life of the assets or Extended Useful Life, as provided in this Regulation.

- 10.7. In case of the Existing Projects, the balance depreciable value as on 1 April, 2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31 March, 2019 from the gross depreciable value of the assets.
- 10.8. The Generating Entity shall submit the details of proposed capital expenditure during the fag end of the Project (five years before the end of Useful Life) along with justification and proposed life extension.
- 10.9. Depreciation in case of plants that have been renovated and modernised:
  - 10.9.1. For the existing assets depreciation shall be allowed on the net asset value over the revised Useful Life of the plant.
  - 10.9.2. For new assets that have been installed as part of modernisation and renovation, depreciation shall be allowed equally over the Extended Life.
- 10.10. In case of De-Capitalisation of assets in respect of Generating Entity or Unit there of or any element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalised asset during its useful services.

Depreciation shall be re-computed for assets capitalised at the time of Truing-up along with the Mid-term Review or at the End of the Control Period, based on documentary evidence of assets capitalised by the

Petitioner, subject to the Prudence Check of the Commission, such that the depreciation is allowed proportionately from the date of capitalisation.

## **11. Return on equity (RoE)**

11.1. Return on equity shall be computed in rupee terms, on the equity base determined in accordance with clause 9 of this Regulation (Debt equity ratio clause).

11.2. RoE shall be computed at the following base rates:

11.2.1. Thermal Generating Stations: 15.50%

11.2.2. Run of the river hydro Generating Station : 15.50%

11.2.3. Storage Type hydro Generating Stations including Pumped Storage Hydro Generating Stations and Run-of-River Generating Station with pondage : 16.50%:

11.2.4. Provided that:

- a) the rate of return of a new Project shall be reduced by 1% for such period as may be 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)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:
- b) as and when any of the above requirements in clause 11.2.4 are found lacking in a Generating Station based on the report submitted by the SLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:
- c) The base rates as specified above or as per Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, including amendments thereto or any



superseding Regulations, whichever is lower shall be used for the computation of RoE.

### 11.3. Tax on return on equity

11.3.1. The base rate of RoE as allowed by the Commission under clause 11.2 shall be grossed up with the effective tax rate of the respective Financial Year.

11.3.2. The effective tax rate shall be considered on the basis of actual tax paid in the respect of the Financial Year in line with the provisions of the relevant Finance Acts by the concerned Generating Entity, as the case may be.

11.3.3. The actual tax income on other income stream (i.e., income of non-Generation Business) shall not be considered for the calculation of “effective tax rate”.

11.3.4. Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below *Rate of pre-tax return on equity = Base rate / (1-t)*

Where “t” is the effective tax rate in accordance with Clause 11.3.1 of this Regulation and shall be calculated at the beginning of every Financial Year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial Year to the generating entity on pro-rata basis by excluding the income of non-generation and the corresponding tax thereon.

11.3.5. In case of Generating Entity paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.

11.3.6. Illustration: -

(a) In case of the Generating Entity paying Minimum Alternate Tax (MAT) @ 20.96% including surcharge and cess:

Rate of return on equity =  $15.50/(1-0.2096) = 19.610\%$

(b) In case of Generating Entity paying normal corporate tax including surcharge and cess:

- Estimated Gross Income from generation business for FY 2014-15 is Rs.1,000 Crores.
  - Estimated Advance Tax for the year on above is Rs.240 Crores.
  - Effective Tax Rate for the year 2014-15 =  $\text{Rs.240 Crores}/\text{Rs.1,000 Crores} = 24\%$
  - Rate of return on equity =  $15.50/ (1-0.24) = 20.395\%$

11.4. The Generating Entity, shall true up the grossed up rate of RoE at the end of every Financial Year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff MYT period on actual gross income of any Financial Year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the Generating Entity. Any under-recovery or over-recovery of grossed up rate on RoE after truing up, shall be recovered or refunded to Beneficiaries or the long term transmission customers/DICs as the case may be on Year to Year basis.

## **12. Interest and finance charges on loan**

12.1. The amount of loans arrived in the manner as indicated in clause 9 of this Regulation reduced by the corresponding loan amount of de-capitalised asset shall be considered as gross loan for calculation of interest on loan.

12.2. The loan outstanding as on 1<sup>st</sup> April of the respective Year shall be worked out by deducting the cumulative repayment as admitted by the Commission from the gross loan.

12.3. The repayment for each of the Year of the Control Period shall be

deemed to be equal to the depreciation allowed for the corresponding Year/period. 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.

12.4. The repayment of loan shall be considered from the first Year of commercial operation of the Project irrespective of any moratorium period availed by the Generating Entity.

12.5. The rate of interest on loan shall be based on weighted average rate of interest for actual loan portfolio subject to the interest rate specified in these Regulations as on the date of filing.

Provided that in no case the rate of interest on loan shall exceed approved rate of RoE.

Provided further that if there is no actual loan for a particular Year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:

Provided also that if the Generating Entity does not have actual loan then the rate of interest shall be considered at the interest rate as specified in these Regulations as on the date of filing, for the notional loan of the relevant Control Period:

Provided that if such rate on notional loan changes by more than MCLR during the Control Period and such change subsists for more than 3 continuous quarters in a Year, then the same shall be effected on the notional loan and adjusted during true-up at the time of Mid-term Review and End of Control Period Review.

Provided also that the loan availed through open tendering process (Competitive Bidding) among Scheduled Banks, Financial Institutions etc., shall be considered at the rate discovered through open tendering process but limited to interest rate specified in these

Regulations.

**12.6. Refinancing:**

12.6.1. The Generating Entity shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such refinancing shall be borne by the beneficiaries and the net savings shall be shared between the Beneficiaries and the Generating Entity in the ratio of 2:1 respectively subject to Prudence Check by the Commission.

12.6.2. The Generating Entity shall submit documentary evidence of the costs associated with such re-financing.

12.6.3. The changes to the terms and conditions of the loans shall be reflected from date of such re-financing.

12.6.4. In case of dispute, any of the parties may make an application in accordance with TSERC (Conduct of business) Regulations, 2015 as amended from time to time, including statutory re-enactment thereof for settlement of dispute:

Provided that the Beneficiaries shall not withhold any payment on account of the interest claimed by the Generating Entity during the pendency of any dispute arising out of the re-financing of loan.

13.1. **Interest on working capital**

The Commission shall calculate the Working Capital requirement as follows:

<b>Coal-based generating stations</b>	
(a)	Cost of coal and lime stone towards stock, if applicable, Lower of : A. maximum coal stock storage capacity [OR] B. for generation corresponding to the target availability • Pit head Generating Station - 15 Days coal cost • Non - pit head Generating Station - 30 Days coal cost
(b)	Cost of coal and limestone for 30 Days of generation corresponding to the target availability;
(c)	Cost of secondary fuel oil for two months of generation corresponding to target availability;
(d)	Maintenance spares @ 20% of the O&M expenses specified in clause 19
(e)	O&M expenses for one (01) month as specified in clause 19 of this Regulation
(f)	Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on target availability
(g)	<b>Minus</b> Payables for fuel (including oil and secondary fuel oil) to the extent of thirty Days of the cost of fuel computed at target availability, depending on the modalities of payment

Provided that for the purpose of Truing-up, the working capital shall be computed based on the scheduled generation or target availability whichever is lower:

Provided further that for the purpose of Truing-up for any Year, the working capital requirement shall be re-computed on the basis of the values of components of working capital approved by the Commission in the Truing-Up before sharing of gains and losses;

<b>Open-cycle Gas Turbine/Combined Cycle Thermal Generating Stations</b>		
(a)	Fuel Cost for 30 Days corresponding to the target availability, duly taking into account mode of operation of the Generating Station on gas fuel and liquid fuel	
(b)	Liquid fuel stock for 15 Days corresponding to the target availability, and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the Generating Stations of gas fuel and liquid fuel	
(c)	Maintenance spares @ 30% of Operation And maintenance Expenses specified in clause 19 these Regulations	
(d)	O&M expenses for one month as specified in clause 19 of these Regulations	
(e)	Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on target availability, duly taking into account mode of operation of the Generating Station on gas fuel and liquid fuel	
(f)	<b>Minus</b> Payables for fuel (including liquid fuel stock) to the extent of thirty Days of the cost of fuel computed at target availability, depending on the modalities of payment :	

Provided that for the purpose of Truing-up, the working capital shall be computed based on the actual generation or target availability whichever is lower:

Provided further that for the purpose of Truing-up for any Year, the working capital requirement shall be re-computed on the basis of the values of components of working capital approved by the Commission in the Truing-Up before sharing of gains and losses

<b>Hydro Generating Station including pumped storage hydro-electric Generating Station</b>		
(a)	Maintenance spares @ 15% of Operation And Maintenance Expenses specified in Regulation 29	
(b)	O&M expenses for one month as specified in these Regulations	
(c)	Receivables equivalent to two months fixed cost	

Provided that for the purpose of Truing-up for any Year, the working capital requirement shall be re-computed on the basis of the values of components of working capital approved by the Commission in the Truing-up before sharing of gains and losses ;

13.2. The cost of fuel in cases covered above shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the Generating Entity and Gross Calorific Value of the fuel as per actual for the three months preceding the first month for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period.

13.3. Rate of interest on working capital shall be on normative basis and shall be considered as the Bank Rate plus 150 basis points as on filing date or as on 1<sup>st</sup> April of the financial Year during the MYT period in which the Generating Station or Unit thereof is declared under commercial operation, whichever is later.

Provided that for the purpose of Truing-up for any year, interest on working capital shall be allowed at a rate equal to the weighted average Bank Rate prevailing during the concerned Year plus 150 basis points

13.4. Rate of interest on working capital shall be on normative basis notwithstanding that the Generating Entity has not taken loan for working capital from any outside agency.

## **14.Rebates and Delayed Payment Charge**

### **a) Delayed Payment Charges**

14.1. In case the payment of bills of generation Tariff and charges by the Beneficiary is delayed beyond a period of 60 Days from the date of billing, a delayed payment charge at the rate of 1.25% per month on the billed amount shall be levied for the period of delay by the Generating Entity, notwithstanding anything to the contrary as may have been stipulated in the agreement or arrangement with the Beneficiaries.

14.2. Such delayed payment charge and interest on delayed payment earned by the Generating Entity shall not be considered under its Non-Tariff Income

### **b) Rebate**

14.3. For payment of bills of generation Tariff and charges within 7 Days of presentation of bills, through Letter of Credit or through NEFT/RTGS, a rebate of 2% on billed amount, excluding taxes, cess, duties etc., shall be allowed.

## **15.Components of Tariff**

15.1. The tariff for sale of electricity from a thermal Power Generating Station shall comprise of two parts, namely,

15.1.1. The Annual Fixed Charges and

15.1.2 Energy Charges (for recovery of primary and secondary fuel cost)

15.2. The tariff for sale of electricity from a Hydro Generating Station shall comprise of two parts, namely, the Capacity Charge and Energy Charge

15.3. **Annual Fixed Charges:** The annual fixed charges shall



comprise the following elements:

- 15.3.1. Depreciation;
- 15.3.2. Interest and finance charges on loan;
- 15.3.3. Interest on Working Capital;
- 15.3.4. Operation & Maintenance Expenses;
- 15.3.5. Return on Equity;

**Minus**

- 15.3.6. Non-Tariff Income:

Provided that Depreciation, Interest and finance charges on loan, interest on working capital and Return on Equity for Thermal and Hydro Generating Stations shall be allowed in accordance with the provisions specified in these Regulations.

**16. Non- Tariff Income & Other Business income**

**a) Non- Tariff Income**

The Generating Entity shall submit forecast of Non-Tariff Income to the Commission, in such form as may be stipulated by the Commission from time to time, whose tentative list is as follows:

- Income from rent of land or buildings;
- Net Income from sale of de-capitalised assets;
- Net Income from sale of scrap;
- Income from statutory investments;
- Interest on advances to suppliers/contractors;
- Rental from staff quarters;
- Rental from contractors;
- Income from investment of consumer security deposit;
- Income from hire charges from contactors and others, etc.

Income from the sale of ash/ rejected coal

The amount of Non-Tariff /other income relating to the Generation Business as approved by the Commission shall be deducted from the Annual Fixed Cost in determining the Annual Fixed Charge of the Generating Entity:

Provided that the Generating Entity shall submit full details of its forecast of Non-Tariff Income to the Commission in such form as may be stipulated by the Commission from time to time. Non-Tariff Income shall also be trued-up based on audited accounts.

**b) Other Business Income**

The net income after tax from Other Business shall be adjusted in the ARR.

The Generating Entity shall follow segment wise reporting of Other Business in the audited financial statement and a reasonable basis for allocation of all joint and common costs between the Licensed Business and the Other Business and shall submit the Allocation Statement as approved by the Board of Directors / competent authority to the Commission along with the application for determination of tariff:

Provided that loss on account of Other Business shall not be considered in the ARR of the Licensee.

**17. Norms of operation for Thermal Generating Stations**

- 17.1 Recovery of capacity charge, energy charge, and incentive by the Generating Entity shall be based on the achievement of the operational norms specified by the Commission.
- 17.2 Norms of operation for existing Generating Stations shall be as follows:

<b>Thermal</b>		<b>KTPS ABC / KTPS O&amp;M</b>	<b>KTPS - Stage V</b>	<b>KTPS Stage VI</b>
Normative Annual Plant Availability Factor (Target Availability)	%	70.00%	80.00%	80.00%
Gross Station Heat Rate	kcal/kWh	3,000	2,500	2,450
Secondary fuel oil consumption	ml/kWh	2.00	2.00	2.00
Auxiliary Energy Consumption	%	10.00%	9.00%	7.50%
Transit and Handling Losses	%	0.80%	0.80%	0.80%
<b>Thermal</b>		<b>RTSB</b>	<b>KTPP- Stage - I</b>	<b>KTPP- Stage - II</b>
Normative Annual Plant Availability Factor (Target Availability)	%	75.00%	80.00%	80.00%
Gross Station Heat Rate	kcal/kWh	3,000	2,450	2,400
Secondary fuel oil consumption	ml/kWh	2.00	2.00	2.0
Auxiliary Energy Consumption	%	10.00%	7.50%	7.00%
Transit and Handling Losses	%	0.80%	0.80%	0.80%

Provided that,

- i. Target Availability for full recovery of Annual Fixed Charges shall be 85 % for all thermal Generating Stations, except those covered under Regulation 17.2.
- ii. Full Capacity Charges shall be recoverable at Normative Annual Plant Availability Factor (NAPAF) specified above of these Regulations. Recovery of Capacity Charges below the level of Normative Annual Plant Availability Factor (NAPAF) will be on a pro-rata basis. At zero availability, no Capacity Charges shall be

payable.

iii. The Availability certified by SLDC shall also include Backing Down of the Generating Stations for the purpose of recovery of capacity charges.

iv. The Normative Annual Plant Load Factor (NAPLF) for incentive will be the same as the Normative Annual Plant Availability Factor (NAPAF)

17.3 Norms of operation for new Generating Stations commissioned during or after the Financial Year 2015 other than those covered in 17.2 above, shall be as follows:

17.3.1 Normative Annual Plant Availability Factor (Target Availability): 85%

17.3.2 Normative Annual Plant Load Factor (NAPLF) for incentive: 85%

#### **17.4 Gross Station Heat Rate**

##### **(a) Coal-based Thermal Generating Stations**

$$= 1.045 \times \text{Design Heat Rate (kCal/kWh)}$$

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:

<b>MW</b>	<b>200 to 300</b>	<b>&gt;300 &amp; ≤500</b>	<b>&gt;500 &amp; ≤600</b>	<b>&gt; 600</b>
Pressure Rating (Kg/cm <sup>2</sup> )	150	170	170	247
SHT/RHT (°C)	535/535	537/537	537/565	565/593
Type of BFP	Electrical Driven	Turbine Driven	Turbine Driven	Turbine Driven
Max Turbine Heat Rate (kCal/kWh)	1,955	1,950	1,935	1,850
<b>Min. Boiler Efficiency</b>				
Sub-Bituminous Indian Coal	0.86	0.86	0.86	0.86
Bituminous Imported Coal	0.89	0.89	0.89	0.89
<b>Max Design Unit Heat Rate (kCal/kWh)</b>				
Sub-Bituminous Indian Coal	2,273	2,267	2,250	2,151
Bituminous Imported Coal	2,197	2,191	2,174	2,078

Provided further that in case pressure and temperature parameters of a Unit are different from 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 for Generating Stations based on coal rejects, the Commission will approve the Design Heat Rate on case to case basis.

**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 BFP.

**(b) Gas-based / Liquid-based thermal Generating Unit(s)/ Block(s)**

= 1.05 X Design Heat Rate of the unit/block for Natural Gas  
and

RLNG (kCal/kWh)

= 1.071 X Design Heat Rate of the Unit/ Block for Liquid Fuel  
(kCal/kWh)

Where the Design Heat Rate of a Unit shall mean the guaranteed heat rate for a Unit at 100% MCR and at site ambient conditions; and the Design Heat Rate of a block shall mean the guaranteed heat rate for a block at 100% MCR, site ambient conditions, zero percent make up, design cooling water temperature/back pressure:

**17.5 Secondary fuel oil consumption**

Coal-based generating stations	0.50 <u>ml/kWh</u>
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## 17.6 Auxiliary Energy Consumption

### (a) Coal Based Generating Stations

	With natural draft cooling tower or without cooling
200 MW series	8.50%
300/330/350/500 MW and above series Steam driven boiler feed pumps	5.25%
Electrically driven boiler feed pumps	7.75%

Provided further that for thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.5%:

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

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) Gas Turbine / Combined Cycle generating stations

Combined Cycle	2.5%
Open Cycle	1.0%

## 17.7 Transit and handling losses:

Transit and handling losses for coal based Generating Stations, as a percentage of quantity of coal dispatched by the coal supply company during the month shall be as given below:

17.7.1 Pit head Generating Stations: 0.20%;

17.7.2 Non-pit head Generating Stations: 0.80%;

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 loss of 0.80% shall be applicable.

Provided further that in case of imported coal, the transit and handling losses shall be 0.20%, subject to terms of delivery.

17.8 In case a Thermal Generating Station or Unit is directed by SLDC to operate below normative loading but at or above technical minimum schedule on account of grid security or due to the lower schedule given by the Beneficiaries, increase in Gross Station Heat Rate or penalties imposed by Bureau of Energy Efficiency (BEE) for being non-compliant arising due to generation backing down/partial loading operation if any or any such charges incurred by Generating Station or Unit on account of operational instructions issued by SLDC for grid security purpose, may be considered by the Commission on case to case basis at time of truing up, subject to prudence check.

**18. Norms of operation for hydro Generating Stations**

18.1. Recovery of capacity charge, energy charge, and incentive by the Generating Entity shall be based on the achievement of the operational norms specified by the Commission.

18.2. Normative capacity index for recovery of annual Capacity charges



	First Year of commissioning of the Generating Station	After first Year of commissioning of the Generating Station
Purely Run-of-river power stations	85%	90%
Storage type and Run-of- river power stations with pondage	80%	85%

**Note:** There shall be pro rata recovery of annual Capacity Charges in case the Generating Station achieves capacity index below the prescribed normative levels. At Zero capacity index, no fixed charges shall be payable to the Generating Station.

### 18.3. **Auxiliary Energy Consumption**

- (a) Surface hydro-electric power Generating Stations with rotating exciters mounted on the generator shaft - 0.2% of energy generated
- (b) Surface hydroelectric power Generating Stations with static excitation system - 0.5% of energy generated
- (c) Underground hydroelectric power Generating Stations with rotating exciters mounted on the generator shaft - 0.4% of energy generated
- (d) Underground hydroelectric power generating stations with static excitation system - 0.7% of energy generated

### 18.4. **Transformation losses**

From generation voltage to transmission voltage: 0.5% of energy generated.

**19. Operating & maintenance expenses (O&M)**

19.1. The O&M expenses for each year of the Control Period shall be approved based on the formula shown below

$$\mathbf{O\&M_n = (R\&M_n + EMP_n + A\&G_n) \times 99\%}$$

Where,

R&M<sub>n</sub> - Repair and Maintenance Costs of the Applicant for the n<sup>th</sup> year;

EMP<sub>n</sub> - Employee Cost of the Applicant for the n<sup>th</sup> year;

A&G<sub>n</sub> - Administrative and General Costs of the Applicant for the n<sup>th</sup> year;

The above components shall be computed in the manner specified in this clause:

**19.2. Employee Cost (EMP<sub>n</sub>)**

Employee cost shall be computed as per the approved norm escalated by CPI, adjusted by provisions for expenses beyond the control of the Generating Entity and one time expected expenses, such as recovery/adjustment of Terminal Benefits, implications of pay commission, arrears and interim relief, governed by the following formula

$$\mathbf{EMP_n = (EMP_b \times CPI\ inflation) + Provision}$$

Where:

EMP<sub>n</sub>: Employee expense for the Year “n”

EMP<sub>b</sub>: Employee expense as per the preceding Year.

For the first year of Control Period, expense shall be the average of the trued-up employee expenses after adding/deducting the share of efficiency gains/losses, for the immediately preceding Control Period,

excluding abnormal, if any, subject to Prudence Check by the Commission.

CPI inflation is the point to point change in the Consumer Price Index for Industrial Workers (all India) as per Labour Bureau, Government of India, as reduced by an efficiency factor of 1% for immediately preceding Year.

CPI index source for one-month lag: Ministry of Statistics - GOI  
Provided that in case CPI inflation is a negative number, the escalation/ change shall be 0%.

Provision refers to provision for expenses beyond control of the Generating Entity and expected one-time expenses as specified above.

### 19.3. **Repairs and Maintenance Expense (R&M<sub>n</sub>)**

The expense shall be calculated as percentage (as per the norm defined) of Opening Gross Fixed Assets for the Year governed by following formula:

$$\mathbf{R\&M_n = K_n \times GFA_n \times WPI\ inflation}$$

Where:

R&M<sub>n</sub>: Repairs & Maintenance expense for n<sup>th</sup> Year  
GFA<sub>n</sub>: Opening Gross Fixed Assets for n<sup>th</sup> Year

K<sub>n</sub>: 'K' is the immediate preceding Control Period average (expressed in %) governing the relationship between R&M and Gross Fixed Assets (GFA).

WPI inflation: point to point change in Wholesale Price Index (WPI) for immediately preceding Year.

Provided that in case WPI inflation is a negative number, the escalation/ change shall be 0%.

Source for WPI - As published by Office of Economic Adviser - GOI

#### 19.4. **Administrative & General Expense (A&G<sub>n</sub>)**

A&G expense shall be computed as per the norm escalated by the inflation factor and adjusted by provisions for confirmed initiatives (IT etc. initiatives as proposed by the Generating Entity and validated by the Commission) or other expected one-time expenses, and shall be governed by following formula:

$$\mathbf{A\&G_n = (A\&G_{fo} * Inflation Factor) + Provision}$$

Where:

A&G<sub>n</sub>: A&G expense for the Year “n”

A&G<sub>fo</sub>: For the first Year of the Control Period, it shall be the average of the audited A&G expense of the immediately preceding 3 Financial Years if available, and for subsequent Years it shall be the preceding Year escalated by the inflation factor.

Inflation Factor: is the sum of the following

- > point to point change in the Wholesale Price Index (WPI) numbers as per Office of Economic Advisor of Government of India for immediately preceding Year as reduced by an efficiency factor of 1% multiplied by 0.5
- > point to point change in Consumer Price Index for Industrial Workers (all India) as per Labour Bureau, Government of India in the previous year, as reduced by an efficiency factor of 1% multiplied by 0.5

Provided that in case Inflation Factor is a negative number, the escalation/ change shall be 0%.

Provision: Cost for initiatives or other one-time expenses as proposed by the Generating Entity and validated by the Commission.

19.5. Normative Operation and Maintenance Expenses for the first Year of a new Generating Entity shall be as per the norms approved by the CERC in Central Electricity Regulatory Commission (Terms and

Conditions of Tariff) Regulations, 2014 as amended from time to time, for respective Year unless specifically approved by the Commission.

- 19.6. Any expenditure on account of license fee, initial or renewal, fee for determination of tariff and audit fee shall be allowed on actual basis, over and above the A&G expenses approved by the Commission.
- 19.7. O&M expenses of assets taken on lease/hire-purchase and those created out of the consumer's contribution shall be considered in case the Generating Entity has the responsibility for its operation and maintenance and bears O&M expenses.
- 19.8. With regard to unfunded past liabilities of pension and gratuity, the Commission will follow the principle of "pay as you go". The Commission shall not allow any other amount towards creating fund for meeting unfunded past liability of pension and gratuity.
- 19.9. O&M expenses for gross fixed assets added during the Year, if not accounted already, shall be considered from the COD on pro-rata basis.
- 19.10. The O&M expenses incurred by the Generating Entity on the housing colonies and related expenses including medical and other facilities, of its operating staff shall be recorded separately and excluded from the above
- 19.11. actual O&M expenses are less than 90% of the normative expenses in respect of New generating stations :

Provided, if actual O&M expenses are less than 90% of the normative expenses, the Commission shall true-up the O&M expenses during the Mid-Term Review or End of Control Period Review as the case may be.
- 19.12. Terminal Liabilities such as death-cum-retirement gratuity, pension, commuted pension, leave encashment, LTC, medical reimbursement

including fixed medical allowance in respect of pensioners will be approved as per the actuals paid.

19.13. O&M expenses made on account of extraordinary situations (if any) shall be submitted to Commission for its approval. Such expenses shall be filed separately and will not be subjected to provisions of this clause of the Regulation. The approved amount by the Commission shall be trued up in the Mid-Term Review and End of Control Period review, as applicable.

19.14. Any increase in employee cost on account of pay revision etc. will be considered separately by the Commission.

**19.15. Prior period expenses**

19.15.1. The Applicant shall submit to the Commission the prior period expenses as a part of the filing for Mid-Term Review and End of Control Period Review;

19.15.2. The Commission shall allow prior period expenses for uncontrollable cost items only as per the audited accounts, during such reviews.

**20. Foreign Exchange Rate Variation**

20.1. The Applicant may hedge foreign exchange exposure in respect of the interest on foreign currency loans and repayment of foreign loans acquired for the Generating Station in part or full at the discretion of the Applicant.

20.2. The Applicant shall recover the cost of hedging of foreign exchange rate variation corresponding to the normative foreign debt, in the relevant Year on Year-to-Year basis as expense in the period in which it arises and extra rupee liability corresponding to such foreign exchange rate variation shall not be allowed against the hedged foreign debt.

20.3. To the extent the Applicant is not able to hedge the foreign exchange exposure, the extra rupee liability towards interest payment and loan repayment corresponding to the normative foreign currency loan in the relevant Year shall be permissible provided it is not attributable to the Applicant or its contractors.

20.4. The Applicant shall recover the cost of hedging and foreign exchange rate variation on Year-to-Year basis as income or expense in the period in which it arises.

## **21. Computation & Payment of Capacity Charges & Energy Charges for Thermal Generating Stations**

21.1. The fixed cost of a Thermal Generating Station shall be computed on annual basis, based on norms specified under these Regulations, and recovered on monthly basis under capacity charge. The total capacity charge payable for a Generating Station shall be shared by its Beneficiaries as per their respective percentage share / allocation in the capacity of the Generating Station

21.2. The capacity charge payable to a Thermal Generating Station for a calendar month shall be calculated in accordance with the following formulae

$$CC_1 = (AFC/12)(PAF_1 / NAPAF) \text{ subject to ceiling of } (AFC/12)$$

$$CC_2 = ((AFC/6)(PAF_2 / NAPAF) \text{ subject to ceiling of } (AFC/6)) - CC_1$$

$$CC_3 = ((AFC/4)(PAF_3/NAPAF)\text{subject to ceiling of } (AFC/4)) - (CC_1+CC_2)$$

$$CC_4 = ((AFC/3) (PAF_4 /NAPAF) \text{ subject to ceiling of } (AFC/3)) - (CC_1+CC_2+CC_3)$$

$$CC_5 = ((AFC \times 5/12) (PAF_5/NAPAF) \text{ subject to ceiling of } (AFC \times 5/12)) - (CC_1+CC_2+CC_3+CC_4)$$

$$CC_6 = ((AFC/2) (PAF_6 / NAPAF) \text{ subject to ceiling of } (AFC/2)) - (CC_1+CC_2+CC_3+CC_4+CC_5)$$

$$CC_7 = ((AFC \times 7/12) (PAF_7/ NAPAF) \text{ subject to ceiling of } (AFC \times 7/12)) -$$

$$(CC_1+CC_2+CC_3+CC_4+CC_5+CC_6)$$

$$CC_8 = ((AFC \times 2/3) (PAF_8 / NAPAF) \text{ subject to ceiling of } (AFC \times 2/3)) - (CC_1+CC_2+CC_3+CC_4+CC_5+CC_6+CC_7)$$

$$CC_9 = ((AFC \times 3/4) (PAF_9 / NAPAF) \text{ subject to ceiling of } (AFC \times 3/4)) - (CC_1+CC_2+CC_3+CC_4+CC_5+CC_6+CC_7+CC_8)$$

$$CC_{10} = ((AFC \times 5/6) (PAF_{10} / NAPAF) \text{ subject to ceiling of } (AFC \times 5/6)) - (CC_1+CC_2+CC_3+CC_4+CC_5+CC_6+CC_7+CC_8+CC_9)$$

$$CC_{11} = ((AFC \times 11/12) (PAF_{11} / NAPAF) \text{ subject to ceiling of } (AFC \times 11/12)) - (CC_1+CC_2+CC_3+CC_4+CC_5+CC_6+CC_7+CC_8+CC_9+CC_{10})$$

$$CC_{12} = ((AFC) (PAF_{12} / NAPAF) \text{ subject to ceiling of } (AFC)) - (CC_1+CC_2+CC_3+CC_4+CC_5+CC_6+CC_7+CC_8+CC_9+CC_{10}+CC_{11})$$

Provided that in case of Generating Station under shutdown due to Renovation and Modernisation, the Generating Entity shall be allowed to recover the O&M expenses and interest on loan only.

Where,

AFC Annual fixed cost specified for the year, in Rupees.

NAPAF = Normative annual Plant Availability Factor in percentage.

PAF<sub>n</sub> = Percent Plant Availability Factor achieved upto the end of the n<sup>th</sup> month.

PAFY = Percent Plant Availability Factor achieved during the Year

CC<sub>1</sub>, CC<sub>2</sub>, CC<sub>3</sub>, CC<sub>4</sub>, CC<sub>5</sub>, CC<sub>6</sub>, CC<sub>7</sub>, CC<sub>8</sub>, CC<sub>9</sub>, CC<sub>10</sub>, CC<sub>11</sub>, and CC<sub>12</sub> are the Capacity Charges of 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> months respectively

21.3. The PAF<sub>n</sub> up to the end of a particular month and PAFY shall be computed in accordance with the following formula:



$$\text{PAF}_n \text{ or PAFY} = 10000 \times \sum_{i=1}^N \text{DC}_i / \{ N \times \text{IC} \times (100 - \text{AUX}) \} \%$$

Where,

AUX = Normative Auxiliary Energy Consumption in percentage.

DC<sub>i</sub> = Average Declared Capacity (in ex-bus MW), for the i<sup>th</sup> 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: DC<sub>i</sub> 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

21.4. PLF Incentive to a Generating Station shall be payable at the rate specified in CERC Regulations, 2014 as applicable during control period.

21.5. The energy charge shall cover the primary and secondary fuel cost and shall be payable by every Beneficiary for the total energy scheduled to be supplied to such Beneficiary during the calendar month on ex-power plant basis, at the energy charge rate of the month with fuel and limestone price (wherever applicable) adjustment. Total Energy charge payable to the Generating Entity for a month shall be:

*(Energy charge rate in Rs./kWh) x {Scheduled energy (ex-bus) for the month in kWh.}*

21.6. 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

21.6.1. For coal based stations

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

21.6.2. For gas and liquid fuel based stations

$$ECR = GSHR \times LPPF \times 100 / \{CVPF \times (100 - AUX)\}$$

Where,

AUX = Normative Auxiliary Energy Consumption in percentage

CVPF =

- Weighted Average Gross calorific Value of coal as received, in kCal per kg for coal based stations
- Weighted Average Gross calorific Value of primary fuel as fired, in kCal per kg, per litre or per standard cubic meter, as applicable for gas and liquid fuel based stations.
- 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 = 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, per litre or per standard cubic meter, as applicable, 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

Provided that energy charge rate for a gas/liquid fuel based station shall be adjusted for open cycle operation based on certification of TSSLDC for the open cycle operation during the month

21.7. The Generating Entity 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, natural gas, RLNG, liquid fuel etc., as per the forms prescribed at Annexure I of CERC 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 fired shall also be provided separately, along with the bills of the respective month;

Provided further that the copies of the bills and details of parameters of GCV and price of fuel i.e. domestic coal, imported coal, e-auction coal, natural gas, RLNG, liquid fuel 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 Generating Entity. The details should be available on its website on monthly basis for a period of three months

21.8. The landed cost of fuel for the month shall include price of fuel corresponding to the grade and quality of fuel inclusive of royalty, taxes and duties as applicable, transportation cost by rail / road or any other means (all these parameters to be shown separately), and, for the purpose of computation of energy charge, and in case 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 notified by the Central Electricity Regulatory Commission, for respective Year unless

specifically approved by the Commission;

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

21.9. 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 Entity 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 in such case, prior permission from Beneficiaries shall not be a precondition, unless otherwise agreed specifically in the power purchase agreement:

Provided further that the weighted average price of use of alternative source of fuel shall not exceed 30% of base price of fuel, however the Commission will make a prudent check in approving the price of alternative fuel, considering the improved GCV and impact of energy rate on account of increased price of alternative source of fuel. 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 and in that event, prior consultation with Beneficiary shall be made not later than three Days in advance

21.10. Any variation in fuel prices on account of change in the Gross Calorific Value (GCV) of coal or gas or liquid fuel shall be adjusted on

a monthly basis on the basis of average GCV of coal or gas or liquid fuel in stock, as fired and weighted average landed cost incurred by the Generating Entity for procurement of coal, oil, or gas or liquid fuel, as the case may be for a Station.

21.11. The Generating Entity shall separately indicate rate of energy charges in its bills at base price of primary and secondary fuel specified by the Commission.

## **22. Computation & Payment of Capacity Charges & Energy Charges for Hydro Generating Stations.**

22.1. 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 one twelfth of Annual fixed charges on every month which shall be payable by the Beneficiaries in proportion to their respective allocation in the saleable capacity of the Generating Station.

Provided that during the period between COD of the first unit of the Generating Station and the COD of the Generating Station, the annual fixed cost shall provisionally be worked out based on the latest estimate of the completion cost for the Generating Station, for the purpose of determining the capacity charge and energy charge payment during such period.

22.2. **The capacity charge payable to a hydro Generating Station for a calendar year shall be:**

Annual Capacity Charges = (Annual Fixed Charge - Primary Energy Charge)

Provided that the Primary Energy Charge shall not exceed the Annual Fixed Charge and there shall be pro rata recovery of annual capacity charges in case the Generating Station achieves capacity index below the prescribed normative levels. At Zero capacity index, no capacity charges shall be payable to the Generating Station.

### 22.3. **Hydel stations Energy Charges**

1. Rate of primary energy for all hydro electric power generating stations, except for pumped storage generating stations, shall be equal to average of the lowest variable charges of the Central and State thermal power generating stations of the State for all months of the previous year. The primary energy charge shall be computed based on the primary energy rate and scheduled primary energy of the station:

Provided that in case the primary energy charge recoverable by applying the above primary energy rate exceeds the Annual fixed charges of a generating station, the primary energy rate of such generating station shall be calculated by' the following formula :

Primary energy rate = Annual fixed charge / Primary Energy

2. **Primary Energy Charge** = Scheduled Primary Energy x Primary Energy Rate.

Secondary Energy Rate shall be equal to the Primary Energy Rate.

Secondary Energy Charge = Scheduled Secondary Energy x Secondary Energy Rate

#### **Note:**

- i. Annual fixed charges shall be adjusted at the end of the financial year
- ii. Declared capacity of Hydel stations based on the instructions of SLDC subjected to the water availability constraints.

### **23. Computation & Payment of Capacity Charges & Energy Charges for Pumped Hydro Generating Stations**

- 23.1 The fixed cost of a Pumped Storage Hydro Generating Station shall be computed on annual basis, based on norms specified under these regulations, and recovered on monthly basis as capacity charge. The capacity charge shall be payable by the Beneficiaries in proportion to

their respective allocation in the saleable capacity of the Generating Station.

Provided that during the period between COD of the first Unit of the Generating Station and the COD of the Generating Station, the annual fixed cost shall be worked out based on the latest estimate of the completion cost for the Generating Station, for the purpose of determining the capacity charge payment during such period

23.2 The capacity charge payable to a Pumped Storage Hydro Generating Station for a calendar month shall be:

If actual Generation during the month is  $\geq 75\%$  of the Pumping Energy consumed by the Station during the month  $(AFC \times NDM / NDY)$  (in Rupees)

If actual Generation during the month is  $< 75\%$  of the Pumping Energy consumed by the Station during the month.

$\{(AFC \times NDM / NDY) \times (\text{Actual Generation during the month during peak hours} / 75\% \text{ of the Pumping Energy consumed by the station during the month})\}$  (in Rupees)}

Where,

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

NDM = Number of Days in the month

NDY = Number of Days in the year

Provided that there would be adjustment at the end of the year based on actual generation and actual pumping energy consumed by the Station during the Year.

Provided further that, the above norms shall be applicable to the dedicated Pumped Storage Hydro Generating Station only.

23.3 The energy charge shall be payable by every Beneficiary for the total

energy scheduled to be supplied to the Beneficiary in excess of the Design Energy plus 75% of the energy utilised in pumping the water from the lower elevation reservoir to the higher elevation reservoir, at a flat rate equal to the average energy charge rate of 20 paise per kWh, excluding free energy, if any, during the calendar month, on ex power plant basis.

23.4 Energy charge payable to the Generating Entity for a month shall be =  $0.20 \times \{ \text{Scheduled energy (ex-bus) for the month in kWh} - (\text{Design Energy for the month (DE}_m) + 75\% \text{ of the energy utilized in pumping the water from the lower elevation reservoir to the higher elevation reservoir of the month}) \}$

Where,

DE<sub>m</sub> = Design energy for the month specified for the hydro  
Generating Station, in MWh

Provided that in case the scheduled energy in a month is less than the Design Energy for the month plus 75% of the energy utilized in pumping the water from the lower elevation reservoir to the higher elevation reservoir of the month, then the energy charges payable by the Beneficiaries shall be zero.

23.5 The Generating Entity shall maintain the record of daily inflows of natural water into the upper elevation reservoir and the reservoir levels of upper elevation reservoir and lower elevation reservoir on hourly basis. The Station shall be required to maximize the peak hour supplies with the available water including the natural flow of water. In case it is established that Generating Entity is deliberately or otherwise without any valid reason, is not pumping water from lower elevation reservoir to the higher elevation during off-peak period or not generating power to its potential or wasting natural flow of water, the capacity charges of the Day shall not be payable by the Beneficiary. For this purpose, outages of the Unit(s)/Station including planned outages and the forced outages up to 15% in a year shall be construed as the



valid reason for not pumping water from lower elevation reservoir to the higher elevation during off-peak period or not generating power using energy of pumped water or natural flow of water:

Provided that the total capacity charges recovered during the Year shall be adjusted on pro-rata basis in the following manner in the event of total machine outages in a Year exceeds 15%:

$$(ACC)_{adj} = (ACC)_R \times (100 - ATO) / 85$$

Where,

(ACC) adj - Adjusted Annual Capacity Charges (ACC)<sub>R</sub> - Annual Capacity Charges recovered

ATO - Total Outages in percentage for the year including forced and planned outages

Provided further that the Generating Station shall be required to declare its machine availability daily on Day-ahead basis for all the Time Blocks of the Day in line with the scheduling procedure of Grid Code;

- 23.6 The concerned Load Dispatch Centre shall finalise the schedules for the hydro Generating Stations, in consultation with the Beneficiaries, for optimal utilization of all the energy declared to be available, which shall be scheduled for all Beneficiaries in proportion to their respective allocations in the Generating Station.

## 24 **Deviation Charges**

Variations between actual injection of Energy and scheduled injection of Energy for the Generating Stations, and variations between actual drawl of Energy and scheduled drawl of Energy for the Beneficiaries shall be treated as their respective deviations and charges for such deviations shall be governed by the deviation settlement mechanism regulations as notified by the Commission.

## **25. Scheduling, Accounting and Billing**

### **25.1 Scheduling:**

The methodology for scheduling and dispatch for the Generating Station shall be as specified in the Grid Code and TSERC's Regulations for Deviation Settlement Mechanism as and when notified by the Commission.

### **25.2 Metering and Accounting:**

The provisions of the Grid Code and TSERC's Regulations for Deviation Settlement Mechanism as and when notified by the Commission shall be applicable.

### **25.3 Billing and Payment of charges:**

25.3.1 Bills shall be raised for capacity charge, energy charge on monthly basis by the Generating Entity in accordance with these Regulations, and payments shall be made by the Beneficiaries

25.3.2 Payment of the capacity charge for a Thermal Generating Station shall be shared by the Beneficiaries of the Generating Station as per their percentage shares for the month (inclusive of any allocation out of the unallocated capacity) in the Installed Capacity of the Generating Station. Payment of capacity charge and energy charge for a hydro Generating Station shall be shared by the Beneficiaries of the Generating Station in proportion to their shares (inclusive of any allocation out of the unallocated capacity) in the saleable capacity

25.4 **Note 1:** Shares / allocations of each Beneficiary in the total capacity of Central sector Generating Stations shall be as determined by the Central Government, inclusive of any allocation made out of the unallocated capacity. The shares shall be applied in percentages of Installed Capacity and shall

normally remain constant during a month. Based on the decision of the Central Government the changes in allocation shall be communicated by the Member-Secretary, Regional Power Committee in advance, at least three Days prior to beginning of a calendar month, except in case of an emergency calling for an urgent change in allocations out of unallocated capacity. The total capacity share of a Beneficiary would be sum of its capacity share plus allocation out of the unallocated portion. In the absence of any specific allocation of unallocated power by the Central Government, the unallocated power shall be added to the allocated shares in the same proportion as the allocated shares.

25.5 **Note 2:** The Beneficiaries may propose surrendering part of their allocated firm share to other States within / outside the region. In such cases, depending upon the technical feasibility of power transfer and specific agreements reached by the Generating Entity with other States within/ outside the region for such transfers, the shares of the beneficiaries may be prospectively re-allocated by the Central Government for a specific period (in complete months) from the beginning of a calendar month. 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 the State(s) 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 capacity charges as per allocated capacity shares. Any such reallocation and its reversion shall be communicated to all concerned by the Member Secretary, Regional Power Committee in advance, at least three Days prior to such reallocation or reversion taking effect.

## **26. Miscellaneous**

### **26.1 Dispute resolving mechanism**

In the event of any dispute regarding interpretation of any provision of the Terms and Conditions of Generation Tariff Regulations or rules and procedures notified under the provisions of the Terms and Conditions of Generation Tariff Regulations, the matter will be decided by the Commission according to the Act.

Provided that for this purpose the aggrieved person shall be entitled to file a proper petition before the Commission by following the Conduct of Business Regulation, 2015 being regulation No. 2 of 2015 and Levy of Fee for Rendering Services Rendered by the Commission Regulation, 2016 being regulation No. 2 of 2016.

Provided that the Commission may initiate such suo moto proceedings as may be necessary in the event of it having come to the conclusion based on reports of the TSGENCO that action needs to be taken against any of the stakeholders in terms of the Act, 2003 by exercising the powers vested in it thereof and by invoking the Conduct of Business Regulation, 2015 being regulation No. 2 of 2015 and Levy of Fees for Rendering Services Rendered by the Commission Regulation, 2016 being regulation No. 2 of 2016, where such fee if required to be levied is to be decided at the end of the proceeding as to who shall pay the same.

### **26.2 Issue of orders and practice directions**

Subject to the provisions of the Act and this Regulation, the Commission may, from time to time, issue orders and practice directions in regard to the implementation of these Regulations and procedure to be followed on various matters, which the Commission has been empowered by these Regulations to direct, and matters incidental or ancillary thereto.

### **26.3 Powers to remove difficulties**

If any difficulty arises in giving effect to the provisions of this

regulations, the Commission may, by general or specific order, make such provisions not inconsistent with the provisions of the Act, 2003, as may appear to it to be necessary and expedient for removing such difficulty duly following the procedure contemplated under the Act, 2003 and regulations in vogue.

#### **26.4 Power of relaxation**

The Commission may in public interest and for reasons to be recorded in writing, relax any of the provision of these Regulations.

#### **26.5 Interpretation**

If a question arises relating to the interpretation of any provision of these Regulations, the decision of the Commission shall be final.

#### **26.6 Saving of inherent powers of the Commission**

1. Anything done or any action taken or purported to have been done or taken including any rule, notification, inspection, order or notice made or issued or any appointment, confirmation or declaration made or any licence, permission, authorization or exemption granted or any document or instrument executed or any direction given under the repealed regulation shall, insofar as it is not inconsistent with the provisions of this regulation, be deemed to have been done or taken under the corresponding provisions of this regulation shall be deemed to be not invalid by virtue of such repeal.
2. Nothing contained in these Regulations shall limit or otherwise affect the inherent powers of the Commission from adopting a procedure, which is at variance with any of the provisions of these Regulations, if the Commission, in view of the special circumstances of the matter or class of matters and for reasons to be recorded in writing, deems it necessary or expedient to depart from the procedure specified in these Regulations.

#### **26.7 Enquiry and investigation**

All enquiries, investigations and adjudications under these regulations shall be done by the Commission through the proceedings in accordance with the provisions of the Conduct of

Business Regulations, 2015.

### **26.8 Power to amend**

The Commission may, at any time, vary, alter, modify or amend any provisions of this regulation.

### **27. Summary of timelines**

<b>Description</b>	<b>Filing of the Document (on or before)</b>	<b>Obtaining additional information and acceptance by the Commission</b>	<b>Approval of the Document</b>
Capital Investment Plan (to be filed only at the beginning of the Control Period)	1st April of the Year preceding the first Year of Control Period	Within 45 Days of filing of document	Within 90 Days of acceptance of the filing
Business Plan	1st April of the Year preceding the first Year of Control Period	Within 45 Days of filing of document	Within 90 Days of acceptance of the filing
Filing of MYT Petition (ARR and Tariff Proposal for the Control Period)	1st April 2019	Within 45 Days of filing of document	Within 120 Days of acceptance of the filing
Mid-Term Review	30th November of the fourth Year of the Control Period	Within 45 Days of filing of document	Within 120 Days of acceptance of the filing
End of Control Period Review	30th November of the first Year of the subsequent Control Period	Within 45 Days of filing of document	Within 120 Days of acceptance of the filing

**(BY ORDER OF THE COMMISSION)**

**Sd/-**

**UMAKANTA PANDA  
COMMISSION SECRETARY (FAC)  
Telangana State Electricity  
Regulatory Commission**

**Hyderabad**

**Date: 04.01.2019.**