

Uttar Pradesh Electricity Regulatory Commission
Notification No.: UPERC/Secretary/CRE Regulations/ 2019/

Dated: 25/07/2019

In exercise of powers conferred under section 181 read with section 9, 61, 86(1)(a), 86(1)(b) and 86(1)(e) of the Electricity Act, 2003, and all other powers enabling in this behalf, the Uttar Pradesh Electricity Regulatory Commission hereby makes the following Regulations, namely:

**UPERC (Captive and Renewable Energy Generating Plants)
Regulations, 2019**

(CRE Regulations, 2019)

CHAPTER - 1

PRELIMINARY

1. Short Title and commencement

- i. These Regulations shall be called the UPERC (Captive and Renewable Energy Generating Plants) Regulations, 2019 (hereinafter referred to as CRE Regulations, 2019).
- ii. These Regulations shall be reckoned to have come into force from 1 April, 2019 and shall remain in force up to 31 March, 2024 unless reviewed earlier or extended by the Commission.
- iii. Words and expressions used in these Regulations and not defined herein but defined in the Electricity Act, 2003 (hereinafter referred to as 'the Act'), as amended from time to time, shall have the meaning as assigned to them under the Act.

2. Scope and extent of application

- i. These Regulations shall apply to:
 - a) All the Generating Stations based on Captive generation, renewable sources of generation and co-generation, existing prior to 01.04.2019 in the State of Uttar Pradesh as on the date of notification of these Regulations.
 - b) All new projects commissioned after 01.04.2019 within Uttar Pradesh for

generation based on Captive generation, renewable sources of generation and co-generation, captive consumption and sale of electricity from such captive plants or plants based on RE sources, to all distribution licensees within Uttar Pradesh or through Open access to a third party.

Provided that in case of Wind, Mini/ Micro hydro projects, Small Hydro projects, Biomass power, Non-fossil fuel based generation and Cogeneration projects, Solar PV projects and Wind based power plants these Regulations shall apply subject to the fulfillment of eligibility criteria specified in these Regulations.

- ii. The provisions of Availability Based Tariff (hereinafter referred to as 'ABT') in respect to functions, duties and obligations, as applicable to conventional generation plants shall apply to these Generating Plants also, unless provided otherwise in some other Regulations.
- iii. For Generating Plants commissioned on or after 1.04.2009, where the Generating Plant/Company has adopted Clean Development Mechanism (CDM), the proceeds of carbon credit from approved CDM project shall be shared in the following manner, namely:
 - a. 100% of gross proceeds on account of CDM shall be retained by the project developer during the first year of commercial operation of the Generating plants.
 - b. During the second year of commercial operation, the share of the procurer shall be 10% which shall progressively increase by 10% every year till it reaches 50%, where-after the proceeds shall be shared in equal proportion, by the Generating Company and the procurer.
- iv. Annual Energy Audit of each Generating Plant shall be compulsory under relevant provisions of Energy Conservation Act, 2001, as amended from time to time.

- v. The Generating Plant / Company shall abide by obligations cast on it by orders of the State Commission issued from time to time in respect of promotion of Renewable Energy Sources.
- vi. The Generating Plant/ Company shall abide by the provisions of the Act, Rules, Codes, Regulations, Orders and Directions of the appropriate Authority / Commission issued from time to time regarding generation and evacuation of electricity.

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

- vii. The Commission may in its discretion refer any technical matter relating to Generation and Transmission to Central Electricity Authority for examination.
- viii. If any difficulty arises in giving effect to these Regulations, the Commission may, on its own motion or otherwise, by an Order and after giving a reasonable opportunity to those likely to be affected by such Order, make such provisions, as may appear to be necessary for removal of difficulty so arisen.

3. Tariff Determination for Captive Generating Plants (Non- RE)

The tariff in respect of a Captive Generating Plant (Non- RE) under these Regulations shall be applicable to the capacities or the units in respect of which an agreement has been reached between the generating company and the procurer for supply of electricity, as per the provisions of these Regulations.

4. Tariff Determination for Renewable Energy based Power Plants

A generic tariff for renewable energy based generating plants viz. Bagasse Based Generation, Biomass (Rice Husk Based) Generation Plants, Municipal Solid Waste Based Generation Plants, Biogas Based Generation Plants, Biomass Gasifier Based Generation Plants, Small Hydro Generation Plants,



Solar Power Generation Plants and Wind Power Generation Plants is given in Schedule II of these Regulations.

Provided that for any renewable energy technology approved by MNRE other than those covered under these Regulations, the tariff may be determined by the Commission on case to case basis on receipt of an application for this purpose.

5. Approval of Power Purchase Agreement

The Distribution Licensee shall make an application for approval of Power Purchase Agreement (PPA) entered into with the Generating Plant in such form and in such manner as prescribed in these Regulations, Orders of the Commission and UPERC (Conduct of Business) Regulations, 2004, notified by the Commission and as amended from time to time.

Provided that the Distribution Licensee shall make the application to the Commission within three (3) months of signing the PPA with the Generating Plant.

6. Definitions

- i. In these Regulations, unless the context otherwise requires:
 - a. **“Act”** means the Electricity Act, 2003 (36 of 2003), including amendments thereto;
 - b. **“Auxiliary Energy Consumption”** means the quantum of energy consumed by auxiliary equipment of the generating station and 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;
 - c. **“Banking of power”** is the process under which a Generating Plant supplies power to the grid with the intent of exercising its eligibility to draw back this power from the grid for its own use as per the conditions

provided in these Regulations;

- d. **“COD” or “Date of Commercial Operation”** shall mean the date on which the generating plant is synchronized with the grid system and has demonstrated the generation capacity as per the terms of the PPA.
- e. **“CERC”** means the Central Electricity Regulatory Commission;
- f. **“Commission”** means the Uttar Pradesh Electricity Regulatory Commission;
- g. **“Contracted Capacity”** means the capacity in MW as agreed to be supplied by the Generating company to a Distribution Licensee under the Power Purchase Agreement;
- h. **“Control Period”** means a period during which the principles and norms for determination of tariff specified in these Regulations shall remain valid;
- i. **“Existing Generating Station”** means a generating station, which has achieved COD prior to the coming into effect of these Regulations;
- j. **“Financial Year”** means a period commencing on 1st April of a calendar year and ending on 31st March of the subsequent calendar year;
- k. **“Gross Calorific Value” or “GCV”** in relation to a fuel used in a generating station means the heat produced in kcal by complete combustion of one kilogram of solid fuel or one litre of liquid fuel or one standard cubic meter of gaseous fuel, as the case may be;
- l. **“Gross Station Heat Rate” or “SHR”** means the heat energy input in kcal required to generate one kWh of electrical energy at generator terminals of a thermal generating station;
- m. **“IEGC”** means the Grid Code specified by the Central Regulatory Commission under clause (h) of sub-section (1) of section 79 of the Act;

- n. **“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), approved by the Commission from time to time;
- o. **“Inter-connection Point”** means a point at EHV substation of transmission licensee or HV/LV sub-station of distribution licensee, as the case may be, where the electricity produced from the generating station is injected into the Uttar Pradesh Grid;
- p. **“Large scale stand-alone Solar projects”** means Solar projects with installed capacity of 5 MW and above.
- q. **“MNRE”** means the Ministry of New and Renewable Energy of the Government of India;
- r. **“New Generating Station”** means a generating station which achieves COD after coming into effect of these Regulations;
- s. **“Non fossil fuel based co-generation”** means the process in which more than one form of energy (such as steam and electricity) are produced in a sequential manner by use of biomass provided the project may qualify as a co-generation project if it fulfils the eligibility criteria as specified in CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2017 and subsequent amendments thereof.
- t. **“Operation and Maintenance expenses” or “O&M expenses”** means the expenditure incurred on operation and maintenance of the project, and includes the expenditure on manpower, repairs, spares, consumables, insurance and other overheads of revenue nature;
- u. **“Ownership”** in relation to a Generating Station or power plant setup by a company or any other body corporate shall mean the equity share capital with voting rights. In other cases ownership shall mean proprietary interest and control over the Generating Station or power

plant;

- v. "**Peak Hours / Off Peak Hours**" means the hours declared as such by the State Load Despatch Centre from time to time unless specified by an Order of the Commission;
- w. "**Plant Load Factor**" shall mean the total sent out energy corresponding to generation during the period expressed as a percentage of sent out energy corresponding to contracted capacity with Distribution Licensee in that period.

$$PLF = \frac{ES \times 1000}{CC \times (100 - AUX) \times 8760}$$

Where,

ES: Energy sold in MU during the year,

CC: Contracted capacity in MW,

AUX: Normative Auxiliary Consumption

- x. "**Power Purchase Agreement**" or "**PPA**" means an agreement between a Generating Company and a Distribution Licensee for supply of power on the terms and conditions specified therein and with the provisions that the tariff for sale of power shall be as determined by the Commission from time to time;
- y. "**Project**" means a generating station and the evacuation system upto inter-connection point and in case of a small 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;
- z. "**Renewable Energy**" means the grid quality electricity generated from Renewable Energy sources;
- aa. "**Renewable Energy Power Plants**" means the power plants other than the conventional power plants generating grid quality electricity

from Renewable Energy sources;

bb. **“Renewable Energy Sources”** (hereinafter called ‘RE sources’) means renewable energy sources such as small hydro, wind, solar, biomass, bio fuel co-generation (including Bagasse based co-generation), urban or municipal solid waste and such other sources as recognized or approved by the MNRE or State Government;

cc. **“RLDC”** means the Regional Load Despatch Centre established under sub-section (1) of section 27 of the Act;

dd. **“SLDC”** means State Load Despatch Centre established in Uttar Pradesh under sub-section (1) of section 31 of the Act;

ee. **“UPEGC”** means the State Grid Code specified under clause (h) of subsection (1) of section 86 of the Act by the Commission;

ff. **“UPERC Open Access Regulations”** means the Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions for Open Access) Regulations, 2009 as amended from time to time;

gg. **“Wheeling”** means the operation whereby the distribution system and associated facilities of a transmission licensee or distribution licensee, as the case may be, are used by another person for the conveyance of electricity on payment of charges to be determined under the Act;

hh. **“Year”** means a financial year.

ii. The Words or expressions occurring in these Regulations and not defined herein, but defined in the Act or any other Regulations of the Commission, shall bear the same meaning as in the Electricity Act, 2003 or any other Regulations of the Commission, as amended from time to time. Expressions used herein but not specifically defined in these Regulations or in the Electricity Act, 2003 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. Expressions used herein but not specifically defined in these Regulations or in the Acts or any law passed by a competent legislature shall have the meaning as is generally assigned in the electricity industry

7. Power to Relax

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

8. Interpretation

In case of any conflict in the interpretation of this Regulation, the english version of the Regulation shall prevail over the hindi version of the Regulation.

CHAPTER - 2

CAPTIVE GENERATING PLANT (NON- RENEWABLE ENERGY)

9. Object

As per the provisions of the Act, supply of electricity from a Captive Generating Plant through the grid shall be regulated in the same manner as in the case of a conventional Generating Plant. These Regulations seek to achieve efficient, safe, well-coordinated operation of the plant, connectivity with the grid and exchange of information among the various utilities in the State grid, Central Utilities and Northern Regional Grid, as the case may be. Non-compliance of these Regulations shall be liable for action under the appropriate provision of the Act.

10. Generation from Captive Power Plants

- i. A power plant shall qualify as a 'Captive Generating Plant', under Section 9 read with Section 2(8) of the Act and Rule 3 of The Electricity Rules, 2005, as amended from time to time.
- ii. It shall be the obligation of the Captive Users to ensure the captive consumption at the percentages mentioned in the Electricity Rules, 2005 and subsequent amendments thereto. In case the minimum percentage of captive generation is not used for captive purposes in any year, the generating plant shall not be eligible for the benefits of a captive generating plant in that financial year and shall not be governed by the Tariff determined under these Regulations. The Tariff for generation from such plants will have to be separately approved by the Commission on an application filed by the generator.

11. General conditions for Captive Generating Plants

- i. These Regulations shall apply to all existing Captive Generating Plants as well as proposed Captive Generating Plants having an installed capacity of 1 MW or above.

ii. Any person intending to set-up a Captive Generating Plant shall submit the detailed project report, scheduled date of commercial operation and half yearly progress report of construction of the plant to the Commission for information and record. The necessary information to be accompanied with the detailed project report shall be as per *Annexure 1* of these Regulations:

Provided that all existing Captive Generating Plants (whether connected with the grid or not) shall furnish the desired information in *Annexure 1* and *Annexure 3* of these Regulations within 90 days from the date of notification of these Regulations. Non-compliance shall be liable for action under the appropriate provisions of the Act or Regulations.

iii. The provisions of ABT in respect to functions, duties and obligations, as provided for conventional Generating Plants under ABT regime, shall apply to Captive Generating Plants.

iv. The Captive Generating Plant shall abide by the grid discipline and shall not be entitled to any compensation in the event of grid failure or any interruptions or damage to the plant or its associated sub-stations or transmission line on account of any happening in the grid.

v. Relevant provisions of these Regulations shall also apply to the captive plants having no connectivity with the grid.

12. Obligations of the Captive Generating Plant

i. The Captive Generating Plant shall establish, operate and maintain Generating Station, Sub- Station, tie lines and dedicated transmission lines connected thereto in accordance with the following:

- The technical standards for construction of electrical plants, electric lines and connectivity with the grid as specified by the Authority;
- Safety requirements for construction, operation and maintenance of electrical plants and electric lines as specified by the Authority;

- c. Uttar Pradesh Electricity Grid Code (UPEGC);
- d. The conditions for installation of meters for supply of electricity as specified by the Authority and / or the State Transmission Utility (STU).
- e. Submit information to the Commission in respect to availability, generation achieved, demand met, plant load factor, auxiliary consumption, specific heat rate, specific oil consumption and other information as specified under *Annexure 1 & Annexure 3* of these Regulations;
- f. Co-ordinate with SLDC and / or STU for scheduling and despatch of electricity.
- g. The plant shall be under obligation to comply with the directions issued to it by SLDC and shall pay fee and charges payable to SLDC as specified by the Commission from time to time.
- h. The Captive Generating Plant shall ensure compliance of all general or specific direction, Rules or Regulations made by the Commission for the generating companies.
- i. The Captive Generating Plant shall ensure that the Distribution Licensee has submitted Power Purchase Agreement to the Commission for approval, if the captive power plant intends to sale surplus power to the distribution licensee.

13. Capacity of the Plant & Location

Captive Generating Plant owner shall clearly mention the capacity of the Plant, Location and fuel linkages in the project report and ensure that Government of India/State Government guidelines regarding use of fuel are complied with.

14. Environmental Clearance

The Captive Generating Plant owner shall abide by the emission standards set

by the Union/State Government. The Captive Generating Plant shall obtain all the required environmental and pollution clearances from the Central / State pollution control authorities and submit copies of Clearance Certificates to the Commission as early as possible.

15. Sale of Power

i. A Captive Generating Plant may enter into an agreement with the Distribution Licensee/procurer for sale of its surplus capacity based on Model PPA available at *Annexure 4* to these Regulations. The parties to the agreement may make plant / site specific changes in the Model PPA not inconsistent with the Act and relevant Regulations. Such changes shall however be subject to approval of the Commission:

Provided that the plant may also supply electricity to a consumer or Licensee, not being the host Licensee and who is permitted open access as per provisions of UPERC Open Access Regulations.

ii. In case of Open Access, the Distribution Licensee/procurer shall pay the Open Access charges as specified by the UPERC Open Access Regulations:

Provided further that Distribution Licensee may require emergency assistance following an extensive failure in the system. Subject to technical feasibility, the Captive Generating Plant may, if requested by the Licensee, extend power supply from its Generating Station to the Licensee's system. In such circumstances, the tariff for such supply shall be mutually agreed.

16. Tariff

The tariff for supply of electricity by a captive plant at pithead location to a Distribution Licensee shall be as per *Schedule 1* of these Regulations:

Provided that the Commission shall approve the transportation cost of fuel for non-pithead locations on case to case basis on a petition filed by the Generating



Plant.

Note:

- a. The tariff for supply of electricity from the plant, having more than one unit commissioned in different years, shall be based on weighted average of the tariff of contracted capacities of the units commissioned in different years.
- b. The tariff for supply of electricity during the period of synchronization and commissioning of the unit shall be equal to the variable cost.

17. Purchase of Electricity

Any person, who establishes, maintains and operates a Generating Plant, may also purchase electricity through Open Access or from Distribution Licensee of his area, to meet the requirement.

Provided that such purchase of electricity, from a Distribution Licensee of the area in which the plant is located, shall be charged under appropriate category of the rate schedule of tariff. This shall apply only to those generators who have entered into PPA with the Distribution Licensee:

Provided also that in case of purchase of power through Open Access, charges shall be payable as determined under UPERC Open Access Regulations:

CHAPTER - 3

RENEWABLE ENERGY BASED GENERATING PLANT (INCLUDING RE CO- GENERATION AND CAPTIVE RE)

18. Object

- i. These Regulations seek to achieve promotion of generation of electricity from RE sources based generation, facilitate connectivity of RE sources based power plants with the grid, ensure sale of electricity to any person. These Regulations also seek to operate the plant in an efficient, safe and well-coordinated manner ensuring exchange of information among the various utilities in the State grid, Central Utilities and Northern Regional Grid, as the case may be. Non-compliance of these Regulations shall be liable for action under the appropriate provision of the Act.
- ii. The Plant shall be deemed to be a Generating Company within the meaning of Section 7 of the Act. However, for generation from small hydro, the provisions of Section 8 of the Act shall apply.
- iii. A person shall construct, maintain and operate a Generating Plant and a dedicated transmission line for generation and evacuation of electricity from RE source based Generation, unless otherwise provided in these Regulations or in any other Regulation.
- iv. The Distribution Licensee shall purchase power from all RE sources only through competitive bidding (except Municipal Solid Waste and rooftop solar covered under RSPV Regulations). The tariff for projects discovered by competitive bidding shall be as per their PPA.
- v. However, for projects whose tariff was governed by earlier Regulations, shall be as provided under these Regulations as per *Schedule II*.
- vi. The provisions of Deviation settlement mechanism (DSM) shall be implemented for all Renewable Energy based Power Plants, except for

Small hydro projects (SHP) and Municipal solid waste (MSW) plants, and the Generating Plants shall be subject to day ahead scheduling:

Provided that for SHP and MSW plants actual energy shall be considered as scheduled energy.

Provided that DSM for Solar and Wind based plants shall be as per UPERC (Forecasting, Scheduling, Deviation Settlement and related matters of Solar and Wind generation sources) Regulations, 2018.

Provided that Deviation Settlement for Biomass & Bagasse based plants shall be accounted for and settled in accordance with the provisions of the CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2014 as amended from time to time.

Provided that the DSM charges as defined by CERC shall apply mutatis mutandis on Biomass & Bagasse based plants irrespective of the installed capacity of these plants. The accounting for this purpose shall be done by the SLDC.

vii. For recovery of full capacity charges for Biomass & Bagasse based plants, the PLF shall be 50%. Annual Fixed charges (AFC) for Bagasse and Biomass based plants, are provided in *Schedule II- A and B* respectively, of these Regulations. Recovery of capacity (fixed) charges below the level of targeted PLF shall be on *pro rata* basis. At zero PLF, no capacity charges shall be payable. The PLF of Biomass & Bagasse based plants shall be computed on the energy sold to the Distribution Licensee or energy scheduled by SLDC, whichever is lower.

Provided the payment of capacity charges shall be on monthly basis in proportion to the contracted capacity.

19. Eligibility of Renewable Energy based Power Plants

i. Small hydro project: Small hydro project(s) located at the sites approved by State Nodal Agency/State Government using new plant and

machinery, and with installed power plant capacity lower than or equal to 25 MW at single location.

- ii. Biomass power project: Biomass power project(s) using plant and machinery based on Rankine cycle technology and using biomass fuel sources.
- iii. Bagasse based generation and co-generation projects shall qualify if these are using plant and machinery in accordance with the definition and also meets the qualifying requirement as defined by CERC.
- iv. Biogas projects: as approved by MNRE from time to time
- v. Biomass Gasifier: as approved by MNRE from time to time
- vi. Solar PV and other small Solar power projects based on Technologies approved by MNRE from time to time.
- vii. Wind Energy based power plants based on technologies as approved by MNRE from time to time.
- viii. MSW based power plants based on Technologies approved by MNRE from time to time;

Provided that mixing of other wastes to renewable nature, including rice husk, bagasse, sewage, cow-dung, other biomass and industrial effluents (excluding distillery effluents) will be permissible up to the extent as prescribed by MNRE from time to time.

20. Capacity of Renewable Energy based-Power Plants

- a. The optimum capacity of Generating Plant shall be assessed by the Generating Company in the detailed project report in view of potential of electricity generation available with such source.
- b. Any person intending to set-up a RE source based Generating Plant shall submit the detailed project report, scheduled date of commercial

operation and half yearly progress report of construction of the plant to the Commission for information and record. The necessary information to be accompanied with the detailed project report shall be as per Annexure 2 of these Regulations:

- c. The Generating Plant shall abide by the grid discipline and shall not be entitled for any compensation in the event of grid failure or any interruptions or damage to the plant or its associated sub-stations or transmission line on account of any happening in the grid.

21. Environmental and other Clearances

The Generating Plant shall abide by the emission standards, as the case may be, set by the Union/State Government and for that purpose it shall obtain all the required environmental and pollution clearances from the Central / State pollution control authorities and submit copies of Clearance Certificates to the Commission.

22. Duties and obligations of Renewable Energy based Power Plants

- a) The Generating Plant shall establish, operate and maintain Generating Station, sub-station and dedicated transmission lines connected therewith in accordance with:
 - i. The technical standards for construction of electrical plants, electric lines and connectivity with the grid as specified by the Authority.
 - ii. Safety requirements for construction, operation and maintenance of electrical plants and electric lines as specified by the Authority.
 - iii. UPEGC.
 - iv. The conditions for installation of meters for supply of electricity as specified by the Authority or the State Transmission Utility.
- b) The Generating Plant shall also:

- i. Submit the technical details regarding its Generating Stations to the Appropriate Commission and the Authority;
- ii. Co-ordinate with SLDC and / or State Transmission Utility for scheduling and of electricity.
- iii. Be under obligation to comply with the directions issued to it by SLDC and shall pay fee and charges payable to SLDC as specified by the Commission from time to time by order.
- iv. Be required to obtain license under the Act for establishing, operating and maintaining a dedicated transmission line.
- v. Ensure compliance of all general or specific direction, Rules or Regulations made by the Commission for the Renewable Energy based Power Plants.

23. Sale of Power

- a. All existing Renewable Energy based Power Plant having PPA approved by the Commission shall be allowed to sell power, to the Distribution Licensee in whose area the plant is located at the rate specified in *Schedule II*, whereas, for sale of power from new Renewable Energy Power Plant (except MSW) to be tied under PPA with Discom shall be at tariff as approved by the Commission through its Orders and under these Regulations:

Provided that purchases under these Regulations, shall qualify for meeting the RPO of the Distribution Licensee under terms and conditions of the UPERC (Promotion of Green Energy through Renewable Purchase Obligation) Regulations, 2010 as amended from time to time;

Provided further that supply to any Distribution Licensee other than the Distribution Licensee of the area in which the plant is located or to any consumer shall be subject to provisions of UPERC Open Access Regulations.

- b. Notwithstanding any other provisions of these Regulations, a Distribution



Licensee may require emergency assistance following an extensive failure in the system, subject to technical feasibility. The Generating Plant may, on a request from the Licensee, extend power supply from its Generating Station to the Licensee's system on mutually agreed tariff.

24. Tariff

The tariff for supply of electricity by the Renewable Energy based Power Plant RE source based generating plant to a Distribution Licensee shall be as per Schedule II of these Regulations.

Note:

- I. The tariff for supply of electricity from the plant, having more than one unit commissioned in different years, shall be based on weighted average tariff of the contracted capacities of the units commissioned in different years.
- II. For Bagasse and Biomass based power plants, the tariff for supply of electricity during the period of synchronization and the commissioning of the unit shall be equal to the variable cost.
- III. In case of other renewable energy based plants, the tariff for supply of electricity during the period of synchronization and the commissioning of unit shall be equal to the 50 percent of the tariff.
- IV. In the earlier control period, if any discount in the tariff has been agreed to between the procurer and the supplier, the same shall not be binding on the supplier during the term of these Regulations.

25. Purchase of Electricity by the RE based Generating Plant:

Any person, who establishes, maintains and operates a Generating Plant, may purchase electricity from Distribution Licensee or through Open Access, in case his plant is not in a position to generate electricity to meet the requirement:

Provided that in case of Renewable Energy based Generating Power Plant RE source based generating stations such purchase of electricity as agreed and

declared in PPA, from a Distribution Licensee of the area in which the plant is located, shall be charged only on actual demand and energy purchased under appropriate category of the rate schedule of tariff. This shall apply only to those generators who have entered into PPA with the Distribution Licensee:

Provided that demand charges for such supply shall be charged for 15 days if the supply is taken for up to 15 days and shall be charged for the month if the supply is taken for more than 15 days.

Provided also that in case of purchase of power through Open Access by the generator, open access charges shall be payable as determined by the Commission under UPERC Open Access Regulations.

Provided further that the tariff payable by a Renewable Energy based Generating Power Plant to a Distribution Licensee, in case of banking of energy, shall be as per these Regulations only if the plant has an arrangement of banking of energy with such Distribution Licensee.

CHAPTER - 4

COMMON TERMS AND CONDITIONS

26. Open Access

a) Captive Plants (Non RE)

- i. A Captive Generating Plant shall have right to 'Open Access' for carrying electricity from its plant to the destination of its use by using transmission and/or distribution system or associated facilities with such lines or system and for this purpose, Rules, Regulations and Orders passed by the appropriate Commission shall apply.
- ii. The Captive Plants seeking 'Open Access' within or outside the State through the grid shall be regulated under Regulations specified by the Appropriate Commission.
- iii. The Captive Plant or the Consumer, seeking 'Open Access' to the State and / or Inter State Transmission Systems and / or distribution system for carrying the electricity to the destination of use, shall pay the transmission charges, wheeling charges and such other charges for use of such facilities as determined by the Appropriate Commission(s).
- iv. A Captive Plant shall not be liable to pay cross subsidy surcharge but shall be liable to pay the transmission and / or wheeling charges as the case may be and losses for carrying the generated electricity from its plant to the destination for its own use or for the use of its user as defined by the Act or the rules made thereunder:

Provided that in case of supply of power to a consumer or to a person other than its users, such consumer or person shall pay cross subsidy surcharge and other charge over and above transmission and wheeling charges as determined by the Commission.

No cross subsidy surcharge shall be payable, if the energy is supplied to a

distribution licensee.

b) Renewable Energy based Generating Power Plant

- i. A Renewable Energy based Generating Power Plant shall have right to 'open access' for carrying electricity from its plant to the destination of its use by using transmission and / or distribution system or associated facilities with such lines or system and for that purpose, Rules, Regulations and Orders passed by the Appropriate Commission shall apply.
- ii. The plant seeking 'Open Access' within or outside the State through the grid shall be regulated under Regulations specified by the Appropriate Commission.
- iii. The plant or the consumer, seeking 'Open Access' to the State and / or Inter State Transmission Systems and / or distribution system for carrying the electricity generated by it to the destination of use, shall pay the transmission charges, wheeling charges and such other charges for use of such facilities as determined by the Appropriate Commission(s).

Provided for large scale stand-alone solar projects set up for sale of power to Electricity distribution Company or Third party or Captive use, there shall be exemption of 50% on Wheeling charges/ Transmission charges on Intrastate Sale of Power and 100% exemption on Intrastate Transmission system on Interstate sale of solar power. This exemption is as per the provisions provided in UP Solar Energy Policy, 2017.

- iv. In case, the power generated from RE source based generating plant is supplied to a consumer, then such consumer shall pay charges as per the provisions of UPERC Open Access Regulations.

Provided for large scale stand-alone solar projects set up for sale of power to Electricity distribution Company or Third party or Captive use, there shall be 100 % exemption from State cross subsidy surcharge for Interstate sale of solar power. This exemption is as per the provisions provided in UP Solar Energy Policy, 2017.

27. Evacuation of Power

- I. The Captive Plants and Renewable Energy based Generating Power Plants shall supply power to the Distribution Licensee of its area through a 33 KV or higher voltage line terminating at the nearest 33 kV (upto 3 MW)/ 132 KV Substation as per the voltage and capacity as given below:
 - i. Contracted capacity up to 3 MW on 11 KV.
 - ii. Contracted capacity above 3 MW and up to 20 MW on 33 KV;
 - iii. Contracted capacity above 20 MW on 132 KV;
- II. The Distribution Licensee or State Transmission Utility shall ensure that the plant is allowed to be connected to the nearest substation in order to control length of line subject to technical feasibility:

Provided that in case of existing plants, the connectivity shall be the same as existing on the date of these Regulations coming into effect:

Provided also that in case of plant where the scheme for connectivity has already been approved by the Commission in PPA and the same is commissioned after the date of these Regulations coming into effect, the connectivity as per that approved scheme shall be allowed.

- III. The Captive Plants and Renewable Energy based Generating Power Plants (except for MSW plant) shall be responsible for construction of the evacuation system for connecting its plant with the substation of the Distribution Licensee or STU / any Transmission Licensee, as per the scheme approved by the Commission in PPA, on its own or through any other agency engaged for that purpose. The cost of laying the dedicated transmission line to the sub-station, the required bays, associated terminal equipment and synchronization equipment shall be borne by the Generating Plant except MSW plant and such works shall be undertaken under approval and supervision of the Licensee / STU or any Transmission Licensee of the area in which the plant is located:

Provided further that in case of evacuation through temporary arrangements

or in case of additional capacity commissioned under supplementary PPA using existing transmission infrastructure the applicable tariff given in *Schedule I and II* of these Regulations shall be reduced by 20 Paise/ kWh.

IV. In case the Generating Company elects to get the dedicated transmission line constructed by other than STU/ Distribution Licensee, the supervision charges shall be payable to Distribution Licensee or STU or any Transmission Licensee as the case may be.

28. Maintenance of Transmission lines and Equipment

a) The Captive Plants and Renewable Energy Generating Power Plants (except for MSW plant) shall be responsible for the maintenance of terminal equipment at the generating end and the dedicated transmission lines. However, Distribution Licensees or STU, as the case may be, shall carry out maintenance of the dedicated transmission line, if so desired by the Captive Plants (Non RE) and Renewable Energy Generating Power Plants (except for MSW plant) on mutually agreed charges.

b) The Distribution Licensee or the Transmission Licensee or the State Transmission Utility, as the case may be, shall be responsible for maintenance of the terminal equipment(s) at the sub-station of the concerned Licensee. The operation and maintenance cost shall be considered as pass through by the Commission while determining the wheeling and transmission charges of the concerned Licensee or State Transmission Utility, as the case may be.

c) In case of MSW Plants, total cost on maintenance of substation and transmission line including bay etc. shall be borne by Distribution Licensee or STU / any other Transmission Licensee, as the case may be, and the cost incurred shall be allowed in tariff of the STU or any Transmission Licensee or Distribution Licensee as the case may be.

29. Metering Arrangement

The Captive Plants and Renewable Energy Generating Power Plants (except for SHP and MSW plant) shall provide ABT compatible Special Energy Meters

(SEM) at the point of injection and point of drawl and shall comply with all metering requirements as notified by the State Transmission Utility:

Provided that the point of injection and point of drawl for the purpose of recording and billing purposes shall be the substation of the Licensee / STU:

Provided also that metering at generator terminal shall be as per the guidelines issued by the Authority:

Provided further that while calculating the energy billed, the meter reading in MWH taken at substation shall be multiplied by a factor as follows to compensate the transmission losses (the line losses to be taken as percentage per km/MW):

$$\text{Multiplying Factor} = 100 / (100 - 0.001 \times L \times CC)$$

L = Length of line in km

CC = Contracted Capacity in MW

Loss factor = 0.001/km/MW

30. Energy Accounting and Billing

SLDC shall do energy accounting and billing and the same shall be communicated to the utilities interacting with the grid as per the scheme framed by SLDC in pursuance of the provisions of UPERC Regulations,

Provided that in case of sale to the Distribution Licensee not involving the transmission network of the area, joint metering shall be done in such cases. The energy accounting and billing shall be done by the Captive Plants and Renewable Energy based Generating Power Plants in association with the concerned Distribution Licensee.

31. Banking of Power

a) Renewable Energy source based Generation and Co-Generation Plants/ Captive RE:

The Renewable Energy Generating Power Plants may be allowed to bank power subject to the following conditions:

- i. All Renewable Energy Generating Power Plants (except for SHP and MSW plants) shall be under ABT mechanism and procedure as mentioned in these Regulations, shall apply to them. The Renewable Energy Generating Power Plants (except for SHP and MSW plants) shall provide ABT compliant SEMs, capable of energy accounting for each block of 15 minutes, or as amended from time.
- ii. Banking of energy up to 100%, as agreed between the Renewable Energy Generating Power Plants (except for SHP and MSW plants) and the Distribution Licensee, shall be allowed subject to technical feasibility regarding evacuation.
- iii. Withdrawal of banked power shall be allowed only as per TOD system i.e. withdrawal of power in the peak/off-peak hours shall not be more than the power banked in that respective TOD slot.
- iv. The Banking as well as withdrawal of banked energy shall be subject to day ahead scheduling. The power withdrawn by Renewable Energy Generating Power Plants (except for SHP and MSW plants), as ascertained by SEMs readings, which is not against the banked power, shall be considered as power purchased by the plant.

In that case the balance energy withdrawn by the RE banking Plant from the Distribution Licensee shall be billed at tariff specified by the Commission, from time to time, in appropriate rate schedule of retail tariff.

- v. Renewable Energy Generating Power Plant (except for SHP and MSW plants) shall be allowed to withdraw power that was banked during a particular quarter within two subsequent quarters i.e. power banked in Qth quarter shall be allowed to withdraw within (Q+2)th quarter. The banked power remaining unutilized on the expiry of the period defined herein would be treated as sale and the financial settlement shall be made at Rs. 2 per

unit or the rate approved in the PPA entered with the Distribution Licensee, whichever is less. However, banking charges shall be deducted from such unutilized banked energy.

vi. Banking charges shall be 12% of the energy banked except for Solar and Wind Power for which it shall be 6% of the energy banked and should be adjusted against the banked energy before withdrawal.

b) Captive Plants (Non- RE):

Captive Plants (Non- RE) may be allowed banking subject to following conditions:

- i. The withdrawal of banked energy will be subject to deduction of banking charges @12% of the banked energy. Withdrawal of banked energy shall be allowed only as per TOD system i.e. withdrawal of power in the peak/off-peak hours shall not be more than the power banked in that respective TOD slot.
- ii. Banking of energy up to 100%, shall be allowed, subject to technical feasibility regarding evacuation.
- iii. The banking as well as withdrawal of power shall be subject to day ahead scheduling. The power withdrawn by Captive Power Plant as ascertained by SEMs readings which is not against the banked power shall be considered as power purchased by the plant.

In that case the balance energy withdrawn by the Captive banking Plant from the Distribution Licensee shall be billed at tariff specified by the Commission, from time to time, in appropriate rate schedule of retail tariff.

- iv. The plant shall provide ABT compliant special energy meters capable of energy accounting for each block of 15 minutes.
- v. The demand posed by the Captive Plants (Non- RE) in KVA while purchasing power from Distribution Licensee combined with demand due

to withdrawal of banked energy by the Captive Plants (Non- RE) shall be considered as the total demand (maximum demand) posed by the Captive Plants (Non- RE) and the same shall not exceed the contracted demand which the Captive Plants (Non- RE) has agreed to purchase from the Distribution Licensee;

Provided that the demand charges payable by the Captive Plants (Non- RE) to the Distribution Licensee shall be as determined by the Commission, from time to time, in appropriate rate schedule of retail tariff;

Provided also that if the maximum demand exceeds the contracted demand, such excess demand shall be paid at additional rate equal to 150% of the rate applicable for the particular class of consumer, as specified by the Commission, from time to time, in the appropriate rate schedule of retail tariff.

- vi. The banked energy in a particular Financial Year (FY) could be utilized in the same FY or the balance can be carried forward to the end of next financial year. The banked energy remaining unutilized on the expiry of such period would be treated as sale to the Distribution Licensee and the financial settlement shall be made at the rate approved for sale of power by the Captive Plant (Non- RE). However, banking charges shall be deducted from such unutilized banked energy;

Provided that the licensee may, subject to the availability of power and taking into account technical and commercial feasibility, enter into an emergency energy supply arrangement with a Captive Plant (Non- RE) subject to the provisions above and other relevant Regulations of the Commission

32. Other Provisions

In case of any inconsistency in these Regulations with the provisions of the Act, as amended from time to time, the provisions of the Act shall have an overriding effect.



33. Repeal

UPERC CRE Regulations, 2014 shall stand repealed with effective date of these Regulations.

By Order of the Commission

(_____)

Secretary



SCHEDULE – I

Tariff for Sale of Power by A Pit- head Captive Generating Plant (Non- RE)

i. Existing Captive Plants (Non RE) commissioned prior to FY 2005-06

The fixed & variable costs for the existing plants commissioned prior to FY 2005-06 and have completed their useful life, has been determined as shown below:

Table 1: Total Tariff- Captive plants (Non RE) commissioned prior to FY 2005-06 (Rs/kWh)

Financial Year	Fixed cost	Variable cost	Total cost
FY 2019-20	0.60	2.10	2.70
FY 2020-21	0.62	2.20	2.82
FY 2021-22	0.64	2.32	2.95
FY 2022-23	0.66	2.43	3.09
FY 2023-24	0.68	2.55	3.23

ii. Existing Captive Plants (Non-RE) commissioned during FY 2005-06 to FY 2008-09

The fixed & variable costs for the existing plants of unit size upto 100 MW commissioned during FY 2005-06 to FY 2008-09 has been determined as shown below:

Table 2: Fixed Cost - Existing Captive plants (Non RE) commissioned during FY 2005-06 to FY 2008-09 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2005-06	0.64	0.65	0.67	0.68	0.70
FY 2006-07	0.65	0.67	0.68	0.70	0.72
FY 2007-08	0.67	0.69	0.70	0.72	0.74
FY 2008-09	0.69	0.70	0.72	0.74	0.76

Table 3: Variable Cost - Existing Captive plants (Non RE) commissioned during FY 2005-06 to FY 2008-09

Financial Year	Variable Cost (Rs/kWh)
FY 2019-20	2.10

Financial Year	Variable Cost (Rs/kWh)
FY 2020-21	2.20
FY 2021-22	2.32
FY 2022-23	2.43
FY 2023-24	2.55

Table 4: Total Tariff - Existing Captive plants (Non RE) commissioned during FY 2005-06 to FY 2008-09 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2005-06	2.74	2.86	2.98	3.11	3.25
FY 2006-07	2.75	2.87	3.00	3.13	3.27
FY 2007-08	2.77	2.89	3.02	3.15	3.29
FY 2008-09	2.79	2.91	3.04	3.17	3.31

iii. Existing Captive plants (Non RE) commissioned during FY 2009-10 to FY 2013-14

The fixed & variable costs for the existing plants of unit size upto 100 MW commissioned during FY 2009-10 to FY 2013-14 has been determined as shown below:

Table 5: Fixed Cost - Existing captive plants (Non RE) commissioned during FY 2009-10 to FY 2013-14 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2009-10	0.77	0.79	0.81	0.82	0.84
FY 2010-11	1.20	0.79	0.81	0.83	0.85
FY 2011-12	1.22	1.20	0.79	0.81	0.83
FY 2012-13	1.26	1.22	1.20	0.79	0.81
FY 2013-14	1.30	1.26	1.22	1.20	0.79

Table 6: Variable Cost - Existing captive plants (Non RE) commissioned during

FY 2009-10 to FY 2013-14

Financial Year	Variable Cost (Rs/kWh)
FY 2019-20	2.10
FY 2020-21	2.20
FY 2021-22	2.32
FY 2022-23	2.43
FY 2023-24	2.55

Table 7: Total Tariff - Existing Captive plants (Non RE) commissioned during FY 2009-10 to FY 2013-14 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2009-10	2.87	3.00	3.12	3.26	3.39
FY 2010-11	3.30	3.00	3.13	3.26	3.40
FY 2011-12	3.32	3.41	3.11	3.24	3.38
FY 2012-13	3.36	3.42	3.52	3.22	3.36
FY 2013-14	3.40	3.46	3.53	3.63	3.34

iv. Existing Captive plants (Non RE) commissioned during FY 2014-15 to FY 2018-19

The fixed & variable costs and the total tariff for the existing plant of unit size upto 100 MW commissioned on or after 1st April 2014 and up to 31st March 2019 shall be as shown below:

Table 8: Fixed Cost - Existing Captive plants (Non RE) commissioned during FY 2014-15 to FY 2018-19 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2014-15	1.40	1.36	1.31	1.26	1.22
FY 2015-16	1.49	1.44	1.39	1.35	1.30
FY 2016-17	1.58	1.53	1.48	1.43	1.38

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2017-18	1.68	1.62	1.57	1.52	1.47
FY 2018-19	1.78	1.72	1.67	1.61	1.56

Table 9: Variable Cost - Existing Captive Plants (Non RE) commissioned during FY 2014-15 to FY 2018-19

Financial Year	Variable Cost (Rs/kWh)
FY 2019-20	2.10
FY 2020-21	2.20
FY 2021-22	2.32
FY 2022-23	2.43
FY 2023-24	2.55

Table 10: Total Tariff - Existing Captive Plants (Non RE) commissioned during FY 2014-15 to FY 2018-19 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2014-15	3.50	3.56	3.63	3.70	3.77
FY 2015-16	3.59	3.65	3.71	3.78	3.85
FY 2016-17	3.68	3.74	3.80	3.86	3.93
FY 2017-18	3.78	3.83	3.89	3.95	4.02
FY 2018-19	3.88	3.93	3.98	4.04	4.11

v. Captive plants (Non RE) commissioned on or after 1st April 2019

The fixed and variable costs and total tariff for the new plants commissioned on or after 1st April 2019 shall be as shown below:

Table 11: Fixed Cost – New Captive Plants (Non RE) commissioned during FY 2019-20 to FY 2023-24 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2019-20	1.92	1.87	1.83	1.79	1.75
FY 2020-21	-	1.94	1.89	1.85	1.81
FY 2021-22	-	-	1.96	1.92	1.88
FY 2022-23	-	-	-	1.98	1.94
FY 2023-24	-	-	-	-	2.00

Table 12: Variable Cost – New Captive Plants commissioned during FY 2019-20 to FY 2023-24

Financial Year	Variable Cost (Rs/kWh)
FY 2019-20	2.10
FY 2020-21	2.20
FY 2021-22	2.32
FY 2022-23	2.43
FY 2023-24	2.55

Table 12A: Total Tariff – New Captive Plants commissioned during FY 2019-20 to FY 2023-24 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2019-20	4.02	4.08	4.15	4.22	4.30
FY 2020-21	-	4.14	4.21	4.29	4.37
FY 2021-22	-	-	4.27	4.35	4.43
FY 2022-23	-	-	-	4.41	4.49
FY 2023-24	-	-	-	-	4.55

vi. Electricity (MW/MU) supplied over and above 85% PLF

The tariff of the captive generating plants has been determined at 85% PLF. For supply at PLF above 85%, incentive @ 50 paisa per unit shall be paid.

SCHEDULE – II

Tariff for Sale of Power by Renewable Energy Power Plants

- A. Bagasse Based Generation & Cogeneration Plants and Biogas based power plants**
- B. Biomass (Rice Husk Based) Generation Plants and Biomass gasifier based power plants**
- C. Municipal Solid Waste Based Generation Plants**
- D. Small Hydro Generation Plants**
- E. Solar Power Generation Plants**
- F. Wind Based Generation Plants**

A. Bagasse based Generation & Cogeneration Plants

i. Tariff for Existing Bagasse based projects Commissioned during FY 2005-06 to FY 2008-09

The fixed & variable costs and total tariff for the existing plants commissioned during FY 2005-06 to FY 2008-09 shall be as shown below:

Table 13: Fixed Cost –Bagasse based Existing Projects commissioned during FY 2005-06 to FY 2008-09 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2005-06	1.15	1.18	1.21	1.24	1.27
FY 2006-07	1.17	1.20	1.23	1.26	1.29
FY 2007-08	1.19	1.21	1.24	1.28	1.31
FY 2008-09	1.20	1.23	1.26	1.29	1.33

Table 14: Variable Cost –Bagasse based Existing Projects commissioned during FY 2005-06 to FY 2008-09

Financial Year	Variable Cost (Rs/kWh)
FY 2019-20	1.77
FY 2020-21	1.85
FY 2021-22	1.95
FY 2022-23	2.04
FY 2023-24	2.15

Table 15: Total Tariff –Bagasse based Existing Projects commissioned during FY 2005-06 to FY 2008-09 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2005-06	2.92	3.03	3.16	3.29	3.42
FY 2006-07	2.94	3.05	3.18	3.30	3.44
FY 2007-08	2.95	3.07	3.19	3.32	3.46



Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2008-09	2.97	3.09	3.21	3.34	3.47

Annual Fixed cost for existing plants commissioned during FY 2005-06 to FY 2008-09 for control period of these Regulations shall be as shown in Table below:

Table 16: Annual Fixed cost of Bagasse based Existing Projects commissioned during FY 2005-06 to FY 2008-09 (Rs lakhs per MW)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2005-06	46.14	47.28	48.49	49.75	51.08
FY 2006-07	46.87	48.01	49.22	50.48	51.81
FY 2007-08	47.53	48.68	49.88	51.14	52.47
FY 2008-09	48.26	49.40	50.61	51.87	53.20

ii. Tariff for Bagasse based projects commissioned during FY 2009-10 to FY 2013-14

The fixed & variable cost and total tariff for the existing plants (commissioned during FY 2009-10 to FY 2013-14) for control period of these Regulations shall be as shown below:

Table 17: Fixed Cost –Bagasse based Existing Projects commissioned during FY 2009-10 to FY 2013-14 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2009-10	1.30	1.33	1.36	1.39	1.42
FY 2010-11	1.87	1.34	1.36	1.39	1.42
FY 2011-12	1.98	1.92	1.37	1.39	1.42
FY 2012-13	2.09	2.03	1.97	1.40	1.43
FY 2013-14	2.20	2.14	2.08	2.02	1.43

Table 18: Variable Cost –Bagasse based Existing Projects commissioned during FY 2009-10 to FY 2013-14 (Rs/kWh)



Financial Year	Variable Cost
FY 2019-20	1.67
FY 2020-21	1.75
FY 2021-22	1.84
FY 2022-23	1.93
FY 2023-24	2.03

Table 19: Total Tariff –Bagasse based Existing Projects commissioned during FY 2009-10 to FY 2013-14 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2009-10	2.97	3.08	3.20	3.32	3.44
FY 2010-11	3.54	3.09	3.20	3.32	3.45
FY 2011-12	3.65	3.67	3.21	3.33	3.45
FY 2012-13	3.76	3.78	3.81	3.33	3.45
FY 2013-14	3.87	3.89	3.92	3.95	3.46

Annual Fixed cost for existing plants (commissioned during FY 2009-10 to FY 2013-14) for control period of these Regulations shall be as shown in Table below:

Table 20: Annual Fixed cost of Bagasse based Existing Projects commissioned during FY 2009-10 to FY 2013-14 (Rs lakhs per MW)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2009-10	52.22	53.29	54.40	55.56	56.77
FY 2010-11	75.10	53.51	54.60	55.73	56.92
FY 2011-12	79.33	77.02	54.79	55.90	57.06
FY 2012-13	83.74	81.32	78.94	56.07	57.20
FY 2013-14	88.35	85.81	83.31	80.85	57.34

iii. Tariff for Bagasse based projects commissioned during FY 2014-15 to FY 2018-19

The fixed & variable costs and total tariff for the existing plants (commissioned during FY 2014-15 to FY 2018-19) for control period of these Regulations shall be as shown below:

Table 21: Fixed Cost –Bagasse based Existing Projects commissioned during FY 2014-15 to FY 2018-19 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2014-15	2.27	2.22	2.17	2.12	2.08
FY 2015-16	2.39	2.34	2.28	2.23	2.18
FY 2016-17	2.51	2.46	2.40	2.35	2.29
FY 2017-18	2.63	2.58	2.52	2.46	2.40
FY 2018-19	2.77	2.70	2.64	2.58	2.52

Table 22: Variable Cost –Bagasse based Existing Projects commissioned during FY 2014-15 to FY 2018-19 (Rs/kWh)

Financial Year	Variable Cost
FY 2019-20	1.67
FY 2020-21	1.75
FY 2021-22	1.84
FY 2022-23	1.93
FY 2023-24	2.03

Table 23: Total Tariff –Bagasse based Existing Projects commissioned during FY 2014-15 to FY 2018-19 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2014-15	3.94	3.97	4.01	4.05	4.10
FY 2015-16	4.06	4.09	4.12	4.16	4.21



FY 2016-17	4.18	4.21	4.24	4.28	4.32
FY 2017-18	4.30	4.33	4.36	4.39	4.43
FY 2018-19	4.43	4.45	4.48	4.51	4.55

Annual Fixed cost for existing plants (commissioned during FY 2014-15 to FY 2018-19) for control period of these Regulations shall be as shown in Table below:

Table 24: Annual Fixed cost of Bagasse based Existing Projects commissioned during FY 2014-15 to FY 2018-19 (Rs lakhs per MW)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2014-15	91.15	89.09	87.07	85.10	83.16
FY 2015-16	95.86	93.69	91.55	89.46	87.42
FY 2016-17	100.74	98.46	96.22	94.01	91.85
FY 2017-18	105.60	103.22	100.87	98.56	96.29
FY 2018-19	110.85	108.35	105.89	103.46	101.08

iv. Tariff for Bagasse based projects commissioned on or after 1st April 2019

The Commission directs the licensee to procure power from Bagasse based generation and co-generation plants commissioned on or after 1st April 2019, through a process of competitive bidding under Section 63 of the Act.

Provided that the above tariff shall also be applicable to Biogas based plants on technologies approved by the MNRE which do not avail any subsidy. In case of any difficulty the aggrieved parties may approach the Commission for specific relief. The Commission may at its discretion, upon prudence check of the project parameters, may provide a project specific tariff for biogas producers.

v. Electricity (MW/MU) supplied over and above 50% PLF

The Bagasse based generating plants, to generate more power beyond 50% PLF shall be paid incentive @ 50 paise per kWh, along with the variable cost, as applicable.

B. Biomass (rice husk based) Generation Plants

i. Tariff for Biomass (rice husk based) projects commissioned during FY 2008-09 to FY 2013-14

The fixed & variable costs and total tariff for the existing plants (commissioned during FY 2008-09 to FY 2013-14) for control period of these Regulations shall be as shown below:

Table 25: Fixed Cost –Biomass Existing (rice husk based) Projects commissioned during FY 2008-09 to FY 2013-14 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2008-09	1.49	1.55	1.60	1.66	1.72
FY 2009-10	1.50	1.54	1.59	1.64	1.69
FY 2010-11	1.89	1.56	1.60	1.65	1.70
FY 2011-12	1.97	1.96	1.62	1.67	1.72
FY 2012-13	2.06	2.05	2.04	1.68	1.73
FY 2013-14	2.15	2.13	2.12	2.11	1.75

Table 26: Variable Cost –Biomass Existing (rice husk based) Projects commissioned during FY 2008-09 to FY 2013-14

Financial Year	Variable Cost (Rs/kWh)
FY 2019-20	4.81
FY 2020-21	5.05
FY 2021-22	5.30
FY 2022-23	5.57
FY 2023-24	5.85

Table 27: Total Tariff –Biomass Existing (rice husk based) Projects commissioned during FY 2008-09 to FY 2013-14 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2008-09	6.30	6.60	6.91	7.23	7.57
FY 2009-10	6.31	6.60	6.89	7.21	7.54
FY 2010-11	6.70	6.61	6.91	7.22	7.55
FY 2011-12	6.79	7.01	6.92	7.24	7.57
FY 2012-13	6.87	7.10	7.34	7.25	7.58
FY 2013-14	6.96	7.19	7.43	7.68	7.59

Annual Fixed cost for existing plants (commissioned during FY 2008-09 to FY 2013-14) for control period of these Regulations shall be as shown in Table below:

Table 28: Annual Fixed cost of Biomass Existing (rice husk based) Projects commissioned during FY 2008-09 to FY 2013-14 (Rs lakhs per MW)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2008-09	94.13	97.47	100.97	104.65	108.51
FY 2009-10	94.49	97.33	100.29	103.38	106.60
FY 2010-11	119.41	98.17	101.13	104.22	107.44
FY 2011-12	124.50	123.79	101.98	105.07	108.29
FY 2012-13	129.89	129.08	128.39	105.96	109.18
FY 2013-14	135.56	134.64	133.84	133.17	110.11

ii. Tariff for Biomass (rice husk based) projects commissioned during FY 2014-15 to FY 2018-19

The fixed & variable costs and total tariff for the existing plants (commissioned during FY 2014-15 to FY 2018-19) for control period of these Regulations shall be as shown below:

Table 29: Fixed Cost –Biomass Existing (rice husk based) Projects commissioned during FY 2014-15 to FY 2018-19 (Rs/kWh) at 50% PLF

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2014-15	2.33	2.32	2.31	2.30	2.29
FY 2015-16	2.42	2.41	2.40	2.39	2.38
FY 2016-17	2.52	2.51	2.50	2.48	2.48
FY 2017-18	2.64	2.64	2.64	2.64	2.65
FY 2018-19	2.73	2.71	2.70	2.68	2.67

Table 30: Variable Cost –Biomass Existing (rice husk based) Projects commissioned during 2014-15 to FY 2018-19

Financial Year	Variable Cost (Rs/kWh)
FY 2019-20	4.81
FY 2020-21	5.05
FY 2021-22	5.30
FY 2022-23	5.57
FY 2023-24	5.85

Table 31: Total Tariff –Biomass Existing (rice husk based) Projects commissioned during FY 2014-15 to FY 2018-19 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2014-15	7.14	7.37	7.61	7.87	8.14
FY 2015-16	7.23	7.46	7.70	7.96	8.23
FY 2016-17	7.33	7.56	7.80	8.05	8.32
FY 2017-18	7.45	7.69	7.94	8.21	8.49
FY 2018-19	7.54	7.77	8.00	8.25	8.52

Annual Fixed cost for existing plants (commissioned during FY 2014-15 to FY 2018-19) for control period of these Regulations shall be as shown in Table below:

Table 32: Annual Fixed cost of Biomass Existing (rice husk based) Projects

commissioned during FY 2014-15 to FY 2018-19 (Rs lakhs per MW)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2014-15	146.77	146.05	145.44	144.97	144.63
FY 2015-16	152.88	152.05	151.34	150.76	150.31
FY 2016-17	159.14	158.20	157.39	156.70	156.14
FY 2017-18	166.44	166.26	166.29	166.53	167.00
FY 2018-19	172.39	171.23	170.20	169.30	168.53

iii. Tariff for Biomass (rice husk based) projects commissioned on or after 1st April 2019

The Commission directs the licensee to procure power from rice husk based Biomass based projects commissioned on or after 1st April 2019, through a process of competitive bidding under Section 63 of the Act.

The developers may approach the Commission on a case to case basis for use of any other Biomass based projects;

Provided that the above tariff shall also be applicable to biomass gasifier based plants on technologies approved by the MNRE which do not avail any subsidy. In case of any difficulty the aggrieved parties may approach the Commission for specific relief. The Commission may at its discretion upon prudence check of the project parameters may provide a project specific tariff.

iv. Electricity (MW/MU) supplied over and above 80% PLF

To provide suitable incentive to biomass (rice husk based) based generating plants to generate more power i.e. above 80%, the generator shall be paid an incentive:

- Variable cost as applicable; plus
- Incentive @ Rs 50 paise/ kWh



C. Municipal Solid Waste based Generation Plants

i. Tariff for Municipal Solid Waste projects commissioned during FY 2014-15 to FY 2018-19

The effective tariff for the Municipal Solid Waste Based Generating Plants commissioned during FY 2014-15 to FY 2018-19 shall be as given below:

Table 33: Total Tariff –Municipal Solid Waste Projects commissioned during FY 2014-15 to FY 2018-19 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2014-15	6.69	6.83	6.97	7.13	7.29
FY 2015-16	6.85	6.98	7.12	7.27	7.44
FY 2016-17	7.01	7.14	7.28	7.43	7.59
FY 2017-18	7.18	7.31	7.44	7.59	7.75
FY 2018-19	7.36	7.48	7.61	7.76	7.91

ii. Tariff for New Municipal Solid Waste projects commissioned during FY 2019-20 to FY 2023-24

The effective tariff for the Municipal Solid Waste Based Generating Plants commissioned during FY 2019-20 to FY 2023-24 shall be as given below:

Table 34: Total Tariff –Municipal Solid Waste New Projects commissioned during FY 2019-20 to FY 2023-24 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2019-20	8.32	7.08	6.95	6.83	6.71
FY 2020-21	-	8.57	7.29	7.16	7.04
FY 2021-22		-	8.82	7.51	7.38
FY 2022-23			-	9.09	7.74
FY 2023-24				-	9.36

Provided that in case of any difficulty the developers may approach the Commission for a specific relief. The Commission may at its discretion upon prudence check of the project parameters may provide a project specific tariff.

iii. Electricity (MW/MU) supplied over and above 75% PLF

To provide suitable incentive to Municipal Solid Waste based generating plants to generate more power i.e. above 75%, the generator shall be paid as below:

- Total tariff as applicable; plus
- Incentive @ 50 paise per kWh

D. Small Hydro based Generation Plants

i. Tariff for Old Small Hydro projects commissioned

The effective tariff for the old Small Hydro Power Plants shall be as given below:

Table 35: Total Tariff –Old Small Hydro Plants (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2005-06	1.48	1.51	1.54	1.58	1.62
FY 2006-07	1.52	1.56	1.59	1.63	1.67
FY 2007-08	1.56	1.60	1.64	1.68	1.72
FY 2008-09	1.61	1.65	1.68	1.73	1.77

ii. Tariff for Small Hydro projects commissioned on or after 1st April, 2014

The effective tariff for the New Small Hydro Power Plants shall be as given in Tables below:

Table 36: Total Tariff –Small Hydro Projects upto 5 MW commissioned during FY 2014-15 to FY 2018-19 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2014-15	4.75	4.64	4.53	4.42	4.32
FY 2015-16	5.02	4.91	4.79	4.68	4.57
FY 2016-17	5.27	5.12	4.98	4.84	4.70
FY 2017-18	5.61	5.48	5.35	5.23	5.11
FY 2018-19	5.92	5.78	5.65	5.53	5.40

Table 37: Total Tariff –Small Hydro Projects greater than 5 MW and upto 25 MW commissioned during FY 2014-15 to FY 2018-19 (Rs/kWh)

Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2014-15	4.11	3.99	3.88	3.77	3.66



Year of Commissioning	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
FY 2015-16	4.35	4.24	4.12	4.01	3.89
FY 2016-17	4.61	4.49	4.37	4.25	4.14
FY 2017-18	4.89	4.76	4.64	4.51	4.39
FY 2018-19	5.17	5.04	4.91	4.78	4.66

iii. Electricity (MW/MU) supplied over and above normative PLF

To provide suitable incentive to small hydro based generating plants to generate more power i.e. above normative PLF, the generator shall be paid as below:

Table 38: Incentive to small hydro based generating plants

Capacity	Plant Load Factor	Incentive
For Old Projects		
Any Capacity	PLF above 35%	50 paise/kWh
For Projects commissioned on or after 1st April 2014		
Upto 5 MW	PLF above 30%	50 paise/kWh
5 MW to 25 MW	PLF above 30%	50 paise/kWh

Tariff for projects commissioned after FY 2018-19

The Commission shall determine project specific tariff for projects commissioned on or after 1st April 2019.



E. Solar based Generation Plants

i. Tariff for projects commissioned before FY 2018-19

The levelized tariff for projects commissioned in FY 2014-15 shall be Rs 7.06/ kWh for 25 years, as provided in UPERC CRE Regulations, 2014.

The Commission vide Order dated 23.08.2017 in the matter for Solar Tariff for FY 2015-16 to FY 2017-18 opined that the tariff for Solar Grid Connected PV Plants from FY 2015-16 onwards shall be project specific.

The tariff for the projects discovered through a process of competitive bidding under Section 63 of the Act, shall be as approved by the Commission.

ii. Tariff for projects commissioned after FY 2018-19

The tariff for the projects above 5 MW shall be as discovered through competitive bidding under Section 63 of the Act.

The tariff for the projects equal to or less than 5 MW shall be the weighted average tariff of Solar projects above 5 MW discovered through Competitive Bidding in last Financial Year and adopted by the Commission or rate agreed between the parties in the PPA, whichever is lower.

F. Wind energy based Generation Plants

Tariff for projects commissioned after FY 2018-19

The tariff for the projects above 25 MW shall be as discovered through competitive bidding under Section 63 of the Act.

The tariff for the projects equal to or less than 25 MW shall be the weighted average tariff of Wind projects above 25 MW discovered through Competitive Bidding in last Financial Year and adopted by the Commission or rate agreed between the parties in the PPA, whichever is lower.
