Uttarakhand Electricity Regulatory Commission

Institution of Engineers (I) Building, 1st Floor, Near ISBT, Majra, Dehradun

Draft Notification

30.12.2009

In exercise of powers conferred under section 181 of the Electricity Act, 2003, and all other powers enabling it in this behalf, and after previous publication, the Uttarakhand Electricity Regulatory Commission hereby makes the following regulations, namely.

CHAPTER 1

PRELIMINARY

1. Short title and commencement

(1) These regulations may be called the Uttarakhand Electricity Regulatory Commission (Tariff and Other Terms for Supply of Electricity from Non-conventional and Renewable Energy Sources) Regulations, 2009.

(2) These regulations shall come into force with effect from date of publication in official gazette and unless reviewed earlier or extended by the Commission, shall remain in force upto 31.03.2013 provided that till they are replaced by new regulations, these shall continue to apply.

(3) With coming into force of these Regulations, UERC (Tariff and Other Terms for Supply of Electricity from Non-conventional and Renewable Energy Sources) Regulations, 2008 shall stand repealed.

(4) Words and expressions used in these regulations and not defined herein but defined in the Act shall have the meaning assigned to them under the Act.

2. Object

(1) Electricity generation from biomass/ bagasse based cogeneration, renewable sources of energy viz. wind, hydro, solar and other non-conventional sources of energy like biogas, municipal waste & industrial wastes is gradually acquiring

importance in augmenting the generation capacity. Apart from providing generation capacity in addition to the traditional sources of power, these sources are also environment friendly.

(2) These regulations seek to achieve promotion of generation from these sources, facilitate connectivity of these generating stations with the grid and to ensure sale of electricity to any person and to specify a percentage of the total electricity generating capacity that shall be purchased by distribution licensee of the area in which the generating station is located. Besides above, these regulations also seek to operate the generating station in an efficient, safe and well-coordinated manner ensuring exchange of information among the various utilities interacting in the State grid as well as with the 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.

(3) The National Electricity Policy of the Central Government in respect to promotion of non-conventional energy sources as envisaged in Para 5.2.20 is 'Feasible potential of non-conventional energy resources, mainly small hydro, wind and bio-mass would also need to be exploited fully to create additional power generation capacity. With a view to increase the overall share of non-conventional energy sources in the electricity mix, efforts will be made to encourage private sector participation through suitable promotional measures.'

3. Scope and extent of application

(1) Where tariff has been determined through transparent process of bidding in accordance with the guidelines issued by the Central Government, the Commission shall adopt such tariff in accordance with the provisions of the Act.

(2) These regulations shall apply in all other cases where tariff and other terms for supply of electricity to the Distribution Licensee from generating stations, which are based on non-conventional and renewable sources of energy and are located in Uttarakhand, is to be determined by the Commission.

Provided that regulations in Chapter 4 shall not be applicable for generating stations commissioned before 1.1.2002 and their present tariffs shall continue to be applicable till they are decided by the Commission on case to case basis.

Provided further that the cases, where legally valid PPAs have been entered into with the Distribution Licensee or where financial closure of the project has taken place prior to coming into force of these regulations on the basis of previous Regulations/orders of the Commission, shall not be re-opened. Such generators shall, however, have the option to be covered under these regulations, in which case these regulations shall be applicable to them and the generators would be required to convey such option within one month of the notification of these Regulations.

Provided further that in respect of generating stations where directions have been issued by a higher court, they shall be governed by their respective directions.

Provided further that in respect of generating stations commissioned prior to the notification of these Regulations and who had opted for tariffs under the previous Regulations, such generators shall have the option to continue with the tariffs determined by the Commission or to get their tariffs determined in accordance with these Regulations.

Provided further that generators covered under previous PPAs/regulations/ orders and directions in second and third proviso respectively shall be governed by these regulations to the extent these regulations are not inconsistent with those provisions/directions and in case of any conflict the provisions of these regulations shall not be applicable.

(3) These regulations, except those in Chapter 4, shall also be applicable to other generating stations, which are based on non-conventional and renewable sources of energy which transmit and/or supply electricity utilising State Transmission and/or Distribution System.

(4) The generating stations covered under these regulations shall be deemed to be the generating station of a generating company and all functions, obligations & duties

assigned to such generating stations under the Act shall apply to these power stations.

4. Definitions

1. Unless the context otherwise requires, the words used in these Regulations shall have the following respective meanings:

(1) "Act" means the Electricity Act 2003 (36 of 2003);

(2) "Appropriate Commission" means the Central Regulatory Commission referred to in sub-section (1) of section 76 of the Act or the State Regulatory Commission referred to in section 82 of the Act or the Joint Commission referred to in section 83 of the Act, as the case may be;

(3) "Authority" means the Central Electricity Authority referred to in sub- section (1) of section 70 of the Act;

(4) 'Auxiliary energy consumption' or 'AUX' in relation to a period in case of a generating station means the quantum of energy consumed by auxiliary equipment of the generating station, and transformer losses within the generating station, expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station;

(5) "Banking" means the process under which a generating station supplies power to the grid not with the intention of selling it to either a third party or to a licensee, but with the intention of exercising his eligibility to draw back this power from the grid.

(6) "Capital Cost" means the actual expenditure incurred by the generating company, as per the original scope of project up to first financial year closing after one year of the date of commercial operation of the last unit, including the cost of transmission, bay and connection/metering/other equipment at receiver's end.

(7) "Captive Generating Plant" means a power plant set up by any person to generate electricity primarily for his own use and includes a power plant set up by any cooperative society or association of persons for generating electricity primarily for use of members of such cooperative society or association where not less than

twenty six percent of the ownership is held by the captive user(s), and not less than fifty one percent of the aggregate electricity generated in such plant, determined on an annual basis, is consumed for the captive use.

(8) "Co-generation" means a process which simultaneously produces two or more forms of useful energy (including electricity);

(9) "Central Commission" means the Central Electricity Regulatory Commission referred to in sub-section (1) of Section 76 of the Act;

(10) "Central Transmission Utility" means any Government company which the Central Government may notify under sub-section (1) of section 38 of the Act;

(11) "Company" means a company formed and registered under the Companies Act, 1956 and includes any body corporate under a Central, State or Provincial Act;

(12) "Commission" means the Uttarakhand Electricity Regulatory Commission;

(13) "Control Period or Review Period" means the period during which the norms for determination of tariff specified in these Regulations shall remain valid;

(14) "Dedicated Transmission Lines" means any electric supply-line for point to point transmission which are required for the purpose of connecting electric lines or electric plants of a captive generating plant referred to in section 9 of the Act or generating station referred to in section 10 of the Act to any transmission lines or sub-stations or generating stations or the load centre, as the case may be;

(15) "Distribution Licensee" means a Licensee authorized to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply;

(16) "Date of commercial operation or Commissioning"-in relation to a unit means the date declared by the generator on achieving maximum continuous rating through a successful trial run and in relation to the generating station, the date of commercial operation means the date of commercial operation of the last unit or block of generating station and expression 'commissioning' shall be construed accordingly.

(17) "Generating company" 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;

(18) "Generating Station" or "Station" means any station for generating electricity, including any building and plant with step up transformer switchgear, switchyard cables or other appurtenant equipment, if any, 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 but does not in any case include any sub-station;

(19) "Generate" means to produce electricity from a generating station for the purpose of giving supply to any premises or enabling a supply to be so given;

(20) "Grid Code" means the Grid Code specified by the Central Electricity Regulatory Commission under clause (h) of sub-section (1) of section 79 of the Act;

(21) "Grid" means the high voltage backbone system of interconnected transmission lines, sub-stations and generating stations;

(22) "Gross calorific value" or "GCV" in relation to a fuel used in 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;

(23) "Gross station heat rate" or "GHR" means the heat energy input in kCal required to generate one kWh of electrical energy at generator terminals of a thermal generating station;

(24) "Infirm Power" means electricity generated prior to commercial operation of the unit of a generating station;

(25) "Installed Capacity" or "IC" means the summation of the name plate capacities of the units in the generating station or the capacity of the generating station (reckoned at the generator terminals), approved by the Commission from time to time;

(26) "Inter-connection Point" shall mean interface point of renewable energy generating facility with the transmission system or distribution system, as the case may be:

a) in relation to wind energy projects and Solar Photovoltaic Projects, inter-connection point shall be line isolator on outgoing feeder on HV side of the pooling sub-station;

b) in relation to small hydro power, biomass power and non fossil fuel based cogeneration power projects and Solar Thermal Power Projects the, inter-connection point shall be line isolator on outgoing feeder on HV side of generator transformer;

(27) "MNRE" means the Ministry of New and Renewable Energy of the Government of India.

(28) "National Electricity Plan" means the National Electricity Plan notified under subsection (4) of section 3 of the Act;

(29) "Open Access" means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission;

(30) "Open Access Regulations" means the Uttarakhand Electricity Regulatory Commission (Terms and Conditions for Open Access in Distribution) Regulations, 2004 as amended from time to time;

(31) "Operation and Maintenance Expenses" or "O&M Expenses" means the expenditure incurred in operation and maintenance of the generating station, including part thereof, including the expenditure on manpower, repairs, spares, consumables, insurance and overheads;

(32) "Peak Hours/Off Peak Hours" means the hours decided as such by Uttarakhand Electricity Regulatory Commission from time to time unless specified otherwise by the Commission;

(33) "Person" shall include any company or body corporate or association or body of individuals, whether incorporated or not, or artificial juridical person;

(34) "Capacity Utilisation Factor" shall mean the total sent out energy corresponding to generation during the period expressed as a percentage of sent out energy corresponding to installed capacity in that period.

$$CUF = \frac{ESO \times 10^7}{IC \times (100 - AUX) \times 8760} \%$$

Where,

ESO- Energy Sent Out Ex-bus and sold in MU during the year,

IC- Installed capacity in MW,

AUX - % Normative Auxiliary Consumption (viz. 8.5 for Cogeneration).

(35) "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 provision that the tariff for sale of power shall be as determined by the Commission from time to time;

(36) "Project" means a generating station or the evacuation system upto inter-connection point, as the case may be, 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;

(37) "Regional Load Despatch Centre" means the Centre established under sub-section (1) of section 27 of the Act;

(38) "Regulations" means these regulations made under the Act;

(39) "Renewable Energy Source" means sources of energy like, wind, solar, small hydro, biogas, biomass/bagasee, agro-based fuels or any other source as defined by the Ministry of Non-conventional Energy Sources (MNES) that can be used for power generation;

(40) "Rules" means rules made under the Act;

(41) "Saleable Energy" means the quantum of energy available for sale (ex-bus) after allowing for free energy to the home State;

(42) "Specified" means specified by regulations made by the Appropriate Commission or the Authority, as the case may be, under the Act;

(43) "State Grid Code" means the Uttarakhand Electricity Regulatory Commission (State Grid Code) Regulations, 2007 specified under clause (h) of subsection (1) of section 86 of the Act by Uttarakhand Electricity Regulatory Commission;

(44) "State Load Dispatch Centre" means the centre established in Uttarakhand under sub-section (1) of section 31 of the Act;

(45) "State Transmission Utility" means the Board or the Government Company specified as such by the State Government under sub-section (1) of section 39 of the Act;

(46) "Sub-station" means a station for transforming or converting electricity for the transmission or distribution thereof and includes transformers, converters, switchgears, capacitors, synchronous condensers, structures, cable and other appurtenant equipment and any buildings used for that purpose and the site thereof;

(47) 'Tariff period' means the period for which tariff is to be determined by the Commission on the basis of norms specified under these Regulations;

(48) "Trading" means purchase of electricity for resale thereof and the expression "trade" shall be construed accordingly;

(49) "Useful Life" in relation to a unit of a generating station including evacuation system shall mean the following duration from the date of commercial operation (COD) of such generation facility, namely:-

(a) Wind energy power project	25 years
(b) Biomass power project, non-fossil fuel cogeneration	20 years
(c) Small Hydro Plant	35 years
(d) Solar PV/Solar thermal power plants	25 years

(50) "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 by the Commission under section 62 of the Act.

(51) "Year" means a financial year.

2. Save as aforesaid and unless repugnant to the context or if the subject matter otherwise requires, words and expressions used in these regulations and not defined, but defined in the Act, or the UERC(Electricity Grid Code) or the Commission's (Determination of Terms and conditions of Hydro generation Tariff) Regulations, 2004 shall have the meanings assigned to them respectively in the Act or the Electricity Grid Code or the Commission's (Determination of Terms and conditions of Hydro generation Tariff) Regulations, 2004.

CHAPTER 2

GENERAL CONDITIONS

5. Qualifying Requirements for Eligible Sources

(1) For the purposes of these Regulations, generation from all types of non-conventional and renewable energy sources, which shall be termed as Eligible Sources, as approved by Ministry of New and Renewable Energy Sources (MNRE), Government of India shall be considered, which shall be collectively referred to as Renewable Energy (RE) Sources/Projects.

(2) For eligibility under these Regulations, only generation from grid connected RE generation projects shall be considered and RE generation from 'off-grid' generation projects or stand-alone system shall not be considered.

(3) At present, generation from following sources and technologies shall qualify to be covered under these Regulations:

- Small hydro with capacity upto 25 MW - located at the sites approved by State Nodal Agency/State Government using new plant and machinery, and installed power plant capacity to be lower than or equal to 25 MW at single location.

- Wind power project – located at the wind sites having minimum annual mean Wind Power Density (WPD) of 200 Watt/m2 measured at hub height of 50 meters and using new wind turbine generators.
- Solar PV and Solar Thermal Power Projects including its integration with combined cycle– Based on Technologies approved by MNRE.
- Biomass/Biogas power project - Biomass power projects using new plant and machinery based on Rankine cycle technology and using biomass fuel sources, provided use of fossil fuel is restricted only to 15% of total fuel consumption on annual basis.
- Bio fuel cogeneration with upto 25% fossil fuel consumption as per MNRE guidelines
- Urban/municipal waste

(4) Any new source or technology would qualify as 'renewable energy', only after the Commission has approved the technology based on the MNRE approval. Further, the Commission shall determine tariff separately for each technology with such terms and conditions as stipulated under relevant Orders of the Commission.

Provided that the financial norms as specified under Chapter-4 of these Regulations, except for capital cost, shall be ceiling norms while determining the project specific tariff.

6. Generation from Co-Generation, Renewable Energy and Other Non-Conventional Sources of Energy

(1) A person may construct, maintain or operate a generating station for generation of electricity from Co-generation or Renewable Sources of energy and other non-conventional sources of energy (hereinafter called 'the Plant') and a transmission line for carrying electricity from his plant to the point of connectivity with the grid or a sub-station of a distribution licensee.

(2) The Plant shall be deemed to be a generating station of a generating company within the meaning of section 7 of the Act which shall establish, operate and

maintain a generating station without obtaining a license under the Act if it complies with the standards specified by the authority under section 53 and section 73 of the Act. However, for hydroelectric generation, the provisions of section 8 of the Electricity Act, 2003 shall apply.

7. Environmental and other Clearances

(1) The generating station shall abide by the emission standards set by the Union/State Government, as the case may be, and for that purpose it shall obtain all the required environmental and pollution clearances from the central/state pollution control authorities.

(2) The generating station shall obtain necessary clearances from Uttarakhand Renewable Energy Development Agency (UREDA), wherever necessary.

8. Obligations of the Generating Station

(1) The capacity of Generating station shall be determined by the generating company in the detailed project report in view of potential of electricity generation available with such source and its optimal utilisation.

(2) Any person having setup or intending to setup a generating station, on which these regulations shall apply, shall be obliged to submit the detailed project report, progress of construction and details regarding commissioning of the generating station or any related information to the Commission in such form and manner as may be required by the Commission.

(3) The generating station shall abide by the grid discipline and install adequate protection equipment for safety of its system and human life. It 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-station and transmission line on account of any occurrence in the grid.

(4) The generating station shall establish, operate and maintain generating station, substation and dedicated transmission lines connected therewith in accordance with:

(a) The technical standards for construction of electrical plants, electric lines and connectivity with the grid as specified by the Authority.

(b) Safety requirements for construction, operation and maintenance of electrical plants and electric lines as specified by the Authority.

(c) Grid standards for operation and maintenance of transmission lines as specified by Central Electricity Regulatory Commission/Central Electricity Authority or the State Transmission Utility.

(d) The conditions for installation of meters for supply of electricity as specified by the Authority or the State Transmission Utility.

(5) Except as provided in Third Proviso to sub-Regulation (2) of Regulation 3 above all power purchase agreements signed by the generating stations existing on the date of notification of these regulations shall be renewed to remove any inconsistencies with these regulations and such renewed PPAs shall be valid for entire life from the year of commissioning of such stations.The generating station, in obligations under these regulations shall ensure economical use of resources, good performance and optimum investment.

(6) The generating station shall endeavor to achieve the operational parameters as applicable to a particular source of energy, such as auxiliary consumption, heat rate, fuel consumption, capacity availability and plant load factor etc. in case of a co-generating station, as may be determined by the Commission from time to time for fixation of tariff for different non conventional and renewable source of energy.

9. Duties of the Generating Station

(1) The generating station shall:

(a) Submit the technical details concerning the generation and transmission as may be specified by the Authority for carrying out studies relating to cost and efficiency.

(b) Submit the information to the Commission in respect to generation, demand met, capacity availability, plant load factor, auxiliary consumption, specific heat

rate and specific oil consumption and any other information which may be directed by the Commission latest by 30th June each year for previous financial year.

(c) Co-ordinate with State Load Dispatch Centre in respect to;

a) Optimum scheduling and dispatch of electricity within the State or outside the state shall be as per the scheme to be made by SLDC as per provisions of Grid Code and State Grid Code.

b) Exchange of data of quantity of electricity transmitted through the grid

c) Real time grid operation and dispatch of electricity in accordance with Grid Code and State Grid Code.

d) Establish a communication and data transfer system with State Load Dispatch Centre.

(2) The generating station shall pay fee and charges payable to State Load Dispatch Centre as may be specified or directed by the Commission from time to time.

(3) The generating station shall be under obligation to comply with the directions issued to it by the State Load Dispatch Centre failing which the plant shall be liable to a penalty not exceeding Rs. 5 lacs for each such instance.

(4) In case of dispute with reference to quality of electricity or safe, secure and integrated operation of the grid or in relation to any direction issued by the State Load Dispatch Centre, the matter shall be referred to the Commission for adjudication.

(5) The generating station shall ensure the compliance of the Grid Code and State Grid Code as amended from time to time.

(6) The generating station shall not be required to obtain transmission license under the Act for establishing, operating or maintaining a dedicated transmission line and shall have to comply with the following:

(a) Grid code and standards of grid connectivity;

(b) Technical standards for construction of electrical lines;

(c) System of operation of such a dedicated transmission line as per the norms of system operation of the concerned State Load Despatch Centre (SLDC) or Regional Load Despatch Centre (RLDC);

(7) The generating station shall ensure compliance of any general or specific direction issued and rules or regulations made by the Commission for the generating companies.

(8) The generating station shall ensure compliance of Availability Based Tariff (ABT) guidelines as may be notified by the Commission and perform all functions, obligations and duties assigned to a generating company in such guidelines.

(9) The generating station shall coordinate with state transmission utility for the purpose of planning and coordination relating to intra-state transmission system as provided under the Act.

10. Sale of Power

(1) All Co-Generation, Renewable Source of Energy and Other Non-Conventional Energy Sources based plants shall be allowed to sell power, over and above the capacity required for their own use, to the Distribution Licensee at the rates determined by the Commission based on the norms specified in these regulations or to local rural grids or to any consumer within the State (provided that consumer has been allowed Open Access under Open Access Regulations) or to any person outside the State provided such sale outside the state is not in contravention to any provision of any legally enforceable existing agreement signed by generating company with any person.

(2) Tariff for sale to Distribution Licensee shall be determined by the Commission in accordance with the norms specified in Chapter 4 on Tariff of these Regulations, and for this purpose, the generating company shall enter into a power purchase agreement with the distribution licensee for its entire life from the date of its commissioning.

(3) The distribution licensee on an offer made by the said plants for entering into a power purchase agreement in conformity with these Regulations and relevant

provisions of other Regulations and the Act, shall sign the PPA within two months failing which the generating company may approach the Commission for suitable remedy.

(4) The distribution licensee shall make an application for approval of power purchase agreement entered into with the generating station in such form and such manner as specified in Uttarakhand Electricity Regulatory Commission (Conduct of Business) Regulations, 2004 as amended by the Commission from time to time.

(5) 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 Station may, on a request from the licensee, extend power supply from its generating station to the licensee's system.

11. Open Access

(1) Open Access in State Transmission System : A person, who has constructed the Generating station, shall have right to 'open access' for carrying electricity from his plant by using transmission lines or associated facilities with such lines or system and for that matter, rules or regulations notified by the Commission in this regard shall apply on the plant:

Provided that the 'open access' shall be subject to the availability of transmission capacity as determined by State Transmission Utility and/or the Central Transmission Utility, as the case may be:

Provided also that in case of inter-state transmission, the rules or regulations made by the Central Electricity Regulatory Commission shall apply:

Provided further that if any question arises as to the availability of surplus transmission/distribution capacity, the matter shall be decided and adjudicated by the Appropriate Commission.

(2) Open Access in Distribution System: Open Access in distribution system of state distribution licensee shall be available only to such generating stations, who has entered in to an agreement to sell power to Local Rural grid, or any consumer

within the state or for his own captive use. For that matter, rules or regulations notified by the Commission in this regard shall apply on the plant:

(3) The plant seeking 'open access' shall approach the State Transmission Utility and/or Central Transmission Utility and/or intervening transmission licensee and/or distribution licensee who shall determine and allow non discriminatory 'open access' subject to availability of transmission/wheeling capacity and other operational constraints.

CHAPTER 3

RENEWABLE PURCHASE OBLIGATION (RPO)

12. Eligible Persons

(1) The 'minimum percentage' as specified under these regulations shall be applicable to all existing and future distribution Licensees in the State who shall be referred to as Eligible Persons.

13. RPO Percentage Specification

(1) Every 'Eligible Person' will have to procure electricity generated from eligible renewable energy sources at the percentages specified below.

Year	Renewable Purchase Obligation (RPO)*
2009-10	8%
2010-11	9%
2011-12	10%

* Percentage RPO as stipulated above denotes Minimum Quantum of purchase from 'co-generation and generation of electricity from renewable energy sources'

(2) The Commission may, on a subsequent date, fix a maximum ceiling of percentage purchase if in Commission's view it is expedient to do so to limit impact of mandatory purchase of renewables on consumer tariff.

(3) While contracting new sources or in case of maximum ceiling being specified by Commission, priority shall be given to the date of commercial operation of the generating stations.

(4) The Commission may review the quantum of purchase from renewable sources by a distribution licensee once in every 5 years or at lesser intervals as may be necessary.

(5) For the purpose of this RPO framework, for every Distribution Licensee, total consumption in its area of supply would mean energy purchased by the distribution licensee from all sources for the purpose of supply within its area of supply including quantum of energy supplied to open access and captive consumers by the licensee.

14. Balanced growth of all types of RE sources

(1) There shall not be any specific percentage either minimum or maximum for any particular source or technology in total percentage. However, the Commission may at a later stage incorporate the same after considering the actual growth of each source or any other influencing factor.

(2) UREDA shall take all possible steps to ensure that renewable energy based projects are taken up in the State and the Distribution Licensees shall ensure offtake from such projects until a maximum percentage is specified by the Commission.

15. Methodology for Application of RPO

(1) For the purpose of RPO, for every Distribution Licensee, total consumption in its area of supply would mean energy purchased by the distribution licensee from all sources for the purpose of supply within its area of supply.

(2) The RPO shall be applicable on the gross energy units purchased by the Distribution Licensees for supplying power to the retail consumers, excluding any inter-se sale of electricity amongst the Licensees or outside consumers.

(3) Each Distribution Licensee shall indicate the proposed quantum of purchase from renewable sources of energy for the ensuing year in the ARR filing for each year. The proposed quantum of purchase shall be as per these regulations.

(4) While indicating the proposed quantum of purchase from co-generation and generation of electricity from renewable sources of energy, the distribution Licensee shall indicate the sources from which it plans to purchase the specified quantum of purchase. The Distribution Licensee shall source the proposed quantum of electricity from renewable sources of energy within its area of supply, to the extent possible. In a situation where the Distribution Licensee is unable to purchase the required quantum within its area of supply, the Distribution Licensee may purchase the quantum from sources outside the Licensee's area of supply but within the State, by way of own generation or procurement of power from RE developer or by way of purchase from other licensee, provided such Licensee has procured renewable energy in excess of its minimum percentage requirement as per applicable RPO.

(5) The Commission may relax or waive the above minimum targets for the year subject to supply constraints or any other uncontrollable factors upon request by concerned Eligible Person, which is acceptable in the opinion of the Commission.

16. Enforcement

(1) The Eligible Persons will have to comply with their RPO obligations as stipulated in these regulations. Shortfall in RE procurement by Eligible Persons shall be treated as non-compliance and shall attract appropriate action as per appropriate provisions of EA 2003.

(2) UREDA shall report such incidence of failure to comply by Eligible Persons to the Commission.

CHAPTER 4

TARIFF

17. Control Period or Review Period

The Control Period or Review Period under these Regulations shall be the period of applicability of these Regulations.

Provided that the benchmark capital cost for Solar PV and Solar thermal projects may be reviewed annually by the Commission.

Provided further that the tariff determined as per these Regulations for the RE projects commissioned during the Control Period, shall continue to be applicable for the entire duration of the Tariff Period as specified in Regulation 18 below.

Provided also that the revision in Regulations for next Control Period shall be undertaken at least six months prior to the end of the first Control Period and in case Regulations for the next Control Period are not notified until commencement of next Control Period, the tariff norms as per these Regulations shall continue to remain applicable until notification of the revised Regulations subject to adjustments as per revised Regulations.

18. Tariff Period

(1) The Generating Company may file an application for tariff determination for a period not less than 5 years.

(2) Tariff period under these Regulations shall be considered from the date of commercial operation of the renewable energy generating stations.

(3) Tariff determined as per these Regulations shall be applicable for Renewable Energy power projects, only for the duration of the Tariff Period as stipulated under sub-regulation (1).

19. Petition and proceedings for determination of tariff

(1) The generating company may make an application for fixation of tariff in respect of the completed units of the generating station in such formats and alongwith such information which the Commission may require from time to time.

(2) In case of a generating station declared under commercial operation on or after 1.4.2009, an application for fixation of tariff shall be made in two stages, namely:

(a) A generating company may make an application for determination of provisional tariff in advance of the anticipated date of completion of project based on the capital expenditure actually incurred up to the date of making the application or a date prior to making of the application, duly audited and certified by the statutory auditors and the provisional tariff shall be charged from the date of commercial operation of the respective unit of the generating station.

(b) A generating company shall make a fresh application for determination of final tariff based on actual capital expenditure incurred up to the date of commercial operation of the generating station, duly audited and certified by the statutory auditors.

(3) In case of a generating station declared under commercial operation before 1.4.2009 and the generator had opted for the tariffs under the Regulations prevalent previously, the generating company will have the option to make an application for determination of tariff based on the norms specified in this Regulation except for capital cost specified in Regulation 26 which shall be subject to the prudence check, if it was subject to the ceilings under the previous Regulation.

(4) The generating company shall file with application for determination of tariff duly validated projected annual data for as many years for which it wants the tariff to be fixed.

(5) A petition for determination of tariff shall be accompanied by such fee as may be specified in the regulations and shall be accompanied by

a) information in forms 1.1, 1.2, 2.1 and 2.2 as the case may be, and as appended in these regulations;

b) Detailed project report outlining technical and operational details, site specific aspects, premise for capital cost and financing plan etc.

c) A Statement of all applicable terms and conditions and expected expenditure for the period for which tariff is to be determined.

d) A statement containing full details of calculation of any subsidy and incentive received, due or assumed to be due from the Central Government and/or State

Government. This statement shall also include the proposed tariff calculated without consideration of the subsidy and incentive.

e) Any other information that the Commission requires the Petitioner to submit.

(6) The proceedings for determination of tariff shall be in accordance with the UERC (Conduct of Business Regulations), 2004.

20. Applicability of Tariff

(1) The tariff, as determined in these Regulations, is applicable for sale of electricity by a generating station to the Distribution Licensee of the State. The tariffs would be worked out by the Commission based on the Petition submitted for the tariff period which will not be less than 5 years.

(2) The tariff would be single part (in Rs./kWh) and ex-bus, i.e. after auxiliary consumption and transformation losses at the outgoing bus-bar of generating switch-yard (i.e. outgoing bus-bar from the sub-station at generating station end of the evacuation line).

Provided that for renewable energy technologies having fuel cost component, like biomass power projects and non-fossil fuel based cogeneration, single part tariff with two components, fixed cost component and fuel cost component, shall be determined.

(3) The generating company shall have the option to get their tariffs determined on the levellised basis for first 10 years and levellised tariff for balance life of the project or to get the levellised tariffs for the life of the project or to get the tariffs determined for each year for the Tariff Period. Provided that for renewable energy technologies having single part tariff with two components, tariff shall be determined on levellised basis considering the year of commissioning of the project for fixed cost component while the fuel cost component shall be specified on year of operation basis.

(4) For the purpose of levellised tariff computation, the discount factor equivalent to weighted average cost of capital shall be considered.

(5) Weighted average cost of capital shall be the determined every year and the pre-tax return on equity for that purposes would be adjusted for tax at the rates applicable at that time.

(6) The tariff will be determined separately on case to case basis for each kind of renewable source and for each type of renewable technology specified in these Regulations.

(7) Tariff for other non-conventional and renewable sources and/or technologies, not covered by these regulations, shall be determined on case to case basis, where the Commission shall as far as possible be guided by the principles and methodologies if any specified by the CERC, National Electricity Policy and Tariff policy, while deciding on the terms and conditions of tariff for cogeneration and generation of electricity from renewable sources of energy. The Commission may deviate from the above by giving reasons in writing in order to accommodate the specific nature of renewable sources and technology used.

(8) The tariff would be based on normative parameters as per the norms specified in these Regulations for each type of source.

(9) Tariff in respect of a generating station under these Regulations shall be applicable for the whole generating station.

21. Norms of Operation

(1) The norms of operation shall be as under, namely:

(a) Normative CUF for recovery of full fixed charges

Renewable Source	CUF (%)
i. SHP Projects (upto 25 MW)	45%
ii. Bagasse based co-generation Projects	45%
iii. Biomass based Power Projects	
a. During Stabilisation	60%
b. During the remaining period of the first year (after stabilization)	70%

c. From 2nd Year onwards:	80%
iv. Wind Projects based on Annual Mean Wind Power Density (W/m2)	
a. 200-250	20%
b. 250-300	23%
c. 300-400	27%
d. > 400	30%
v. Solar PV Power Project	19%
vi. Solar Thermal Power Project	23%

Note:

i. For biomass projects, the stabilization period shall not be more than 6 months from the date of commissioning of the project.

ii. For bagasse and other non-fossil fuel based cogeneration projects, the CUF shall be computed on the basis of plant availability for number of operating days considering operations during crushing season and off-season and load factor of 92%. Hence, operating days of 120 has been considered taking 120 days (crushing) + 60 days (off-season)

iii. For Annual Mean Wind Power Density shall be measured at 50 meter sub-height.

iv. For projects opting to have the tariffs determined on actual capital cost instead of normative capital cost specified in Regulation 26, their CUF (generation) for recovery of fixed charges would be taken as that envisaged in the approved DPR or the normative CUF specified in sub-Regulation (1)(a) above whichever is higher.

(b) Normative Auxiliary Consumption including Transformation Loss

a)	SHP Projects (upto 25 MW)	1%
b)	Bagasse based co-generation Projects	8.5%
c)	Biomass Projects	10%
d)	Wind Projects	0.5%
e)	Solar Thermal Projects	10%

(c) Normative Gross Station Heat Rate (GSHRn) in kCal/kWh

a) Bagasse based co-generation Projects 3600

b) Biomass Projects 3800

(d) Normative Calorific Value of Fuel, GCVn, (kCal/kg)

a) Bagasse based co-generation Projects 2250

b) Biomass Projects 3371

(e) Normative Fuel Consumption, Qn, (kg/kWh)

a) Bagasse based co-generation Projects 1.60

b) Biomass Projects 1.13

(f) Fuel Cost (Pb) (Rs./MT)

a) Biomass based renewable Projects: Fuel price during first year of the Control Period (i.e. FY 2009-10) shall be Rs. 1518/MT.

b) Bagasse based co-generation Projects: Fuel price during first year of the Control Period (i.e. FY 2009-10) shall be Rs. 1013/MT. For use of biomass other than bagasse in co-generation projects, the biomass prices shall be applicable.

The fuel costs shall be linked to index formulae specified in Regulation 25. Alternatively, for each subsequent year of the Control Period, the normative escalation factor of 5% per annum shall be applicable at the option of the project developer.

(2) The Saleable Energy for each renewable project shall be worked out on the basis of normative CUF after adjusting for Auxiliary consumption including transformation losses specified above and also the free power delivered to the home state.

22. Fuel Mix

(1) The biomass power plant shall be designed in such a way that it uses different types of non-fossil fuels available within the vicinity of biomass power project such as crop residues, agro-industrial residues, forest residues etc. and other biomass fuels as may be approved by MNRE.

(2) The Biomass Power Generating Companies shall ensure fuel management plan to ensure adequate availability of fuel to meet the respective project requirements.

23. Use of Fossil Fuel

(1) The use of fossil fuels shall be limited to the extent of 15% of total fuel consumption on annual basis.

24. Monitoring Mechanism for the use of fossil fuel

(1) The Project developer shall furnish a monthly fuel usage statement and monthly fuel procurement statement duly certified by Chartered Accountant to the beneficiary (with a copy to appropriate agency appointed by the Commission for the purpose of monitoring the fossil and non-fossil fuel consumption) for each month, along with the monthly energy bill. The statement shall cover details such as -

(a) Quantity of fuel (in tonnes) for each fuel type (biomass fuels and fossil fuels) consumed and procured during the month for power generation purposes,

(b) Cumulative quantity (in tonnes) of each fuel type consumed and procured till the end of that month during the year,

(c) Actual (gross and net) energy generation (denominated in units) during the month,

(d) Cumulative actual (gross and net) energy generation (denominated in units) until the end of that month during the year,

(e) Opening fuel stock quantity (in tonnes),

(f) Receipt of fuel quantity (in tonnes) at the power plant site and

(g) Closing fuel stock quantity (in tonnes) for each fuel type (biomass fuels and fossil fuels) available at the power plant site.

(2) Non-compliance with the condition of fossil fuel usage by the project developer, during any financial year, shall result in withdrawal of applicability of tariff as per these Regulations for such biomass based power project.

25. Fuel Price Indexation Mechanism

(1) In case of non-fossil fuel based cogeneration projects, the following indexing mechanism for adjustment of fuel prices for each year of operation will be applicable for determination of applicable variable charge component of tariff, in case developer wishes to opt for indexing mechanism:

$$P_{(n)} = P_{(n-1)} * \{a * (WPI_{(n)}/WPI_{(n-1)} + b * (1+IRC)_{(n-1)} + c * (Pd_{(n)}/Pd_{(n-1)})\}$$

Where

$P_{(n)}$ = Price per ton of Biomass/Bagasse fuel for the n^{th} year to be considered for tariff determination

$P_{(n-1)}$ = Price per ton of Biomass/Bagasse fuel for the (n-1)th year to be considered for tariff determination. P1 shall be Biomass/Bagasse fuel price for FY 2009-10 as specified under Regulation 21.

a = Factor representing fuel handling cost

b = Factor representing fuel cost

c = Factor representing transportation cost

$IRC_{(n-1)}$ = Average Annual Inflation Rate for indexed energy charge component in case of captive coal mine source (in %) to be applicable for (n-1)th year, as may be specified by the Commission

Pd_n = Weighted average price of HSD for nth year.

Pd_{n-1} = Weighted average price of HSD for (n-1)th year.

WPI_n = Whole sale price index for the month of April of nth year

WPI_{n-1} = Wholesale price index for month of April of (n-1)th year.

Where a, b & c will be as may be specified by the Commission from time to time. In default, these factors shall be 0.2, 0.6 & 0.2 respectively.

(2) Variable Charge for the n^{th} year shall be determined as under:

i.e. $VC_n = VC_1 x (P_n / P_1)$ or $VC_n = VC_1 x (1.05)^{(n-1)}$ (optional)

Where,

VC_1 represents the Variable Charge based on biomass/bagasse fuel price P_1 for FY 2009-10 as specified under Regulation 21 and shall be determined as under:

$$VC_1 = \frac{\text{Station Heat Rate (SHR)}}{\text{Gross Calorific Value (GCV)}} \text{ x } \frac{1}{\text{(1 - Aux Consum. Factor)}} \text{ x } \frac{P1}{100}$$

26. Capital Cost

(1) For projects commissioned after 01.04.2009, the capital cost (Rs. Cr./MW), including cost of transmission line and bays at receiver's end, shall be determined by the Commission based on the prudence check of the actual capital costs incurred on the project. The generator in such case would be required to furnish all the information sought by the Commission.

(2) Where capital cost cannot be verified in the absence of details or for any other reason, the following capital cost shall be the ceiling:

Renewable Source	For projects whose CoD falls during FY 2009-10 (Rs. Crore/MW)
i. SHP Projects (upto 25 MW)	(a)
(b) Below 5 MW	7.00
(c) 5 MW to 25 MW	6.30
ii. Bagasse based co-generation Projects	4.45
iii. Biomass based Power Projects	4.50
iv. Wind Projects	5.15
v. Solar PV Power Project	17.00
vi. Solar Thermal Power Project	13.00

(3) In case of a generating station declared under commercial operation before 1.4.2009, and the generator had opted for the tariffs under the Regulations prevalent previously and its capital cost was subject to the ceilings under the previous Regulation, it will have the option to make an application for determination of tariff

based on the norms specified in these Regulations subject to the prudence check of its capital cost.

(4) No additional capitalisation shall be considered during the validity of tariff determined at normative parameters.

(5) Capital subsidy received by the generator shall not be reduced from the capital cost for depreciation purposes. However, the generator will have to carry out any renovation or replacement or additional capitalisation work through depreciation available to it.

(6) The capital cost for subsequent years shall be determined on the basis of indexation formula as outlined under Regulation 27.

27. Capital Cost Indexation Mechanism

(1) The following indexation mechanism shall be applicable in case of renewable projects for adjustments in capital cost over the Control Period with the changes in Wholesale Price Index for Steel and Electrical Machinery.

$CC_{(n)} = P\&M_{(n)} X (1+F_1+F_2+F_3)$

$P\&M_{(n)} = P\&M_{(0)} X (1+d_{(n)})$

$d_{(n)} = [a X \{(SI_{(n-1)}/SI_{(0)}) - 1\} + b X \{(EI_{(n-1)}/EI_{(0)}) - 1\}]/(a+b)$

Where,

$CC_{(n)}$ = Capital Cost for n^{th} year

$P\&M_{(n)}$ = Plant and Machinery Cost for n^{th} year

$P\&M_{(0)}$ = Plant and Machinery Cost for the base year

Note: $P\&M_{(0)}$ is to be computed by dividing the base capital cost (for the first year of the control period) by (1+F1+F2+F3), where $P\&M_{(O)}$ for different renewable energy sources is given in the Table below:

Renewable Energy Source	**Base Capital Cost Base Capital Cost (Rs. Crore / MW)**	**Factor $(1+F_1+F_2+F_3)$**	**$P\&M_{(0)}$ (Rs. Crore / MW)**

i. SHP Projects (upto 25 MW)			
a. Below 5 MW	7.00	1.40	5.00
b. 5 MW to 25 MW	6.30	1.40	4.50
ii. Non-fossil fuel based co-generation Projects	4.45	1.33	3.35
iii. Biomass based Power Projects	4.50	1.33	3.38
iv. Wind Projects	5.15	1.25	4.12

$d_{(n)}$ = Capital Cost escalation factor for year (n) of Control Period

$SI_{(n-1)}$ = Average WPI Steel Index prevalent for calendar year (n-1) of the Control Period

$SI_{(0)}$ = Average WPI Steel Index prevalent for calendar year (0) at the beginning of the Control Period i.e. January 2008 to December 2008

$EI_{(n-1)}$ = Average WPI Electrical Machinery Index prevalent for calendar year (n-1) of the Control Period

$EI_{(0)}$ = Average WPI Electrical and Machinery Index prevalent for calendar year (0) at the beginning of the Control Period i.e. January 2008 to December 2008

a = Constant to be determined by Commission from time to time, for weightage to Steel Index

b = Constant to be determined by Commission from time to time, for weightage to Electrical Machinery Index

F_1 = Factor for Land and Civil Work

F_2 = Factor for Erection and Commissioning

F_3 = Factor for IDC and Financing Cost

The default values of a, b, F_1, F_2 & F_3 is given in the Table below for each of the renewable sources:

Renewable Energy Source	**a**	**b**	**F_1**	**F_2**	**F_3**

i. SHP Projects (upto 25 MW)					
a) Below 5 MW	0.6	0.4	0.16	0.10	0.14
b) 5 MW to 25 MW	0.6	0.4	0.16	0.10	0.14
ii. Non-fossil fuel based co-generation Projects	0.7	0.3	0.10	0.09	0.14
iii. Biomass based Power Projects	0.7	0.3	0.10	0.09	0.14
iv. Wind Projects	0.6	0.4	0.08	0.07	0.10

28. Debt-Equity Ratio

(1) In case of all RE Projects, debt–equity ratio as on the date of commercial operation shall be 70:30 for determination of tariff.

(2) If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.

Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.

Provided further that the equity invested in foreign currency shall be designated

in Indian rupees on the date of each investment.

Provided that subsidy available from MNRE shall be considered to have been utilized towards pre-payment of debt leaving balance loan and 30% equity to be considered for determination of tariff.

Provided further that it shall be assumed that the original repayments shall not be affected by this prepayment.

(3) The amount of subsidy shall be considered for each renewable source as per the existing policy of MNRE. If the amount of subsidy is reduced by MNRE, then necessary corrections in tariffs would be carried out by the Commission provided the reduction in subsidy amount is not due to the inefficiency of the generator.

29. Annual Fixed Charges

(1) Annual Fixed Charges shall consist of:

(a) Interest on loan capital;

(b) Depreciation,

(c) Return on equity;

(d) Operation and maintenance expenses;

(e) Interest on working capital; and

30. Interest on loan capital

(1) The loans arrived at in the manner indicated in Regulation 28 shall be considered as gross normative loan for calculation for interest on loan. The normative loan outstanding as on April 1st of every year shall be worked out by deducting the cumulative repayment up to March 31st of previous year from the gross normative loan.

(2) For the purpose of computation of tariff, the normative interest rate shall be considered as average long term prime lending rate (LTPLR) of State Bank of India (SBI) prevalent during the previous year plus 150 basis points.

(3) Notwithstanding any moratorium period availed by the generating company, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.

(4) Original period of repayment shall be taken as 10 years.

(5) The average of opening and closing loan for the year shall be considered to working out interest liability for that year.

31. Depreciation

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

(a) The value base for the purpose of depreciation shall be the capital cost of the project admitted by the Commission.

(b) 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.

(c) Depreciation per annum shall be based on 'Differential Depreciation Approach' over loan tenure and period beyond loan tenure over useful life computed on 'Straight Line Method'. The depreciation rate for the first 10 years of the Tariff Period shall be 7% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 11th year onwards.

(d) Depreciation shall be chargeable from the first year of commercial operation.

Provided that in case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

32. Return on Equity

(1) The value base for the equity shall be 30% of the capital cost or actual equity as determined under Regulation 28.

(2) The Return on Equity shall be:

a) Pre-tax 19% per annum for the first 10 years.

b) Pre-tax 24% per annum 11th years onwards.

33. Operation and Maintenance expenses

(1) Operation and maintenance expenses shall be determined for the Tariff Period based on normative O&M expenses specified below for the first Year of Control Period.

(2) Normative O&M expenses allowed during first year of the Control Period (i.e. FY 2009-10) under these Regulations shall be escalated at the rate of 5.72% per annum over the Tariff Period.

Renewable Energy Source	Normative O&M expenses for the first Year of Control Period, i.e. 2009-10 (Rs. Lakh/MW)
i. SHP Projects	
a) Below 5 MW	21.00
b) 5 MW to less than 10 MW	19.50
c) 10 MW to less than 15 MW	18.00

d) 15 MW to less than 20 MW	16.50
e) 20 MW to less than 25 MW	15.00
ii. Non-fossil fuel based co-generation Projects	13.35
iii. Biomass based Power Projects	20.25
iv. Wind Projects	6.50
v. Solar PV project	9.00
vi. Solar Thermal project	13.00

34. Interest on Working Capital

(1) The Working Capital requirement in respect of wind energy projects, small hydro power, solar PV and Solar thermal power projects shall be computed in accordance with the following:

a) Operation & Maintenance expenses for one month;

b) Receivables equivalent to 2 (Two) months of energy charges for sale of electricity calculated on the normative CUF;

c) Maintenance spare @ 15% of operation and maintenance expenses

(2) The Working Capital requirement in respect of biomass power projects and non-fossil fuel based co-generation projects shall be computed in accordance with the following:

a) Fuel costs for four months equivalent to normative CUF;

b) Operation & Maintenance expense for one month;

c) Receivables equivalent to 2 (Two) months of fixed and variable charges for sale of electricity calculated on the target CUF;

d) Maintenance spare @ 15% of operation and maintenance expenses

(3) Interest on Working Capital shall be at interest rate equivalent to average State Bank of India short term PLR during the previous year plus 100 basis points.

35. Incentive for generation beyond CUF

The tariff for generation beyond CUF, when entire fixed cost has been recovered, shall be allowed to be recovered at the normal tariff determined by the Commission.

36. Deviation from norms

(1) Tariff for sale of electricity by a generating company may also be determined by the Commission in deviation of the norms specified in these regulations subject to the conditions that:

(a) The overall per unit tariff of electricity over the entire life of the asset, calculated on the basis of the norms in deviation does not exceed the per unit tariff calculated on the basis of the norms specified in these regulations;

(b) In genuine and deserving cases, the Commission may relax above condition to the extent deemed appropriate by the Commission; and

(c) Any such deviation shall come into effect only after approval by the Commission.

37. Applicability of ABT to RE Sources

Since RE Sources are dependent on vagaries of nature and are of small capacities, the ABT regime as and when introduced by Commission shall not be applicable to supply of power from such sources.

38. Merit Order Dispatch

All RE Sources shall be exempted from merit order dispatch principle and their energy shall be purchased by Distribution Licensee at all times for maximum utilization of these sources.

39. CDM benefits

(1) The proceeds of carbon credit from approved CDM project shall be shared between generating company and concerned beneficiaries in the following manner, namely-

(a) 100% of the gross proceeds on account of CDM benefit to be retained by the project developer in the first year after the date of commercial operation of the generating station;

(b) In the second year, the share of the beneficiaries shall be 10% which shall be progressively increased by 10% every year till it reaches 50%, where after the proceeds shall be shared in equal proportion, by the generating company and the beneficiaries.

40. Rebate

For payment of bills through the letter of credit on presentation, a rebate of 2% shall be allowed. If the payments are made by a mode other than through the letter of credit but within a period of one month of presentation of bills by the generating company, a rebate of 1% shall be allowed.

41. Late Payment Surcharge

In case the payment of bills is delayed beyond a period of 60 days from the date of billing, a late payment surcharge at the rate of 1.25% per month shall be levied by the generating company.

42. Subsidy or incentive by the Central / State Government

The Commission shall take into consideration any incentive or subsidy offered by the Central or State Government, including accelerated depreciation benefit if availed by the generating company, for the renewable energy power plants while determining the tariff under these Regulations.

Provided that the following principles shall be considered for ascertaining income tax benefit on account of accelerated depreciation, if availed, for the purpose of tariff determination:

i. Assessment of benefit shall be based on capital cost admitted, accelerated depreciation rate as per relevant provisions under Income Tax Act and corporate income tax rate.

ii. Capitalisation of RE projects during second half of the fiscal year.

43. Taxes and Duties

Tariff determined under these regulations shall be exclusive of taxes and duties as may be levied by the appropriate Government:

Provided that the taxes and duties levied by the appropriate Government other than direct taxes shall be allowed as pass through on actual incurred basis.

CHAPTER 5

OTHER TERMS AND CONDITIONS

44. Transmission Charges, Wheeling Charges and Losses

(1) The plant seeking non-discriminatory 'open access' to the State and/or Inter-state Transmission Systems and/or intervening transmission facility and/or distribution system for carrying the electricity generated by the plant to the destination of use, the transmission charges and wheeling charges, as determined by the Appropriate Commission, shall be paid by the licensee or consumer importing electricity for his use.

(2) The Transmission Charges for use of State Transmission System for open access shall be payable in kind @ 5% of energy injected irrespective of point of injection and drawal (i.e. irrespective of distance and voltage level).

(3) The wheeling charges for use of distribution system shall also be payable in kind @ 5% of energy injected irrespective of distance and voltage, if Distribution System is also being used.

Provided that no Transmission and Wheeling Charges are payable for sale of electricity to licensee or to local rural grid.

(4) In addition to Transmission and Wheeling Charges, the losses in the intervening Transmission and Distribution System shall be payable in kind at the following %ages of energy injected depending upon voltage level of injection and drawal point as follows:

Point of injection	**Point of Drawal**	
	Below 66 kV	**At and above 66 kV**
Below 66 kV	15%	10%
At and above 66 kV	10%	5%

Provided that no losses are payable for sale of electricity to licensee or to local rural grid.

45. Surcharge and Additional Surcharge

(1) No cross-subsidy surcharge shall be payable for open access by a person, having established a generating station, if he seeks open access for the transmission/wheeling of electricity from his Plant to a destination for consumption of power for his own use.

(2) Additional surcharge shall, however, be payable by all consumers availing open access at the rate determined by Commission from time to time.

(3) Cross-subsidy surcharge shall be payable by the consumer within the State, who has been allowed Open Access and gets supply from any source (except captive source) within or outside the State at the rates determined by Commission from time to time according to the formula given in the Tariff Policy.

46. Purchase of Electricity by the Generating station/Start up Power

(1) Any person, who establishes, maintains and operates a generating station and normally does not need power from the licensee round the year, may purchase electricity from a generating company or a distribution licensee in case his plant is not in a position to generate electricity to meet the requirement of his own use or for start up and consequently power is required to be drawn from distribution licensee.

Provided that such purchase of electricity, from a distribution licensee, shall be charged as per the tariff determined by the Commission for temporary supply under appropriate 'Rate Schedule of tariff' under which the total load requirement of the plant shall belong to.

Provided also that in case of purchase of power though a trader or a generating company, rate shall be as mutually agreed however, transmission and wheeling charges shall be payable as determined by the Commission.

47. Evacuation of Power

(1) The generating station may supply power to the Distribution Licensee of its area through a line terminating at the nearest Substation as per the voltage and capacity as given below:

a) upto 100 kW on LT,

b) above 100 kW and upto 3 MW on 11 kV or above,

c) above 3 MW and upto 25 MW on 33 kV or above,

d) above 25 MW on 132 kV or above;

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 plants where the scheme for connectivity has already been approved and the same are commissioned after the date of these regulations coming into effect, the connectivity as per that approved scheme shall be allowed.

Provided further that in case of generation from non-conventional energy sources other than bagasse based cogeneration like wind, solar, hydro, municipal waste, industrial wastes (including solid, semi solid, liquid and gaseous wastes) and bio gas, the Commission may allow evacuation of power at 11 kV.

(2) The cost of laying the transmission line to the sub-station, the required bay, terminal equipments and associated synchronization equipment, shall be borne by the generating station and such work shall be undertaken under the supervision of the Licensee of the area in which the plant is located. The same has been factored in for tariff calculations also.

Provided also that the construction of the power evacuation system for transmission at 132 kV or higher voltage shall be carried out under the supervision of the State Transmission Utility.

Supervision charges for transmission utility or distribution licensee shall, however, not be more than 15% of labour cost.

Provided further that the land for extending the bay shall be provided by the owner of the sub-station free of cost.

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 as the case may be.

48. Maintenance of Transmission lines and Equipment

(1) The generating station 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 maintenance of the dedicated transmission line if so desired by the generating company on mutually agreed charges not less than O&M charges as per norms specified in these regulations.

(2) 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.

(3) In case the generating company agrees to sell power to distribution licensee for entire life of the project, then no maintenance charges shall be payable for maintenance of line by distribution/transmission licensee.

49. Metering Arrangement

(1) The Generating Station shall provide ABT compatible Special Energy Meters at the point of injection and point of drawl and shall comply with all metering requirements as notified by the State Transmission Utility.

50. Energy Accounting and Billing

(1) The State Load Dispatch Centre 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 State Grid Code.

Provided that in case of sale to the distribution licensee of the area, the power purchase agreement may provide for joint metering and in such cases, energy accounting and billing shall be done by the generating station in association with the concerned distribution licensee.

51. Banking of Power

(1) The Generating Stations shall be allowed to bank power within a period of one calendar month, for the purpose of withdrawal of the banked power in the event of emergency or shut down or maintenance of the plant, subject to following conditions:

(a) Banking of energy upto 100%, as agreed between the plant and the distribution licensee, shall be allowed during the period 17:00 hrs. to 22:00 Hrs. (specified as peak hours for this purpose).

(b) Withdrawal of power shall be allowed only during the period other than 17:00 hrs. to 22:00 Hrs.

(c) The plants shall provide ABT compliant Special Energy Meters and the monthly settlement of energy sales shall be done based on Power supplied during the peak hours as per SEM meter readings shall be considered as banked power and monthly settlement shall be done for the balance energy supplied by the plant at the rate specified for supply of electricity to distribution licensee.

(d) Upon introduction of intra-state ABT in the State, the banking as well as withdrawal of banked energy shall be subject to day ahead scheduling.

(e) The power withdrawn by the plant as ascertained by SEM readings, which could not be considered as withdrawal from banked power, shall be considered as power purchased by the plant.

(f) The purchase of power by these plants under clause (e) or otherwise shall be charged for the maximum-recorded demand and the energy at rate specified in the Schedule of retail Tariff corresponding to the declared load by the generator. No minimum consumption guarantee or other charges shall be levied on such generators. Excess load over and above the declared load shall

be billed according to the provision of the relevant Schedule of Tariff specified by the Commission. This shall apply only to those generators who have commissioned the supply of power under the PPA with the licensee.

(g) A Generating Station shall be allowed to withdraw power that was banked during a particular financial year in the same year or during the following financial year.

(h) The banked power remaining unutilized on the expiry of the following financial year would be treated as sale and the financial settlement shall be made at the scheduled tariff for the year during which the power was banked. No banking charges shall be deducted from such unutilized banked energy.

(i) Banking charges shall be 12.5% of the energy banked

CHAPTER 6

MISCELLANEOUS

52. Savings

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

53. Power to Remove Difficulties

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

54. Power to Relax

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

By Order of the Commission

(Pankaj Prakash)
Secretary
Uttarakhand Electricity Regulatory Commission

Sample Calculation of SHP with capacity of 5 MW based on the norms in draft Regulations

(Rs. in Crore)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
O&M expenses	0.98	1.03	1.09	1.15	1.22	1.29	1.36	1.44	1.52	1.61	1.70	1.80	1.90	2.01	2.12	2.25	2.37
Interest on Loans	2.99	2.68	2.36	2.05	1.73	1.42	1.10	0.79	0.47	0.16	-	-	-	-	-	-	-
Depreciation	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Return on Equity	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	2.27	2.27	2.27	2.27	2.27	2.27	2.27
Interest on Working Capital	0.22	0.22	0.21	0.21	0.20	0.20	0.20	0.19	0.19	0.19	0.16	0.16	0.17	0.17	0.18	0.19	0.19
Annual Fixed Charges	**8.19**	**7.92**	**7.66**	**7.41**	**7.16**	**6.91**	**6.66**	**6.42**	**6.19**	**5.96**	**4.38**	**4.48**	**4.59**	**4.70**	**4.82**	**4.95**	**5.09**
Net Saleable Energy (MU)	19.51	19.51	19.51	19.51	19.51	19.51	19.51	19.51	19.51	19.51	19.51	19.51	19.51	19.51	19.51	16.59	16.59
Tariff (Rs. p.u.)	**4.20**	**4.06**	**3.93**	**3.80**	**3.67**	**3.54**	**3.41**	**3.29**	**3.17**	**3.05**	**2.24**	**2.30**	**2.35**	**2.41**	**2.47**	**2.99**	**3.07**
Discounting Factor	1.00	0.87	0.76	0.66	0.57	0.50	0.43	0.37	0.32	0.27	0.23	0.20	0.17	0.15	0.13	0.11	0.10

Year	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M expenses	2.51	2.65	2.81	2.97	3.14	3.31	3.50	3.70	3.92	4.14	4.38	4.63	4.89	5.17	5.47	5.78	6.11	6.46
Interest on Loans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Return on Equity	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27
Interest on Working Capital	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.31	0.32	0.34	0.35	0.37	0.39	0.40	0.42
Annual Fixed Charges	**5.23**	**5.38**	**5.54**	**5.71**	**5.89**	**6.08**	**6.28**	**6.49**	**6.72**	**6.95**	**7.20**	**7.47**	**7.75**	**8.04**	**8.36**	**8.69**	**9.04**	**9.41**
Net Saleable Energy (MU)	16.59	16.59	16.59	16.59	16.59	16.59	16.59	16.59	16.59	16.59	16.59	16.59	16.59	16.59	16.59	16.59	16.59	16.59
Tariff (Rs. p.u.)	**3.15**	**3.25**	**3.34**	**3.44**	**3.55**	**3.67**	**3.79**	**3.91**	**4.05**	**4.19**	**4.34**	**4.50**	**4.67**	**4.85**	**5.04**	**5.24**	**5.45**	**5.67**
Discounting Factor	0.08	0.07	0.06	0.05	0.05	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01

Period of levellisation	35 Yrs	Ist 10 Yrs	Bal. 25 Yrs
Levellised Tariff (Rs. p.u.)	**3.57**	**3.76**	**2.90**
Impact of subsdiy (Rs. p.u.)			
Old	**(0.35)**	**(0.44)**	**-**
New	**(0.18)**	**(0.23)**	**-**
Impact of accelerated dep. (Rs. p.u.)	**(0.15)**	**(0.29)**	**0.31**