

Uttarakhand Electricity Regulatory Commission

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Notification

April 30, 2008

No.F-9(21)/RG/UERC/2008/145 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, 2008.
- (2) These regulations shall come into force with effect from 01.04.2008 and unless reviewed earlier or extended by the Commission, shall remain in force upto 31.03.2012 provided that till they are replaced by new regulations, these shall continue to apply.
- (3) With coming into force of these Regulations, UERC (Terms and Conditions for Determination of Tariff for Bagasse Based Co-generation Projects) Regulations, 2007 shall stand repealed and the Orders on Approach to Determination of Tariff for Small Hydro Power Projects with Capacity upto 1 MW (including the amendment Regulation dated 18.05.2007) and New SHPs above 1 MW and upto 25 MW dated 10.11.2005 shall stand superceded/repealed.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 plants 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 plant is located. Besides above, these regulations also seek to operate the plant 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. Noncompliance 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 in entirety and their PPAs, if any, will have to be suitably revised. This option has to be given to the licensee latest by 30.09.2008 and the option once exercised shall not be revocable.

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 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

Unless 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) "Banking" means the process under which a generating plant 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.
- (5) "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.
- (6) "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;
- (7) "Co-generation" means a process which simultaneously produces two or more forms of useful energy (including electricity);
- (8) "Central Commission" means the Central Electricity Regulatory Commission referred to in sub-section (1) of Section 76 of the Act;
- (9) "Central Transmission Utility" means any Government company which the Central Government may notify under sub-section (1) of section 38 of the Act;
- (10) "Company" means a company formed and registered under the Companies Act, 1956 and includes any body corporate under a Central, State or Provincial Act;
- (11) "Commission" means the Uttarakhand Electricity Regulatory Commission;
- (12) "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;
- (13) “Distribution Licensee” means a Licensee authorized to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply;
- (14) “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.
- (15) “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;
- (16) “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;
- (17) “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;
- (18) “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;
- (19) “Grid” means the high voltage backbone system of interconnected transmission lines, sub-stations and generating plants;
- (20) “Infirm Power” means electricity generated prior to commercial operation of the unit of a generating station;
- (21) “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).

- (22) “National Electricity Plan” means the National Electricity Plan notified under subsection (4) of section 3 of the Act;
- (23) “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;
- (24) “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;
- (25) “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;
- (26) “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;
- (27) “Person” shall include any company or body corporate or association or body of individuals, whether incorporated or not, or artificial juridical person;
- (28) “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 installed capacity in that period.

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

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).

- (29) “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;
- (30) “Regional Load Despatch Centre” means the Centre established under sub-section (1) of section 27 of the Act;
- (31) “Regulations” means these regulations made under the Act;
- (32) “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;
- (33) “Rules” means rules made under the Act;
- (34) “Saleable Energy” means the quantum of energy available for sale (ex-bus) after allowing for free energy to the home State;
- (35) “Specified” means specified by regulations made by the Appropriate Commission or the Authority, as the case may be, under the Act;
- (36) “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;
- (37) “State Load Dispatch Centre” means the centre established in Uttarakhand under sub-section (1) of section 31 of the Act;
- (38) “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;
- (39) “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;
- (40) “Trading” means purchase of electricity for resale thereof and the expression “trade” shall be construed accordingly;

(41) “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.

(42) “Year” means a financial year.

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
 - Wind
 - Solar including its integration with combined cycle
 - Biomass/Biogas
 - 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.

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 plant 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 plant shall obtain necessary clearances from Uttarakhand Renewable Energy Development Agency (UREDA), wherever necessary.

8. Obligations of the Generating Plant

- (1) The capacity of Generating plant 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 plant, 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 plant or any related information to the Commission in such form and manner as may be required by the Commission.

- (3) The generating plant 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 plant 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) The generating plant shall enter into a power purchase agreement with the distribution licensee of the area in which the plant is located for a period of at least 20 years from the date of its commissioning, in line with the Model Power Purchase Agreement. The parties to the agreement may make plant/site specific changes in the Model PPA not inconsistent with the Act, these Regulations and other relevant Regulation. Such changes shall however be subject to approval of the Commission.

Provided that the distribution licensee shall propose and get the Model PPA approved by the Commission within a period of 3 months from the date of notification of these Regulations.
- (6) Except as provided in Third Proviso to sub-Regulation (8) of Regulation 3 above all power purchase agreements signed by the plants 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 at least till 20 years from the year of commissioning of such plants.

- (7) 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 prescribed in these Regulations and Uttarakhand Electricity Regulatory Commission (Conduct of Business) Regulations, 2004 as amended by the Commission from time to time.
- (8) The generating plant, in obligations under these regulations shall ensure economical use of resources, good performance and optimum investment.
- (9) The generating plant 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-gen plant, 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 Plant

- (1) The generating plant 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;
 - (i) 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.
 - (ii) Exchange of data of quantity of electricity transmitted through the grid
 - (iii) Real time grid operation and dispatch of electricity in accordance with Grid Code and State Grid Code.

- (iv) Establish a communication and data transfer system with State Load Dispatch Centre.
- (2) The generating plant 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 plant 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 plant shall ensure the compliance of the Grid Code and State Grid Code as amended from time to time.
- (6) The generating plant 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 Dispatch Centre (SLDC) or Regional Load Dispatch Centre (RLDC);
- (7) The generating plant 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 plant 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 plant 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 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 other third party outside the State.
- (2) Tariff for sale to Distribution Licensee shall be as determined in Chapter 4 on Tariff of these Regulations.
- (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, the same shall be signed by such licensee within two months failing which the generating company may approach the commission for suitable remedy.
- (4) The distribution licensee shall purchase such capacity through competitive bidding process as and when notified by the Commission.
- (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 Plant may, on a request from the licensee, extend power supply from its generating station to the licensee's system.

11. Open Access

- (1) A person, who has constructed the Plant, shall have right to 'open access' for carrying electricity from his plant by using transmission lines or distribution system 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/distribution 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) 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)*
2007-08	5%
2008-09	5%
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. 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 levellised tariff for supply of electricity by the Eligible Source to a distribution licensee shall be as per Schedule – I of these Regulations.
- (2) The tariff is 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).

- (3) The tariff has been determined separately for each kind of renewable source and for each type of renewable technology specified in these regulations.
- (4) 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.
- (5) While determining the tariff, the Commission has, to the extent possible, made an allowance based on technology, fuel, market risk and environmental benefits, etc., of each type of renewable source.
- (6) The tariff is based on normative parameters as per the norms specified in these Regulations for each type of source.
- (7) Tariff being normative any shortfall or gain due to performance or other reasons is to be borne/retained by the generator and no true up of any parameter, including additional capitalisation for whatsoever reasons, shall be taken up during the validity of the tariff.
- (8) Tariff in respect of a generating station under these regulations shall be applicable for the whole generating station.

Provided that 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 capacities of the units commissioned in different years.

- (9) The tariff for supply of electricity between the period of synchronization and the commissioning of the unit shall be equal to the variable cost for bagasse/biomass/biogas based generation. However, in case of hydel plants and other non-conventional and renewable sources of energy based plants, the tariff for supply of electricity between the period of synchronization and the commissioning of the unit shall be equal to the 50 percent of the tariff.

Note:- Other Non-conventional Sources of Energy shall include, inter alia, generation from wind, solar, municipal waste, industrial wastes including solid, semi solid, liquid and gaseous wastes and bio-gas.

18. Norms of Operation

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

(a) Normative PLF for recovery of full fixed charges

(i) SHP Projects (upto 25 MW)	45%
(ii) Bagasse based co-generation Projects	45%
(iii) Biomass Projects	75%
(iv) Wind Projects	20%

(b) Normative Auxiliary Consumption including Transformation Loss

(i) SHP Projects (upto 25 MW)	1%
(ii) Bagasse based co-generation Projects	8.5%
(iii) Biomass Projects	10%
(iv) Wind Projects	0.5%

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

(i) SHP Projects (upto 25 MW)	NA
(ii) Bagasse based co-generation Projects	3300
(iii) Biomass Projects	4200
(iv) Wind Projects	NA

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

(i) SHP Projects (upto 25 MW)	NA
(ii) Bagasse based co-generation Projects	2275
(iii) Biomass Projects	3300
(iv) Wind Projects	NA

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

- (i) SHP Projects (upto 25 MW) NA
- (ii) Bagasse based co-generation Projects 1.45
- (iii) Biomass Projects 1.27
- (iv) Wind Projects NA

(f) Normative Fuel Price, Pb, (Rs./kg)

- (i) SHP Projects (upto 25 MW) NA
- (ii) Bagasse based co-generation Projects

The cost of fuel (Rs./kg) shall be taken as determined by using following formula for Rihand II coal based pit head plant in the Northern Region on parameters approved by CERC:

Cost of Fuel (Rs./kg)

$$Pb = \frac{(100 - AUX_c) \times GCV_n \times REC_c}{100 \times GSHR_c}$$

Where,

GSHR_c = GSHR (normative) for coal based plant (kCal/kWh)

REC_c = Rate of Energy Charges after AUX_c (ex-bus) in coal based plant (Rs./kWh)

AUX_c = Auxiliary Consumption (normative) in coal based plant (%)

GCV_n = Normative Gross Calorific Value of RE Fuel

- (iii) Wind Projects NA

19. Capital Cost

- (1) The normative capital cost (Rs. Cr./MW), including cost of transmission line and bays at receiver's end, shall be as under for the projects/ units commissioned:

Date of Commercial Operation	Before 01.04.2007	On or after 01.04.2007
(i) SHP Projects (upto 25 MW)	5.50	6.00
(ii) Bagasse based co-generation Projects	3.50	3.75
(iii) Biomass Projects	-	4.25
(iv) Wind Projects	-	4.50

- (2) No additional capitalisation shall be considered during the validity of tariff determined at normative parameters.
- (3) Capital subsidy 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.

20. 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.

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.

- (2) Following level of subsidies shall be considered for each source as per existing policy of MNRE:

(i)	SHP Projects (upto 25 MW)	Rs. $2.25 \times (\text{MW})^{0.645}$ Crore
(ii)	Bagasse based co-generation Projects under Pvt Sector	
		Rs. $18 \times (\text{MW})^{0.645}$ Lakh
	Bagasse based co-generation Projects under Joint/Public Sector	
	40 bars	Rs. 40 lakh/MW (s.t. max Rs. 8 Cr.)
	50 bars	Rs. 50 lakh/MW (s.t. max Rs. 8 Cr.)
	60 bars	Rs. 60 lakh/MW (s.t. max Rs. 8 Cr.)
(iii)	Biomass Projects	Rs. $25 \times (\text{MW})^{0.645}$ Lakh
	Biomass Project (Advance Technology)	Rs. $1.25 \times (\text{MW})^{0.645}$ Crore
(iv)	Wind Projects	Rs. $0.25 \times (\text{MW})^{0.645}$ Crore

21. 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
- (f) Tax on Income.

22. Interest on loan capital

- (1) Interest on loan capital shall be computed at the PLR of SBI for long term loans as on 01.04.2007, which is 11.25%.
- (2) Opening and closing outstanding loan for a financial year shall be worked out as the gross loan as on commissioning minus cumulative repayments as per original repayment schedule.
- (3) Original period of repayment shall be taken as 10 years.
- (4) The average of opening and closing loan for an year shall be considered to working out interest liability for that year.

23. Extra Rupee Liability

No extra rupee liability towards interest payment and loan repayment corresponding to any foreign debt shall be permissible in any year during validity of tariff.

24. 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 normative capital cost.
 - (b) Depreciation shall be calculated annually based on straight line method over the useful life of the asset. The residual life of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset.
- (2) The following lives shall be considered for the RE sources:

(i)	SHP Projects (upto 25 MW)	35 yrs
(ii)	Bagasse based co-generation Projects	20 yrs
(iii)	Biomass Projects	20 yrs
(iv)	Wind Projects	20 yrs

- (3) No advance against depreciation shall be considered as tariff is being levelised for multiple years.

25. Return on Equity

- (1) Return on equity shall be computed on the equity base determined in accordance with Regulation 20 and shall be computed @ 14% per annum.

26. Operation and Maintenance expenses

- (1) The base operation and maintenance expenses shall be fixed as a %age of the normative capital cost, in the year of commissioning and shall be subject to an annual escalation of 5% per annum for the subsequent years.

(i)	SHP Projects (upto 25 MW)	
	Upto 5 MW	5.00%
	5 to 10 MW	4.75%
	10 to 15 MW	4.50%
	15 to 20 MW	4.25%
	20 to 25 MW	4.00%
(ii)	Bagasse based co-generation Projects	3.5%
(iii)	Biomass	4%
(iv)	Wind Projects	1.5%

27. Interest on Working Capital

- (1) Working Capital shall cover:
- (a) Operation and Maintenance expenses for one month;
 - (b) Maintenance spares @ 1% of the historical cost escalated @ 5% per annum from the date of commercial operation;
 - (c) Fuel stock for a period (months) as shown below:

(i)	SHP Projects (upto 25 MW)	Nil
(ii)	Bagasse based co-generation Projects	1.5
(iii)	Biomass Projects	1.5
(iv)	Wind Projects	Nil

- (2) Rate of interest on working capital shall be the short-term Prime Lending Rate of State Bank of India as on 1.4.2007, which is 12.25%.

28. Tax on Income

- (1) Tax on the income streams of the generating company from its core business, subject to a maximum tax leviable on return on equity has been computed as an expense and shall be incorporated in tariff on normative basis as grossed up tax on return on equity irrespective of actual tax liability. For this purpose, MAT has been considered for first 10 years and normal tax rates for subsequent years. Normative Tax has been calculated on post tax RoE by grossing up.

29. Tariff

- (1) Tariff (Rs./kWh) shall be sum of Rate of Fixed Charges and Rate of Energy Charges for the same year.
- (2) Rate of Fixed Charges (RFC) shall be worked out by dividing Annual Fixed Charges by Saleable Energy for that year.
- (3) Rate of Energy Charges (REC) (in Rs./kWh) is the cost of normative quantities of RE Fuel required for delivering ex-bus one kWh of electricity and shall be computed as under:

$$\text{REC (Rs./kWh)} = \frac{100 \times \text{Pb} \times \text{Qn}}{(100 - \text{AUXn})}$$

Where,

Pb = Cost of RE Fuel in Rs./kg

Qn = Normative RE Fuel consumption in kg/kWh

and AUXn = Normative Auxiliary Consumption for RE Source Station

- (4) The rate of energy charges (REC) in (Rs./kWh) shall be provisionally taken as under:

(i)	SHP Projects (upto 25 MW)	NA
(ii)	Bagasse based co-generation Projects	1.32
(iii)	Biomass Projects	1.71

(iv) Wind Projects

NA

- (5) The rate of fuel charges shall be subject to Fuel Price Adjustment if REC calculated as per formula given earlier is different from the above provisional rate on the basis of actual REC_c (including FPA, if any) for Rihand II station for a particular month.

30. Life and Agreement period

- (1) The life and PPA period of wind/biomass/bagasse projects shall be 20 years. For SHPs, however, the life shall be 35 years and PPA period as 30 years. After the expiry of PPA period, first right of purchase shall be that of distribution licensee.

31. Levelised RFC

- (1) The levelised RFC (Rs./kWh) shall be worked out by levelising the Rate of Fixed Charge for each year during the life of the project.

Provided that Commission may suitably round off the tariff for plants with different capacities to multiple of 5 paise.

- (2) The rate of discounting taken for levelising shall be 11.1%.
- (3) The levelised RFC worked out accordingly is given in Schedule 1.
- (4) The tariff and other terms for solar plants selling power to distribution licensee shall be same as those applicable to SHPs under these Regulations.

Provided that any subsidy/incentive available to such plants from Central/State Government shall be allowed to be retained by it.

- (5) The tariff and other terms for biogas plants shall be same as those applicable to biomass based plants.

32. Incentive for generation beyond normative PLF

The tariff for generation beyond normative PLF, when entire fixed cost has been recovered, shall be allowed to be recovered at the normal tariff given in Schedule 1.

33. 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.

34. 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.

35. 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.

36. CDM benefits

RE Sources selling power to distribution licensee shall be allowed to retain the entire benefit received, if any, from CDM credits.

37. 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.

38. Late Payment Surcharge

In case the payment of bills is delayed beyond a period of 1 month from the date of billing, a late payment surcharge at the rate of 1.25% per month shall be levied by the generating company.

CHAPTER 5

OTHER TERMS AND CONDITIONS

39. 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 (i.e. either injection or drawal or both are at voltages above 33 kV) 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). In addition, 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 i.e. either injection or drawal or both are at voltages below and upto 33 kV.

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

- (3) 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 Drawal		
Point of injection	Below 33 kV	At and above 33 kV
Below 33 kV	15%	10%
At and above 33 kV	10%	5%

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

40. Surcharge and Additional Surcharge

- (1) No cross-subsidy surcharge shall be payable for open access by a person, having established a generating plant, 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 equivalent to demand charges for the relevant consumer category for balance of the lock-in period, if any, in the Contract/Agreement with the Distribution licensee.
- (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. For the year 2007-08 and 2008-09, the cross-subsidy surcharge shall be zero.

41. Purchase of Electricity by the Plant/Start up Power

- (1) Any person, who establishes, maintains and operates a generating plant 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 through 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.

42. Evacuation of Power

- (1) The generating plant shall 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:
 - (i) upto 100 kW on LT,
 - (ii) above 100 kW and upto 1 MW on 11 kV,

(iii) above 1 MW and upto 10 MW on 33 kV,

(iv) above 10 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 plant 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. Supervision charges shall, however, not be more than 15% of labour cost.

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.

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.

43. Maintenance of Transmission lines and Equipment

- (1) The generating 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 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.

44. Metering Arrangement

- (1) The Generating Plant 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.

45. 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 plant in association with the concerned distribution licensee.

46. Banking of Power

- (1) The Generating Plants 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 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 Plant 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

47. 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.

48. 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.

49. 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

Schedule 1

The levelised Rate of Fixed Charges (RFC) in Rs./kWh for RE sources selling power to Distribution Licensee in the State shall be as follows:

(a) Projects commissioned before 01.04.2007		
(i) SHP (upto 25 MW) & Solar Projects		
Upto 5 MW		2.55
5 to 10 MW		2.55
10 to 15 MW		2.50
15 to 20 MW		2.45
20 to 25 MW		2.40
(ii) Bagasse based co-generation Projects		1.80
(b) Projects commissioned on or after 01.04.2007		
(i) SHP/Solar Projects (upto 25 MW)		
Upto 5 MW		2.80
5 to 10 MW		2.80
10 to 15 MW		2.75
15 to 20 MW		2.70
20 to 25 MW		2.65
(ii) Bagasse based co-generation Projects		1.90
(iii) Biomass/Biogas Projects		1.35
(iv) Wind Projects		3.90
