MEGHALAYA STATE ELECTRICITY REGULATORY COMMISSION

NOTIFICATION

11th November, 2014

MSERC/REG/2014/02: In exercise of the power conferred by Section 86(1)(a),(b),and (c) read with(e), Section 61(a to H) of the Electricity Act 2003 (36 of 2003) and all others power enabling it in this behalf Meghalaya State Electricity Regulatory Commission, after previous publications, hereby makes the following Regulations, namely;

CHAPTER – 1
PRELIMINARY

1. Short title and commencement

(1) These regulations may be called the Meghalaya State Electricity Regulatory Commission (Terms and Conditions for determination of Tariff for Generation from Renewable Energy Sources) Regulations, 2014.

(2) These regulations shall come into force from the date of their publication in the Official Gazette of the Government of Meghalaya and unless reviewed earlier or extended by the Commission, shall remain effective up to 31.3.2017.

2. Definitions

2.1 In these regulations, unless the context otherwise requires,

(3) **"Act"** means the Electricity Act, 2003 (36 of 2003);

(4) **"Auxiliary energy consumption"** 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 its eligibility to draw back this power from the grid.

(6) **"Biomass"** means wastes produced during agricultural and forestry operations (for example straws and stalks) or produced as a by-product of processing operations of agricultural produce (e.g. Husks, shells, de-oiled cakes etc); wood produced in dedicated energy plantations or recovered from wild bushes / weeds; and the wood waste produced in some industrial operations.

(7) **"Biomass Gasification"** means a process of incomplete combustion of biomass resulting in production of combustible gases consisting of a mixture of Carbon Monoxide (CO), Hydrogen (H_2) and traces of Methane (CH_4), which is called producer gas.

(8) **"Biogas"** means a gas created when organic matter like crop residues, sewage and manure breaks down in oxygen-free environment (ferments).

(9) **"Capital Cost"** means capital cost as defined under Regulation 16, 28, 32, 38, 51, 61, 66, 71, 81 of these regulations.

(10) **'Central Commission' or 'CERC'** shall mean Central Electricity Regulatory Commission referred to in sub-section (1) of Section 76 of the Act;

(11) **'Capacity Utilisation Factor (CUF)** means the total energy sent out corresponding to generation during the period expressed as a percentage of energy sent out corresponding to installed capacity in that period

$$\text{CUF (in \%)} = \frac{E}{IC \times (100\text{-}Aux) \times H} \times 10^7$$

Where,

E	=	Energy sent out ex-bus in during the period
IC	=	Installed capacity in MW
Aux	=	% Normative auxiliary consumption
H	=	Number of hours in the period

(12) **"CERC RE Tariff Regulations'** shall mean Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012, as amended from time to time.

(13) **"Commission"** means the Meghalaya State Electricity Regulatory Commission;

(14) **"Control period" or "Review period"** means the period during which the norms for determination of tariff specified in these regulations shall remain valid.

(15) **'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. In case of small hydro plants the date of commissioning shall, however, not be linked to achieving maximum continuous rating, but the generator will have to demonstrate the same within three years of commissioning.

(16) **'Existing RE Project'** means the renewable energy project whose date of commissioning falls prior to the date of notification of these regulations;

(17) **"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;

(18) **'Gross Station Heat Rate'** means the heat energy input in kcal required to generate one kWh of electrical energy at generator terminals of a thermal generating station;

(19) **"Hybrid Solar Thermal Power Plant"** means the solar thermal power plant that uses other forms of energy input sources along with solar thermal energy for electricity generation, and wherein not less than 75% of electricity is generated from solar energy component.

(20) **'Installed Capacity'** means the summation of the name plate capacities of all the Units of the generating station or the capacity of the generating station (reckoned at the generator terminals), approved by the Commission from time to time;

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

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

Provided the Pooling Sub-station shall mean the sub-station at project site of the wind farm or solar power plant, as the case may be, and shall constitute step-up transformer and associated switchgear, and to the LV

side of which, multiple (more than one) generating unit(s) (i.e. wind turbine generators or solar PV modules/arrays/inverter units) are connected.

ii) In relation to small hydro power, biomass power and non-fossil fuel based co-generation power projects and Solar Thermal power projects, the inter-connection point shall be the line isolator on outgoing feeder on HV side of generator transformer;

(22) **"Integrated Utility"** means the Meghalaya State Electricity Board, in its present form or the successor entities performing more than one of the functions of generation, transmission and distribution after restructuring thereof ;

(23) **'MNRE'** means the Ministry of New and Renewable Energy of the Government of India.

(24) **'New RE Project'** means the renewable energy project whose date of commissioning shall be subsequent to the date of notification of these regulations;

(25) **"Non-fossil fuel based co-generation"** means the process in which more than one form of energy (such as steam and electricity) are produced in a sequential manner by use of biomass, provided the project may qualify to be a co-generation project if it fulfills the eligibility criteria as specified in Regulation 4 (2) (d).

(26) **'Operation and Maintenance expenses' or 'O&M expenses'** means the expenditure incurred on operation and maintenance of the project, or part thereof, and includes the expenditure on manpower, repairs, spares, consumables, insurance and overheads;

(27) **"Open Access Customer"** means, (a) a consumer permitted by the Commission to receive supply of electricity from a person other than distribution licensee of his area of supply, or (b) a generating company (including captive generating plant), or (c) a licensee who has availed or intends to avail of Open Access in accordance with the regulations of the Commission for grant of open access to the transmission lines and the distribution system of a licensee;

(28) **"Open Access Regulations"** means the regulations notified by the Commission for grant of open access to the transmission lines and the distribution system of a licensee;

(29) **'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;

(30) **'Renewable Energy'** means the grid quality electricity generated from renewable energy sources.

(31) **'Renewable Energy Power Plants'** means the power plants other than the conventional power plants generating grid quality electricity from renewable energy sources.

(32) **'Renewable Energy Sources'** means renewable sources such as small hydro, wind, solar including its integration with combined cycle, biomass including bagasse, bio fuel co-generation, urban or municipal waste and such other sources as approved by the MNRE;

(33) **'Small Hydro'** means Hydro Power projects with a station capacity upto and including 25 MW.

(34) **'Solar PV power'** means the Solar Photo Voltaic power project that uses sunlight for direct conversion into electricity through Photo Voltaic technology.

(35) **'Solar rooftop PV and other small solar power'** means the Solar rooftop or other small solar Photo Voltaic power project that uses Photo Voltaic technology for generation of electricity, which are mounted on rooftop of buildings or ground mounted installations, and satisfying any other eligibility criteria as may be specified by MNRE from time to time.

(36) **"Solar Thermal Power"** means the Solar Thermal power project that uses sun light for direct conversion into electricity through Concentrated Solar Power Technology based on either line focus or point focus principle.

(37) **"State"** means the State of Meghalaya;

(38) **"Tariff Period"** means the period for which tariff is to be determined by the Commission on the basis of norms specified under these regulations.

(39) **'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) Small Hydro Plant	35 years
c) Biomass power project with Rankine Cycle Technology	20 years
d) Solar PV/Solar thermal power project	25 years
e) Bio mass Gasifier based Power Project	20 years

(40) **"Year"** means financial year ending on 31st March.

2.2 Words and expressions used in these regulations and not defined herein but defined in the Act or regulations made by the Commission, shall have the meanings assigned to them respectively in the Act, and regulations made by the Commission from time to time.

3. Scope and extent of application

These regulations shall apply in all cases where tariffs, for supply of electricity from Renewable Energy Sources to the distribution licensees within the state of Meghalaya, is to be determined by the Commission under Section 62 read with Section 86 of the Act.

Provided that in cases of wind, small hydro projects, biomass power based on Rankine cycle, solar PV, Solar Thermal power projects, and Biomass gasifier power project, these regulations shall apply subject to the fulfillment of eligibility criteria specified in Regulation 4 of these regulations.

CHAPTER – 2: GENERAL CONDITIONS

4. Eligibility Criteria

(1) For the purposes of these regulations, generation from all types of Renewable Energy Sources, as approved by Ministry of New and Renewable Energy (MNRE), Government of India shall be considered and such generating stations shall be collectively referred to as **"RE based Generating Stations"**.

(2) At present, generation from the following sources and technologies shall qualify to be covered under these regulations:

(a) **Wind Power project** – using new wind turbine generators

(b) **Small hydro Project** – 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.

(c) **Biomass power project based on Rankine Cycle technology** - 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;

(d) **Solar PV and Solar Thermal Power Projects** – Based on Technologies approved by MNRE.

(e) **Biomass Gasifier based Power Project** – The project shall qualify to be termed as a biomass gasifier based power project, if it is using new plant and machinery and having a Grid connected system that uses 100% producer gas engine, coupled with gasifier technologies approved by MNRE.

(3) Any new source or technology would qualify as "renewable energy", only after the Commission has approved the technology based on MNRE approval. Further, the Commission shall determine tariffs separately for such technology on case to case basis.

5. Obligations and duties of the Generating Station

(1) RE based Generating Stations shall indicate the capacity of its generating plant in the "Detailed Project Report" (DPR) keeping in view the potential of electricity generation available from such source and its optimal utilization. It shall further be obliged to submit the DPR, progress of construction and details regarding commissioning of the generating plant or any other related information to the Commission in such form and manner as may be required by the Commission.

(2) The RE based Generating Stations shall:

(a) Submit the information in respect to generation, demand met, capacity availability, capacity utilization factor, auxiliary consumption, specific heat rate and specific oil consumption or on any other parameters etc. as may be directed by the Commission.

(b) Shall establish a communication and data transfer system with State Load Dispatch Centre and Co-ordinate with State Load Dispatch Centre in respect to:

i) Scheduling

ii) Exchange of data of quantity of electricity transmitted through the grid.

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

(3) The RE based Generating Stations shall abide by the grid discipline and install adequate protection equipment for safety of its system and human life.

(4) The RE based Generating Stations shall ensure the compliance of the State Grid Code Regulations as amended from time to time.

(5) The RE based Generating Stations shall ensure compliance of any general or specific direction issued and regulations made by the Commission for the generating companies.

(6) Power Purchase Agreements signed by the generating stations existing on the date of notification of these regulations shall not be renewed in accordance with these regulations.

(7) The RE based Generating Stations shall ensure economical use of resources, good performance and optimum investment at all times and 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, capacity utilization factor etc. in the case of a non-fossil fuel based co-generating station, as may be specified/determined by the Commission from time to time for fixation of tariff for different renewable sources of energy.

(8) The RE based Generating Stations shall coordinate with State Transmission Utility/Distribution Licensee for the purpose of planning and coordination relating to intra-state transmission/distribution system as provided under the Act.

(9) The RE based Generating Stations shall pay fee and charges to the State Load Dispatch Centre as may be specified or directed by the Commission from time to time.

(10) The RE based Generating Stations shall be under obligation to comply with the directions issued to it by the State Load Dispatch Centre.

6. Sale of Power

(1) All RE based Generating Stations shall be allowed to sell power to the distribution licensee at the rates determined by the Commission or to any consumer (provided that such consumer has been allowed Open Access under Open Access Regulations) or to any person within the State or outside the State at mutually agreed rates provided that such sale outside the State is not in contravention to any Policy notified by the State Government or to any provision of any legally enforceable existing agreement signed by generating company with any person.

(2) The distribution licensee on an offer made by the said RE based Generating Stations shall enter into a power purchase agreement in conformity with these regulations and relevant provisions of other Regulations, the Act and Policies made in this regard.

(3) The distribution licensee shall make an application to the Commission for approval of power purchase agreement prior to entering into with the generating station.

7. Open Access

(1) Open access in the State Transmission/Distribution System shall be allowed to all RE based Generating Stations for captive use and to those covered under Regulation 6 (1), which shall be subject to provisions of these regulations.

(2) <u>Open Access in State Transmission System:</u>

(a) A person, who has established the RE based Generating Station shall have right to non-discriminatory open access to the State Transmission System for carrying electricity from his plant by using transmission lines and associated facilities in accordance with Commission's OA Regulations subject to payment of transmission charges and adjustment of average Transmission Losses in kind as determined by the Commission in the relevant tariff orders of the licensees for a particular year.

(b) The “open access” to the State Transmission System shall be subject to the availability of surplus transmission capacity as determined by State Transmission Utility.

(3) Open Access in Distribution System:

(a) For sale of electricity within the State, non-discriminatory open access to the distribution system shall be available to such RE based Generating Stations and plants, who have entered into an agreement to sell power to any consumer within the State or require power for their own captive use.

(b) Open access to State Distribution System may also be available to RE based Generating Station or Co-generating Station for sale of electricity outside the State provided that the Distribution Licensee is in agreement with above Generating Station for wheeling such power outside the State through its system. This will be done in accordance with Commission’s OA Regulations.

(c) The open access to the distribution system shall be subject to payment of wheeling charges and adjustment of average distribution losses in kind as determined by the Commission in the relevant tariff orders of the licensees for a particular year.

(d) The “open access” to the Distribution System shall be subject to the availability of surplus distribution capacity in the Distribution System.

(4) If any question arises as to the availability of surplus capacity in the State transmission system or the State distribution system, the matter shall be adjudicated and decided by the Commission.

CHAPTER – 3: TARIFF – GENERAL PRINCIPLES

8. Control Period or Review Period

The Control Period or Review Period under these regulations shall be of three (3) financial years. First year of the Control Period shall commence from the date of notification of these regulations to 31st March, 2017.

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 9 below;

Provided also that the revision in regulations for next Control Period shall be notified separately 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.

9. Tariff Period

1) The Tariff Period for Renewable Energy power projects except in case of Small hydro projects below 5 MW, Solar PV, Solar thermal, Biomass Gasifier, Biogas based power projects shall be for a minimum period of thirteen (13) years.
2) In case of Small hydro projects below 5 MW, the tariff period shall be thirty five (35) years.
3) In case of Solar PV and Solar thermal power projects, the tariff period shall be twenty five years (25) years.
4) In case of Biomass and Biomass Gasifier based power projects the tariff period shall be twenty (20) years.
5) Tariff Period under these regulations shall be considered from the date of commercial operation of the renewable energy generating stations.
6) 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 Regulations 9 (1), (2), (3), (4) and (5) above.
7) The PPA shall be executed with the distribution licensee for the entire Tariff Period subject to Commission's approval.

10. Project Specific Tariff

(1) Project specific tariff, on case to case basis, shall be determined by the Commission for the following types of projects:

(i) Municipal Solid Waste Projects;

(ii) Solar PV and Solar Thermal Power projects, if a project developer opts for project specific tariff;

Provided that the Commission while determining the project specific tariff for Solar PV and Solar Thermal shall be guided by the provisions of Chapters 9 & 10 of these regulations.

(iii) Hybrid Solar Thermal Power plants;

(iv) Other hybrid projects such as, renewable-renewable or renewable-conventional sources, for which renewable technology is approved by MNRE;

(v) Biomass project other than that based on Rankine Cycle technology application with water cooled condenser;

(vi) Any other new renewable energy technologies approved by MNRE; and

(vii) For projects opting to have their tariffs determined on the basis of actual capital cost and other norms instead of the bench mark normative capital cost and other norms as specified for different technologies under Chapters 5 to 12.

(2) Determination of project specific tariff for generation of electricity from such renewable energy sources shall be in accordance 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.

11. Generic Tariff

(1) Generic tariff shall be determined on the petition filed by eligible RE generator for such renewable energy technologies indicated in Regulation 4.

(2) The Generic Tariff would be based on normative parameters as per the norms specified in these regulations for each type of renewable energy source and the year of commissioning of the plant.

(3) The tariff determined being normative, no true up of any parameter, including additional capitalization, for what so ever reasons shall be taken up during the validity of the tariff; any short fall or gain due to performance or other reasons is to be borne / retained by the RE based generating stations.

12. Petition and proceedings for determination of tariff

(1) The RE based Generating Stations, opting for project specific tariff, shall make an application for fixation of Project Specific Tariff based on actual Capital cost and along with such information as the Commission may require from time to time.

Provided that for the project specific Tariff determination, the RE based Generating stations shall submit the break-up of Capital cost items along with the petition.

(2) A petition for determination of project specific tariff shall be accompanied by such fee as may be determined by 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 to 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.

(3) The proceedings for determination of tariff shall be in accordance with the Conduct of Business Regulations of the Commission.

13. Tariff Structure

(1) The tariff for sale of energy from renewable energy technologies shall be single-part tariff (in Rs./kWh) and ex-bus consisting of the following fixed cost components;

a) Interest on loan capital;

b) Depreciation;

c) Return on equity;

d) Interest on working capital;

e) Operation and maintenance expenses;

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

14. Tariff Design

(1) The generic tariff shall be determined on levellised basis 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.

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

(3) Levellisation shall be carried out for the 'useful life' of the Renewable Energy Project, while tariff shall be specified for the period equivalent to 'Tariff Period'.

15. Levellised Tariff

a. Levellised tariff is calculated by carrying out levellisation for 'useful life' of each technology considering the discount factor for time value of money.

b. The discount factor considered for this purpose is equal to the Post Tax weighted average cost of the capital on the basis of normative debt : equity ratio (70 : 30) specified in the Regulations. Considering the normative debt equity ratio and weighted average of the post tax rates for interest and equity component, the discount factor is calculated.

CHAPTER – 4: FINANCIAL PRINCIPLES

16. Capital Cost

The norms for the bench mark Capital Cost as specified in the subsequent technology specific chapters shall be inclusive of all capital works like plant and machinery, civil works, erection & commissioning, financing, interest during construction and evacuation infrastructure up to inter-connection point.

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

Provided that for project specific tariff determination, the generating company shall submit the break-up of capital cost items along with its petition in the manner specified under Regulation 12. The capital cost shall be admitted based on the scrutiny of capital estimates by the Commission which shall include reasonableness of capital cost, interest during construction, use of efficient technology and such other matters relevant for arriving at Capital cost of the project.

17. Debt - Equity Ratio

(1) For determination of generic tariff, the debt- equity ratio shall be 70: 30.

(2) For determination of project specific tariff, the following provisions shall apply: -

If the equity actually deployed is more than 30% of the capital cost, the amount of equity for the purpose of tariff determination shall be limited to 30% and the balance 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 denominated/ designated in Indian rupees on the date of each investment.

(3) The debt and equity amounts arrived in accordance with the above clauses shall be used for calculating interest on loan and return on equity.

18. Interest and Finance Charges on Loan Capital

(1) Loan tenure

For the purpose of determination of tariff, loan tenure of 12 years shall be considered.

(2) Interest Rate

a) The loans arrived at in the manner indicated above in Regulation 17 shall be considered as gross normative loan for calculation of 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.

b) For the purpose of computation of tariff, the normative interest rate shall be considered as average State Bank of India Base Rate prevalent during the first six months of the previous year plus 150 basis points.

c) 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.

19. Depreciation

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

(a) The value base for the purpose of depreciation shall be the Capital Cost of the asset admitted by the Commission.

(1) 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.

(2) Annual Depreciation shall be based on ‘’Differential Depreciation Approach’ using ‘Straight Line Method’ over two distinct periods comprising loan tenure and period beyond loan tenure over useful life. The depreciation rate for the first 12 years of the Tariff Period shall be 5.83% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 13^{th} year onwards.

(3) 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.

20. Return on Equity

(1) The value base for the equity shall be 30% of the capital cost for generic tariff determination or actual equity (in case of project specific tariff determination) as determined under Regulation 17.

(2) The normative Return on Equity shall be: 16%

Provided that in case of projects commissioned after notification of these regulations an additional return of 1.0% shall be allowed if such projects are completed within the timeline approved in the sanctioned Detail Project Report and within the original sanctioned project cost without cost over run.

21. 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 as under:

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 Capacity Utilisation Factor (CUF);

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

(2) The Working Capital requirement in respect of Biomass power projects shall be computed as under:

(a) Fuel costs for four months equivalent to normative Plant Load Factor (PLF);

(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 PLF;

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

(3) Rate of Interest on Working Capital shall be at interest rate equivalent to average State Bank of India Base Rate prevalent during the first six months of previous year plus 100 basis points.

(4) The interest on working capital shall be on normative basis not withstanding that the generating company has not taken working capital loan from any outside agency.

22. Operation and Maintenance Expenses

(1) 'Operation and Maintenance or O&M expenses' shall comprise the following,

(a) Repair and maintenance (R&M),

(b) Establishment including employee expenses, and

(c) Administrative and general expenses including insurance.

(2) Operation and maintenance expenses shall be determined for the Tariff Period based on normative O&M expenses specified by the Commission subsequently in these regulations for the first Year of Control Period.

(3) Normative O&M expenses allowed during first year of the Control Period under these regulations shall be escalated at the rate of 5.72% per annum to determine the O&M expenses for different years of the Tariff Period.

23. Rebate

(1) For payment of bills of the generating company through letter of credit, a rebate of 2% shall be allowed.

(2) Where payments are made other than through letter of credit within a period of one month of presentation of bills by the generating company, a rebate of 1% shall be allowed.

24. Late payment surcharge

In case the payment of any bill for charges payable under these regulations is delayed beyond a period of 60 (sixty) 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.

25. Sharing of CDM benefits

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

(1) 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;

(2) 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.

(3) The CDM benefits shall not be considered for determination of levellised or yearly tariff and total amount of proceeds shall be remitted directly by the generating company to the distribution licensee for each financial year within one month of its receipt along with auditor's certification in accordance with above provisions.

26. 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 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 for the purpose of tariff determination:

a) 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.
b) Capitalisation of RE projects during second half of the fiscal year.
c) Per unit benefit shall be derived on levellised basis at discount factor equivalent to Post Tax weighted average cost of capital or any appropriate discounting factor considered by the Commission.

Provided further that where Central Government or the State Government has notified any Generation Based Incentive (GBI) Scheme for a particular kind of renewable technology, the tariffs of such generating stations shall be reduced by the amount of GBI per unit.

27. Taxes and Duties

Tariff determined under these regulations shall be exclusive of taxes and duties on generation and sale of electricity from renewable energy project as may be levied by the appropriate Government:

Provided that the taxes and duties levied by the appropriate Government on generation and sale of electricity from renewable energy project shall be allowed as pass through on actual incurred basis subject to production of documentary evidence by the generating company.

CHAPTER – 5: TECHNOLOGY SPECIFIC PARAMETERS FOR WIND ENERGY PROJECTS

28. Capital Cost

(1) The Capital Cost for wind energy projects shall include wind turbine generator including its auxiliaries, land cost, site development charges and other civil works, transportation charges, evacuation cost upto inter-connection point, financing charges and interest during construction (IDC).

(2) The normative capital cost for wind energy projects shall be of Rs. 565 lakh / MW.

(3) The Commission may review the Capital Cost at the end of first year of the Control Period, if considered appropriate by the Commission.

29. Capacity Utilization Factor

Capacity utilization factor (CUF), for wind energy projects depends on several factors such as wind velocity, air density, capacity and performance of machine, age of machine, height of the hub and length of the blade. Capacity utilization factor is a vital parameter influencing the viability of a wind energy project at a particular site.

(1) CUF norms for this control period shall be as follows:

Sr. No.	Annual Mean Wind Power Density Watt / M^2	CUF
1	Upto 200	20 %
2	201 – 250	22 %
3	251 – 300	25 %
4	301 – 400	30 %
5	> 400	32 %

(2) The annual mean wind power density specified in sub-regulation (1) Sr. No. 1 above shall be measured at 80 metre hub-height.

(3) For the purpose of classification of wind energy project into a particular wind zone class, as per MNRE guidelines for wind measurement, wind mast either put-up by Centre for Wind Energy Technology (C-WET) or a private developer and validated by C-WET would be normally extended 10 km from the mast-point to all directions for uniform terrain and limited to appropriate distance in complex terrain with regard to complexity of the site. Based on such validation by C-WET, State Nodal Agency should certify zoning of the proposed wind farm complex.

30. Operation and Maintenance Expenses

(1) Normative O&M expenses for the first year of the Control Period shall be Rs. 7.26 lakh per MW

(2) Normative O&M expenses allowed under these regulations shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff.

CHAPTER – 6: TECHNOLOGY SPECIFIC PARAMETERS FOR SMALL HYDRO PROJECTS

31. Capital Cost

(1) Small Hydro Projects for the purpose of these Regulations cover those projects which are located at the sites approved by the State Nodal Agency / State Government using new plant and machinery and with installed power plant capacity lower than or equal to 25 MW.

(2) The normative capital cost for Small Hydro Projects shall be as follows:

Size of project	Capital Cost (Rs. lakh / MW)
Below 5 MW	770
5 MW to 25 MW	700

(3) The Commission may review the Capital Cost at the end of first year of the Control Period, if considered appropriate by the Commission.

32. Capacity Utilization Factor

The capacity utilization factor would be considered on the basis of CUF of small hydro projects in the state while approving the tariff. The benchmark capacity utilization factor for small hydro projects shall be 45%.

The normative CUF shall be net of free power to the home State if any, and any quantum of free power if committed by the developer over and above the normative CUF shall not be factored into the tariff.

33. Auxiliary Consumption

Normative auxiliary consumption for Small hydro projects shall be 1.0 %.

34. Operation and Maintenance Expenses

(1) The normative O&M expenses for small hydro projects for the first year control period shall be as given below:

Size of project	O&M Expenses (Rs. lakh / MW)
Below 5 MW	23.47
5 MW to 25 MW	16.77

(2) Normative O&M expenses allowed under these regulations shall be escalated at the rate of 5.72 % per annum for the tariff period for the purpose of determination of levellised tariff.

CHAPTER – 7: TECHNOLOGY SPECIFIC PARAMETERS FOR BIOMASS POWER PROJECTS

35. Technology Aspect

Biomass power project for the purpose of these Regulations covers the projects using new plant and machinery based on Rankine cycle technology application using water cooled condenser and biomass fuel sources where use of fossil fuel is limited to the extent of 15% total fuel consumption on annual basis.

The norms for tariff determination specified here under are for biomass power projects based on Rankine Cycle technology application using water cooled condensers.

36. Capital Cost

(1) The normative capital cost for the biomass power projects, based on Rankine Cycle shall be Rs. 445 lakh / MW. The Commission may review the Capital Cost at the end of first year of the Control Period, if considered appropriate by the Commission.

37. Plant Load Factor

1) Threshold Plant Load Factor for determining fixed charge component of Tariff shall be:
   a) During Stabilization : 60%
   b) During the remaining period of the first year (after stabilization) : 70%
   c) From 2nd Year onwards : 80 %
2) The stabilization period shall not be more than 6 months from the date of commissioning of the project.

38. Auxiliary Consumption

The auxiliary power consumption factor shall be 10% for the determination of tariff.

39. Station Heat Rate

The Station Heat Rate for biomass power projects will be 4000 kcal/kWh.

40. Operation and Maintenance Expenses

(1) The normative Operation & Maintenance (O&M) expenses for the first year of the Control Period shall be Rs.24 lakh per MW.

(2) Normative O&M expenses allowed at the commencement of the Control Period under these regulations shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff.

41. 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.

42. Use of Fossil Fuel

The use of fossil fuels shall be limited to the extent of 15% of total fuel consumption on annual basis or as amended by MNRE from time to time.

43. Monitoring Mechanism for the use of fossil fuel

1) The project developer shall furnish a monthly fuel procurement statement and monthly fuel usage statement duly certified by Chartered Accountant to the beneficiary, with whom the power purchase agreement has been made (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) procured and consumed during the month for power generation purposes,
   b) Cumulative quantity (in tonnes) of each fuel type procured and consumed till the end of that month during the year,
   c) Actual (gross and net) energy generation (denominated in kWh) during the month,
   d) Cumulative actual (gross and net) energy generation (denominated in kWh) 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.

44. Calorific Value

The benchmark norm for Calorific Value of the biomass fuel(s) used for the purpose of determination of tariff for new biomass power projects shall be 3467 kcal/kg.

45. Fuel Cost

The benchmark norm for Biomass fuel price shall be 2018 Rs./MT during first year of the Control Period and thereafter shall be linked to indexation mechanism as specified under Regulation 46 in case developer wishes to opt for indexing mechanism.

Alternatively, for each subsequent year of Tariff period, the normative escalation factor of 5% per annum shall be applicable at the option of the biomass project developer.

46. Fuel Price Indexation Mechanism

The indexed Biomass fuel price in case of biomass power projects for each year of the control period shall be done in accordance with indexation mechanism stipulated under CERC RE Tariff Regulations, 2012.

CHAPTER – 8: TECHNOLOGY SPECIFIC PARAMETERS FOR SOLAR PV POWER PROJECTS

47. Technology Aspect

Norms for Solar Photovoltaic (PV) Power under these regulations shall be applicable to PV systems that directly convert solar energy into electricity through Photo Voltaic Technology using Crystalline, Silicon or Thin Film technology or any other technology as approved by MNRE and are connected to the grid.

48. Capital Cost

The Normative Capital Cost for setting up solar photovoltaic Power Project shall be Rs. 650.00 lakh/MW.

Provided that the normative Capital Cost for Solar PV power plants shall be determined by the Commission separately for each year by a separate Order.

Provided that the Commission may deviate from above norm in case of project specific tariff determination in pursuance of Regulation 10 and Regulation 11.

49. Capacity Utilization Factor

The Capacity utilization factor for Solar Power Project shall be 19% provided that the Commission may deviate from the above norm in case of project specific tariff determination in pursuance of Regulations 10 and 11.

50. Operation and Maintenance Expenses

The O&M expenses at Rs. 11.0 lakh / MW for the first year of operation of the control period which shall be escalated at the rate of 5.72 % per annum over the tariff period for determination of the levellised tariff.

51. Tariff for solar roof PV and other small solar power.

Tariff for Solar rooftop PV and other small solar power projects, complying with eligibility criteria as may be specified by MNRE, may be determined by Commission from time to time, if required so. However the existing consumers opting for solar roof top PV will get it adjusted in its regular consumption bills through net metering instead of selling additional generation over and above their consumption.

CHAPTER – 9: TECHNOLOGY SPECIFIC PARAMETERS FOR SOLAR THERMAL POWER PROJECTS

52. Technology Aspect

Norms of Solar thermal power projects under these regulations shall be applicable for concentrated solar power (CSP) technologies with line focusing or point focusing as may be approved by MNRE and which uses direct sunlight, concentrating it several times to reach higher energy densities and thus higher temperatures whereby the heat generated is used to operate a conventional power cycle to generate electricity and are connected to the grid.

53. Capital Cost

The Normative Capital Cost for setting up Solar Thermal Power Project shall be Rs. 1200 lakh/MW.

Provide that the normative Capital Cost for Solar Thermal power plants shall be determined by the Commission separately for each year by a separate Order.

Provided that the Commission may deviate from above norm in case of project specific tariff determination in pursuance of Regulations 10 and 11.

54. Capacity Utilization Factor

The capacity utilization factor shall be 23% to solar thermal power projects.

Provided that the Commission may deviate from above norm in case of project specific tariff determination in pursuance of Regulations 10 and 11.

55. Operation and Maintenance Expenses

The O&M expenses shall be Rs. 15.0 lakh / MW for the first year of operation which shall be escalated of the rate of 5.72 % per annum over the tariff period for determination of the levellised tariff.

56. Auxiliary Consumption

The auxiliary consumption shall be 6.5%.

Provided that the Commission may deviate from above norm in case of project specific tariff determination in pursuance of Regulations 10 and 11.

CHAPTER – 10: TECHNOLOGY SPECIFIC PARAMETERS FOR BIOMASS GASIFIER POWER PROJECTS

57. Technology Aspect

The norms for tariff determination specified hereunder are for grid connected biomass gasifier based power projects.

A project shall qualify as a biomass gasifier based project, if it is in accordance with the eligibility criteria as specified under Regulation 4 (2) (f).

58. Capital Cost

(1) The normative capital cost for the biomass gasifier power projects based on Rankine cycle shall be Rs. 400 Lakh/MW, after taking capital subsidy into account.

(2) The Commission may review the Capital Cost at the end of first year of the Control Period, if considered appropriate by the Commission.

59. Plant Load Factor

Threshold Plant Load Factor for determining fixed charge component of Tariff shall be 85%.

60. Auxiliary Consumption

The auxiliary power consumption factor shall be 10% for the determination of tariff.

61. Specific fuel Consumption

Normative specific fuel consumption shall be 1.1kg per kWh.

62. Operation and Maintenance Expenses

(1) Normative O&M expenses for the first year of the Control period shall be Rs. 30 lakh/MW

(2) Normative O&M expenses allowed at the commencement of the Control Period under these Regulations shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff.

63. Fuel Mix

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

64. Fuel Cost

Biomass fuel price during first year of the Control Period shall be as per Regulation 45 and shall be linked to indexation formula as specified under Regulation 65.

Alternatively, for each subsequent year of the Tariff Period, the normative escalation factor of 5% per annum shall be applicable at the option of the Biomass Gasifier project developer.

65. Fuel Price Indexation Mechanism

The indexed Biomass fuel price in case of biomass gasifier power projects for each year of the control period shall be done in accordance with indexation mechanism stipulated under CERC RE Tariff Regulations, 2012.

CHAPTER – 11: MISCELLANEOUS

66. Deviation from Norms

Tariff for sale of electricity generated from a generating station based on renewable energy sources, may also be determined, in deviation from the norms specified in these regulations subject to the conditions that the levellised tariff over the useful life of the project on the basis of the norms in deviation does not exceed the levellised tariff calculated on the basis of the norms specified in these regulations.

Provided that the reasons for deviation from the norms specified under these regulations shall be recorded in writing.

67. Power to Relax

The Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected may relax any of the provisions of these regulations on its own motion or on an application made before it by an interested person.

68. Power to Amend

The Commission may, at any time, vary, alter, modify or amend any provisions of these regulations on its own or on any application made before it by an interested person.

69. 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 difficulty.

J.B.Poon
Secretary
Meghalaya State Electricity Regulatory Commission
Shillong

Annexures

Form - 1.1
Form Template for (Wind Power or Small Hydro Project or Solar PV / Solar thermal): Parameter Assumptions

(Refer: Regulation 12)

Sr. No.	Assumption Head	Sub-Head (1)	Sub-Head (2)	Unit	Parameter Values
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	
			Capacity Utilization Factor	%	
			Commercial Operation Date	mm / yyyy	
			Useful Life	Years	
2	Project Cost	Capital Cost	Normative capital cost	Rs. lakh / MW	
			Capital Cost	Rs. lakh	
			Capital Subsidy, if any	Rs. lakh	
			Net Capital Cost	Rs. lakh	
3	Financial Assumptions	Debt Equity	Tariff Period	Years	
			Debt	%	
			Equity	%	
			Total Debt Amount	Rs. lakh	
			Total Equity Amount	Rs. lakh	
		Debt Component			
			Loan Amount	Rs. lakh	
			Moratorium Period	Years	
			Repayment Period (include Moratorium)	Years	
			Interest Rate	%	
		Equity Component			
			Equity amount	Rs. lakh	
			Return on Equity for First 10 years	% P.a	
			Return on Equity 11th year onwards	% P.a	
			Discount Rate	%	
		Depreciation			
			Depreciation Rate for first 12 years	%	
			Depreciation Rate 13th year onwards	%	
		Incentives	Generation Based incentives, if any	Rs. lakh P.a	
			Period for GBI	Years	
4	Operation & Maintenance	Normative O&M Expenses		Rs. lakh / MW	
		O&M Expenses per annum		Rs. lakh	
		Escalation factor for O&M Expenses		%	
5	Working Capital	O&M Expenses		Months	
		Maintenance Spare (% of O&M expenses)		%	
		Receivables		Months	
		Interest on Working Capital		% P.a	

Form – 1.2

Form Template for (Wind Power or Small Hydro Project or Solar PV / Solar thermal): Parameter Assumptions

(Refer: Regulation 12)

Units Generation	**Unit**	**Yr-1**	**Yr-2**	**Yr-3**	**Yr-4**	**Yr-5**	**Yr-6**	**Yr-7**	**Yr-8**	**Yr-9**	**Yr-10**	**Yr-11**	**Yr-12**	**Yr-13**	**Yr-14**
Installed Capacity	MW														
Net Generation	MU														
Tariff Components (Fixed Charge)	**Unit**	**Yr-1**	**Yr-2**	**Yr-3**	**Yr-4**	**Yr-5**	**Yr-6**	**Yr-7**	**Yr-8**	**Yr-9**	**Yr-10**	**Yr-11**	**Yr-12**	**Yr-13**	**Yr-14**
O&M Expenses	Rs. Lakh														
Depreciation	Rs. Lakh														
Interest on term loan	Rs. Lakh														
Interest on Working Capital	Rs. Lakh														
Return on Equity	Rs. Lakh														
Total Fixed Cost	Rs. Lakh														
Per Unit Tariff Components	**Unit**	**Yr-1**	**Yr-2**	**Yr-3**	**Yr-4**	**Yr-5**	**Yr-6**	**Yr-7**	**Yr-8**	**Yr-9**	**Yr-10**	**Yr-11**	**Yr-12**	**Yr-13**	**Yr-14**
PU O&M Expenses	Rs / kWH														
PU Depreciation	Rs / kWH														
PU Interest on term loan	Rs / kWH														
PU Interest on working capital	Rs / kWH														
PU Return on Equity	Rs / kWH														
PU Tariff Components	Rs / kWH														
Levellised Tariff	**Unit**	**Yr-1**	**Yr-2**	**Yr-3**	**Yr-4**	**Yr-5**	**Yr-6**	**Yr-7**	**Yr-8**	**Yr-9**	**Yr-10**	**Yr-11**	**Yr-12**	**Yr-13**	**Yr-14**
Discount Factors															
Discounted Tariff Components	Rs / kWH														
Levellised Tariff	Rs / kWH														

Form – 2.1
Form Template for Biomass Power: Parameter Assumptions

(Refer: Regulation 12)

Sr. No.	Assumption Head	Sub-Head (1)	Sub-Head (2)	Unit	Parameter Values
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	
			Auxiliary Consumption factor	%	
			PLF (during stabilization upto 6 months)	%	
			PLF (during 1st year stabilization)	%	
			PLF (2nd yr onwards)	%	
			Commercial Operation Date	mm/yyyy	
			Useful Life	Years	
2	Project Cost	Capital Cost	Normative Capital Cost	Rs. lakh / MW	
			Capital Cost	Rs. lakh	
			Capital Subsidy, if any	Rs. lakh	
			Net Capital Cost	Rs. lakh	
3	Financial Assumptions	Debt Equity	Tariff Period	Years	
			Debt	%	
			Equity	%	
			Total Debt Amount	Rs. lakh	
			Total Equity Amount	Rs. lakh	
		Debt Component			
			Loan Amount	Rs. lakh	
			Moratorium Period	Years	
			Repayment Period (including Moratorium)	Years	
			Interest Rate	%	
		Equity Component			
			Equity amount	Rs. lakh	
			Return on Equity for First 10 years	% P.a	
			Return on Equity 11th year onwards	% P.a	
			Discount Rate	%	
		Depreciation			
			Depreciation Rate for first 12 years	%	
			Depreciation Rate 13th year onwards	%	
		Incentives	Generation Based incentives, if any	Rs. lakh P.a	
			Period for GBI	Years	
4	Operation & Maintenance	Normative O&M Expenses		Rs. lakh / MW	
		O&M Expenses per annum		Rs. lakh	
		Escalation factor for O&M Expenses		%	

Contd……

Contd……

5	Working Capital	O&M Expenses		Months	
		Maintenance Spare (% of O&M expenses)		%	
		Receivables		Months	
		Interest on Working Capital		% P.a	
6	Fuel related assumptions	Station Heat Rate	During stabilization	Kcal/kWH	
			Post stabilization	Kcal/kWH	
		Fuel types & mix	Biomass fuel type – 1	%	
			Biomass fuel type – 2	%	
			Fossil Fuel (coal)	%	
			GCV of Biomass fuel type-1	KCal / kg	
			GCV of Biomass fuel type-2	KCal / kg	
			GCV of fossil Fuel (coal)	KCal / kg	
			Biomass price (fuel type-1): Yr-1	Rs / MT	
			Biomass price (fuel type-2): Yr-1	Rs / MT	
			Fossil Fuel price (Coal): Yr-1	Rs / MT	
			Fuel price escalation factor	% P.a	

Form – 2.2

Form Template for Biomass Power: Parameter Assumptions

(Refer: Regulation 12)

Units Generation	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11	Yr-12	Yr-13
Installed Capacity	MW													
Net Generation	MU													

Tariff Components (Fixed Charge)	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11	Yr-12	Yr-13
O&M Expenses	Rs. Lakh													
Depreciation	Rs. Lakh													
Interest on term loan	Rs. Lakh													
Interest on Working Capital	Rs. Lakh													
Return on Equity	Rs. Lakh													
Total Fixed Cost	Rs. Lakh													

Tariff Components (Variable charge)	Unit	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7	Yr-8	Yr-9	Yr-10	Yr-11	Yr –12	Yr-13
Biomass fuel type 1	Rs. Lakh													
Biomass fuel type 2	Rs. Lakh													
Fossil fuel (coal)	Rs. Lakh													
Sub-total (Fuel Costs)	Rs. Lakh													
Fuel cost allocable to power	%													
Total Fuel Costs	Rs. Lakh													

Contd…..

Contd……

Per Unit Tariff Components (fixed)	**Unit**	**Yr-1**	**Yr-2**	**Yr-3**	**Yr-4**	**Yr-5**	**Yr-6**	**Yr-7**	**Yr-8**	**Yr-9**	**Yr-10**	**Yr-11**	**Yr-12**	**Yr-13**
PU O&M Expenses	Rs / kWH													
PU Depreciation	Rs / kWH													
PU Interest on term loan	Rs / kWH													
PU Interest on working capital	Rs / kWH													
PU Return on Equity	Rs / kWH													
PU Tariff Components (fixed)	Rs / kWH													
PU Tariff Components (Variable)	Rs / kWH													
PU Tariff Components (Total)	Rs / kWH													

Levellised Tariff	**Unit**	**Yr-1**	**Yr-2**	**Yr-3**	**Yr-4**	**Yr-5**	**Yr-6**	**Yr-7**	**Yr-8**	**Yr-9**	**Yr-10**	**Yr-11**	**Yr-12**	**Yr-13**
Discount Factors														
Discounted Tariff Components (Fixed)	Rs / kWH													
Discounted Tariff Components (Variable)	Rs / kWH													
Discounted Tariff Components (Total)	Rs / kWH													
Levellised Tariff (fixed)	Rs / kWH													
Levellised Tariff (Variable)	Rs / kWH													
Levellised Tariff (Total)	Rs / kWH													