

KERALA STATE ELECTRICITY REGULATORY COMMISSION

WHEREAS the Kerala State Electricity Regulatory Commission have published in the Kerala Government Gazette on different dates the following, namely:-

Kerala State Electricity Regulatory Commission (KSERC), (Renewable Energy) Regulations, 2015;

(Notification No. : .442/CT/2015/KSERC, Dated: 11.11.2015)

A. Kerala State Electricity Regulatory Commission Supply Code (KSERC), ((Renewable Energy) Regulations, 2015 (First Amendment), 2017; (Notification No. : 442/CT/2015/KSERC, Dated: 2.11.2017)

- Inserted/ Replaced matter is shown as []^A at appropriate place; wordings inserted/ replaced shown within square brackets;
- In both of above cases; -^A ; superscript A implies that change is caused by Amendment '1'.

NOTIFICATION

No.442/CT/2015/KSERC

Dated, Thiruvananthapuram, 11th November, 2015

Preamble,- In exercise of the powers conferred by sub-section (1) of Section 181 of the Electricity Act, 2003 (Central Act 36 of 2003) read with clause (e) of subsection (1) of Section 86 thereof and all other powers enabling it in this behalf and after previous publication, the Kerala State Electricity Regulatory Commission hereby makes the following Regulations, namely:-

Kerala State Electricity Regulatory Commission (Renewable Energy) Regulations, 2015.

Chapter - I

Preliminary

1. Short title, extent and commencement .- (1) These Regulations may be called the Kerala State Electricity Regulatory Commission (Renewable Energy) Regulations, 2015.

(2) These Regulations shall extend to the whole State of Kerala.

(3) It shall come into force at once.

2. Definitions.- (1) In these Regulations, unless the context otherwise requires,

- (a) 'Act' means the Electricity Act, 2003 (Central Act 36 of 2003);
- (b) 'banking facility' means such facility whereby the prosumer gets the benefit of utilizing without any restriction at any time during the settlement period, a quantum of electricity equal to the renewable energy banked by him;
- (c) 'buyer licensee' means a distribution licensee which is engaged in the activity of bulk purchase of electricity for supply in its area of licence;
- (d) 'captive consumer' means a consumer owning a captive generating plant with a capacity above one megawatt, generating electricity except from renewable sources or by cogeneration processes;
- (e) 'central agency' means the agency operating the National Load Dispatch Centre or such other agency as the Central Commission may designate from time to time for the purpose of implementation of the scheme relating to issuance of renewable energy certificate and performance of other duties as assigned under the provisions of the Central Electricity Regulatory Commission

(Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010, as amended from time to time;

- (f) 'Central Commission' means the Central Electricity Regulatory Commission referred to in sub-section (1) of Section 76 of the Electricity Act, 2003;
- (g) 'certificate' means the renewable energy certificate issued by the Central Agency in accordance with the procedures approved under the provisions of the REC Regulations;
- (h) 'Commission' means the Kerala State Electricity Regulatory Commission;
- (i) 'control period' means the period during which the norms for determination of tariff for renewable energy specified under these regulations shall remain valid;
- (j) 'financial year' means the period beginning from first of April in a Gregorian calendar year and ending on the thirty first of March of the next year;
- (k) 'forbearance price' means the ceiling price for the certificate for each category of renewable energy, as determined by the Central Commission in accordance with the REC Regulations, within which only, the certificate can be dealt in the power exchange;
- (l) 'non-solar certificate' means the certificate issued in respect of the electricity generated from renewable sources of energy other than solar source;
- (m) 'normal hours' means the period from 06.00 hours to 18.00 hours on the same day;
- (n) 'obligated entity' means the distribution licensee or the buyer licensee or the captive consumer or the open access consumer in the State of Kerala, who is mandated to fulfill renewable purchase obligation under these Regulations;
- (o) 'off-peak hours' means the period from 22.00 hours to 06.00 hours on the next day;
- (p) 'peak hours' means the period from 18.00 hours to 22.00 hours on the same day;
- (q) 'power exchange' means any exchange operating as the power exchange for electricity in terms of the orders issued by the Central Commission;
- (r) 'preferential tariff' means the generic or project specific tariff determined by the Commission for the sale of electricity generated from a renewable source of energy;
- (s) 'prosumer' means the consumer who produces electricity from the renewable sources of energy and consumes such electricity fully or partially for his own use;
- (t) 'REC Regulations' means the Central Electricity Regulatory Commission (Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010, as amended from time to time;
- (u) 'renewable energy' means the electricity generated from renewable source of energy;
- (v) 'renewable source of energy' means the category of renewable source for the generation of electricity such as small hydro-electric, wind, solar including its integration with combined cycle, biomass, bio fuel cogeneration, urban or municipal waste and such other sources as recognized or approved by Central Government or by Government of Kerala;
- (w) 'renewable purchase obligation' means the obligation of an entity to purchase electricity generated from a renewable source of energy as per regulations 4, 5, 6 and 7 of these Regulations;
- (x) 'seller licensee' means a distribution licensee which sells electricity to other licensees;
- (y) 'settlement period' means, the periods for the purpose of accounting of electricity from the following categories of renewable sources,-
 - (i) from solar sources, the period from the first day of October in a Gregorian calendar year to the thirtieth day of September in the next year; and
 - (ii) from non-solar sources, the period from the first day of April in a Gregorian calendar year to the thirty first day of March in the next year;
- (z) 'State Agency' means the agency in the State of Kerala designated by the Commission to act as the agency for accrediting and recommending the renewable energy projects for registration and for undertaking the functions assigned by the Commission under these regulations;
- (aa) 'solar certificate' means the certificate issued in respect of electricity generated from solar source;
- (ab) 'tariff period' means the period for which the tariff determined by the Commission on the basis of

the norms specified under these Regulations, is made applicable for the sale of electricity from a renewable energy project.

(2) The words and expressions not defined in these regulations and used herein but defined in the Act or in the regulations issued by the Central Commission or in any other regulations issued by the Commission, shall have the same meaning assigned to them respectively in the Act or in such regulations.

Chapter - II

Renewable Purchase Obligation and Renewable Energy Certificates

3. Obligation to purchase renewable energy.- The following entities shall have the obligation to purchase such quantity of renewable energy as specified in regulations

4, 5, 6 and 7 hereunder.

- (i) distribution licensee;
- (ii) buyer licensee;
- (iii) captive consumer; and
- (iv) open access consumer.

4. Renewable purchase obligation of the distribution licensee.- (1) ~~Every distribution licensee shall purchase renewable energy, not less than 4.5 percentage of the total energy supplied by it to the consumers within its area of licence, during the financial years commencing from 2015-16, with an annual increase of 0.5 percentage per year, until its renewable purchase obligation reaches 10 percentage of the total supply of energy to its consumers during a financial year:~~

~~Provided that the renewable energy, if any, generated by the distribution licensee from the renewable sources of energy and supplied to its consumers shall be accounted towards its renewable purchase obligation.~~

^A[(1) Every distribution licensee shall purchase renewable energy not less than the percentage of the total energy supplied by it to the consumers within its areas of licence excluding consumption met from hydro sources of power during the financial years commencing from 2016-17, as specified in the table below,-

Financial Year	Minimum Non-solar RPO as % of total consumption (excluding hydro power) within the area of distribution licensee	Minimum solar RPO as % of total consumption(excluding hydro power) within the area of distribution licensee	Total RPO target as % of total consumption
2016-17	4.50*	0.50*	5.00*
2017-18	6.00	1.50	7.50
2018-19	7.00	2.75	9.75

* For the year 2016-17, the non-solar and solar RPO targets are inclusive of the hydro generation.

Provided that the renewable energy if any, generated by the distribution licensee from the renewable sources of energy and supplied to its consumers shall be accounted towards its renewable purchase obligation:

Provided further that the solar energy generated or purchased in excess of solar renewable purchase obligation may be accounted towards the non-solar renewable purchase obligation.]^A

(2) The quantum of electricity generated by a prosumer who is not an obligated entity, using off grid renewable energy system and consumed by him within the area of supply of a distribution licensee may be accounted towards the renewable purchase obligation of such distribution licensee, provided the said distribution licensee pays to such prosumer the generation based incentive at the rates approved

¹ Omitted and inserted sub-Regulation (1) of Regulation 4, vide First amendment (A), 2017

by the Commission.

(3) The quantum of electricity generated by a prosumer who is an obligated entity, using off grid renewable energy system and consumed by him in excess of his renewable purchase obligation may be accounted towards the renewable purchase obligation of a distribution licensee, provided the said distribution licensee pays to the prosumer for such excess consumption of electricity, the generation based incentive at the rates approved by the Commission.

(4) The quantum of electricity generated by a person who is not an obligated entity using grid interactive renewable energy system may be accounted towards the renewable purchase obligation of a distribution licensee, provided the said distribution licensee,-

- (i) purchases such electricity at preferential tariff; or
- (ii) affords to such person the benefit of banking facility for the renewable energy banked by him.

(5) The quantum of electricity generated by a person who is an obligated entity, using grid interactive renewable energy system and consumed by him in excess of his renewable purchase obligation, may be accounted towards the renewable purchase obligation of a distribution licensee, provided the said distribution licensee affords to such person, the benefit of banking facility for such excess consumption of electricity.

(6) ^{A²} ~~The renewable energy generated from solar sources or purchased from solar energy generators by the distribution licensee shall not be less than ten percent of its renewable purchase obligation.]^A~~

(7) The renewable purchase obligation shall be inclusive of the purchases, if any, from renewable sources of energy being made by the concerned distribution licensee as per the existing power purchase agreement.

(8) The purchase of renewable energy under the power purchase agreements entered into by the distribution licensee and approved to by the Commission, shall not be terminated till the expiry of the validity of such power purchase agreements, only on the ground that the total quantity of renewable energy purchased including the quantity of renewable energy purchased under such agreements exceeds the renewable purchase obligation of such distribution licensee.

(9) The distribution licensee shall submit to the Commission, the proposed quanta of purchase of renewable energy from the solar sources and from the non-solar sources, separately in its application for the approval of the Aggregate Revenue Requirement and Expected Revenue from Charges for the ensuing financial year.

5. Renewable purchase obligation of the buyer licensee.- ^{A³} ~~(1) Every buyer licensee shall purchase renewable energy, not less than 4.5 percentage of the total energy supplied by it to the consumers within its area of licence, during the financial years commencing from 2015-16, with an annual increase of 0.5 percentage per year, until the renewable purchase obligation reaches 10 percentage of the total supply of energy to its consumers during a financial year:~~

~~Provided that the renewable energy, if any, generated by the buyer licensee from the renewable sources of energy and supplied to its consumers shall be accounted towards its renewable purchase obligation.~~

~~(1) Every buyer licensee shall purchase renewable energy not less than the percentage of the total energy supplied by it to the consumers within its areas of licence excluding consumption met from hydro sources of power during the financial years commencing from 2016-17 as specified in the table below,-~~

<i>Financial Year</i>	<i>Minimum Non-solar RPO as % of total consumption (excluding hydro power) within the area of distribution licensee</i>	<i>Minimum solar RPO as % of total consumption(excluding hydro power) within the area of distribution licensee</i>	<i>Total RPO target as % of total consumption</i>
2016-17	4.50*	0.50*	5.00*

² Omitted sub-Regulation (6) of Regulation 4, vide First amendment (A), 2017

³ Omitted and inserted sub-Regulation (1) of Regulation 5, vide First amendment (A), 2017

2017-18	6.00	1.50	7.50
2018-19	7.00	2.75	9.75

** For the year 2016-17, the non-solar and solar RPO targets are inclusive of the hydro generation.*

Provided that the solar energy generated and consumed by the buyer licensee in excess of solar renewable purchase obligation may be accounted towards its non-solar renewable purchase obligation:

Provided further that the renewable energy if any, generated or consumed by the buyer licensee shall be accounted towards its renewable purchase obligation.]^A

(2) The quantum of electricity generated by a prosumer who is not an obligated entity, using off grid renewable energy system and consumed by him within the area of supply of a buyer licensee may be accounted towards the renewable purchase obligation of such buyer licensee, provided the said buyer licensee pays to such prosumer the generation based incentive at the rates approved by the Commission.

(3) The quantum of electricity generated by a prosumer who is an obligated entity, using off grid renewable energy system and consumed by him in excess of his renewable purchase obligation may be accounted towards the renewable purchase obligation of a buyer licensee, provided the said buyer licensee pays to the prosumer for such excess consumption of electricity, the generation based incentive at the rates approved by the Commission.

(4) The quantum of electricity generated by a person who is not an obligated entity, using grid interactive renewable energy system may be accounted towards the renewable purchase obligation of a buyer licensee, provided the said buyer licensee,-

(i) purchases such electricity at preferential tariff; or

(ii) affords to such person the benefit of banking facility for the renewable energy banked by him.

(5) The quantum of electricity generated by a person who is an obligated entity, using grid interactive renewable energy system and consumed by him in excess of his renewable purchase obligation, may be accounted towards the renewable purchase obligation of a buyer licensee, provided the said buyer licensee affords to such person, the benefit of banking facility for such excess consumption of electricity.

(6) The buyer licensee shall not have separate obligation for renewable energy purchase if,-

(i) the seller licensee meets the renewable purchase obligation for the energy sold to the buyer licensee also; and

(ii) the buyer licensee reimburses, as approved by the Commission, to the seller licensee the additional cost incurred by the seller licensee for the generation or purchase of renewable energy to meet the renewable purchase obligation of the buyer licensee.

~~^A[(7) The renewable energy generated from solar sources or purchased from solar energy generators by the buyer licensee shall not be less than ten percent of its renewable purchase obligation.]^A~~

(8) The renewable purchase obligation of the buyer licensee shall be inclusive of the purchases, if any, from renewable sources of energy being made by it as per the existing power purchase agreement.

(9) The purchase of renewable energy under the power purchase agreements entered into by the buyer licensee and approved to by the Commission, shall not be terminated till the expiry of the validity of such power purchase agreements, only on the ground that the total quantity of renewable energy purchased including the quantity of renewable energy purchased under such agreements exceeds the percentage as specified in the above sub-regulations.

(10) The buyer licensee shall submit to the Commission, the proposed quanta of purchase of renewable energy from the solar sources and from the non-solar sources, separately in its application for the approval of the Aggregate Revenue Requirement and Expected Revenue from Charges for the ensuing financial year.

⁴Omitted sub-Regulation (7), of Regulation 5, vide First amendment (A), 2017

6. Renewable purchase obligation of the captive consumer.- ~~(1) Every captive consumer, shall purchase renewable energy, not less than 4.5 percentage of its total captive consumption of electricity generated except from renewable sources or by co-generation process, during the financial years commencing from 2015-16, with an annual increase of 0.5 percentage per year, until the renewable purchase obligation reaches 10 percentage of such captive consumption for a financial year:~~

~~Provided that the renewable energy, if any, generated and consumed by the captive consumer shall be accounted towards its renewable purchase obligation.~~

^A~~⁵(1) Every captive consumer shall purchase renewable energy not less than the percentage of its total captive consumption of electricity generated except from renewable sources or by co-generation process and excluding consumption met from hydro sources of power during the financial years commencing from 2016-17 as specified in the table below,-~~

Financial Year	Minimum Non-solar RPO as % of total consumption (excluding hydro power) within the area of distribution licensee	Minimum solar RPO as % of total consumption(excluding hydro power) within the area of distribution licensee	Total RPO target as % of total consumption
2016-17	4.50*	0.50*	5.00*
2017-18	6.00	1.50	7.50
2018-19	7.00	2.75	9.75

* For the year 2016-17, the non-solar and solar RPO targets are inclusive of the hydro generation.

~~Provided that the solar energy generated and consumed by the captive consumer in excess of solar renewable purchase obligation may be accounted towards its non-solar renewable purchase obligation:~~

~~Provided further that the renewable energy if any, generated or consumed by the captive consumer shall be accounted towards its renewable purchase obligation.]^A~~

^A~~⁶(2) The renewable energy generated and consumed from solar sources or purchased from solar-energy generators by the captive consumer shall not be less than ten percent of its renewable purchase obligation.]^A~~

(3) The renewable purchase obligation shall be inclusive of the purchases, if any, from renewable sources of energy being made by the captive consumer as per the existing power purchase agreement.

7. Renewable purchase obligation of the open access consumer.- ~~(1) Every open access consumer shall purchase renewable energy, not less than 4.5 percentage of the energy availed by it through open access during the financial years commencing from 2015-16, with an annual increase of 0.5 percentage per year, until the renewable purchase obligation reaches 10 percentage of the total energy availed by it through open access during a financial year:~~

~~Provided that the renewable energy, if any, generated and consumed by the open access consumer shall be accounted towards its renewable purchase obligation.~~

^A~~⁷(1) Every open access consumer shall purchase renewable energy not less than the percentage of its total energy availed by it through open access during the financial years commencing from 2016-17 as specified in the table below,-~~

Financial Year	Minimum Non-solar RPO as % of total consumption (excluding hydro power) within the area of distribution licensee	Minimum solar RPO as % of total consumption(excluding hydro power) within the area of distribution licensee	Total RPO target as % of total consumption
2016-17	4.50*	0.50*	5.00*
2017-18	6.00	1.50	7.50

⁵ Omitted and inserted sub-Regulation (1) of Regulation 6, vide First amendment (A), 2017

⁶ Omitted sub-Regulation (2) of Regulation 6, vide First amendment (A), 2017

⁷ Omitted and inserted sub-Regulation (1) of Regulation 7, vide First amendment (A), 2017

2018-19	7.00	2.75	9.75
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For the year 2016-17, the non-solar and solar RPO targets are inclusive of the hydro generation.

Provided that the solar energy if any generated and consumed by the open access consumer in excess of solar renewable purchase obligation may be accounted towards its non-solar renewable purchase obligation:

Provided further that the renewable energy if any, generated or consumed by the open access consumer shall be accounted towards its renewable purchase obligation.]^A

~~^A(2) The renewable energy generated and consumed from solar sources or purchased from solar energy generators by the open access consumer shall not be less than ten percent of its renewable purchase obligation.]^A~~

(3) The renewable purchase obligation shall be inclusive of the purchases, if any, from renewable sources of energy being made by the open access consumer as per the existing power purchase agreement.

8. Preference for the purchase from the renewable energy generating units within the State.-

Every obligated entity shall purchase the quantum of renewable energy required to meet its renewable purchase obligation preferentially from the renewable energy generating units within the State if available and priority shall be given to the purchase from the renewable energy generating units which commenced commercial operation earlier:

Provided that the Commission may, in public interest and considering the environmental concerns, direct any obligated entity by order, to purchase the renewable energy generated from municipal solid waste in preference to the renewable energy generated from other sources.

9. Purchase of Renewable Energy Certificates under the REC Regulations.- (1) If any obligated entity fails to satisfy fully its renewable purchase obligation during any financial year, it shall purchase certificates to make good such short fall.

(2) Subject to the terms and conditions in these regulations, the certificates shall be the valid instruments for the discharge of the mandatory renewable purchase obligation of an obligated entity.

(3) If the quantum of renewable energy purchased from solar sources by an obligated entity falls short of its solar renewable purchase obligation ^A[~~as provided in sub-regulation (6) of regulation 4 or sub-regulation (7) of regulation 5 or sub-regulation (2) of regulation 6 or sub-regulation (2) of regulation 7, as the case may be]~~^A, during any financial year, such obligated entity shall purchase the solar certificates, to make good such shortfall.

(4) If the quantum of renewable energy purchased by an obligated entity falls short of its renewable purchase obligation, during any financial year, such obligated entity shall purchase non-solar certificates or solar certificates, to make good such shortfall, subject to the provisions in sub-regulations (1), (2) and (3) above.

(5) Subject to such direction as the Commission may issue from time to time, the obligated entity shall be bound to act consistent with the provisions of the REC Regulations, for the procurement of the certificates for fulfillment of the renewable purchase obligation under these regulations.

(6) The obligated entity shall deposit with the Commission the certificates purchased by it from the power exchange with a report on the compliance of its renewable purchase obligation.

10. State Agency and its functions.- (1) A State Agency for accreditation and recommending the renewable energy projects for registration and for undertaking the functions under these regulations shall be designated by the Commission.

(2) The State Agency shall function in accordance with the directions issued by the Commission and the procedures and regulations specified by the Central Agency under the REC Regulations.

(3) The State Agency shall submit quarterly reports to the Commission in respect of compliance of renewable purchase obligation by the obligated entities in the format as approved by the Commission

⁸ Omitted sub-Regulation (2) of Regulation 7, vide First amendment (A), 2017

⁹ Omitted wordings in sub-Regulation (3) of Regulation 9, vide First amendment (A), 2017

and may suggest to the Commission, appropriate action if any required, for the compliance of the renewable purchase obligation by the obligated entity.

(4) The Commission may from time to time fix the remuneration and charges payable to the State Agency for the discharge of its functions under these regulations.

(5) If the Commission is satisfied that the State Agency is not able to discharge its functions efficiently, it may by order with reasons in writing, designate any other agency to function as the State Agency.

11. Effect of default.- (1) In case any obligated entity fails to comply with its renewable purchase obligation as provided in these regulations during any financial year and fails to purchase the required number of certificates, the Commission may by order, direct such obligated entity to deposit into a separate fund, to be created and maintained by such entity, in accordance with the directions issued by the Commission, such amount as the Commission may determine on the basis of the shortfall in the renewable purchase obligation and the forbearance price thereof.

(2) The fund so created shall be utilized in such manner as may be directed by the Commission for the purchase of certificates or for such other purposes for promoting the renewable energy within the State.

(3) The Commission may authorize the State Agency to procure out of the amount in the fund, the required number of certificates from the power exchange, to make good the shortfall in the renewable purchase obligation of such obligated entity.

(4) The failure of any obligated entity to deposit the amount in the fund as directed by the Commission under sub-regulation (1) above, within thirty days from the date of communication of such direction, shall be deemed to be breach of conditions of its licence and shall be liable to be proceeded against under Section 142 or such other provisions of the Act and the regulations made thereunder.

12. Power of the Commission to grant permission to carry forward the short fall in renewable purchase obligation.- (1) The obligated entity may, in the case of genuine difficulty in complying with its renewable purchase obligation in full in any financial year, apply to the Commission for permission to carry forward to the next financial year, the short fall in its renewable purchase obligation.

(2) The Commission shall issue appropriate orders on such application with reasons thereof and communicate the same to the obligated entity within a period of sixty days from the date of receipt of such application:

Provided that the application under sub-regulation (1) shall not be rejected without affording to the obligated entity, an opportunity of being heard.

(3) Where the Commission has granted permission to carry forward to the next financial year, the short fall in its renewable purchase obligation during that financial year, as per orders issued under sub-regulation (2) above, no proceedings under sub-regulation (4) of regulation 11 shall be initiated against such obligated entity.

Chapter – III

Incentives for Generation of Renewable Energy

13. Incentives for Generation of Renewable Energy.- Any person, generating electricity from renewable energy sources, shall be eligible for the following incentives as are applicable under these regulations,-

- (i) generation based incentive as specified under regulation 14;
- (ii) banking facility as specified in regulation 15;
- (iii) renewable energy certificate as specified in regulation 16;
- (iv) preferential tariff as determined under regulation 19.

14. Generation based incentive.- (1) The Commission may, by order notified in the official gazette,-

- (a) determine the rate of generation based incentive payable by the licensee to a prosumer for the electricity generated by him using off grid renewable energy system for each financial year; and

- (b) specify the procedure for payment of such generation based incentive.
- (2) The distribution licensee shall pay, as ordered by the Commission, the generation based incentive to the prosumer for the electricity generated by him using off grid renewable energy system.

15. Banking facility.- (1) The distribution licensee shall, on application by a prosumer, provide banking facility for the renewable energy generated by him if the capacity of the renewable energy generating system of the prosumer is of and below one megawatt.

(2) The distribution licensee may, on application by a prosumer, provide banking facility for the renewable energy generated by him if the capacity of the renewable energy generating system of the prosumer is above one megawatt.

16. Benefits under Renewable Energy Certificate Scheme.- Any person generating electricity from renewable sources of energy shall be eligible for the benefits under the renewable energy certificate scheme as provided in the REC Regulations.

Chapter - IV

Determination of Tariff for the Electricity Generated from renewable sources of energy

17. Norms for determination of tariff.- (1) The Commission may, for each control period, notify the principles, norms and parameters for determination of tariff for the electricity generated from various categories of renewable sources of energy.

(2) While determining the principles, norms and parameters for determination of tariff, the Commission may consider appropriate operational and financial parameters of each category of renewable source of energy and may, to the extent possible, provide an allowance based on technology, fuel, market risk, social and environmental benefits and such other factors.

(3) The Commission may, while formulating and notifying the principles, norms and parameters for determination of tariff for the renewable energy from various categories of renewable source of energy, be guided by the National Electricity Policy and Tariff Policy published under Section 3 of the Act and the principles, norms and parameters specified by the Central Commission for this purpose.

(4) Until separate principles, norms and parameters are specified by the Commission as above, the principles, norms and parameters specified by the Central Commission for the purpose of determination of tariff for the electricity generated from various categories of renewable sources of energy, as specified in the Central Electricity Regulatory Commission (Terms and Conditions for Tariff Determination from Renewable Energy Sources) Regulations, 2012, as amended from time to time, may be adopted by the Commission for the purpose of determination of tariff under these regulations.

18. Control period.-(1) The control period under these regulation shall be five years.

(2) The norms for determination of tariff for the electricity generated from each category of renewable source of energy shall remain valid during the control period:

Provided that the bench mark capital cost of the renewable energy projects and the rate of interest for loans may be reviewed annually by the Commission and the normative values of capital cost and rate of interest shall be modified accordingly by notification published in the official gazette.

(3) On completion of every control period, the Commission may by notification, revise the norms for determination of tariff:

Provided that the norms for determination of tariff for electricity from renewable sources of energy, shall continue in force till they are revised.

(4) The financial year 2012-13 which is the first year of the control period as per regulation 6 of the Kerala State Electricity Regulatory Commission (Power Procurement from Renewable Sources by Distribution Licensee) Regulations, 2013, shall be deemed to be the first year of the first control period as per these regulations.

19. Preferential tariff.- The Commission may, by order notified in the official gazette, determine

preferential tariffs applicable to the electricity generated from various categories of renewable sources of energy, either as generic tariff or as project specific tariff.

20. Generic tariff for the electricity generated from renewable sources of energy.- (1) The Commission may determine, by order published in the official gazette, the generic tariff for each financial year for the electricity generated from various categories of renewable sources of energy in accordance with the principles, norms and parameters specified or adopted by the Commission as per regulation 17 above and the normative values of capital cost and rate of interest notified under the proviso under sub-regulation (2) of regulation 18.

(2) The generic tariff shall be determined on levelised basis for the useful life of the renewable energy project.

Explanation: 'Useful life' in relation to a unit of a generating station including evacuation system means the following duration from the date of declaration of commercial operation (COD) of such generating unit, namely:-

- (i) 35 years in the case of small hydro-electric projects having installed capacity below 5MW;
- (ii) 35 years in the case of small hydro-electric projects having installed capacity of and above 5 MW and up to and including 25MW;
- (iii) 25 years in the case of wind energy power projects;
- (iv) 25 years in the case of solar photo voltaic projects; and
- (iv) such other period as decided by the Commission in the case of other renewable energy projects.

(3) The generic tariff shall be applicable to the renewable energy projects commissioned during the financial year for which the generic tariff is determined under sub-regulation (1) above:

Provided that the generic tariff published by the Commission for a financial year shall be applicable provisionally to the renewable energy projects which are commissioned after the close of that financial year, till such tariff is revised by the Commission:

Provided further that, as soon as the generic tariff is revised by the Commission for the financial year in which the renewable energy project is commissioned, the revised generic tariff shall be assigned to such renewable energy projects for which provisional tariff is assigned as per the above proviso.

(4) The Commission shall, for the purpose of sale of electricity from each category of renewable energy source, fix the tariff period in respect of the generic tariff determined under sub-regulation (1) above and that made applicable to a particular renewable energy project under sub-regulation (3) above:

Provided that the tariff period fixed by the Commission under this clause shall be subject to the minimum duration as specified hereunder,-

- (i) in the case of small hydro projects with capacity below five megawatt, twenty five years;
- (ii) in the case of solar photo voltaic and solar thermal power projects, twenty years;
- (iii) in the case of bio mass gasifier and bio gas based power projects, fifteen years; and
- (iv) in the case of all other renewable energy power projects except those coming under clauses (i), (ii) and (iii) above, thirteen years.

(5) The tariff period shall be computed from the date of commercial operation of the renewable energy generating unit.

(6) The generic tariff for wind energy projects will be determined separately for wind zone –I, wind zone-II ^{A10} ~~and wind zone-III~~ *wind zone III, wind zone IV and wind zone V*^A, as classified by the National Institute of Wind Energy from time to time.

(7) For claiming the generic tariff applicable to the wind energy projects in a wind zone, the project developer shall submit necessary and sufficient details for classification of the project into a particular wind zone class as validated by the National Institute of Wind Energy and certified by the State Agency for renewable energy namely the Agency for Non-conventional Energy and Rural Technology, Kerala (ANERT).

¹⁰ Modified words and figures in sub-Regulation (6) of Regulation 20, vide First amendment (A), 2017

21. Procedure for determination of generic tariff for the electricity generated from renewable sources of energy. (1) The Commission may, *suo-motu*, determine for each financial year in a control period the generic tariff for the electricity generated from each category of renewable source of energy.

(2) The Commission shall publish in its website a summary of the proposal for the determination of tariff as per sub-regulation (1) above and invite responses from all the stakeholders.

(3) The Commission shall, after the expiry of a period of twenty one days from the date of publication of the proposal as per sub-regulation (2) above, conduct public hearing on such proposal.

(4) The Commission shall determine the generic tariff after duly considering the responses from the stakeholders and the views expressed in the public hearing.

(5) The tariff determined as per sub-regulation (4) above shall be notified in the official gazette.

(6) The Commission may, on application from the generator or the purchaser of electricity from a renewable energy project, revise the generic tariff applicable to the said project and issue appropriate orders, in case,-

(a) the actual average capacity utilization factor for three consecutive years immediately following the date of commissioning of the projects other than wind energy projects varies due to site specific reasons, by more than ten percent of the normative capacity utilization factor adopted earlier for the determination of the generic tariff applicable to that project; and

(b) the actual average capacity utilization factor for three consecutive years immediately following the date of commissioning of a wind energy project varies due to site specific reasons, in such a way that the actual average capacity utilization factor conforms to that of a different wind zone.

22. Project specific tariff for the electricity generated from renewable sources of energy.- (1) The Commission may, on application from the project developer, determine by order, the project specific tariff for the electricity generated from the following categories of renewable energy projects in accordance with the principles, norms and parameters specified or adopted by the Commission as per regulation 17 above keeping in view the procedure for determination of tariff for generation projects as per the Kerala State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2014,-

(i) municipal solid waste project; and

(ii) any other projects as decided by the Commission.

(2) The tariff period for the projects for which the Commission determines project specific tariff, shall be as specified by the Commission in the tariff order.

(3) The Commission may, on application from the generator or the purchaser of electricity from a renewable energy project, for which a project specific tariff has been determined under sub-regulation (1) above, revise such project specific tariff applicable to the said project and issue appropriate orders, in case the actual average capacity utilization factor for three consecutive years immediately following the date of commissioning of the said project varies due to site specific reasons, by more than ten percent of the capacity utilization factor adopted earlier for the determination of the project specific tariff applicable to that project.

23. Normative parameters and tariff applicable to the renewable energy projects commissioned during the financial years 2014-15 and 2015-16.-

Notwithstanding anything contrary contained in these regulations, the normative parameters, the generic tariff and the tariff period applicable to the renewable energy projects commissioned during the financial years 2014-15 and 2015-16 shall be as specified in the annexures attached to these regulations, the list of which is shown below,-

List of Annexures

Annexure	Particulars
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A	Small hydro-electric projects having installed capacity of and above 5MW and up to and including 25MW – For the year 2014-15
B	Small hydro-electric projects having installed capacity below 5MW – For the year 2014-15
C	Wind energy generation projects, located in wind zone - 1 - For the year 2014-15
D	Wind energy generation projects, located in wind zone – 2 - For the year 2014-15
E	Wind energy generation projects, located in wind zone - 3 - For the year 2014-15
F	Solar photo voltaic energy generation projects -For the year 2014-15
G	Small hydro-electric projects having installed capacity of and above 5MW and up to and including 25MW – For the year 2015-16
H	Small hydro-electric projects having installed capacity below 5MW – For the year 2015-16
I	Wind energy generation projects, located in wind zone – 1 - For the year 2015-16
J	Wind energy generation projects, located in wind zone – 2 - For the year 2015-16
K	Wind energy generation projects, located in wind zone - 3 - For the year 2015-16
L	Solar photo voltaic energy generation projects - For the year 2015-16

^{A¹¹} **23-A: Normative parameters and the tariff applicable to the renewable energy projects commissioned during the financial years 2016-17.-**

Notwithstanding anything contrary contained in these regulation the normative parameters, the generic tariff and the tariff period applicable to the renewable energy project commissioned during the financial year 2016-17 shall be as specified in the Annexures I to VII attached to these regulations, the list of which is shown below,-

Sl. No.	Description	Tariff Rs/kW		
		levelised tariff	Benefit of Accelerated Depreciation	Net levelised tariff upon adjusting for Accelerated Depreciation benefit
I	Small hydro-electric projects having installed capacity below 5MW	5.54		
II	Wind energy generation projects, located in wind zone – 1(CUF- 20%)	6.60	0.71	5.89
III	Wind energy generation projects, located in wind zone – 2(CUF- 22%)	6.00	0.64	5.36
IV	Wind energy generation projects, located in wind zone – 3(CUF- 25%)	5.28	0.57	4.71
V	Wind energy generation projects, located in wind zone – 4(CUF- 30%)	4.40	0.47	3.93

¹¹ Inserted new Regulation 23-A after Regulation 23, vide First amendment (A), 2017

VI	Wind energy generation projects, located in wind zone – 5(CUF- 32%)	4.13	0.45	3.68
VII	Solar photo voltaic energy generation projects	5.68	0.60	5.08] ^A

24. Effect of financial assistance on the tariff of renewable energy.- (1) The Commission shall, while determining the tariff for the renewable energy projects, make appropriate adjustments considering the financial assistance such as capital subsidy or accelerated depreciation or concessions in duties and taxes, if any availed by the project developer for the implementation of such project, keeping in view the guidelines and methods specified by Central Commission.

(2) The project developer shall submit to the Commission along with the application for approval or determination of tariff, all details relating to such financial assistance availed by him for the implementation of the renewable energy project

Chapter - V General

25. Open access.- Any person generating electricity from renewable sources of energy shall have open access to the transmission system of the State Transmission Utility and to the transmission system or distribution system of any licensee in the State.

26. Facility to consume the electricity generated by a prosumer using renewable energy generating system with capacity above one megawatt and injected into the grid.- The distribution licensee shall, on application by a prosumer generating electricity using renewable energy generating system of capacity above one megawatt, afford to the prosumer the facility to consume such electricity injected into the grid of the licensee during the settlement period in the manner as specified hereunder, - (a) accounting of such electricity shall be separate for normal hours, peak hours and off peak hours;

(b) the prosumer shall be allowed to consume electricity from the grid on any day the quantum of which shall be determined applying the quantitative relation as specified in the Table below,-

Table

Time zone of injection of renewable energy to grid	Quantum of renewable energy injected (kWh)	Quantum of electricity allowable for consumption (kWh)		
		Normal Hours	Peak Hours	Off-Peak Hours
Normal hours	1.00	1.00	0.66	1.33
Peak Hours	1.00	1.50	1.00	2.00
Off-Peak Hours	1.00	0.75	0.50	1.00

27. Accounting and settlement of renewable energy .-(1) The accounting and settlement of solar electricity generated using a grid interactive solar energy system with a capacity of and below 1 MW and injected into the grid of the licensee by a prosumer who is availing banking facility shall be done in the manner as specified in regulations 14 and 15 of the Kerala State Electricity Regulatory Commission (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014.

(2) The accounting and settlement of electricity generated using a grid interactive renewable energy system other than solar energy system, with a capacity of and below 1 MW and injected into the grid of the licensee by a prosumer who is availing banking facility shall be done following the methodology and procedure as specified in regulations 14 and 15 of the Kerala State Electricity Regulatory Commission (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014, *mutatis mutandis*.

(3) The accounting and settlement of electricity generated using a grid interactive renewable energy system, with a capacity of and below 1 MW and injected into the grid of the licensee by a prosumer who is not availing banking facility shall be done in accordance with the methodology and procedure approved by the Commission based on the proposal submitted by the licensee.

(4) The accounting and settlement of electricity generated using a grid interactive renewable energy system, with a capacity above 1 MW and injected into the grid of the licensee by a prosumer shall be done in accordance with the methodology and procedure approved by the Commission based on the proposal submitted by the licensee.

(5) The licensee shall, within three months from the date of publication of these regulations, submit to the Commission for its approval the methodology and procedure for accounting and settlement of electricity generated from renewable sources.

28. Security mechanism for purchase of renewable energy.- (1) The obligated entity shall provide adequate payment security mechanism for purchase of renewable energy.

(2) If any obligated entity defaults in the purchase of renewable energy from any generating unit with which it has entered into a power purchase agreement, such generating unit shall be at liberty to sell, at the risk and cost of the defaulting obligated entity, the renewable energy to any other person and to avail open access for that purpose.

29. Power to review the renewable purchase obligation and matters incidental thereto.- The Commission may review the renewable purchase obligation of the obligated entities and all the matters incidental thereto once in three years.

30. Sharing of clean development mechanism (CDM) benefits.- The benefits if any, received from clean development mechanism or such other programmes shall be shared between renewable energy generating unit and distribution licensee which purchases renewable energy from the said unit, in the following manner,-

- (a) The entire benefits received from clean development mechanism or such other programmes during the first financial year after the date of synchronization of the renewable energy projects to the distribution system, shall be retained by the renewable energy generating unit.
- (b) In the second financial year, ten percent of the benefits received from clean development mechanism or such other programmes shall be given to the purchaser of renewable energy and in subsequent financial years the share of benefits allocated to the purchaser shall be progressively increased at a rate of ten percent per annum till the share reaches fifty percent and thereafter the benefits shall be shared equally by the renewable energy generating unit and the purchaser of renewable energy.

31. Effect of termination of power purchase agreements before the expiry of agreement period.- In case, an agreement for the purchase of electricity from a renewable energy project is terminated before the expiry of the agreement period stipulated therein, the generator or purchaser shall not be eligible for any incentives under these regulations till the date of expiry of original period of the power purchase agreement or till the completion of three years from the date of termination of the power purchase agreement whichever is later.

32. Power to remove difficulties.- If any difficulty arises in giving effect to any of the provisions of these regulations, the Commission may by order, do anything not inconsistent with the provisions of the Act which appears to it to be necessary for the purpose of removing the difficulties.

33. Repeal and Savings.- (1) Save as otherwise provided in these regulations, the following regulations are hereby repealed,-

- (i) Kerala State Electricity Regulatory Commission (Power Procurement from Solar Plants by

Distribution Licensees) Regulations, 2008;

(ii) Kerala State Electricity Regulatory Commission (Renewable Purchase Obligation and its compliance) Regulations, 2010;

(iii) Kerala State Electricity Regulatory Commission (Power Procurement from Renewable Sources by Distribution Licensees) Regulations, 2013.

(2) Notwithstanding such repeal, anything done or any action taken under the said regulations shall be deemed to have been done or taken under the corresponding provisions of these regulations.

By order of the Commission,

Santhosh Kumar. K.B

SECRETARY

Explanatory Note

(This does not form part of the notification, but is intended to indicate its general purport) Section 86 (1) (e) of the Electricity Act, 2003 authorises the State Electricity Regulatory Commission to promote co generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person and specify for the purchase of electricity from such sources a percentage of the total consumption of electricity within the area of the distribution licensee. Accordingly the Kerala State Electricity Regulatory Commission had, for achieving the above purposes, issued various Regulations for fixing the renewable purchase obligation of the distribution licensees, for fixing the tariff applicable for the procurement of electricity from renewable sources and such other matters. In order to consolidate the provisions of such regulations and to provide more transparency and predictability, the Commission has decided that the terms and conditions and norms for fixation of renewable energy tariff in the State can be aligned in tune with the norms, terms and conditions specified by the Central Electricity Regulatory Commission. The Central Electricity Regulatory Commission vide its order in petition No SM/354/2013 (*Suo Motu*) dated 15.05.2014 approved generic levelised tariff for the electricity generated from various categories of renewable energy sources for financial year 2014-15. The Central Commission has also, vide its order in petition No SM/004/2015 (*Suo Motu*) dated 31.03.2015, approved generic levelised tariff for the electricity generated from various categories of renewable energy sources for financial year 2015-16. The Commission has decided to issue a comprehensive regulation on the subject in supersession of the existing Regulations on renewable energy and adopting the generic levelised tariff for the financial years 2014-15 and 2015-16. Accordingly the Commission has published a draft of the Kerala State Electricity Regulatory Commission (Renewable Energy) Regulations, 2015 dated 31.03.2015 incorporating the tariff approved by Central Electricity Regulatory Commission for the years 2014-15 and 2015-16 and the various measures for the promotion of renewable energy in the State **for eliciting public opinion**. A public hearing was conducted on 12.05.2015 at Municipal Town Hall, Kalamassery. Taking into consideration the written responses and also the suggestions in the public hearing from the stakeholders and the licensees, the Commission has finalized the Kerala State Electricity Regulatory Commission (Renewable Energy) Regulations, 2015.

This notification is intended to achieve the above object.

Annexure A (2014-15)

Small hydro-electric projects having installed capacity of and above 5MW and up to and including 25MW

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	30
			(iii) Auxiliary consumption	%	1
			(iv) Useful life	Years	35
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	577.671
			Tariff period	Years	13
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.70
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per annum	20
			Return on equity 11 th year onwards	% per annum	24
			Weighted average of ROE	%	22.86
			Discount rate	%	10.67
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12 years	%	5.83
			Rate of depreciation from 13 th year onwards	%	0.87
5	Working capital	Fixed charges	O&M charges	month	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	month	2
			Interest on working capital	%	13.20
6	Operation and Maintenance	O&M expenses		Rs. lakhs	15.65
		O&M escalation		%	5.72

Generic tariff Rs.4.47 / unit for 35 years

Annexure B (2014-15)
Small hydro-electric projects having installed capacity below 5MW

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	30
			(iii) Auxiliary consumption	%	1
			(iv) Useful life	Years	35
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	630.186
			Tariff period	Years	25
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.70
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per annum	20
			Return on equity 11 th year onwards	% per annum	24
			Weighted average of ROE	%	22.86
			Discount rate	%	10.67
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12 years	%	5.83
			Rate of depreciation from 13 th year	%	0.87
5	Working capital	Fixed charges	O&M charges	month	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	month	2
			Interest on working capital	%	13.20
6	Operation and Maintenance	O&M expenses		Rs. lakhs	22.35
		O&M escalation		%	5.72

Generic tariff Rs.5.25 / unit for 35 Years

Annexure C (2014-15)

Wind energy generation projects, located in wind zone - 1

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	Of and below
			(iii) Auxiliary consumption	%	0
			(iv) Useful life	Years	25
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	603.929
			Tariff period	Years	13
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.70
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per	20
			Return on equity 11 th year onwards	% per	24
			Weighted average of ROE	%	22.40
			Discount rate	%	10.67
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12	%	5.83
			Rate of depreciation from 13 th year	%	1.54
5	Working capital	Fixed charges	O&M charges	month	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	month	2
			Interest on working capital	%	13.20
6	Operation and Maintenance	O&M expenses (14-15)		Rs. lakhs	10.05
		O&M escalation		%	5.72

Generic tariff Rs.6.34 / unit for 25 years

Annexure D (2014-15)
Wind energy generation projects, located in wind zone - 2

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	Above 20 below 22
			(iii) Useful life	Years	25
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	603.929
			Tariff period	Years	13
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.70
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per annum	20
			Return on equity 11 th year onwards	% per annum	24
			Weighted average of ROE	%	22.40
			Discount rate	%	10.67
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12 years	%	5.83
			Rate of depreciation from 13 th year onwards	%	1.54
5	Working capital	Fixed charges	O&M charges	Months	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	Month	2
			Interest on working capital	%	13.20
6	Operation and Maintenance	O&M expenses		Rs lakhs / MW	10.05
		O&M escalation		%	5.72

Generic tariff Rs.5.76 / unit for 25 years.

Annexure E(2014-15)

Wind energy generation projects, located in wind zone - 3

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii)Capacity utilization factor	%	Of and above
			(iii)Useful life	Years	25
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	603.929
			Tariff period	Years	13
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.70
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per annum	20
			Return on equity 11 th year onwards	% per annum	24
			Weighted average of ROE	%	22.40
			Discount rate	%	10.67
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12 years	%	5.83
			Rate of depreciation from 13 th year onwards	%	1.54
5	Working capital	Fixed charges	O&M charges	Months	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	Month	2
			Interest on working capital	%	13.20
6	Operation and Maintenance	O&M expenses		Rs. Lakhs / MW	10.05
		O&M escalation		%	5.72

Generic tariff Rs.5.07 / unit for 25 years.

Annexure F(2014-15)
Solar photo voltaic energy generation projects

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii)Capacity utilization factor	%	19
			(iii)Auxiliary consumption	%	0.00
			(iv)Useful life	Years	25
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	691
			Tariff period	Years	20
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.70
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per annum	20
			Return on equity 11 th year onwards	% per annum	24
			Weighted average of ROE	%	22.40
			Discount rate	%	10.67
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12 years	%	5.83
			Rate of depreciation from 13 th year onwards	%	1.54
5	Working capital	Fixed charges	O&M charges	Month	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	Month	2
			Interest on working capital	%	13.20
6	Operation and Maintenance	O&M expenses		Rs. Lakhs	12.30
		O&M escalation		%	5.72

Generic tariff Rs.7.72/ unit for 25 years

Annexure G (2015-16)

Small hydro-electric projects having installed capacity of and above 5MW and up to and including 25MW

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	30
			(iii) Auxiliary consumption	%	1
			(iv) Useful life	Years	35
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	592.586
			Tariff period	Years	13
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	13
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per annum	20
			Return on equity 11 th year onwards	% per annum	24
			Weighted average of ROE	%	22.86
			Discount rate	%	10.81
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12 years	%	5.83
			Rate of depreciation from 13 th year onwards	%	0.87
5	Working capital	Fixed charges	O&M charges	month	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	month	2
			Interest on working capital	%	13.50
6	Operation and Maintenance	O&M expenses		Rs. lakhs	16.54
		O&M escalation		%	5.72

Generic tariff Rs.4.65 / unit for 35 years

Annexure H (2015-16)
Small hydro-electric projects having installed capacity below 5MW

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	30
			(iii) Auxiliary consumption	%	1
			(iv) Useful life	Years	35
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	646.458
			Tariff period	Years	25
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	13
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per annum	20
			Return on equity 11 th year onwards	% per annum	24
			Weighted average of ROE	%	22.86
			Discount rate	%	10.81
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12 years	%	5.83
			Rate of depreciation from 13 th year	%	0.87
5	Working capital	Fixed charges	O&M charges	month	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	month	2
			Interest on working capital	%	13.50
6	Operation and Maintenance	O&M expenses		Rs. lakhs	23.63
		O&M escalation		%	5.72

Generic tariff Rs.5.47 / unit for 35 Years

Annexure I (2015-16)
Wind energy generation projects, located in wind zone - 1

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	Of and below
			(iii) Auxiliary consumption	%	0
			(iv) Useful life	Years	25
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	619.522
			Tariff period	Years	13
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	13
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per	20
			Return on equity 11 th year onwards	% per	24
			Weighted average of ROE	%	22.40
			Discount rate	%	10.81
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12	%	5.83
			Rate of depreciation from 13 th year	%	1.54
5	Working capital	Fixed charges	O&M charges	month	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	month	2
			Interest on working capital	%	13.50
6	Operation and Maintenance	O&M expenses (14-15)		Rs. lakhs	10.63
		O&M escalation		%	5.72

Generic tariff Rs.6.58 / unit for 25 years

Annexure J (2015-16)
Wind energy generation projects, located in wind zone - 2

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	Above 20 and below 22
			(iii) Useful life	Years	25
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	619.522
			Tariff period	Years	13
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	13
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per annum	20
			Return on equity 11 th year onwards	% per annum	24
			Weighted average of ROE	%	22.40
			Discount rate	%	10.81
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12 years	%	5.83
			Rate of depreciation from 13 th year onwards	%	1.54
5	Working capital	Fixed charges	O&M charges	Months	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	Month	2
			Interest on working capital	%	13.50
6	Operation and Maintenance	O&M expenses (FY15-16)		Rs lakhs / MW	10.63
		O&M escalation		%	5.72

Generic tariff Rs.5.98 / unit for 25 years.

Annexure K (2015-16)
Wind energy generation projects, located in wind zone - 3

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	Of and above
			(iii) Useful life	Years	25
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	619.522
			Tariff period	Years	13
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	13
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per annum	20
			Return on equity 11 th year onwards	% per annum	24
			Weighted average of ROE	%	22.40
			Discount rate	%	10.81
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12 years	%	5.83
			Rate of depreciation from 13 th year onwards	%	1.54
5	Working capital	Fixed charges	O&M charges	Months	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	Month	2
			Interest on working capital	%	13.50
6	Operation and Maintenance	O&M expenses		Rs. Lakhs / MW	10.63
		O&M escalation		%	5.72

Generic tariff Rs.5.27 / unit for 25 years.

Annexure L (2015-16)
Solar photo voltaic energy generation projects

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	19
			(iii) Auxiliary consumption	%	0.00
			(iv) Useful life	Years	25
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	605.85
			Tariff period	Years	20
3	Source of fund	Debt-equity	(i) Debt	%	70
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	13
			(ii) Equity	%	30
			Return on equity (post tax)	%	16
			For first ten years	% per	20
			Return on equity 11 th year onwards	% per	24
			Weighted average of ROE	%	22.40
			Discount rate	%	10.81
4	Financial	Tax	Income tax	%	33.990
		Depreciation	Rate of depreciation for first 12	%	5.83
			Rate of depreciation from 13 th year	%	1.54
5	Working capital	Fixed charges	O&M charges	Month	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	Month	2
			Interest on working capital	%	13.50
6	Operation and Maintenance	O&M expenses(2015-16)		Rs. Lakhs	13.00
		O&M escalation		%	5.72

Generic tariff Rs.7.04 / unit for 25 years

Annexure I (2016-17)
Small hydro – electric projects having installed capacity below 5MW

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	30%
			(iii) Auxiliary consumption	%	1%
			(iv) Useful life	Years	35
2	Project cost	Capital cost per MW	Power plant cost	Rs. lakh / MW	646.755
			Tariff period	Years	35
3	Source of fund	<u>Debt-equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	452.728
			Total Equity Amount	Rs Lacs	194.026
		<u>Debt Component</u>	Loan Amount	Rs Lacs	452.73
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.76%
		<u>Equity Component</u>	Equity amount 194.03	Rs Lacs	194.03
			Return on equity (post tax)	%	16%
			Return on equity for first ten years	% p.a,	20
			Return on equity 11 th year onwards	% p.a.	24.00
			Weighted average of ROE	% p.a.	22.86%
			Discount rate	%	10.64%
4	Financial	Tax	Income tax	%	34.610%
		Depreciation	Rate of depreciation for first 12 years	%	5.83%
			Rate of depreciation from 13 th year onwards	%	0.87%
5	Working capital	<u>For Fixed charges</u>	O&M charges	Months	1
			Maintenance spare	% of O&M	15
			Receivables from debtors	month	2
			Interest on working capital	%	13.26%
6	Operation and Maintenance	O&M expenses	O&M (2016-17)	Rs. lakhs	24.985
			O&M Expenses Escalation	%	5.72%
			O&M Expenses (2012-13)	Rs. lakhs	20

Generic Tariff Rs.5.54/unit for 35 years

Annexure II (2016-17)

Wind Energy Generation Projects, located in wind zone – 1 (CUF – 20%)

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	20%
			(iii) Useful life	Years	25
2	Project cost	Capital cost/MW	Power plant cost	Rs. Lakh/MW	619.807
			Tariff period	Years	13
3	Source of fund	<u>Debt-equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	433.865
			Total Equity Amount	Rs Lacs	185.942
		<u>Debt Component</u>	Loan Amount	Rs Lacs	433.86
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	185.94
			Return on equity for first ten years	% p.a.	20.00%
			Return on equity 11 th year onwards	% p.a.	24.00%
			Weighted average of ROE	%	22.40%
			Discount rate	%	10.64%
4	Financial		Income tax	%	34.610%
		<u>Depreciation</u>	Rate of depreciation for first 12 years	%	5.83%
			Rate of depreciation from 13 th year onwards	%	1.54%
5	Working capital	<u>For Fixed charges</u>	O&M charges	month	1
			Maintenance spare	% of O&M	15%
			Receivables from debtors	month	2
		<u>For Variable Charges</u>	Interest on working capital	%	13.26%
6	Operation and Maintenance	O&M expenses (16-17)	O&M (2016-17)	Rs.Lakhs/ MW	11.24
			O&M Expenses Escalation	%	5.72%
			O&M Expenses (2012-13)	Rs.lakhs/M W	9.00

Generic tariff Rs.6.60 / unit for 25 years

Annexure III (2016-17)

Wind Energy Generation Projects, located in wind zone – 2 (CUF – 22%)

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	22%
			(iii) Useful life	Years	25
2	Project cost	Capital cost/MW	Power plant cost	Rs. Lakh/MW	619.807
			Tariff period	Years	13
3	Source of fund	<u>Debt-equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	433.865
			Total Equity Amount	Rs Lacs	185.942
		<u>Debt Component</u>	Loan Amount	Rs Lacs	433.86
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	185.94
			Return on equity for first ten years	% p.a.	20.00%
			Return on equity 11 th year onwards	% p.a.	24.00%
			Weighted average of ROE	%	22.40%
			Discount rate	%	10.64%
4	Financial		Income tax	%	34.610%
		<u>Depreciation</u>	Rate of depreciation for first 12 years	%	5.83%
			Rate of depreciation from 13 th year onwards	%	1.54%
5	Working capital	<u>For Fixed charges</u>	O&M charges	month	1
			Maintenance spare	% of O&M	15%
			Receivables from debtors	month	2
		<u>For Variable Charges</u>	Interest on working capital	%	13.26%
6	Operation and Maintenance	O&M expenses (16-17)	O&M (2016-17)	Rs.Lakhs/ MW	11.24
			O&M Expenses Escalation	%	5.72%
			O&M Expenses (2012-13)	Rs.lakhs/M W	9.00

Generic Tariff Rs. 6.00/unit for 25 years.

Annexure IV (2016-17)

Wind Energy Generation Projects, located in wind zone – 3 (CUF – 25%)

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	25%
			(iii) Useful life	Years	25
2	Project cost	Capital cost/MW	Power plant cost	Rs. Lakh/MW	619.807
			Tariff period	Years	13
3	Source of fund	<u>Debt-equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	433.865
			Total Equity Amount	Rs Lacs	185.942
		<u>Debt Component</u>	Loan Amount	Rs Lacs	433.86
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	185.94
			Return on equity for first ten years	% p.a.	20.00%
			Return on equity 11 th year onwards	% p.a.	24.00%
			Weighted average of ROE	%	22.40%
			Discount rate	%	10.64%
4	Financial		Income tax	%	34.610%
		<u>Depreciation</u>	Rate of depreciation for first 12 years	%	5.83%
			Rate of depreciation from 13 th year onwards	%	1.54%
5	Working capital	<u>For Fixed charges</u>	O&M charges	month	1
			Maintenance spare	% of O&M	15%
			Receivables from debtors	month	2
		<u>For Variable Charges</u>	Interest on working capital	%	13.26%
6	Operation and Maintenance	O&M expenses (16-17)	O&M (2016-17)	Rs.Lakhs/MW	11.24
			O&M Expenses Escalation	%	5.72%
			O&M Expenses (2012-13)	Rs.lakhs/MW	9.00

Generic Tariff Rs. 5./unit for 25 years.

Annexure V (2016-17)

Wind Energy Generation Projects, located in wind zone – 4 (CUF – 30%)

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	Capacity	(i) Installed capacity	MW	1
			(ii) Capacity utilization factor	%	30%
			(iii) Useful life	Years	25
2	Project cost	Capital cost/MW	Power plant cost	Rs. Lakh/MW	619.807
			Tariff period	Years	13
3	Source of fund	<u>Debt-equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	433.865
			Total Equity Amount	Rs Lacs	185.942
		<u>Debt Component</u>	Loan Amount	Rs Lacs	433.86
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	185.94
			Return on equity for first ten years	% p.a.	20.00%
			Return on equity 11 th year onwards	% p.a.	24.00%
			Weighted average of ROE	%	22.40%
			Discount rate	%	10.64%
4	Financial		Income tax	%	34.610%
		<u>Depreciation</u>	Rate of depreciation for first 12 years	%	5.83%
			Rate of depreciation from 13 th year onwards	%	1.54%
5	Working capital	<u>For Fixed charges</u>	O&M charges	month	1
			Maintenance spare	% of O&M	15%
			Receivables from debtors	month	2
		<u>For Variable Charges</u>	Interest on working capital	%	13.26%
6	Operation and Maintenance	O&M expenses (16-17)	O&M (2016-17)	Rs.Lakhs/ MW	11.24
			O&M Expenses Escalation	%	5.72%
			O&M Expenses (2012-13)	Rs.lakhs/M W	9.00

Generic Tariff Rs. 4.40/unit for 25 years.

Annexure VI (2016-17)

Wind Energy Generation Projects, located in wind zone – 5 (CUF – 32%)

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	<u>Capacity</u>	(i) Installed capacity	MW	1
			(ii)Capacity utilization factor	%	32%
			(iii)Useful life	Years	25
2	Project cost	<u>Capital cost /MW</u>	Power plant cost	Rs. Lakh/MW	619.807
			Tariff period	Years	13
3	Source of fund	<u>Debt-equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	433.865
			Total Equity Amount	Rs Lacs	185.942
		<u>Debt Component</u>	Loan Amount	Rs Lacs	433.86
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	185.94
			Return on equity for first ten years	% p.a.	20.00%
			Return on equity 11 th year onwards	% p.a.	24.00%
			Weighted average of ROE	%	22.40%
			Discount rate	%	10.64%
4	Financial		Income tax	%	34.610%
		<u>Depreciation</u>	Rate of depreciation for first 12 years	%	5.83%
			Rate of depreciation from 13 th year onwards	%	1.54%
5	Working capital	<u>For Fixed charges</u>	O&M charges	month	1
			Maintenance spare	% of O&M	15%
			Receivables from debtors	month	2
		<u>For Variable Charges</u>	Interest on working capital	%	13.26%
6	Operation and Maintenance	O&M expenses (16-17)	O&M (2016-17)	Rs.Lakhs/ MW	11.24
			O&M Expenses Escalation	%	5.72%
			O&M Expenses (2012-13)	Rs.lakhs/M W	9.00

Generic Tariff Rs. 4.13/unit for 25 years.

Annexure VII (2016-17)

Solar PV Projects

Solar Photo Voltaic Energy Generation Projects

Sl. No.	Head	Sub-Head	Detailed head	Unit	Norm
1	Generation of power	<u>Capacity</u>	(i) Installed capacity	MW	1
			(ii)Auxiliary Consumption		0.00%
			(iii)Capacity utilization factor	%	19.0%
			(iv)Useful life	Years	25
2	Project cost	<u>Capital cost /MW</u>	Power plant cost	Rs. Lakh/MW	530.02
			Tariff period	Years	25
3	Source of fund	<u>Debt-equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	371.02
			Total Equity Amount	Rs Lacs	159.01
		<u>Debt Component</u>	Loan Amount	Rs Lacs	371.02
			Moratorium period	Years	0
			Repayment period including moratorium period	Years	12
			Interest rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	159.01
			Return on equity for first ten years	% p.a.	20.00%
			Return on equity 11 th year onwards	% p.a.	24.00%
			Weighted average of ROE	%	22.40%
			Discount rate	%	10.64%
4	Financial		Income tax	%	34.61%
			MAT Rate (for first 10 years)	%	21.34%
			80 IA benefits	Yes/No	Yes
		<u>Depreciation</u>	Rate of depreciation for first 12 years	%	5.83%
			Rate of depreciation from 13 th year onwards	%	1.54%
5	Working capital	<u>For Fixed charges</u>	O&M charges	month	1
			Maintenance spare	% of O&M	15%
			Receivables from debtors	month	2
		<u>For Variable Charges</u>	Interest on working capital	%	13.26%
6	Operation and Maintenance	O&M expenses (16-17)	O&M (2016-17)	Rs.Lakhs/ MW	7.00
			O&M Expenses Escalation	%	5.72%
			O&M Expenses (2012-13)	Rs.lakhs/M W	11.00

Generic Tariff Rs. 5.68/unit for 25 years

