

KERALA STATE ELECTRICITY REGULATORY COMMISSION

Notice

No. 1204/D(T)/2019/KSERC

Dated, Thiruvananthapuram 30.06.2022

The Kerala State Electricity Regulatory Commission hereby publishes under subsection (3) of Section 181 of the Electricity Act, 2003, the following draft (Amendment) Regulations of the Kerala State Electricity Regulatory Commission (Renewable Energy and Net Metering) Regulations, 2022, for information of the stakeholders and persons likely to be affected thereby. Any objections or suggestions thereon may be forwarded to the Secretary, Kerala State Electricity Regulatory Commission, KPFC Bhavanam, C.V.Raman Pillai Road, Vellayambalam, Thiruvananthapuram-10 within ten (10) days from the date of publication of this notice. Objections and suggestions received on or before the said date shall be considered by the Commission before finalization of this draft regulation. A public hearing on the same will be conducted on 11.07.2022 at Ernakulam. The exact venue shall be intimated separately.

By order of the Commission,

Sd/-

Secretary

(DRAFT)

THE KERALA STATE ELECTRICITY REGULATORY COMMISSION (RENEWABLE ENERGY AND NET METERING) (FIRST AMENDMENT) REGULATIONS, 2022.

1. Short title and commencement.-

- (1) These Regulations may be called the “Kerala State Electricity Regulatory Commission (Renewable Energy and Net Metering) (First Amendment) Regulations, 2022”.
- (2) These Regulations shall come into force from 01.08.2022.

2. **Amendment to the existing Regulations,-** In the Kerala State Electricity Regulatory Commission (Renewable Energy & Net Metering) Regulations, 2020, the following Amendments are proposed;

(1) Regulation 1(2) of the existing Regulations, shall be amended as follows;

Regulation 1 (2) These Regulations shall apply to all new, Grid Interactive Renewable Energy Systems, consumers, prosumers, captive consumers, captive generating plants, generating companies, distribution licensees and obligated entities, in the matter of Determination of Tariff of Renewable Energy, Renewable Purchase Obligation, Net Metering, Banking, Generation Based Incentives and related matters.

Provided that, the captive generators/ consumers existing in the State prior to the enactment of the Electricity Act-2003 and governed by the agreements entered into between the licensee and generators as per the policies then existing, shall be allowed to continue till the expiry of the term of the agreement as per the provisions of such agreements as long as the provisions of such agreements are consistent with the Act.

Provided further that the bills issued during the period from 5th June 2020 to the date of effect of these Regulations need not be revised.

(2) Insert Regulation 2(1) (da), in between Regulations 2(1) (d) and Regulation 2(1) (e), as follows: -

Regulation 2(1) (da).

“Average Power Purchase Cost” or “APPC” during a year means the weighted average cost of power purchased by the distribution licensee including the cost of self-generation by the Licensee, for the previous financial year as approved by the Commission.

(3) Insert Regulation 2(1) (wa) in between Regulations 2(1)(w) and Regulation 2(1)(x), as follows:

Regulation 2(1) (wa)

‘Feed in tariff’ means the Average Power Purchase Cost” or “APPC” determined by the Commission during the year applicable for the projects commissioned during that year

(4) Insert Regulation 2(1) (aca) in between Regulations 2(1) (ac) and Regulation 2(1) (ad), as follows:

Regulation 2(1) (aca)

“**Gross-Metering**” means a mechanism whereby the total solar energy generated from Grid Interactive rooftop Solar Photovoltaic system of a Prosumer and the total energy consumed by the Prosumer are accounted separately through appropriate metering arrangements and for the billing purpose, the total energy consumed by the Prosumer is accounted at the applicable retail tariff and total solar power generated is accounted for at feed-in tariff determined by the Commission;’

- (5) Insert Regulation 2(1) (aea), in between Regulations 2 (1) (ae) and Regulation 2(1) (af)

Regulation 2(1) (aea).

“Hydro Power Obligation” or “HPO” means the obligation of an entity to purchase electricity generated from Large Hydropower Projects (LHPs) including pumped storage projects having capacity of more than 25 MW which has come into commercial operation on or after 08.03.2019 as renewable energy source.

- (6) Insert Regulation 2(1) (ama) in between Regulations 2(1) (am) and Regulation 2(1) (an), as follows:

Regulation 2(1) (ama)

“Net-Billing or Net feed-in” means a single bidirectional energy meter used for net-billing or net feed-in at the point of supply wherein the energy imported from the Grid and energy exported from Grid Interactive rooftop Solar photovoltaic system of a Prosumer are valued at two different tariffs, where-

- (i) the monetary value of the imported energy is based on the applicable retail tariff;
- (ii) the monetary value of the exported solar energy is based on feed-in tariff determined by the Commission;
- (iii) the monetary value of the exported energy is deducted from the monetary value of the imported energy to arrive at the net amount to be billed (or credited / carried-over);

- (7) Insert Regulation 2(1) (ata) in between Regulations 2(1) (at) and Regulation 2(1)(au), as follows:-

Regulation 2(1) (ata)

“Ocean Energy” means the energy produced using various forms of ocean energy sources such as tidal, wave, ocean thermal energy etc.

- (8) Regulation 2(1) (bk) of the existing Regulations, shall be revised as;

Regulation 2(1)(bk)

‘Settlement Period’ for the purposes of these Regulations ‘is the period from the first day of April in a Gregorian calendar year to the thirty first day of March in the next calendar year;

- (9) In **Regulation 3**, the Renewable Power Obligation specified in Table-1 may be revised as follows; including the RPO target for the FYs 2022-23 and 2023-24 and HPO;

Table-1

Financial Year	Quantum of generation and/or purchase from Renewable Energy Sources as a (%) of total consumption (in terms of energy in kWh)			
	Non-Solar	Solar	HPO	Total
2019-20	8.00	4.00	-	12.00
2020-21	9.00	5.25	-	14.25
2021-22	10.25	6.75	-	17.00
2022-23	10.25	10.50	0.35	21.10
2023-24	10.68	10.50	0.66	21.84

- (10) In **Regulation 13(2)(a)**, the word “500kW” shall be substituted instead of “1000kW” and the below proviso to be added;

13(2) The Grid Interactive Renewable Energy Systems, installed by a prosumer at his premise under this Chapter shall be:

- (a) of not less than one kW and not exceeding **500 kW** capacity on AC side of the inverter connected to the net meter of the distribution system, limited to the sanctioned connected load or contract demand as applicable to the prosumer, with the distribution licensee.

Provided that this is not applicable if the project is registered under any of the schemes already in vogue under KSEB Ltd / GoK, like

Soura scheme.

- (11) Third proviso to **Regulation 13(2)(a)** shall be substituted with the following:

Provided also that, prosumers including those prosumers mentioned above are also permitted to install Renewable Energy System in excess of their connected load or contract demand as applicable. **Such consumers shall be treated under ‘net-billing or net-feed-in’ tariff.**

- (12) After second proviso to **Regulation 13 (2) (a)**, insert the following;

“Explanation: The Distribution Licensee shall permit, ‘residential flats’ availing supply at LT for the common services and categorized under the domestic tariff, to install Solar PV system under net metering as Prosumer, upto a maximum capacity of 100kW, subject to the conditions specified under Regulation 13(3) of the KSERC (Renewable Energy & Net Metering) Regulations, 2020 and other Rules and Regulations in force.”

- (13) Insert new **Regulation 17 A after Regulation 17** as follows:

“17 A The distribution licensee shall facilitate the process for setting up of RE generation system at prosumers’ premises. In this regard, the licensee shall: -

(a) create an online portal for receiving applications from prosumers for installation, interconnection and metering of distributed renewable energy systems or devices at their premises, and update the same on a regular basis;

(b) prominently display on its website and in all its offices, the following; namely: -

(i) detailed standardized procedure for installation and commissioning of roof top solar system;

(ii) a single point of contact to facilitate the consumers in installation of roof top solar system from submission of application form to commissioning;

(iii) address and telephone numbers of offices where filled-up application forms can be submitted;

(iv) complete list of documents required to be furnished along with such applications;

(v) applicable charges to be deposited by the applicant;

(vi) empanelled list of service providers for the benefit of consumers who want to install roof top solar PV system through service providers; and

(vii) financial incentives to the prosumers, as applicable under various schemes and programmes of the Central and State Governments;”

(14) Insert the following provisos after Regulation 18(1)

Provided that the application forms shall be accepted online or through hard copy or through web portal;

Provided further that in case the application form submitted is in hard copy form, the same shall be scanned and uploaded on the website within 3 working days of its receipt and acknowledgement with the registration number for that application shall be generated and intimated to the applicant within this period;

(15) After Regulation 18(2), insert the following proviso;

Provided that in case the application form received online through web portal of the distribution licensee, the acknowledgement with the registration number shall be generated immediately on submission of application;

Provided further that the application shall be deemed to be received on the date of generation of acknowledgement with registration number;

(16) After Regulation 18(5), insert sub-Regulation 18(6) as follows:

18(6) The application tracking mechanism based on the unique registration number shall be provided by the distribution licensee through web-based application or any other mode to monitor the status of processing of the application like receipt of application, site inspection, meter installation and commissioning, etc.

(17) After Regulation 18, insert Regulation 18 A as follows:

18 A Upgradation of the distribution system for connectivity:

During the time period from the feasibility study till the completion of installation, in case, there is any requirement for upgradation of the distribution infrastructure like augmentation of service line, distribution transformer capacity etc., for installation of the required capacity of the solar PV system, the same shall be carried out by the

distribution licensee or consumer, as the case may be, subject to the provisions in the Kerala Electricity Supply Code, amended from time to time.

- (18) After Regulation 20, insert Regulation 20 A as follows:

Regulation 20 A:

The distribution licensee shall pass on the financial incentives wherever applicable to the prosumers, as may be provided under the various schemes and programmes of the Central and State Governments.

- (19) In Chapter IV the heading 1 MW may be replaced with 500 kW

“Prosumers having capacity more than 500 MW, Captive Consumers and Independent Power Producers”

- (20) In Regulation 22(1) (i), 1 MW may be replaced with 500 kW

Regulation 22 (1)(i)

A prosumer having Renewable Energy Systems with installed capacity more than **500 MW** at his premise for his own use, including a prosumer not covered under net metering specified in Chapter-III of these Regulations.

- (21) In Regulation 26 heading 1 MW may be replaced by 500 kW

26. General Conditions and charges applicable for a prosumer, having a Renewable Energy System with capacity more than 500 kW at the same premise for his own use:

- (22) In Regulation 31, the term ‘commissioned’ shall be replaced with the word ‘declared date of commercial operation’ to give more clarity.

31. Scope and extent of application. -

The provisions under these Regulations shall be applicable for determining the project specific tariff/ generic tariff as determined by the Commission for the electricity generated from Renewable Sources of Energy plants which have **declared their date of commercial operation** during the control period specified in these Regulations, under Section 62 read with Section 86 of the Electricity Act, 2003.

(23) The following proviso shall be added to **Regulation 31**.

*Provided that, the tariff determined based on the norms and parameters specified in any of the previous Regulations or the generic tariff approved in any of the previous Regulations **shall not be** redetermined for the electricity generated from the RE projects which have already declared commercial date of operation during the period prior to the control period specified in these Regulations.*

(24) **Regulation 35(1) and 35(2)** shall be revised as follows: -

35. Generic Tariff for the Electricity Generated from Renewable Sources of Energy. –

(1) *The Commission shall determine project specific tariff for all the renewable energy systems beyond 1 MW capacity. However, in exceptional circumstances to be recorded in writing, the Commission may, if considered necessary, determine the generic tariff for each financial year of the control period, for the electricity generated from the following categories of renewable sources of energy in accordance with the principles, norms and parameters specified or adopted by the Commission in these Regulations and considering the normative values of capital cost, rate of interest and other parameters notified under these Regulations, by an order published in the official Gazette.*

(i) Solar Photo Voltaic (PV) of capacity of and below **1 MW** at a location,

(ii) Wind Energy of capacity of and below **5 MW** at a location,

(iii) Small Hydro Electric plants having capacity of and below **2 MW**.

Provided that, the generic tariff so determined shall be the upper ceiling limit and shall not prevent the generator and distribution licensee from agreeing to a lower tariff than the generic tariff determined by the Commission.

Provided further that, the generic tariff so determined by the Commission as mentioned above shall not prevent the right of the generator to get a project specific tariff determined, if they so desire, by the Commission as per the provisions of these Regulations. However, the distribution licensee/ purchaser of electricity from RE sources under these Regulations shall pay only the lower of the

'generic tariff of the year of CoD or the project specific tariff' as determined by the Commission.

Provided also that, the generic tariff determined by the Commission shall also not prevent the right of the distribution licensee to procure power from the renewable energy sources through competitive bidding route as per Section 63 of the Electricity Act, 2003.

35(2) The generic tariff if determined by the Commission under these Regulation, shall be applicable to the renewable energy projects which declares their date of commercial operation (COD) **during the control period specified under these Regulations or till it is re-determined by the Commission, whichever is earlier.**

Provided that the generic tariff determined by the Commission for **the control period** shall be applicable provisionally to the renewable energy projects which are **declared commercial operation** after the close of that **control period**, till such time, the tariff is revised by the Commission;

Provided further that, as soon as the generic tariff is revised by the Commission for the next **control period** in which the renewable energy project is **declared commercial operation**, the revised generic tariff shall be assigned to such renewable energy projects, for which provisional tariff is assigned as per the above proviso from the date of declaration of its Commercial Operation.

(25) In **Regulation 35(4)**, the word 'for the financial year 2019-20' shall be replaced with the words 'control period of these Regulations' and insert the following proviso to Regulation 35 (4);

35(4) Notwithstanding anything to the contrary contained in these Regulations, the normative parameters and the generic tariff applicable to Small Hydro projects having capacity of and below 2 MW, Wind Energy having capacity of and below 5 MW and Solar PV plants having capacity of and below 1 MW, for the **control period of these Regulations** is specified in Annexure IV, V and VI (1 to 4) attached.

Provided that the generic tariff applicable for projects, whose date of Commercial Operation is between 05.06.2020 and prior to coming into effect of these regulations, shall be that specified for the FY 2019-20.

(26) The **Regulation 38(1) and 38(2)**, shall be replaced with the following:

38(1) All the renewable energy power plants having valid Power Purchase Agreement (PPA) approved by the Commission, unless and otherwise exempted by the Commission for reasons to be recorded in writing, shall be treated as 'MUST RUN' power plants and shall not be subjected to 'Merit order Dispatch' principles.

38(2) Scheduling of Renewable Energy plants shall be governed by KSERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, to be finalized and from the date of publication of the same in the official Gazette.

(27) Insert a fourth proviso to **Regulation 52(3)** and shall be modified as indicated below:

52(3) **Operation and Maintenance (O&M) Expenses, -**

The Commission shall determine the O&M Expenses based on the prevailing market information, and allowing an escalation rate of 5.72% over the previous year.

Normative O & M rates for the financial year 2019-20 is taken as Rs 8.00 lakh per MW, based on the prevailing market information.

The generic tariff applicable for the Wind projects of capacity of and below 5 MW for **the period from the date of effect of these Regulations up to FY 2023-24** is given in Annexure-V.

(28) The **Regulation 53(4)(iii)** shall be revised as;

53(4)(iii) The generic tariff applicable for SHEP < 2 MW capacity for the **period from date of effect of these Regulations up to FY 2023-24** is given in Annexure-IV.

(29) In **Regulation 54(2)**, insert the following proviso;

54 (2) Capital Cost, - The Commission shall determine the capital cost and the tariff, based on prevailing market trends for Solar PV projects of capacity of and below 1 MW at a location. The normative capital cost for Solar PV project commissioned during the control period shall be limited to Rs 4.00 crore/ MW.

Provided that the above rate is applicable up to the date effect of these Regulations.

Provided further that the normative capital cost/ Benchmark capital cost excluding GST, for different Solar PV plants to be installed in the remaining period of the control period under these Regulations shall be as follows;

SI No	Capacity range	Capital cost (Rs/kW) (excluding GST)
1	Upto 10kW	40991
2	11kW to 100kW	38236
3	101kW to 500kW	35886
4	501kW to 1MW	33733

(30) At the end of **Regulation 54(3)** add “up to 31.07.2022”

54(3) **Capacity Utilization Factor**, - The Capacity Utilization Factor for Solar PV project shall be 19% **up to 31.07.2022**.

(31) Insert **Regulation 54(3A)** after 54(3).

54(3)(A) The Capacity Utilization Factor for Solar PV project shall be 21% from 01.08.2022 till the remaining period of the control period, unless otherwise revised by the Commission.

(32) Insert **Regulation 54(6A)** as follows.

54(6)(A). The generic tariff for solar projects having capacity of and below 1 MW for the period from 01.08.2022 to FY 2023-24 shall be as given below:

SI No	Capacity range	Generic tariff (Rs/ kWh)	
		(without availing the benefit of accelerated depreciation)	(If availing the benefit of accelerated depreciation)
1	Upto 10kW	3.57	
2	11kW to 100kW	3.37	
3	101kW to 500kW	3.14	
4	501kW to 1MW	3.05	2.81

The detailed computation for the generic tariff of Solar PV plants are provided under Annexure VI(1) to Annexure VI(4) of these Regulations.

(33) Insert **Regulation 56(A)** after Regulation 56 as follows;

56 (A) *The Commission may permit gross-metering for Prosumers who would like to sell all the generated solar energy to the distribution licensee instead of availing the net-metering, net-billing or net feed-in facility and the Commission shall decide for this purpose the generic tariff for gross-metering as per the tariff regulations.*

(34) In **Regulation 58**, the words, “30.09.2021” may be substituted with “the control period of this Regulation”

58. Generation based incentives for off-grid solar schemes. -
Generation based incentives as per the order of the Commission dated 11.11.2019 is available to the off-grid captive solar plants upto the **control period of this Regulation** .

(35) In **Regulation 62(1)**, the words ‘Rs 1000 per day’ shall be replaced with the word ‘Rs 500 per day’.

62. Penalty or compensation for non compliance by the distribution licensee. -

(1) In case of failure to meet timelines prescribed under these Regulations, penalty of Rs. **500** per day for each day of delay shall be levied on the distribution licensee.

By order of the Commission,

Sd/-

SECRETARY

Annexure-IV

**Small Hydro Electric Projects having installed capacity of and below 2 MW
(01.08.2022 to 31.03.2024)**

Small Hydro Electric Projects having installed capacity below 2 MW					
Sl No	Head	Sub Head	Detailed Head	Unit	Norm
1	Power Generation	Capacity	(i) Installed Power Generation Capacity	MW	1
			(ii) Capacity Utilisation factor	%	30
			(iii) Auxiliary consumption	%	1
			(iv) Useful life	years	35
2	Project cost	Capital cost /MW	Power plant cost	Rs .Cr	7.79
3	Source of Fund		Tariff period	Years	35
		<u>Debt- equity</u>	Debt	%	70
			Equity	%	30
		Debt component	Loan amount/MW	Rs.Cr	5.45
			Moratorium	Years	0
			Repayment period (include moratorium)	Years	13
			Interest rate	(MCLR+2)%	8.65
		Equity component	Equity amount/ MW	Rs. Cr	2.34
			Normative RoE	%	14.00
4	Financial Assumptions				
		Depreciation	for first 13 years		5.28
			Remaining years		0.97
5	Working capital requirement		O&M charges	Months	1
			Maintenance spare	% of O&M expenses	15
			Receivable for debtors	Months	2
			Interest on working capital	(MCLR+3)%	9.65
6	Operation and Maintenance		O&M Cost Base year	Rs. Lakh/MW	32.41
			O&M expense escalation	%	5.72
Generic Tariff - for 35 years without the benefit of accelerated depreciation			5.72	Rs/unit	
Accelerated depreciation			0.33	Rs/unit	
Generic Tariff for 35 years with the benefit of accelerated depreciation			5.39	Rs/unit	

Annexure-V

Wind Energy Generation Projects having installed capacity of and below 5MW (01.08.2022 to 31.03.2024)

Wind Energy Generation Projects located in wind zone-1 (CUF 24%)					
Sl No	Head	Sub Head	Detailed Head	Unit	Norm
1	Power Generation	capacity	(i) Installed Power Generation Capacity	MW	1
			(ii) Capacity Utilisation factor	%	24
			(iii) Auxiliary consumption	%	0
			(iv) Useful life	years	25
2	Project cost	Capital cost /MW	Power plant cost	Rs .Cr	5.75
3	Source of Fund		Tariff period	Years	25
		<u>Debt- equity</u>	Debt	%	70
			Equity	%	30
		Debt component	Loan amount/MW	Rs.Cr	4.03
			Moratorium	Years	0
			Repayment period (include moratorium)	Years	13
			Interest rate	(MCLR+2)%	8.65
		Equity component	Equity amount/ MW	Rs.Cr	1.73
			Normative RoE	%	14.00
4	Financial Assumptions				
		Depreciation	Depreciation rate for first 13 years		5.28
					1.78
5	Working capital requirement		O&M charges	Months	1
			Maintenance spare	% of O&M expenses	15
			Receivable for debtors	Months	2
			Interest on working capital	(MCLR+3)%	9.65
6	Operation and Maintenance		Base year	Rs. Lakh/MW	8.00
			O&M expense escalation	%	5.72
			O&M expense for 2021-22	Rs. Lakh/MW	8.94
Generic Tariff - for 25 years without the benefit of accelerated depreciation			3.94	Rs/unit	
Accelerated depreciation			0.31	Rs/unit	
Generic Tariff for 25 years with the benefit of accelerated depreciation			3.64	Rs/unit	

Annexure-VI (1)

Solar PV projects (upto 10kW) (01.08.2022 to 31.03.2024)					
Sl No	Head	Sub Head	Detailed Head	Unit	Norm
1	Power Generation	Capacity	(i) Installed Power Generation Capacity	kW	10
			(ii) Capacity Utilisation factor	%	21
			(iii) Auxiliary consumption	%	0.25
			(iv) Useful life	years	25
2	Project cost	Capital cost	Power plant cost	Rs .Cr/MW	4.59
3	Source of Fund		Tariff period	Years	25
		<u>Debt- equity</u>	Debt	%	70
			Equity	%	30
		Debt component	Loan amount/MW	Rs.Cr	3.21
			Moratorium	Years	0
			Repayment period (include moratorium)	Years	13
			Interest rate	(MCLR+2)%	8.65
		Equity component	Equity amount/ MW	Rs.Cr	1.38
			Normative RoE	%	14.00
4	Financial Assumptions				
		Depreciation	Depreciation rate for first 13 years		5.28
					1.78
5	Working capital requirement		O&M charges	Months	1
			Maintenance spare	% of O&M expenses	15
			Receivable for debtors	Months	2
			Interest on working capital	(MCLR+3)%	9.65
6	Operation and Maintenance		Base year	Rs. Lakh/MW	6.00
			O&M expense escalation	%	5.72
			O&M expense for 2021-22	Rs. Lakh/MW	6.71
Generic Tariff - for 25 years without the benefit of accelerated depreciation			3.57	Rs/unit	

Annexure-VI (2)

Solar PV projects (11kW to 100kW) (01.08.2022 to 31.03.2024)					
Sl No	Head	Sub Head	Detailed Head	Unit	Norm
1	Power Generation	Capacity	(i) Installed Power Generation Capacity	kW	1
			(ii) Capacity Utilisation factor	%	21
			(iii) Auxiliary consumption	%	0.25
			(iv) Useful life	years	25
2	Project cost	Capital cost (GST@12%)	Power plant cost	Rs .Cr/MW	4.28
3	Source of Fund		Tariff period	Years	25
		<u>Debt- equity</u>	Debt	%	70
			Equity	%	30
		Debt component	Loan amount/MW	Rs .Cr	2.99
			Moratorium	Years	0
			Repayment period (include moratorium)	Years	13
			Interest rate	(MCLR+2)%	8.65
		Equity component	Equity amount/ MW	Rs. Cr	1.28
			Normative RoE	%	14.00
4	Financial Assumptions				
		Depreciation	Depreciation rate for first 13 years		5.28
					1.78
5	Working capital		O&M charges	Months	1
			Maintenance spare	% of O&M expenses	15
			Receivable for debtors	Months	2
			Interest on working capital	(MCLR+3)%	9.65
6	Operation and Maintenance		Base year	Rs. Lakh/MW	6.00
			O&M expense escalation	%	5.72
			O&M cost 2021-22	Rs. Lakh/MW	6.71
Generic Tariff - for 25 years without the benefit of accelerated depreciation			3.37	Rs/unit	

Annexure -VI (3)

Solar PV projects 101kW to 500kW (01.08.2022 to 31.03.2024)					
Sl No	Head	Sub Head	Detailed Head	Unit	Norm
1	Power Generation	Capacity	(i) Installed Power Generation Capacity	kW	1
			(ii) Capacity Utilisation factor	%	21
			(iii) Auxiliary consumption	%	0.25
			(iv) Useful life	years	25
2	Project cost	Capital cost	Power plant cost	Rs .Cr/MW	4.02
3	Source of Fund		Tariff period	Years	25
		<u>Debt- equity</u>	Debt	%	70
			Equity	%	30
		Debt component	Loan amount/MW	Rs. Cr	2.81
			Moratorium	Years	0
			Repayment period (include moratorium)	Years	13
			Interest rate	(MCLR+2)%	8.65
		Equity component	Equity amount/ MW	Rs. Cr	1.21
			Normative RoE	%	14.00
4	Financial Assumptions				
		Depreciation	Depreciation rate for first 13 years		5.28
					1.78
5	Working capital requirement		O&M charges	Months	1
			Maintenance spare	% of O&M expenses	15
			Receivable for debtors	Months	2
			Interest on working capital	(MCLR+3)%	9.65
6	Operation and Maintenance		Base year	Rs. Lakh/MW	6.00
			O&M expense escalation	%	5.72
			O&M expense for 2021-22	Rs. Lakh/MW	6.00
Generic Tariff - for 25 years without the benefit of accelerated depreciation			3.14	Rs/unit	

Annexure -VI (4)

Solar PV projects (501kW to 1MW) (01.08.2022 to 31.03.2024)					
Sl No	Head	Sub Head	Detailed Head	Unit	Norm
1	Power Generation	Capacity	(i) Installed Power Generation Capacity	kW	1
			(ii) Capacity Utilisation factor	%	21
			(iii) Auxiliary consumption	%	0.25
			(iv) Useful life	years	25
2	Project cost	Capital cost	Power plant cost	Rs .Cr/MW	3.78
3	Source of Fund		Tariff period	Years	25
		<u>Debt- equity</u>	Debt	%	70
			Equity	%	30
		Debt component	Loan amount/MW	Rs. Cr	2.64
			Moratorium	Years	0
			Repayment period (include moratorium)	Years	13
			Interest rate	(MCLR+2)%	8.65
		Equity component	Equity amount/ MW	Rs. Cr	1.13
			Normative RoE	%	14.00
4	Financial Assumptions				
		Depreciation	Depreciation rate for first 13 years		5.28
					1.78
5	Working capital requirement		O&M charges	Months	1
			Maintenance spare	% of O&M expenses	15
			Receivable for debtors	Months	2
			Interest on working capital	(MCLR+3)%	9.65
6	Operation and Maintenance		Base year	Rs. Lakh/MW	6.00
			O&M expense escalation	%	5.72
			O&M cost for 2021-22	Rs. Lakh/MW	6.71
Generic Tariff - for 25 years without the benefit of accelerated depreciation			3.05	Rs/unit	
Accelerated depreciation			0.23	Rs/unit	
Generic Tariff for 25 years with the benefit of accelerated depreciation			2.81	Rs/unit	

Explanatory Note on the proposed Amendments

Section 86(1) (e) of the Electricity Act, 2003 authorizes the State Electricity Regulatory Commission to promote co-generation and generation of electricity from Renewable Source of Energy by providing suitable measures for connectivity with the grid and sales 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, Kerala State Electricity Regulatory Commission (KSERC) has published on 07.02.2020, the KSERC (Renewable Energy and Net Metering) Regulations, 2020. During the last 2 years of operation of this Regulation, Stakeholders have raised certain ambiguities and clarifications on many clauses of the Regulations. Thereafter, Gol has notified the Electricity (Rights of Consumers) Rules, 2020, in which more consumer friendly Rules were introduced. Further the existing Regulation 2020 is valid for the control period upto 31.03.2024. But the RPO rates of the obligated entities for the FYs 2022-24 was not notified. Also, the Generic Tariff for the various RE generators were published for the period upto FY 2020-21 only. Considering the above, the Commission has decided to issue Amendment Regulations to incorporate the above. Accordingly this proposed draft of the amendments is published for stakeholder consultation and comments. The reasoning for the proposed amendments are provided hereunder;

- (1) The Commission noticed that it is not right to apply a Regulation with retrospective effect.

The Commission shall determine the project specific tariff of RE power plants declared commercial operation (CoD) during the control period of the Regulation, i.e., from 01.04.2019 to 31.03.2024, or further period as notified by the Commission from time to time. Commission shall not re-determine the tariff of RE plants declared CoD prior to 01.04.2019 based on the provisions of these Regulations.

All the existing and new, distribution licensees, captive consumers, RE generators, prosumers has to meet the RPO and also has to get the benefit of banking, open access etc, and also has to bear the applicable charges for availing such facilities as per these Regulations.

It is further clarified that, the captive generators/ consumers existing in the State prior to the enactment of the Electricity Act-2003, and

governed by the agreements entered into between the licensee and generators as per the policies then existing, shall be allowed to continue till the term of the agreement as per the provisions of such agreements, as long as the provisions of such agreements are consistent with the EA-2003.

- (2) Though the term “Average Power Purchase Cost” or “APPC” is repeatedly used in the KSERC (Renewable Energy and Net metering) Regulations, 2020, it was not defined in the said Regulation.

The definition is the same as that used in the KSERC (Terms and Conditions for Determination of Tariff) Regulations, 2021.

- (3) For defining the APPC determined by the Commission during the year applicable for the projects commissioned during that year, the definition ‘Feed in tariff’ is proposed.

- (4) Government of India (GoI) on 8th March, 2019 had issued an order detailing various policy measure to promote hydropower sector in India inter- alia declaring hydropower projects including pumped storage projects having capacity of more than 25 MW (LHPs) which come into commercial operation after 08.03.2019 as renewable energy source and to specify Hydropower Purchase Obligation (HPO) within Non- Solar Renewable Purchase Obligation (RPO).

In compliance with the above decision and with the objective to add 30,000 MW of hydropower capacity by the FY 2029-30, GoI vide Order dated 29th January, 2021 has notified the RPO trajectory including long term trajectory for HPO considering the LHPs commissioned after 8th March, 2019.

- (5) Ministry of Power, Government of India, vide the Notification G.S.R 448(E) dated 28th June 2021 had notified the Electricity (Right of Consumers) Amendment Rules 2020. In the said Rule define the ‘gross metering’.

- (6) Ministry of Power, Government of India, vide the Notification G.S.R 448(E) dated 28th June 2021 had notified the Electricity (Right of Consumers) Amendment Rules 2020. In the said Rule define the ‘net-billing’ or net-feed-in”.

- (7) Ministry of New and Renewable Energy, vide the press release dated 22nd August 2019, approved to consider Ocean energy as Renewable

Energy and shall be eligible for meeting the non-solar Renewable Purchase Obligation.

- (8)** In the existing Regulation the settlement period for accounting of electricity for the 'Solar sources' and 'Non-Solar Sources' are different. Generally, the financial year starting from first day of April in a Gregorian calendar year to the thirty first day of March in the next calendar year is considered for accounting purposes. The Commission is of the considered view that, the settlement period of accounting of electricity from all RE sources shall be done on financial year basis.
- (9)** In the existing Regulation, the Commission has not specified the RPO targets for the FY 2022-23 and 2023-24. Further, the RPO targets specified up to the FY 2021-22 was much less than the RPO targets approved by the MNRE/ MoP. As per the MoP Order dated 29.01.2021, the Solar RPO for the FY 2021-22 is fixed @10.50% and the Non-Solar RPO other than hydro is also fixed @10.50%. The Ministry of Power vide Order dated 8th March, 2019 has notified the Hydropower Purchase Obligation (HPO) as a separate entity, to promote hydropower sector in India declaring large hydropower projects including pumped storage projects having capacity of more than 25MW (Large Hydropower Projects) which come into commercial operation after 08.03.2019, as renewable energy source and to specify Hydropower Purchase Obligation (HPO) within Non -Solar Renewable Purchase Obligation (RPO). The Commission has decided to publish Hydropower Purchase Obligation along with the RPO trajectory for the FYs 2022-23 and 2023-24.
- (10)** As per the Electricity (Rights of Consumers) Amendment Rules,2021 dated 28th June 2021, the maximum load permitted under "Net-Metering" is limited to 500 kW or sanctioned load whichever is lower.
- (11)** As per the Electricity (Rights of Consumers) Amendment Rules,2021 dated 28th June 2021, the maximum load permitted under "net-metering" is limited to 500 kW or sanctioned load. If the Solar PV installation is more than 500kW or more than sanctioned load, whichever is lower, such prosumers shall be treated under 'net-billing' or net feed in' basis.
- (12)** Indian Oil Officers Cooperative Housing Society Ltd, Behind JN Stadium, Stadium Link Road, Opposite IMA, Kaloor, Kochi has filed a petition before the Commission for clarification on the load that can be

permitted to the common connection of the residential flats and the Commission vide Order dated 01.02.2021 in OP No 45/2020 clarified that residential flats can avail up to 100 kW for common services.

- (13)** The change proposed as Regulation 17(A) is in line with Rule 11(5) of the Electricity (Rights of Consumers) Rules, 2020.
- (14)** The change proposed as Regulation 18(1) is in line with Rule 11(6) (i) and (ii) of the Electricity (Rights of Consumers) Rules, 2020.
- (15)** The change proposed in Regulation 18(2) is in line with Rule 11(6) (iii) and (iv) of the Electricity (Rights of Consumers) Rules, 2020.
- (16)** The change proposed as Regulation 18(6) is in line with Rule 11(6) (v) of the Electricity (Rights of Consumers) Rules, 2020.
- (17)** The change proposed as Regulation 18(A) is in line with Rule 11(4) of the Electricity (Rights of Consumers) Rules, 2020.
- (18)** The change proposed as Regulation 20(A) is in line with Rule 11(14) of the Electricity (Rights of Consumers) Rules, 2020.
- (19)** As per the Electricity (Rights of Consumers) Amendment Rules,2021 dated 28th June 2021, the maximum load permitted under “Net-Metering” is limited to 500 kW or sanctioned load whichever is lower.
- (20)** As per the Electricity (Rights of Consumers) Amendment Rules,2021 dated 28th June 2021, the maximum load permitted under “Net-Metering” is limited to 500 kW or sanctioned load whichever is lower.
- (21)** As per the Electricity (Rights of Consumers) Amendment Rules,2021 dated 28th June 2021, the maximum load permitted under “Net-Metering” is limited to 500 kW or sanctioned load whichever is lower.
- (22)** The norms and parameters specified in the Regulation is applicable for the project specific tariff determination of the electricity generated from the RE projects declared ‘commercial operation’ during the control period specified in these Regulations. Hence, to provide more clarity, the Commission proposes to the amendment as above.
- (23)** The stakeholders including RE generators and licensees have requested before the Commission for re-determination of tariff for the

projects who have already declared commercial operation during the period prior to the control period specified in these Regulation. The Commission hereby clarify that, the norms and parameters specified in these Regulation shall be applicable, only for the RE projects declared 'commercial operation' during the control period specified in these Regulations for determination of the project specific tariff/ generic tariff.

The Commission further clarify that, the generic tariff and project specific tariff determined based on the previous Regulations for the RE projects declared commercial operation during the period prior to the control period specified in these Regulations shall not be redetermined based on the norms, parameters and other provisions of these Regulations'.

- (24)** The change proposed in Regulation 35(2) is to provide more clarity as per the request of the stakeholders.
- (25)** In the original KSERC (Renewable Energy & Net Metering) Regulations, 2020, the Commission has specified the technical and financial norms and parameters, which are applicable for the entire control period of these Regulations from 01.04.2019 to 31.03.2024.

Further the Commission determined generic tariff for the FY 2019-20 through the said Regulation. However, the Commission has determined the generic tariff for Small Hydro Projects having capacity of and below 5MW, Wind Energy having capacity of and below 25MW and Solar plants having of and below 5 MW for the financial year 2021-22 through these Regulations. Hence the Commission has decided to fix the generic tariff to be the same as that of FY 2019-20 till coming into effect of these Regulations.

- (26)** The Commission is yet to finalize the KSERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2019. Hence the proposed change in Regulation 38(2).
- (27)** Since the technical and financial norms and parameters specified in these Regulations are applicable for the entire control period of these Regulations, it is not appropriate to re-determine the generic tariff for the control period in every financial year. Hence the proposed amendment in Regulation 52(3).

- (28)** As already mentioned, since the technical and financial norms and parameters specified in these Regulations are applicable for the entire control period of these Regulations, it is not appropriate to re-determine the generic tariff for the control period in every financial year. Hence the proposed amendment in Regulation 53(4)(iii).
- (29)** MNRE, Gol, vide the order No. 32/24/2020-SPV Division dated 27.10.2021 had approved the 'benchmark capital cost for Grid connected Roof top SPV for the year 2021-22 excluding GST. The Commission adopted the same as benchmark costs for Grid connected SPV upto 500kW. Since the MNRE had not specified the bench mark cost for SPV above 500kW capacity, the Commission had provided a reduction of 6% on benchmark cost for 500kW for arriving the benchmark cost for 500kW to 1MW capacity range. Hence proposed the amendment in Regulation 54(2).
- (30)** The proposed change is in line with Regulation 54 (3)(A).
- (31)** The Commission noted that, the quality and efficiency of new solar PV panels has increased considerably since the last two years. The prevailing market trend of CUF is also in the range of 21% and above and with advancement of technology in the solar sector, the project developer can easily attain the minimum CUF of 21%.

Further, CERC also vide the CERC Renewable Energy Tariff Regulations, 2020 has fixed the minimum CUF of Solar PV plants @21%. Considering these reasons this Commission also proposed to increase the minimum CUF from 19% to 21%.

- (32)** MoP, Gol notified the Electricity (Rights of consumers) Rules, 2021 vide the notification dated 31st December 2020 and its amendment on 28th June 2021. The Rules provides to permit the prosumers to sell all the solar energy generated to the distribution licensee instead of availing net-metering, net billing or net feed in facility at the generic tariff determined by the State Commissions. The Commission determined the generic tariff for Solar PV capacities up to 10kW, 11 to 100kW and 101-500kW separately for facilitating the prosumers to avail this facility, if they desire so. Since such promoters may not be large entrepreneurs, they will not avail the benefit of Accelerated Depreciation (AD). Hence the Commission determined the generic tariff for Solar PV up to 500kW without considering the benefit of AD. Hence, the new Regulation 56 (A) is proposed.

- (33)** The change in Regulation 58 is proposed in line with the amended Rule 11(4) of the Electricity (Rights of Consumers) Rules, 2020, notified on 28th June 2021.
- (34)** The change is to extend the Generation Based Incentives for off- grid solar schemes till the validity of the control period.
- (35)** As per the Rule 11(12) of the Electricity (Rights of Consumers) Rules, 2020, the minimum penalty for delay in providing services to the 'prosumers' to the Solar PV installation shall be @Rs 500 per day. So, proposed the change in Regulation 62(1).