

No.: CE/RE/Draft Generic Tariff Regulation/

No 3 17 17

Date:

16 NOV 2019

To,
The Secretary,
Maharashtra Electricity Regulatory Commission,
Centre No. 1, 13th Floor,
World Trade Centre,
Cuff Parade, **Mumbai - 400005**

Sub: - Comments on Draft Maharashtra Electricity Regulatory Commission (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

Ref: - MERC, Public notice dated 26th October 2019 vide Advt. No. 09/2019-20.

Respected Sir,

This is with reference to MERC's public notice with regard to seeking comments and suggestions of stakeholders on "Maharashtra Electricity Regulatory Commission (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

The Hon'ble Commission has invited written comments, suggestions or objections and has directed to submit till 18.11.2019. Considering the significance of certain key points of the Draft Regulation, MSEDCL has briefly provided some of its comments herein to consider the same in the MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

1. Competitive Bidding for procurement of power generated by grid-connected RE Projects and Project Specific Tariff:

With RE technologies attaining maturity and the RE tariff achieving grid parity, the Ministry of Power, Govt. of India has already issued the guidelines for competitive bidding procedure. MSEDCL has successfully carried out the competitive bidding for procurement of RE power in last couple of years for wind, solar, Non-fossil fuel based co-generation projects and the tariff discovered are competitive.

However the draft Regulations at clause 9 has provision for Project-specific tariff on case-to case basis for certain types of RE Projects. MSEDCL suggest that the project specific tariff shall be determined only in case of Municipal solid waste projects, Small Hydro Projects and any other new RE technologies approved by MNRE after notification of these Regulations. The tariff for other existing RE technologies including repowered wind projects shall be invariably discovered through competitive bidding process only.

In regard to Wind repowered projects, it is submitted that the states like Gujrat, Andhra Pradesh in their repowering policy has envisaged for tariff discovery of such projects through competitive bidding process only. The draft policy regarding repowering of wind mills of Maharashtra State has similar provision.

2. Tariff Period /EPA tenure:

MSEDCL supports the Hon'ble Commissions decision to set tariff period and accordingly period of energy purchase agreement equal to the useful life of the project. However the useful life and tariff period for the Biomass power project, non-fossil fuel co-generation projects has been proposed as 20 years only. In this regard, it is to submit that; the Biomass power project, non-fossil fuel co-generation projects use similar technology as that of coal fired thermal generating stations which has useful life of 25 years. Hence the useful life of Biomass power project, non-fossil fuel co-generation projects shall also be considered as 25 years and accordingly the tariff period shall be made 25 years.

Also in case of existing projects especially in case of Biomass power project, non-fossil fuel co-generation projects and wind mills, where the tariff period determined by the Hon'ble Commission was less than the useful life of these RE projects, it is humbly requested that, the Commission shall determine the generic tariff for the balance useful life of these project and Discom shall have the first right to refuse (for projects which entered in to long term agreement with concern DISCOM).

3. CUF in respect of Wind Power Projects:

The draft Regulations has considered the CUF of 22% for the wind projects to be commissioned under the control period of regulations.

In this regard, it is to submit that, with the adoption of better technology, the CUF quoted for wind mills by the bidders in competitive bidding process conducted by MSEDCL, ranges between 35% to 40%, for projects located in the state of Maharashtra. Hence 22% CUF appears to be on very lower side and it is suggested that the same shall be considered as 30% for the purpose of tariff determination.

4. Sharing of CDM Benefits:

The provision 23 of MERC's Draft Regulation states that; all risks, costs and efforts associated with the availing of carbon credits shall be borne by the Project Entity and the entire proceeds of carbon credit from approved CDM project, if any, shall be retained by it.

MSEDCL submits that, for the projects which enter into Long term PPAs with DISCOMs, the capital costs, O & M expenses, interest on working capital are borne by the Distribution Licensee. Hence, the CDM benefits shall be passed on to the Distribution licensee/procurer.

5. Scheduling and Despatch principles for electricity generated from RE Sources:

The provisions 13.1 and 13.3 related to Scheduling and Despatch principles for electricity generated from RE Sources appears to be contradictory and need more clarity.

The Regulation 13.1 states that, Biomass-based Power Projects and Co-Generation Projects shall be subject to the respective scheduling and despatch code as specified under the State Grid Code, as amended from time to time. Once State Grid Code

becomes applicable, the biomass power generating station and co-generation projects will come under the principle of Merit order Despatch. The provision 13.3 states that all RE projects shall be treated as Must Run plants. However in view of applicability of State Grid Code and considering the higher variable charges of Biomass-based Power Projects and Co-Generation Projects they will be subjected to backing down in real time which will defeat the purpose of absorbing RE power.

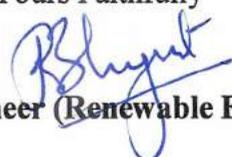
6. Development of evacuation infrastructure beyond interconnection point:

It is submitted that, the RE sites, particularly hydro, biomass and co-generation projects are remotely located and no grid network is available in nearby vicinity. The Regulations states that, the license shall be responsible for development of evacuation infrastructure beyond the inter-connection point. The interconnection point as defined in Regulation in relation to hydro, biomass, bagasse etc. means the line isolator on the outgoing feeder on the HV side of the generator transformer. The evacuation infrastructure involves the cost of express feeder from an interconnection point to grid. Owing to the remote locations, expenditure required to be incurred on evacuation infrastructure is huge. Further in case of hydro projects, due to smaller installed capacity [Mini Hydro (> 500 kW and < 1 MW)-and micro projects (< 500 kW)], the power generated from these project will be low. It is observed that in some cases cost of evacuation infrastructure is considerably high in comparison with total project cost and power generated from such projects is not economically viable. Hence, there shall be some ceiling or mechanism to determine the economic feasibility of such projects from evacuation infrastructure point of view so as to avoid burdening to the common consumers of MSEDCL with RE infrastructure expenditure. MSEDCL propose that, the maximum expenditure on evacuation infrastructure per MW to be borne by licensee should be limited to 25 lakh / MW only subject to overall ceiling of INR 1 Crore only.

The detailed comments / suggestions of MSEDCL are enclosed herewith as **Annexure A**. It is kindly requested that the same may please be taken on record and shall be considered in the MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

Thanking You,

Yours Faithfully


Chief Engineer (Renewable Energy)

Comments on MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

Clause	Draft Regulations, 2019	Comments
2	Definitions and Interpretation	
(b)	'Auxiliary energy consumption' means the quantum of energy consumed by auxiliary equipment of the generating station, and transformer losses within the generating station, expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station;	The following need to be added – “Provided that auxiliary energy consumption shall not include energy consumed for supply of power to any other facilities at the generating station and the power consumed for construction works at the generating station”
(c)	‘Average Power Purchase Cost’ or ‘APPC’ means the weighted average price at which the Distribution Licensee has purchased or is expected to purchase electricity (excluding procurement from RE sources), including the cost of self-generation, if any, as approved by the Commission in the relevant Tariff Order or any other general or specific Order;	The following need to be revised – (excluding procurement from RE sources and liquid fuel based plants)
(l)	‘Date of Commissioning’ means the date of commissioning declared by a Generating Company in relation to a Unit of its Generating Station;	Date of Commissioning with respect to the Project/ Unit shall also be certified by SLDC/DISCOM and shall mean when all equipment’s as per rated capacity has been installed and energy has flown into the grid.
(p)	‘Hybrid Renewable Energy Project’ means a Renewable Energy Project that uses a combination of Renewable Energy technologies approved by MNRE for electricity generation within the same premises;	Premise shall mean the continuous parcel of land at a single location having owned by a single person / company /entity.
(o)	‘Inter-connection Point’ means the interface point of a renewable energy generating facility with the transmission system or distribution system, as the case may be and:	
(1)	in relation to wind energy and Solar Photovoltaic Projects, inter-connection point shall be the line isolator on outgoing feeder on HV side of the pooling sub-station; <i>Explanation - A Pooling sub-Station is a sub-Station, consisting of a step-up transformer and associated switchgear, to the LV side of which multiple generating Units (Wind Turbine Generators or Solar PV modules/arrays/inverter units) are connected.</i>	

(2)	in relation to mini/micro hydro, small hydro, biomass and biomass gasification, non-fossil fuel based co-generation, Biogas-based, Hybrid Renewable Energy, Municipal Solid Waste and Solar Thermal Power Projects, the inter-connection point shall be the line isolator on the outgoing feeder on HV side of generator transformer;	The Hydro, biomass and co-generation projects, sites are remotely located and no grid network is available in nearby vicinity. The Regulations states that, the license shall be responsible for development of evacuation infrastructure beyond the inter-connection point. The evacuation infrastructure involves the cost of express feeder from an interconnection point to grid. Owing to the remote locations, expenditure required to be incurred on evacuation infrastructure is huge. Further in case of hydro projects, due to smaller installed capacity [Mini Hydro (> 500 kW and < 1 MW)-and micro projects (< 500 kW)], the power generated from these project will be low. It is observed that in some cases cost of evacuation infrastructure is considerably high in comparison with total project cost and power generated from such projects is not economically viable. Hence, there shall be some ceiling or mechanism to determine the economic feasibility of such projects from evacuation infrastructure point of view so as to avoid burdening to the common consumers of MSEDCL with RE infrastructure expenditure.
(w)	'Non fossil fuel based co-generation' means the process in which more than one form of energy (such as steam and electricity) are produced in a sequential manner by use of biomass .	The following may be added: Biomass and Bagasse. "Provided the project may qualify to be a co-generation project if it fulfills the eligibility criteria as specified in clause (vi) of Definition (m)."
(cc)	'Re-powering' means the process of replacing older wind turbines with newer ones that have either a higher name plate capacity or higher CUF which results in a net increase in power generated from the same site;	Tariff for re-powered turbine projects shall be invariably discovered through competitive bidding process only.
(gg)	'Solar Roof-top PV Power Project' means a Solar Photo Voltaic Power Project installed on the roof-top of a building or any other mounting	Following may be added at the end of the definition:

	structure in the consumer premises that uses sunlight for direct conversion into electricity through Photo Voltaic technology and satisfies any other eligibility criteria as may be stipulated by MNRE;	”from time to time”
(j)	‘Station Heat Rate’ or ‘SHR’ means the heat energy input in kilocalories required to generate one kWh of electrical energy at generator terminals of a Renewable Energy Project that uses fuel for generation;	The clarity regarding ‘gross SHR’ and ‘net SHR’ shall be given.
(l)	‘Tariff period’ means the period for which tariff is to be determined by the Commission on the basis of norms specified under these Regulations;	Tariff period shall be equal to useful life of the RE technology.
(m)	<p>‘Useful Life’ in relation to a unit of a generating station including evacuation system means the following duration from the date of commercial operation (COD) of such generation facility, namely:-</p> <ol style="list-style-type: none"> Wind energy power project 25 years Biomass power project, non-fossil fuel co-generation 20 years Mini/Micro and Small Hydro Power Plants 35 years Solar PV/Solar thermal power plants 25 years Solar rooftop PV systems and small ground mounted PV systems 25 years <p>Provided that the Useful Life of Hybrid RE Projects shall be minimum of Useful Life of different RE technologies combined for the Hybrid RE Project: Provided that the Useful Life of Hybrid RE Projects shall be minimum of Useful Life of different RE technologies combined for the Hybrid RE Project: Provided further that the Useful Life of other RE Projects shall be as stipulated by the Commission while determining the Project-specific tariff, taking into consideration the norms specified by the Central Commission;</p>	The Biomass power project, non-fossil fuel co-generation projects use similar technology as that of coal fired thermal generating stations which has useful life of 25 years. Hence the useful life of Biomass power project, non-fossil fuel co-generation projects shall be considered has 25 years.
	Chapter 1 : General Principles	
6	Tariff Period	

Comments on MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

	<p>The Tariff Period for RE Projects shall be equal to their Useful Life, as under:</p> <p>a) Wind Energy Power Projects 25 years</p> <p>b) Biomass-based Power Project, Non-Fossil Fuel-based CoGeneration 20 years</p> <p>c) Mini/Micro and Small Hydro Power Projects 35 years</p> <p>d) Solar PV/Solar Thermal Power Projects 25 years</p> <p>e) Solar Roof-top PV Power Projects 25 years</p> <p>f) Hybrid RE Projects and other RE Projects Equal to Useful Life of Project</p>	<p>MSEDCL welcomes taking the provision to extend the tariff period equal to useful life for new RE projects. Further, post expiry of long term PPAs with DISCOM, if such RE projects remains in operation then the Hon'ble Commission shall determine the generic tariff for such projects and the DISCOM shall have first right of refusal (for projects which entered in to long term agreement with concern DISCOM).</p> <p>The Biomass power project, non-fossil fuel co-generation projects use similar technology as that of coal fired thermal generating stations which has useful life of 25 years. Hence the useful life of Biomass power project, non-fossil fuel co-generation projects shall be considered has 25 years and accordingly the tariff period shall also be 25 years.</p> <p>Also in case of existing projects where the tariff period determine by the Hon'ble Commission was less than the useful life of the RE projects (e.g. wind), the Commission shall determine the generic tariff for the balance useful life of the project and Discom shall have the first right to refuse (for projects which had long term agreement with concern DISCOM).</p>
6.2	The Tariff Period shall commence from the date of commercial operation of the Generating Station or Unit, as the case may be.	<p>The same shall be applicable for newly commissioned projects only.</p> <p>For the old and existing projects the same shall commence from the mutually agreed date.</p>
7	Competitive Bidding for procurement of power generated by grid-connected RE Projects	
7.1	The tariff shall invariably be determined through a transparent process	As observed by the Hon'ble Commission in its

	<p>of competitive bidding in accordance with the Guidelines issued by the Central Government under Section 63 of the Act, inter-alia for the following types of RE Projects:</p> <p>(a) Wind Energy Power Projects; (b) Solar PV Power Projects; (c) Non-Fossil Fuel-based Co-Generation; (d) Biomass based Projects; (e) Hybrid RE Power Projects</p>	<p>explanatory memorandum, the preferential tariff regime would promote inefficiencies. Also, the National Tariff Policy, 2016, talks about promoting competitive bidding regime instead of cost-plus. This is a step in right direction for promoting discipline and prudence among utilities for achievement of low cost power for all. Hence, MSEDCL strongly recommends for migration towards competitive bidding regime.</p> <p>The competitive bidding shall be mandatory to all RE projects mentioned herein including repowered wind projects.</p>
7.3	<p>The tariff for RE Power Projects below threshold limit of eligibility for participating in Competitive Bidding shall be considered equal to the following cases, in order of priority:</p> <p>(a) Latest Tariff discovered through Competitive Bidding by concerned Distribution Licensee for similar RE project; (b) The Tariff discovered through Competitive Bidding for similar RE project by Other Distribution Licensee(s) in the State; (c) The Tariff discovered through Competitive Bidding for similar RE project in the Country.</p>	<p>The following needs to be added:</p> <p>“The tariff discovered and adopted by appropriate Commission.”</p>
8	Generic Tariff	
	<p>The Commission shall determine the generic tariff for Solar Roof-top PV Power Projects and Variable Charges for Biomass and Non-fossil fuel based Co-generation Projects, in accordance with the norms specified in these Regulations.</p>	<p>As per clause 7.1 (c) and (d) of draft Regulations the tariff for Biomass and Non-fossil fuel based Co-generation Projects has to be invariably determined through competitive bidding process only.</p> <p>In view of above, the generic tariff for Variable Charges for Biomass and Non-fossil fuel based Co-generation Projects for feed in tariff category projects shall only be determined.</p>
9	Project-specific Tariff	

Comments on MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

9.1	<p>A Project-specific tariff shall be determined by the Commission on a case-to case basis for the following types of RE Projects:</p> <p>(a) Waste to Energy Projects based on the technologies approved by MNRE;</p> <p>(b) Solar Thermal Power Projects;</p> <p>(c) Small Hydro Projects, Mini Hydro Projects and Micro Hydro Projects;</p> <p>(d) Re-powering of Wind Energy Power Projects;</p> <p>(e) Projects based on any other RE technologies approved by MNRE after notification of these Regulations;</p> <p>(f) Any other RE technology, for which either Generic Tariff is being determined or for which the tariff is to be invariably determined through competitive bidding, in respect of which the Project Entities opt for a project-specific tariff.</p>	<p>MSEDCL suggest that the project specific tariff shall be determined only in case of Waste to energy projects that too particularly Municipal solid waste projects and any other RE technologies approved by MNRE after notification of these Regulations.</p> <p>In regard to 9.1(d) it is to submit that, the tariff for Re-powering of Wind Energy Power Projects shall also be determined invariably through competitive bidding process only.</p> <p>The states like Gujrat, Andhra Pradesh in their repowering policy has envisaged for tariff discovery of such projects through competitive bidding process only. The draft repowering policy of State of Maharashtra has similar provision.</p> <p>In respect to 9.1(f) it is to submit that, the same shall be allowed only in case of any new RE technology is approved by MNRE after notification of these Regulations.</p>
10	Petition and proceedings for determination of tariff	
10.2	<p>A Petition for determination of project-specific tariff shall be filed by the concerned RE Power Project entity, with the concerned Distribution Licensee as a Respondent, accompanied by such fee as may be specified in the applicable Regulations of the Commission, and shall be accompanied by:</p> <p>(a) Information in Forms 1.1, 1.2, 2.1 and 2.2, as the case may be, appended as Annexure-A to these Regulations;</p> <p>(b) An EPA with a Distribution Licensee in the State of Maharashtra, clearly stipulating that the tariff to be determined by the Commission in accordance with these Regulations and the consequences of under-generation or excess generation vis-à-vis the guaranteed generation;</p> <p>(c) A detailed project report outlining technical and operational details, site-specific aspects, premise for Capital Cost and financing plan, etc.;</p> <p>(d) A statement of all applicable terms and conditions and expected expenditure for the period for which tariff is to be determined;</p>	<p>MSEDCL has already commented that the project specific tariff shall be determined only in case of Waste to energy projects that too particularly Municipal solid waste projects and any other new RE technologies approved by MNRE after notification of these Regulations.</p> <p>In case of Municipal solid waste projects, the concerned distribution Licensee shall mean the distribution licensee in whose licensee area such solid waste is generated.</p>

Comments on MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

	<p>(e) A statement containing details of any grant, subsidy or incentive received, due or assumed to be due from the Central Government and/or State Government, which shall also include the computation of tariff without consideration of such grant, subsidy or incentive;</p> <p>(f) Details of financial gain through REC or any other mechanism;</p> <p>(g) Any other information that the Commission may require the Petitioner to submit.</p>	
10.3	<p>In case the RE Project fails to generate energy up to the guaranteed CUF, then the RE Project proponent shall compensate the concerned Distribution Licensee to the extent of under-generation at the tariff rate approved by the Commission:</p> <p>Provided that in case the above under-generation is on account of transmission constraints, then such under-generation shall be considered as deemed generation by the RE Project and be compensated accordingly</p>	<p>In any given year during the contract, if the availability of the transmission line after inter-connection point for evacuation of power falls below 98% (the CEA from time to time has recommended the normative availability of transmission system to be 98%).</p> <p>The concerned Distribution Licensee shall mean the Licensee with whom the RE generator has signed long term PPA.</p>
10.4	<p>In case the RE Project generates energy in excess of the guaranteed CUF, then the RE Project proponent shall be entitled to receive compensation from the concerned Distribution Licensee for such excess generation at 75 percent of the tariff rate approved by the Commission.</p>	<p>The concerned Distribution Licensee shall mean the Licensee with whom the RE generator has signed long term PPA.</p>
12	Tariff Design	
12.1	<p>The tariff shall be determined on a levelised basis for the Tariff Period:</p> <p>Provided that, for RE Projects having a single-part tariff with two components, the tariff shall be determined on a levelised basis for the Tariff Period, considering the year of commissioning of the Project for the fixed cost component, while the fuel cost component shall be determined separately for each year of operation.</p>	<p>The fuel cost component shall be determined only for existing projects whose tariff was determined under section 62 of E.A. 2003. For new projects whose tariff has been / will be discovered through Competitive bidding process, there is no need for determination of fuel cost component.</p>
13	Scheduling and Despatch principles for electricity generated from RE Sources	
13.1	<p>The Biomass-based Power Projects and Co-Generation Projects shall be subject to the respective scheduling and despatch code as specified</p>	<p>The provisions 13.1 and 13.3 are contradictory and</p>

Comments on MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

	under the State Grid Code, as amended from time to time.	need more clarity. Once State Grid Code becomes applicable, the biomass power generating station and co-generation projects will come under the principle of MoD. The provision 13.3 states that all RE projects shall be treated as Must Run plants, but due to the higher variable charges of Biomass-based Power Projects and Co-Generation Projects they will be subjected to backing down in real time which will defeat the purpose of absorbing RE power.
13.2	The Wind Energy Power Projects and Solar PV Power Projects shall be subject to the MERC (Forecasting, Scheduling and Despatch of Solar and Wind Generation) Regulations, 2018, as amended from time to time.	Implementation of “MERC (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2018 is very necessary for bringing discipline and grid security. No further relaxation in implementation of all provisions of said Regulation shall be provided.
13.3	Subject to the provisions of the Indian Electricity Grid Code and the State Electricity Grid Code, all RE Power Projects shall be treated as ‘Must Run’ Projects and shall not be subjected to ‘merit order despatch’ principles.	
	Chapter 2: Financial Principles	
15	Debt-equity Ratio	
15.1	For determination of generic tariff by the Commission, the debt-equity ratio shall be considered to be 70:30.	Normative debt equity ratio to be revised to 80:20 in case of new plants. It would bring in necessary discipline and prudence on behalf of equity investors.
15.2	For project-specific tariff determination, if the equity actually deployed is more than 30% of the Capital Cost, the equity in excess of 30% shall be treated as normative loan: Provided that, where the equity actually deployed is less than 30% of the Capital Cost, the actual equity shall be considered for determination of tariff: Provided further that the equity invested in foreign currency shall be denominated or designated in Indian rupees as on the date of each	The equity deployed shall be considered as 20%

Comments on MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

	investment.	
16	Loan and Finance Charges	
16.1	<p>Loan Tenure For the purpose of determination of tariff, the loan tenure shall be considered as 12 years.</p>	<p>The loan tenure shall be extended equivalent to Useful life / EPA period. Extension of useful life term period of loan would translate into depreciation and loan repayment effectively being spread out for larger period. This would moderate the upfront loading and make RE power attractive.</p>
16.2	<p>Interest Rate: (a) The quantum of loan arrived at as specified above shall be considered as the gross normative loan for computation of the interest on loan; (b) The normative loan outstanding as on 1st April of every year shall be worked out by deducting the cumulative repayment up to 31st March of the previous year from the gross normative loan; (c) For the purpose of computation of tariff, the average of the one-year Marginal Cost of Funds-based Lending Rate ('MCLR') as declared by the State Bank of India for the previous year plus 200 basis points, shall be considered as the normative interest rate; (d) Notwithstanding any moratorium period availed, the repayment of loan shall be considered from the first year of commercial operation of the Project and shall be</p>	<p>As per the RBI guidelines dated 23rd April 2015 vide circular no. RBI/2014-15/573, the renewable power project is provided in the list of priority sector and usually such sector included in priority list have a lower interest rate. Therefore, only 150 basis points need to be considered instead of 200 basis points.</p>
17	Depreciation	
17.1	The value base for the purpose of depreciation shall be the capital cost of the asset as admitted by the Commission.	Since land is a non-depreciable asset, Depreciation is to be allowed upto maximum of 90% of the Capital cost of the asset excluding land cost.
17.3	The depreciation rate for the first 12 years of the Tariff Period shall be 5.83% per annum, and the remaining depreciation shall be spread over the remaining useful life of the project from the 13th year onwards.	<p>Considering the fact that depreciation must be charged only after commercial operation, following should be retained –</p> <p>“Provided that in case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.”</p>
18	Return on Equity	

Comments on MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

18.1	The value base for the equity shall be 30% of the Capital Cost, or the actual equity (in case of project-specific tariff determination) as determined under Regulation 15.	The same shall be 20% of the capital cost or actual whichever is lesser.
18.2	The Return on Equity shall be computed at the base rate of 14%, to be grossed up as per the Minimum Alternate Tax ('MAT') rate applicable as on 1st April of the previous Financial Year.	MSEDCL suggests lower return on equity considering that the market and regulatory space has matured over the years and the pertaining risk has mitigated to large extent.
19	Interest on Working Capital	
19.3	Interest on Working Capital shall be the average of the one-year Marginal Cost of Funds Page 15 of 36 based Lending Rate ('MCLR') as declared by the State Bank of India for the previous year plus 300 basis points	MSEDCL suggests that interest on working capital with MCLR rates along with premium of 150 bps.
20	Operation and Maintenance Expenses	
20.1	O&M expenses shall comprise repair and maintenance ('R&M') expenses, establishment (including employee) expenses, and administrative and general expenses including insurance.	It is submitted that to arrive at Normative O&M expenses, necessary data from all the generators shall be collected and analyzed the same by state agency/procurer. Also it needs to be made mandatory for all renewable generators to provide data to SNA /procurer on yearly basis regarding their generation and financial performance.
20.2	O&M expenses shall be determined for the Tariff Period based on normative O&M expenses specified by the Commission in these Regulations for the first year of the Review Period.	
20.3	Normative O&M expenses allowed under these Regulations shall be escalated at the rate specified for Generating Companies in the MERC (Multi Year Tariff) Regulations, 2019, as amended from time to time, for computation of the levelized tariff.	
21	Rebate	
21.1	For payment of bills of the Project Entity through revolving and valid Letter of Credit, a rebate of 2% shall be allowed.	MSEDCL suggests that payments made within 30 days shall be allowed for rebate of 2%.
21.2	Where payments are made other than through Letter of Credit within seven days of presentation of bills by the Project Entity, a rebate of 1% shall be allowed.	

22	Late Payment Surcharge	
	In case the payment of any bill for charges payable under these Regulations is delayed beyond a period of 30 days from the date of billing, Late Payment Surcharge on simple interest basis at the one-year MCLR as declared by the State Bank of India as on 1st of the respective month plus 350 basis points per annum on the billed amount, shall be levied for the period of delay by the Project Entity.	A period of 60 days shall be provided from the date of billing for attracting late payment surcharge provision. MSEDCL suggests Late Payment Surcharge on simple interest basis at the one-year MCLR as declared by the State Bank of India as on 1st of the respective month plus 150 basis points per annum on the billed amount.
23	Sharing of Clean Development Mechanism (CDM) Benefits	
	All risks, costs and efforts associated with the availing of carbon credits shall be borne by the Project Entity, and the entire proceeds of carbon credit from approved CDM Project, if any, shall be retained by it.	MSEDCL submits that, for the projects which enter into Long term PPAs with DISCOMs, the capital costs, O & M expenses, interest on working capital are borne by the Distribution Licensee. Hence, the CDM benefits shall be passed on to the Distribution licensee.
25	Grant, Subsidy or Incentive from the Central/State Government	
25.4	In case the Central or State Government or their agencies provide any generation-based incentive, which is specifically over and above the tariff, such incentive shall neither be taken into account while determining the tariff nor be deducted by the Distribution Licensee in subsequent bills raised by the particular Project Entity	The generation-based incentive shall be considered while determining the tariff.
26	Taxes and Duties	
	The tariff determined under these Regulations shall be exclusive of taxes and duties on the generation and sale of electricity from a RE Project as may be levied by the appropriate Government: Provided that the taxes and duties levied by the appropriate Government on generation, and sale of electricity from such RE Project, such as Electricity Duty and Water Royalty, shall be allowed as a pass-through to the extent actually incurred.	The following shall be added: Also subsidy alongwith the concession or waiver on taxes and duties needs to be passed on to the Distribution Licensee.
	Chapter 3: Technology-specific Parameters for Wind Energy Projects	
28	Capacity Utilisation Factor	

Comments on MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019.

	<p>The minimum normative CUF for Wind Energy Projects for the Review Period shall be 22% for the purpose of tariff determination: Provided that the above normative CUF may be revised by the Commission through general or specific Order considering data that may become available subsequently.</p>	<p>MSEDCL supports the provision to do away with wind zoning concept.</p> <p>However, it is to submit that with the adoption of better technology the CUF quoted by wind developers in competitive bidding process conducted by MSEDCL ranges between 35% to 40% for projects located in Maharashtra. Hence 22% CUF appears to be on very lower side and it is suggested that the same shall be considered as 30% for the purpose of tariff determination.</p>
30	Tariff Determination in case of Re-powering of Wind Energy Power Project	
30.1	<p>A Project-specific tariff shall be determined by the Commission in case of Re-powering of Wind Energy Power Project, subject to the following conditions, in addition to the conditions specified in Regulation 10.2 for determination of Project-specific tariff:</p> <p>(a) The older wind turbines shall have been operational for at least 15 years of Useful Life since their commissioning: Provided that based on cost economics, contracting Parties may agree for repowering of wind turbine, which has been operational for lower than 15 years;</p> <p>(b) The older wind turbines shall be replaced by newer wind turbines having either a higher name-plate capacity or higher CUF, and should result in a net increase in power generated from the same site;</p> <p>(c) Detailed Project Report shall also clearly explain the rationale and benefits of Repowering vis-à-vis setting up of a new project.</p>	<p>In case of power being procured from a wind mill by Discom through long term PPA and such wind mills opt for repowering, then the power generated corresponding to average of last three years' generation prior to repowering would continue to be procured on the terms of PPA in-force. For the additional generation, the generator shall participate in competitive bidding and the procurer Discom shall have first right of refusal.</p>
	Chapter 4: Technology-specific Parameters for Small/Mini/Micro Hydro Power Projects	
32	Capacity Utilisation Factor	
	Capacity Utilisation factor for small hydro projects shall be 30% for the purpose of tariff determination	<p>In case of Small Hydro Projects</p> <ol style="list-style-type: none"> 1. The Generation depends on water release from WRD, hence the CUF shall be considered after analyzing the actual generation from initial

		<p>period of three years.</p> <p>2. Yearly review shall be taken with comparison between CUF considered & actual CUF and tariff shall be revised accordingly .</p>										
34	Operation and Maintenance Expenses											
	<p>The ceiling normative O&M expenses for the base year of the Review Period for the purpose of tariff determination shall be as follows:</p> <table border="1"> <thead> <tr> <th>Project Size</th> <th>O&M Expense (Rs Lakh/ MW)</th> </tr> </thead> <tbody> <tr> <td>Upto 500 kW</td> <td>4.00% of the Capital Cost.</td> </tr> <tr> <td>Greater than 500 kW and up to and including 1 MW</td> <td>4.00% of the Capital Cost.</td> </tr> <tr> <td>Greater than 1 kW and up to and including 5 MW</td> <td>3.60% of the Capital Cost.</td> </tr> <tr> <td>Greater than 5 kW and up to and including 25 MW</td> <td>2.80% of the Capital Cost.</td> </tr> </tbody> </table>	Project Size	O&M Expense (Rs Lakh/ MW)	Upto 500 kW	4.00% of the Capital Cost.	Greater than 500 kW and up to and including 1 MW	4.00% of the Capital Cost.	Greater than 1 kW and up to and including 5 MW	3.60% of the Capital Cost.	Greater than 5 kW and up to and including 25 MW	2.80% of the Capital Cost.	<p>The O&M shall be as per actual subject to prudence check and the ceiling mentioned herewith whichever is lower.</p>
Project Size	O&M Expense (Rs Lakh/ MW)											
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Greater than 1 kW and up to and including 5 MW	3.60% of the Capital Cost.											
Greater than 5 kW and up to and including 25 MW	2.80% of the Capital Cost.											
	Chapter 5: Technology-specific parameters for Biomass-based Power Projects											
38	Auxiliary Consumption											
	<p>The ceiling Auxiliary Power Consumption for Biomass-based Power Projects shall be 10% for the purpose of tariff determination.</p>	<p>Biomass plants have less number of auxiliaries compared to coal-fired stations and further there is no milling plant. Further, the amount of ash to be handled in the Biomass plants is comparatively lesser than that in coal fired stations. Having regard to the above and in view of the need of progressive improvement the auxiliary consumption should be specified lower than the coal-fired station.</p> <p>Further, in view of enhanced technologies, the auxiliary consumption has been decreased. Accordingly, MSEDCL proposed the auxiliary consumption of 8%.</p>										
39	Station Heat Rate											
	<p>The ceiling SHR for new Biomass-based Power Projects shall be 4200</p>	<p>The SHR for new Biomass-based Projects shall be</p>										

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	kcal/kWh for the purpose of tariff determination.	considered as 3600 kcal/kWh for the purpose of tariff determination. Some developers have attained SHR of 3600 kcal/kWh way back in the year 2010-2011, the same was shown at pg 78 of the explanatory memorandum to draft MERC RE tariff regulations 2015. Now as the technology has improved SHR should be lowered.
40	Operation and Maintenance Expenses	
	The ceiling normative O&M expenses for the base year of the Review Period shall be 5.32% of the Capital Cost for the purpose of tariff determination.	The O&M shall be as per actual subject to prudence check and the ceiling mentioned herewith whichever is lower.
41	Fuel Mix	
41.1	The Biomass-based Power Project shall be designed in such a way that it uses different types of non-fossil fuels available within its vicinity such as crop residues, agro-industrial residues, forest residues, Refuse Derived Fuel (RDF), etc., or other biomass fuels as may be approved by MNRE.	The calorific value of the actual fuel used shall be considered for tariff determination purpose
42	Use of Fossil Fuel	
	Use of fossil fuels for generation shall not be allowed, and the entire power has to be generated using biomass.	MSEDCL's welcome the decision for not allowing use of any fossil fuel by both existing and new Biomass-based Power Project and Non-Fossil Fuel-based Co-Generation Project. The said decision shall be very useful towards promotion of only green energy generation.
44	Compliance Monitoring for Biomass-based Power Projects	
44.1	The Distribution Licensee shall be responsible for monitoring compliance with these Regulations by Biomass-based Power Projects from whom it is procuring power	The Discoms may not have the expertise for such activities. Hence, the responsibility of monitoring compliance shall be with SNA only.
44.2	The concerned Distribution Licensee shall maintain all data relevant to these Regulations, including technical and commercial details, in respect of Biomass-based Projects from whom it is procuring power, and shall make the data available in the public domain by publishing it on its website and updating it on a quarterly basis.	However, the data related to commercial details and procuring data can be provided and uploaded on website by distribution licensee.
44.3	Project Entities shall submit the information to Distribution Licensee	

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	procuring power in the templates specified in Annexure-B of these Regulations	
	Chapter 6: Technology-specific parameters for Non-fossil fuel-based Co-Generation Projects	
52	Auxiliary Consumption	
	The ceiling Auxiliary Power Consumption shall be 8.5%, for the purpose of tariff determination	Co-generation plants have less number of auxiliaries compared to coal-fired stations and further most of the auxiliaries are common between the main product (i.e. sugar in case of bagasse based project) and power generation. Having regard to the above, the auxiliary consumption needs to be shared equally between the two products. (i.e. sugar and electricity). Accordingly, MSEDCL proposed the auxiliary consumption of 5%
54	Operation and Maintenance Expenses	
	The ceiling normative O&M expenses during the base year of the Review Period shall be 3.54 % of the Capital Cost for the purpose of tariff determination	It is suggested to seek necessary data from all the generators and analyse the same. Also it needs to be made mandatory for all renewable generators to provide data to SNA on yearly basis. The O&M expenses shall be as per actual subject to prudence check and the ceiling mentioned herewith whichever is lower.
58	Fuel Mix and Co-Generation Project Capacity	
58.2	The Co-Generation Projects shall be sized in co-relation to the locally available non-fossil fuels.	The parameters of gross calorific value of the fuel used shall be made applicable
59	Use of Fossil Fuel	
	Use of fossil fuels for generation shall not be allowed, and the entire power has to be generated using non-fossil fuels.	MSEDCL's welcome the decision for not allowing use of any fossil fuel Non-Fossil Fuel-based Co-Generation Project. The said decision shall be very useful towards promotion of only green energy generation. The provision shall be applicable for existing projects

		also.
61	Measurement and Verification Protocol for Compliance Monitoring	
61.3	The Distribution Licensee shall scrutinise such Audit Reports so as to verify compliance by the Project.	The Discom may not have expertise in auditing the computations related to boiler efficiency (based on direct or indirect method), the turbine isentropic efficiency and the auxiliary electricity consumption of the Co-Generation facility. Hence state nodal agency shall scrutinized such audit report.
61.5	<p>In addition to any others, the following readings/stipulations shall be mandatory for such Audit:</p> <p>(a) Duration of Test – The duration shall be at least one hour of continuous operation.</p> <p>(b) Input fuel (e.g. Bagasse) flow – The total quantity of fuel supplied to a boiler for the duration of the test is to be measured (in case the continuous measurement of fuel inflow is not possible, an average figure of fuel intake/hour may be taken as the basis. To arrive at this average, the fuel weightment over a period of constant plant load operation – either on 8-hours shift or 24 hours, as the case may be – shall be considered). Mass flow rate of non-fossil fuel – bagasse, i.e. (mass balance is to be then calculated in kg/hr).</p> <p>(c) A sample of input fuel (e.g. bagasse) is to be tested (certified laboratory test report to be included) for its Gross Calorific Value using a bomb calorimeter.</p> <p>(d) Temperatures and pressures are to be measured at the different steam consumption points say, 1,2,...n (T1, P1, T2, P2,...Tn, Pn, etc.)</p> <p>(e) The steam flow rates at 1,2,n (m1, m2,...mn) are to be measured with on line steam flow meters, which are to be calibrated before the Audit.</p> <p>(f) Electrical output at generator terminals is to be recorded in kWh for the test period.</p> <p>(g) A schematic of the configuration showing the instrument locations shall be provided.</p>	The Discom may not have the required expertise in audit of generation station.
61.6	The Energy Audit shall include computation of the boiler efficiency	

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	(based on direct or indirect method), the turbine isentropic efficiency and the auxiliary electricity consumption of the Co-Generation facility	
61.9	The Audit results shall be reported to the Commission by the Distribution Licensee annually after the closing of the crushing season	The responsibility may be entrusted to state nodal agency.
62	Compliance Monitoring of Non-fossil Fuel-based Co-Generation Projects	
61.1	The Distribution Licensee shall be responsible for monitoring compliance with these Regulations by Non-fossil Fuel-based Co-Generation Projects from whom it is procuring power.	The Discoms may not have the expertise for such activities. Hence, such activities may be given to state nodal agency.
62.2	The concerned Distribution Licensee shall maintain all data relevant to these Regulations, including technical and commercial details, in respect of Non-Fossil Fuel-based CoGeneration Projects from whom it is procuring power, and shall make the data available in the public domain by publishing it on its website and updating it on a quarterly basis.	
62.3	Project Entities shall submit the information to Distribution Licensee procuring power in the templates specified in Annexure-B.	
	Chapter 7: Technology-specific parameters for Solar PV Power Projects and Solar Rooftop PV Power Projects	
65	Capital Cost	
	The normative Capital Cost of a Solar Rooftop PV Power Project shall be considered as Rs. 400 lakh/MW for base year for the purpose of tariff determination: Provided that the Capital Cost may be revised in the Generic Tariff Order, based on market conditions and prevailing prices.	Considering the lowest Solar PV tariff rate under competitive bidding in which is rate of Rs. 2.74 was discovered, it is required to revisit the normative capital cost of the solar pv plant so as to provide advantage to consumers of Distribution Licensee.
67	Operation and Maintenance Expenses	
	The O&M Expenses for the first year of the Review Period shall be Rs. 6 lakh/MW.	The O&M expenses shall be as per actual subject to prudence check and the ceiling mentioned herewith whichever is lower
	Chapter 8: Technology-specific parameters for Solar Thermal Power Projects	
70	Capacity Utilisation Factor	

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	The minimum CUF of a Solar Thermal Power Project shall be considered as 23% for the purpose of tariff determination.	The CUF of 23% or actual whichever is higher shall be considered for tariff determination.
71	Operation and Maintenance Expenses	
	The ceiling O&M expenses for the base year of the Review Period shall be Rs. 15 lakh per MW for the purpose of tariff determination	<p>It is suggested to seek necessary data from all the generators and analyse the same. Also it needs to be made mandatory for all renewable generators to provide data to SNA on yearly basis.</p> <p>The O&M expenses shall be as per actual subject to prudence check and the ceiling mentioned herewith whichever is lower.</p>
72	Auxiliary Consumption	
	The ceiling Auxiliary Consumption factor shall be 10% for the purpose of tariff determination.	<p>Solar Thermal Power Projects have less number of auxiliaries compared to coal-fired stations and further there is no milling plant. Also, there is no ash handling plant. Having regard to the above the auxiliary consumption should be specified lower than the coal-fired station.</p> <p>MSEDCL suggest that the auxiliary consumption shall be 5%.</p>
	Additional Point:	
	Development of evacuation infrastructure beyond interconnection point:	<p>It is submitted that, the RE sites, particularly hydro, biomass and co-generation projects are remotely located and no grid network is available in nearby vicinity. The Regulations states that, the licensee shall be responsible for development of evacuation infrastructure beyond the inter-connection point. The interconnection point as defined in Regulation in relation to hydro, biomass, bagasse etc. means the line isolator on the outgoing feeder on the HV side of the generator transformer. The evacuation infrastructure involves the cost of express feeder from an interconnection point to grid. Owing to the remote</p>

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		<p>locations, expenditure required to be incurred on evacuation infrastructure is huge. Further in case of hydro projects, due to smaller installed capacity [Mini Hydro (> 500 kW and < 1 MW)-and micro projects (< 500 kW)], the power generated from these project will be low. It is observed that in some cases cost of evacuation infrastructure is considerably high in comparison with total project cost and power generated from such projects is not economically viable. Hence, there shall be some ceiling or mechanism to determine the economic feasibility of such projects from evacuation infrastructure point of view so as to avoid burdening to the common consumers of MSEDCL with RE infrastructure expenditure. MSEDCL propose that, the maximum evacuation infrastructure per MW to be borne by licensee should be limited to 25 lakh / MW only subject to overall ceiling of INR 1 Crore.</p>
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