

COMMERCIAL CIRCULAR No. 260

Sub: Tariff of Non-conventional Energy (NCE)/ Renewable Energy (RE) Projects for the period from 10th November 2015 to 31st March 2016.

Ref: 1. MERC RE Tariff order dated 25th January 2016 in Case No. 135 of 2015.
2. T.O.L. No. CE/Comm/CP-II/Biomass-Bagasse/Fuel Monitoring/3545 dated 30.01.2016.

The Maharashtra Electricity Regulatory Commission has notified the MERC (Terms and Conditions for determination of Renewable Energy (RE) Tariff) Regulations, 2015, ("the RE Tariff Regulations") on 10 November, 2015. The RE Tariff Regulations specifies that the Review Period for determination of Tariff for RE Projects shall be five years, starting from the date of notification of the RE Tariff Regulations. The first year of the Review Period is FY 2015-16.

Now, the Hon'ble Commission has issued generic RE tariff order on 25th January 2016 in Case No. 135 of 2015 for the renewable energy projects for the first year of the review period i.e FY 2015-16 (**10th November 2015 to 31st March 2016**).

Accordingly, guidelines are issued for implementation of the said order as below:

1. Applicability of Tariff Order:-

This Tariff is applicable for New RE Projects to be commissioned during FY 2015-16 (i.e. from **10th November 2015 to 31st March 2016**).

2. Tariff for Renewable Energy Projects:-

I. WIND:

Tariff for New Wind Energy Projects for the period from 10 November 2015 to 31 March 2016

Particular	Tariff Period	Levelised Tariff from 10 November 2015 to 31 March 2016	Benefits of Tax and Additional Depreciation (if availed)	Net Levelised Tariff, adjusting for Tax and Additional Depreciation Benefit (if availed)
	Years	Rs/kwh	Rs/kwh	Rs/kwh
Wind Zone-1	13	5.71	0.61	5.10
Wind Zone-2	13	5.02	0.53	4.49
Wind Zone-3	13	4.19	0.44	3.75
Wind Zone-4	13	3.92	0.42	3.50

Note: The above Tariff shall be valid for Projects Commissioned during the period from 10 November 2015 to 31 March 2016 and for a Tariff Period of 13 years from the Commercial Operation Date (COD).

II. **SMALL HYDRO:**

Tariff for New RE Projects – Mini/Micro Hydro Projects and other SHPs:

Type of SHP	Tariff Period (Years)	Levelised Tariff from 10 November 2015 to 31 March 2016	Benefit of Accelerated Depreciation (if availed)	Net Levelised Tariff (upon adjusting for accelerated depreciation benefit, if availed)
		(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Mini and Micro Hydro Projects				
500 kW and below	35	6.12	0.43	5.69
Above 500 kW and up to and including 1 MW	35	5.62	0.43	5.19
Other SHPs				
Above 1 MW and up to and including 5 MW	35	5.12	0.43	4.69
Above 5 MW and upto and including 25 MW	13	4.35	0.39	3.96

The above Tariff shall be applicable for Projects commissioned during the period from 10 November, 2015 to 31 March, 2016 and shall be valid for the entire tariff period as specified above.

III. **BIOMASS POWER PROJECTS:**

The Tariff Rate comprises two parts, viz., (i) Fixed Charge component, and (ii) Variable Charge component, and shall be applicable for sale of power by Rankine Cycle-based Projects to Distribution Licensees in Maharashtra during the applicable period of this Order.

Date of Commissioning of Project	Fixed Charge (Rs/kWh)	Variable Charge (Rs/kWh)	Tariff during 10 November, 2015 to 31 March, 2016 (Rs/kWh)	Benefit of Accelerated Depreciation (if availed) (Rs/kWh)	Net Levelised Tariff (upon adjusting for accelerated depreciation benefit, if availed) (Rs/kWh)
During FY 2015-16 (10 November, 2015 to 31 March, 2016)	2.35	5.15	7.50	0.16	7.34
During FY 2015-16 (1 April to 9 November, 2015)	2.27*	5.15	7.42	0.22*	7.20
During FY 2014-15	2.27*	5.15	7.42	0.22*	7.20
During FY 2013-14	2.17#	5.15	7.32	0.21#	7.11
Prior to FY 2013-14	1.70**	5.15	6.85	NA	6.85

* As per Order dated 7 July, 2014 in Case No. 100 of 2014 (extended till 31 Dec 2015)

As per Order dated 22 March, 2013 in Case No. 6 of 2013

**Considering first year of operation as per Order dated 8 August, 2005 in Case Nos. 37 of 2003 and 83 of 2008). The per unit fixed charge component is as under:

Year of operation	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	12 th	13 th
Fixed Charge (Rs/kWh)	1.70	1.67	1.63	1.59	1.54	1.49	1.43	1.37	1.32	1.25	1.18	1.11	1.02

The fixed charge component is linked to year of operation, commencing from date of commissioning of plant and the variable charge component is linked to the financial year.

IV. NON FOSSIL FUEL BASED CO-GENERATION PROJECT (BAGASSE):

Tariff for Non-Fossil Fuel Bagasse based Co-generation Projects from 10 November 2015 to 31 March 2016:

The Tariff Rate comprises two parts, viz., (i) Fixed Charge component, and (ii) Variable Charge component, and shall be applicable for sale of power by Non-Fossil fuel-based Co-Generation Projects to Distribution Licensees in Maharashtra from 10 November, 2015 to 31 March, 2016.

Date of Commissioning	Fixed Charge (Rs/kWh)	Variable Charge (Rs/kWh)	Tariff (Rs/kWh)	Benefit of Accelerated Depreciation (if availed) (Rs/kWh)	Net Levelised Tariff (upon adjusting for accelerated depreciation benefit, if availed) (Rs/kWh)
During FY 2015-16 (10 November, 2015 to 31 March, 2016)	2.52	4.07	6.59	0.21	6.38
During FY 2015-16 (1 April to 9 November, 2015)	2.46*	4.07	6.53	0.28*	6.25
During FY 2014-15	2.46*	4.07	6.53	0.28*	6.25
During FY 2013-14	2.38#	4.07	6.45	0.27#	6.18
Prior to FY 2013-14	2.26**	4.07	6.33	NA	6.33

* As per Order dated 7 July, 2014 in Case No. 100 of 2014 (extended till 31 Dec 2015)

#As per Order dt 22 March, 2013 in Case No. 6 of 2013

** As per Order dt 11 January, 2010 in Case No. 123 of 2008.

V. TARIFF FOR NON-QUALIFYING NON-FOSSIL FUEL-BASED CO-GENERATION PLANTS:

The Tariff Rate for existing non-qualifying non-fossil fuel based co-generation projects is equivalent to the Average Power Purchase Cost (APPC) of MSEDCL for the period of FY 2015-16 from 10 November 2015 to 31 March 2016.

VI. SOLAR PHOTO VOLTAIC PROJECTS:

Levelised tariff for Solar PV Power Projects commissioned between 10 November 2015 to 31 March 2016

Tariff for New Solar PV Power Projects				
Particulars	Tariff Period (Years)	Levelised Tariff	Benefit of Accelerated Depreciation (if availed)	Net Levelised Tariff (upon adjusting for Accelerated Depreciation benefit, if availed)
		(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Solar PV Projects	13	7.08	0.71	6.37

Levelised tariff for Solar Roof-Top PV Projects from 10 November 2015 to 31 March 2016

Particulars	Tariff Period (Years)	Levelised Total Tariff	Benefit of Accelerated Depreciation (if availed)	Net Levelised Tariff (upon adjusting for Accelerated Depreciation benefit, if availed)
		(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Solar Roof-top PV and other small Solar Power Projects	13	7.58	0.71	6.87

VII. SOLAR THERMAL POWER PROJECTS:

Levelised tariff for Solar Thermal Power Projects commissioned between 10 November 2015 and 31 March 2016

Tariff for New Solar Thermal Power Projects				
Particulars	Tariff Period (Years)	Levelised Tariff	Benefit of Accelerated Depreciation (if availed)	Net Levelised Tariff (upon adjusting for Accelerated Depreciation benefit, if availed)
		(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Solar Thermal Power Projects	25	12.05	1.40	10.64

General Conditions for all New RE Projects:

Payment Mechanism:-

- Payment shall be made within 60 days from the date of receipt of Bill/ Invoice in Circle office.
- Late payment surcharge at the rate of 1.25% per month shall be applicable for the payment beyond a period of 60 days from the date of billing.
- For existing RE projects commissioned on or before 31st March 2010, the payment mechanism shall be as per the EPA.

Other Terms and Conditions:

- (i) The MERC has extended the applicability of RE tariff order for FY 14-15 dated 07.07.2014 in Case No. 100 of 2014 upto 09.11.2015. Therefore, the tariff for the period 01.04.2015 till 09.11.2015 is same that of FY 2014-15.
- (ii) The Tariff determined for a particular year shall continue to be applicable for the entire duration of the Tariff period i.e. Agreement Period.
- (iii) The Tariff payable to all the RE generators shall be the Net Levellised Tariff (upon adjusting for accelerated depreciation benefit). If benefit of accelerated depreciation is not availed by the project developer, then the project developer shall submit an Undertaking at the time of execution of EPA that he is not going to avail the said benefit and after the end of financial year shall submit the duly certified certificate from the Chartered Accountant / Copy of Income tax returns confirming that the benefit of accelerated depreciation is not availed. The total Levellised tariff shall be made applicable after receipt of such certificate and the differential amount if any shall be paid in due course of time.
- (iv) Applicability of Reactive Power Penalty :

Till the finalization of suitable action plan with regard to the reactive power penalty the reactive power compensation as stipulated in following paragraphs (in line with the MERC Order dated 29.04.2011) and as may be revised from time to time shall be applicable in the following manner for all the RE Projects (Existing and New):

- a. In case of Wind Energy Projects: Reactive energy charge at the rate of Rs 0.10/RkVAh shall apply for reactive energy consumption upto 10% of the active energy delivered to the grid by the Generators. The reactive energy consumption in excess of 10% of active energy delivered to the grid shall be payable at the rate of Rs 0.25/RkVAh.

Reactive energy charges shall be recovered from the bill of the developer for energy sold to the Utility; in case of self-use/ third party, these charges shall be added to the monthly electricity bill of the developer/ generator.

- b. In case of biomass power projects, non-fossil fuel based co-generation projects and Small Hydro projects, the Project will supply reactive power (RkVAh) equivalent to at least 36% of the active power (kWh) supplied to the grid on a monthly basis. In case of failure to do so, the STU/Licensee shall charge the shortfall at the rate of Rs 0.25/RkVAh, or such other rate as may be stipulated by the Commission from time to time.

(v) USE OF FOSSIL FUEL (For Biomass based IPP projects and Cogeneration Projects):

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

The project developer using fossil fuel more than 15%, shall be ineligible for preferential tariff from the date of default and for duration of the default during financial year when such default occurs. During the period of default the tariff applicable shall be APPC rate of MSEDCL.

As per the MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2015 the responsibility of monitoring compliance of Fossil Fuel by Biomass & Bagasse based Co-generation Projects is on MSEDCL. Also, the data is to be made available in the public domain by publishing it on website and updating it on a quarterly basis.

In this regard, all are requested to ask to all such project holders to mandatorily furnish the monthly fuel procurement and fuel usage statement certified by a Chartered Accountant as per the Annexure B (4nos. of formats) enclosed herewith.

Accordingly, all are requested to ensure monitoring of use of Fossil Fuel to the extent of 15% of the total fuel consumption on an annual basis by Biomass & Bagasse based Co-generation Projects. Further, the monthly report shall be submitted to this Office separately by 10th day of every subsequent month with a copy to State Nodal Agency (MEDA). The soft copy of report shall be sent to email ID: cecomm@mahadiscom.in and eecpmsedcl@gmail.com without fail. Please refer letter no. 3545 dated 30.01.2016 from this office.

- (vi) As per the MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations 2015, Energy Audit of the Co-Generation Project shall be conducted by the Project Entity once a year, during the crushing season, through a Certified Energy Auditor or an Energy Auditor empanelled by State Nodal Agency, and report to be furnished to the Distribution Licensee. The dates of the Audit shall be intimated to the purchasing Distribution Licensee, who shall have the option to depute its representative to participate in the Audit. The Distribution Licensee shall scrutinize such Audit reports so as to verify compliance by the Project.

The Energy Audit is to be conducted during a period of steady load on the Plant during the season. The following readings/ stipulations are mandatory for such Audit:

- (a) Duration of Test – The duration shall be at least one hour of continuous operation.
- (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 nonfossil fuel – bagasse, i.e. (mass balance is to be then calculated in kg/hr).

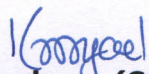
- (c) A sample of input fuel (e.g. bagasse) is to be tested (certified laboratory test report to be included) for its Gross Calorific Value using a bomb calorimeter.
- (d) Temperatures and pressures are to be measured at the different steam consumption points say, 1,2,...n (T1, P1, T2, P2,...Tn, Pn etc.)
- (e) The steam flow rates at 1,2,n (m1, m2,...mn) are to be measured with on line steam flow meters. The flow meters are to be calibrated before the Audit.
- (f) Electrical output at generator terminals is to be recorded in kWh for the test period.
- (g) A schematic of the configuration showing the instrument locations shall be provided.

The Energy Audit shall include computation of the boiler efficiency (based on direct or indirect method), the turbine isentropic efficiency and the auxiliary electricity consumption of the Co-Generation facility.

The Co-Generation Project Entity shall appoint, at its cost, an independent Certified Energy Auditor or an Auditor for conducting Energy Audit as above, from among the panel of Auditors prepared by State Nodal Agency.

The Audit results shall be reported to MERC by the concerned Circle Office annually after the closing the crushing season.

All the field officers are requested to take necessary action accordingly.


Chief Engineer (Commercial)

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