

Maharashtra State Electricity Distribution Co. Ltd.

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Date: 26.02.2016

## CE/Comm/CP/NCE/Tariff/6699

# COMMERCIAL CIRCULAR No. 260

- **Sub**: Tariff of Non-conventional Energy (NCE)/ Renewable Energy (RE) Projects for the period from 10<sup>th</sup> November 2015 to 31<sup>st</sup> March 2016.
- Ref: 1. MERC RE Tariff order dated 25<sup>th</sup> 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 25<sup>th</sup> 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 (10<sup>th</sup> November 2015 to 31<sup>st</sup> 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 **10<sup>th</sup> November 2015 to 31<sup>st</sup> March 2016**).

## 2. Tariff for Renewable Energy Projects:-

#### I. <u>WIND</u>:

		-J		
		Levelised Tariff	Benefits of Tax	Net Levelised Tariff,
	Tariff	from 10 November	and Additional	adjusting for Tax and
Particular	Period	2015 to 31 March	Depreciation (if	Additional Depreciation
		2016	availed)	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

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

**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. <u>SMALL HYDRO</u>:

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

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

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 PORJECTS:

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	Fixed Charge	Variable	Tariff during	Benefit of	Net Levelised Tariff
Commissioning of	(Rs/kWh)	Charge	10	Accelerated	(upon adjusting for
Project		(Rs/kWh)	November,	Depreciation	accelerated
			2015 to 31	(if availed)	depreciation benefit,
			March, 2016	(Rs/kWh)	if availed) (Rs/kWh)
			(Rs/kWh)		
During FY 2015-16	2.35	5.15	7.50	0.16	7.34
(10 November,					
2015 to 31 March,					
2016)					
During FY 2015-16	2.27*	5.15	7.42	0.22*	7.20
(1 April to 9					
November, 2015)					
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 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>	13 <sup>th</sup>
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	Fixed	Variable	Tariff	Benefit of	Net Levelised Tariff
Commissioning	Charge	Charge	(Rs/kWh)	Accelerated	(upon adjusting for
	(Rs/kWh)	(Rs/kWh)		Depreciation	accelerated
				(if availed)	depreciation benefit, if
				(Rs/kWh)	availed) (Rs/kWh)
During FY 2015-16					
(10 November, 2015	2.52	4.07	6.59	0.21	6.38
to 31 March, 2016)					
During FY 2015-16					
(1 April to 9	2.46*	4.07	6.53	0.28*	6.25
November, 2015)					
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	Levelised Tariff	Benefit of	Net Levelised Tariff (upon								
	Period		Accelerated	adjusting for Accelerated								
	(Years)		Depreciation	Depreciation benefit, if								
			(if availed)	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	Levelised Total	Benefit of	Net Levelised Tariff (upon
	Period	Tariff	Accelerated	adjusting for Accelerated
	(Years)		Depreciation (if	Depreciation benefit, if
			availed)	availed)
		(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Solar Roof-top PV and				
other small Solar	13	7.58	0.71	6.87
Power Projects				

## 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	Levelised Tariff	Benefit of	Net Levelised Tariff (upon								
	Period		Accelerated	adjusting for Accelerated								
	(Years)		Depreciation (if	Depreciation benefit, if								
			availed)	availed)								
		(Rs/kWh)	(Rs/kWh)	(Rs/kWh)								
Solar Thermal Power	25	12.05	1.40	10.64								
Projects	20	12.05	1.40	10.04								

## 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 31<sup>st</sup> 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. 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 Cogeneration 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 <u>separately</u> by 10<sup>th</sup> day of every subsequent month with a copy to State Nodal Agency (MEDA). The soft copy of report shall be sent to email ID: <u>cecomm@mahadiscom.in</u> and <u>eecpmsedcl@gmail.com</u> 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 weighment 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)

Copy: As per mailing list.

ANNEXURE B

Format of Monthly Statements to be submitted by Biomass and Co-Generation Project Entities to State Nodal Agency

For FY : Statement Date:

Template 1.1: Monthly Fuel Usage Statement Name of the Project

(Location, District)

% Fossil Fuel Consumption of Total Fuel Consumption current last 12 month (13)((4+7+10) (14)((5+8+11 +13) +14) 15 16	
ossil Fuel sumption Durington urrent //(4+7+10 15 15	
ativ th	
Code: Fossil Fuel (Coal) consumption (in Tonnes) rade During Cumul coal current e last ised month moni	
Project Code: n Fo ativ Grade 12 of coal h used 12 12	
Proj sumption so Cumulativ e last 12 month	
P       Biomass Fuel-3 consumption       (in Tonnes)       (in Tonnes)       Of fuel       During       Of fuel       9     10       9     10       11	
Biomas Type of fuel	
1.0 L	
Biomass Fuel-2       consumption (in Tonnes)       Type       During       Cumula       0     fuel     elast 1       6     7     8       6     7     8	
1 consu Type of fuel	
sumption s) Cumulativ e last 12 month 5	
Ref.No. icity (MW) inssioning Biomass Fuel-1 consumption (in Tonnes) (in Tonne	
y Ref.No. pacity (MW Biomass 3 3 3 3	
SNA / Utility Ref.No. Installed Capacity (MW) Date of Commissioning Biomass F Biomass F ( 1 Pinel July June July August September October November December December September December	March
	11 12

**ANNEXURE B** 

Format of Monthly Statements to be submitted by Biomass and Co-Generation Project Entities to State Nodal Agency

Template 1.2: Monthly Fuel Usage Statement Name of the Project

					3			7	_	<b></b>			_	_		_						_
						% Fossil Fuel Consumption of Total Fuel	Cumulative last 12 month	(13)/(4+7+10 (14)/(5+8+11 +13) +14)	16				d. 14							1		
						% Fossil Fuel Consumption	Consumption current month	(13)/(4+7+10 +13)	15													
							During Cumulativ current e last 12 month month		14													
						Fossil Fuel (Coal) consumption (in Tonnes)	During current month		13													
	For FY :	Statement Date:	Project Code:			Foe	Grade of coal used		12													
		Statemo	Proje			Biomass Fuel-3 consumption (in Tonnes)	During Cumulativ current e last 12 month month		П													
						s Fuel-3 cons (in Tonnes)	During current month		10													
						Biomas	Type of fuel		6													
						Biomass Fuel-2 consumption (in Tonnes)	During Cumulativ current e last 12 month month		8													
						Biomass Fuel-2 umption (in Tor	During current month		7								2.00					
						B	Type of fuel		9													
						Biomass Fuel-1 consumption (in Tonnes)	During Cumulativ current e last 12 month month		5													
						s Fuel-1 cons (in Tonnes)	During current month		4								9					
						Biomass	Type of fuel		ŝ													
m					2	Cummulative Energy Generation (kWh)	during FY till end of the month	Net														
Se oraleme						Cummulat Generati	during FY the n	Gross									0					
y ruel Usa						eneration	(kWh) during month	Net														
I emplate 1.2. Monumy rue Usage Statement	Project	District)	y Ref. No.	Installed Capacity (MW)	unissioning	Energy Generation	(kWh) dur	Gross														
I ambigua I	Name of the Project	(Location, District)	SNA / Utility Ref. No.	Installed Cap	Date of Commissioning		Month		2		April	May	June	July	August	September	October	November	December	January	February	12 March
		-					Sr. No.		-		1 1	2	3	4	5	9	7	8	6	10	11	12

# ANNEXURE B

Monthly Update	Template 2.1: Monthly Fuel Procurement Statement (1/2) tame of the Project	Statement Date: Project Code:			<b>a</b>	alle		Т			_							
	nent Sta				3	Fossile Fuel -4	10											
	nen				cost of F akh)	Biomass Fuel -3	6											
	G				Total Delivered cost of Fuel (in Rs Lakh)	Biomass Fuel -2	00											
	rocur				Total	Biomass Fuel -1	1											
	uel P				P	Fossile Fuel -4	9											
	thiy F				Quantity of Fuel Procured (in tonnes)	Biomass Fuel -3	5	T										
	: Mon	D.	(MM)	buino	ntity of Fuel P (in tonnes)	Biomass Fuel -2	4											
	te 2.1	District ility Ref	apacity	mmissi	Quar	Biomass Fuel -1	ę											
	Template 2.1: I Name of the Project	(Location, District) MEDA / Utility Ref.No.	Installed Capacity (MW)	Date of Commissioning	Month		2	April	May	nc	July	August	September	October	November	December	10 January	11 Fehniary

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Monthly Update

Template 2.2: Monthly Fuel Procurement Statement

Name of the Project (Location, District) SNA / Utility Ref.No. Installed Capacity (MW) Date of Commissioning

For FY : Statement Date: Project Code:

_			Biom	ass Fuel-	Biomass Fuel-1 Procured	ber		Bioma	ss Fuel-	<b>Biomass Fuel-2 Procured</b>	p		Bioma	-lau' ssr	<b>Biomass Fuel-3 Procured</b>	p		Fossile .	Fuel (Co	Fossile Fuel (Coal) Procured	Ired
S.	Month		Storage	Handlin	granspor	thelivere	Cost to Storage Handling ransportatelivered Cost to	Storage	Handling	Storage HandlingTransportatelivered Cost to Storage HandlingTransportatelivered Cost to Storage HandlingTransportatelivered	Delivered	1 Cost to	Storage	Handling	<b>Fransporta</b>	Delivered	Cost to	Storage	Handling	Fransport	Delivere
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-		Rs./Ton	Rs./Ton	Rs./Tor	Rs./Ton Rs./Ton Rs./Ton Rs./Ton H	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton	Rs./Ton
	2	3	4	5	9	7	8	6	10	11	12	13	14	15	16	17	18	19	20	21	22
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A	April																				
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6 S	September																				
0	7 October										-										
8 N	November														-						
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