

*Operational Framework
for
Renewable Purchase Specification (RPS)
in
Maharashtra*

(In line with The MERC RPS Order dated August 16, 2006)



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MAHARASHTRA ENERGY DEVELOPMENT AGENCY, PUNE

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1. Introduction:

In pursuance of the Order dated August 16, 2006 by the Maharashtra Electricity Regulatory Commission (the MERC), in respect of Long Term Development of Renewable Energy Sources and Associated Regulatory (RPS) Framework to be applicable for Distribution Licensees, Captive Consumers and Open Access Consumers, in accordance with Section 86 (1) (e) of the Electricity Act 2003 (EA 2003), “Operational

developed.

The MEDA established by the Government of Maharashtra (GoM) in July 1985 with key objectives of -

- (a) Providing assistance to the Government of India and Government of Maharashtra in renewable (RE) programme implementation,
- (b) Providing energy conservation measures in industrial commercial and domestic sectors and (d) of public awareness through training programmes, publications, exhibitions, seminars electronic/print media.

the development of and energy conservation programs in the State of Maharashtra,

Upon enactment of EA 2003, which outlined several enabling provisions to accelerate the development of renewable energy generation purchase obligation as per Section 86(1) the MERC during April 2006 outlining various issues to be addressed and the key principles to be considered for Renewable Purchase Specification (RPS) for the State of Maharashtra.

Upon extensive deliberations and consultations with various stakeholders and hearing the matter, the MERC issued an Order dated August 16, 2006 in respect of “Long Term Development of Renewable Energy Sources and Associated Regulatory (RPS) Framework” for Distribution Licensees, Open Access Consumers and Captive Consumers, collectively called as “Eligible Person”, in line with the provisions of Section 86(1)(e) read with Section 61(e) and Section 3 of EA 2003. The Order states that “MEDA shall be responsible for administering this RPS framework in the State. While noting the concerns raised by InWEA and Prayas, the Commission directs MEDA to assess feasibility of extending the existing RPO Operating Mechanism to undertake reconciliation and settlement of renewable energy transactions carried out under this RPS framework. As RPS settlement for 2006-07 will have to be carried out at the end of 2006-07, 6 months is available to MEDA for implementation of above ‘RPS Operating framework’. The Commission directs MEDA to put in place ‘RPS Operating Framework’ within stipulated timeframe.”

The MEDA, being the State Nodal Agency for renewable energy sources, was directed to provide requisite information, extend support, coordinate with “Eligible Person” and facilitate finalization of a suitable mechanism to enable operationalisation

of RPS. In this regard, the MEDA engaged **SenegyGlobal Pvt. Ltd. (SG)** to assist the MEDA in development of an appropriate framework for implementation of RPS in the State of Maharashtra.

The consultant came out with the draft on RPS Operational Framework and public/stakeholders comments were invited by the MEDA latest by 11th February 2007. A meeting was held on 12th February 2007 at the MEDA, Pune to discuss the suggestions/comments on the draft framework.

Further, based on the request from the MEDA, the MERC vide its letter No MERC /Case No 6 of 2006/289 dt. 07-02-2007 issued clarificatory letter that RPS order dtd. 16th August 2006 is applicable to only those captive consumers who are grid synchronized. Thereafter, a draft “Operational Framework for Renewable Purchase Specification (RPS) in Maharashtra” was submitted by the MEDA for approval of the MERC vide its letter no. BP-02/RPS/2007-08/5574 dt. 23-07-2007 and finally, observations with some useful suggestions from the MERC were received vide letter No MERC /Case No 6 of 2006/180 dt. 14-01-2008. These suggestions were incorporated; and as directed by the MERC, it was forwarded to the eligible persons for any comments or suggestions requesting reply before 10th March, 2008 failing which it would be construed as automatically accepted by them. No reply was received from any of eligible persons on or before the stipulated time. Therefore, the Operational Framework for RPS is finalized herein under.

3. Key Aspects of RPS Order : -

This section contains details of the key aspects of the the MERC Order dated August 16, 2006 on “Long Term Development of Renewable Energy Source and associated Regulatory (RPS) Framework” herein referred to as RPS Framework Order.

In its Order, it is noted by the MERC that, under Section 86(1)(e) of the Electricity Act - 2003, it is empowered to promote co-generation and generation from renewable sources of energy by providing suitable measures of connectivity with the grid, and the Commission’s jurisdiction covers the State of Maharashtra. Hence, RE purchase from RE resources, located within the State only, shall be considered as a part of fulfillment of RPS obligation of the Distribution Licensee as well as of Open Access and Captive Consumers.

The Key Aspects of RPS Framework Order are as follows:

3.1 Applicability:

The RPS order is applicable to all existing and future electricity distribution Licensees in Maharashtra as well as to Open Access Consumers and Captive Consumers within the state.

3.2 Date of Effectiveness:

The order is effective from 2006-07 to last fiscal year of MYT control period i.e. 2009-10.

3.3 Denomination :

RPS for each Licensee is denominated in terms of percentage of 'gross consumption units' handled by the Licensee for supplying power to consumers within its designated area of supply including quantum of energy supplied to Open Access and Captive consumers by the licensee.

For Open Access/Captive consumers the RPS Percentage is applicable to that quantum which has been procured through OA or through Captive/Self Generation.

3.4 RPS Percentage Specification :

Every "Eligible Person" will have to procure electricity generated from "Eligible" sources at the percentages specified below.

Year	Renewable Purchase Specifications (RPS) *
2006 - 07	3.0%
2007 - 08	4.0%
2008 - 09	5.0%
2009 - 10	6.0%

*Percentage RPS denotes Minimum Quantum of Purchase from 'co-generation and generation from renewable energy sources.'

3.5 Eligible Persons :

The "minimum percentage" as indicated above shall be applicable to all existing and future distribution licensees in Maharashtra as well as to open access and captive consumers.

3.6 Eligible RE Sources :

Energy Generation from all types as approved by Ministry of Non-conventional Energy Sources (now Ministry of New and Renewable Energy i.e. MNRE) and those connected with Grid shall only be considered under RPS framework. As on date, the Commission has issued Orders in case of following technologies and generation from these technologies would qualify under this RPS framework:

- Non-fossil fuel (incl. bagasse) based co-generation projects
- Wind energy sources
- Biomass (based on Rankin cycle technology)

- Small Hydro power projects
- Municipal Solid Waste

Further, the Commission rules that a renewable energy source and the technology shall be included amongst eligible sources for RPS, only after the Commission has approved the technology on the basis of Ministry of Non-conventional Energy Sources (now Ministry of New and Renewable Energy i.e. MNRE) approval.

3.7 RPS Operating Mechanism :

Each “Eligible Person” would be required to meet its ‘RPS Percentage’ by way of

- its own RE generation and Procurement or
- by purchase from RE developers within the state or
- another Licensee, in case such other Licensee has surplus ‘RE generation’ available, in excess of its ‘RPS Percentage’.

Maharashtra Energy Development Agency (the MEDA) is given the responsibility for administrating the RPS framework within the state and to assess feasibility of extending the existing RPO mechanism to undertake reconciliation and settlement of renewable energy transactions carried out under the RPS framework.

3.8 Enforcement :

The Eligible Persons will have to comply with their RPS obligation. Each Eligible Person in Non-compliance with the order is liable to pay to the Agency at the rate of **Rs. 5.00/ kWh** of shortfall in **2007-08**, **Rs. 6.00/kWh** of shortfall in **2008-09** and **Rs. 7.00/ kWh** of shortfall for **2009-10**. During first year of RPS implementation i.e. 2006-07, there shall not be any charge towards non compliance.

The penalty charges thus accrued in a separate account shall be utilized by the Agency to support the research and development efforts, institutional capacity building, training, public awareness related to renewable energy etc. Any non compliance by Eligible Persons against the directives issued under this Order shall be reported by the MEDA to Hon’ble Commission for appropriate action.

4. Operationalising RPS Framework:

To make RPS order operational and to develop a framework for the same, the matter proceeds with the methodology in a sequential manner as below:

- 1) Ascertaining Gross Energy Consumption of “Eligible Persons”.
- 2) Units to be purchased for meeting RPS specification by “Eligible Persons”.
- 3) RPS Settlement - Actual Administration/Authentication/Reconciliation.
- 4) Enforcements

4.1 Gross Energy Consumption of “Eligible Persons”:

RPS order intends to cover actual consumption within the state to work out the RE purchase obligation. Accordingly, separate formulae have been developed for each category of “Eligible Persons” as given below:

4.1.1 For each **distribution licensee**, figure shall be arrived by following formula:

(A) Gross Energy Consumption (GEC) = O + P -S Where,

GEC = Gross Energy Consumption
O = Own Generation
P = Energy Purchased from Generating Company/Licensees/Intermediaries/Trader
S = Sale to other Licensees /Intermediaries /Trader

While ascertaining GEC, following points should be taken care of:

- a. Data for “Own Generation” is the data at Feeder/Sub Station at drawal point of the distribution licensee;
- b. The “Purchase from other Generating Companies / Licensees / Intermediaries / Traders” is the quantum being purchased from licensees/intermediaries/traders from within and outside the State. Corresponding data for such transaction will again be at the drawal point;
- c. “Sale to other Licensees / Intermediaries / Traders” includes the quantum sold to licensees/intermediaries /traders within and outside the State and data for such transaction should be taken at injecting point i.e. the point in the grid at which electricity is fed into or as defined in their contractual agreement;
- d. Gross Energy Consumption is the quantum of electricity consumed within its region by a licensee including distribution losses on part of the licensee;

Table 1 shows an illustration to arrive at the RPS% obligation and accordingly an Excel Worksheet (Form II & Form III) in Annexure has been developed to arrive at such figure.

Table 1 (ILLUSTRATION):

Form II - MONTHLY ENERGY CONSUMPTION			
Sl. No.	Gross Consumption Details		
	Month : March '07		
	Licensee : XYZ		
1	Gross Consumption	Quantum (MUs)	Remarks
O	Own Generation		
	XYZ Generation Plant I	2500	
	XYZ Generation Plant II	3000	
	Sub Total (1)	5500	
P	Purchase from Other Generating Company/Intermediaries		
	ABC Power Generation	1000	
	EFG Power Trading	250	Trader
	DEF Licencee	500	
	Sub Total (2)	1750	
S	Sale to Other Licensees/Intermediaries		
	DFG Licensee	300	
	EFG Power Trading	100	Trader
	Sub Total (3)	400	
GEC	Total For The Month (O+P-S)	6850	
2	RPS Obligation (3% of GEC)	205	

Each distribution Licensee will provide monthly report as per Form II and Form III given in the Annexure.

4.1.2 For each Grid Synchronized **Captive Consumers** (Captive Consumers means the consumer as per definition of The Electricity Rules 2005) the Energy Consumption figure applicable for RPS % specification will be arrived by following formula

(B) Gross Consumption for RPS obligation =

Actual energy consumption of captive consumers to the extent sourced from its captive generating source.

4.1.3 For each **Open Access Consumer**, the figure is arrived by

(C) Gross Consumption for RPS Obligation =

Actual energy consumption of open access consumers to the extent the same is outsourced from its open access generating source (i.e. consumption other than that supplied by concerned distribution licensees to which such OA consumer is connected).

Explanation: Clause 7.1 of the MERC (Distribution Open Access) Regulations, 2005 mandates that "Every Connector shall install or have installed a correct meter in accordance with the regulations made in this behalf by the Authority under Section 55 of the Act:

Provided that every Connector who is either-

- (i) a consumer under Regulation 4.2 with a contract demand in excess of 1 MVA; or
- (ii) a person under Regulation 4.3 with a contract demand in excess of 1 MVA; or
- (iii) a supplier directly connected to the distribution system of the Distribution Licensee under Regulation 4.4

shall install or have installed a Special Energy Meter (SEM):

Provided further that such meters may be procured from the Distribution Licensee or from any supplier of correct meters in accordance with specifications laid down by the Authority in the regulations made in exercise of the powers under Section 55 of the Act:

Provided also that till the regulations are specified by the Authority under Section 55 of the Act, such meters may be procured in accordance with specifications laid down by the Distribution Licensee:

Provided also that where such meter has been procured from a supplier of meters other than the Distribution Licensee, the Distribution Licensee shall be entitled to test the correctness of the meter prior to installation:

Provided also that the meters shall be maintained by the Distribution Licensee over the duration of the Connection Agreement."

Hence, metering will not be a problem for such consumer. The data for above calculation will be taken from SEM installed at the consumer end.

Accordingly an Excel Sheet (Form III & Form IV) in **Annexure** has been developed in line to arrive at the figure.

All Open Access/Captive Consumers are expected to submit these forms on monthly basis.

4.2 Units to be purchased under RPS obligation by “Eligible Persons” from “Eligible

Once the figure of “Gross Energy Consumption” has been arrived, the units to be purchased from RE sources by each “Eligible Persons” for meeting the RPS Obligation can be calculated.

The figure can be arrived by multiplying (A) or (B) or (C) above with RPS percentage specification for each year.

Units to be procured for meeting RPS Obligation =

(Gross Electricity Consumption of respective eligible person) X (% RPS for corresponding financial year)

= (A) or (B) or (C)*(% RPS for corresponding year).

4.3 RPS Settlement - Administration/Authentication/Reconciliation

Every distribution Licensee shall provide the metering data at their drawal point and the data shall be used for determining the energy purchased from Generators.

Energy scheduled by SLDC/RLDC for power flow from/to other intermediaries/traders to a licensee shall be used for the purpose of purchase and sell.

All Open Access Consumers shall submit the actual energy consumption to the extent the same is outsourced from its open access generating source (i.e. consumption other than that supplied by concerned distribution licensees to which such OA consumer is connected).

In case of captive consumers, the RPS percentage will be applicable on the actual energy consumption of such captive consumers to the extent sourced from its captive generating source.

The MEDA being the implementing agency may issue Form I and Form V to each eligible person at the end of each year.

RPS Obligation in MUs shall be obtained from the formats submitted by all the eligible persons and shall be prepared on cumulative monthly basis by the MEDA based on month-to-month information furnished by eligible person. At the end of each fiscal year, the settlement would be carried out.

Accordingly the MEDA shall maintain Form I to arrive at the figure for each eligible person.

4.4 Enforcements:

For purpose of enforcement the MEDA would maintain Form I as below for each of the “Eligible Person” for each year to arrive at Shortfall or Compliance.

Each “Eligible Person” shall submit monthly detail as per Form II and Form III and shall update Form I.

The MEDA shall also maintain Form I for each Eligible Person so that reconciliation and verification of data provided can be done with third party, if required, from time to time.

“Eligible Person” that have a shortfall in meeting their RPS obligation as per the RPS settlement account (Form I), shall be liable to pay to the Agency at the rate of Rs. 5.00 per unit of shortfall in 2007-08 , Rs. 6.00 per unit of shortfall in 2008-09 and Rs. 7.00 per unit of shortfall for 2009-10.

Form V: RPS Non-Compliance Charges:

Eligible Person	Shortfall (MUs)	Penalty in Rs. (@Rs. __ per Unit)

To arrive at penalty charges, at the end of each year the Agency shall publish Form V based on the figure in Form I and circulate it to all eligible person. Penalty charges as applicable has to be deposited to the MEDA account within 15 working days from issue of Form V.

4.5 The MEDA Service Fees:

For implementing, administering and monitoring the framework, the MEDA will levy fees of Rs. 20 Lakhs per annum in total. The amount may be revised with approval of the the MERC . The fees shall be chargeable to all eligible persons in proportion of their Gross Electricity Consumption which shall be paid by the eligible person within 15 days of receipt of demand letter from the MEDA.

Annexure:

Form I: RPS Settlement Account (Yearly)								
NAME : ELIGIBLE PERSON								
Gross Energy Consumption		RPS % Obligation	RPS % Upto Previous Month	RPS % Cumulati ve Upto The Month (1)	RE for the Month	RE Upto Previous Month	RE Cumulati ve Upto The Month (2)	Short if any (1-2)
Fiscal Year (xx- xx)	MUs	MUs	MUs	MUs	MUs	MUs	MUs	MUs
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								
Total								

Form II - MONTHLY ENERGY CONSUMPTION			
Sl. No.	Gross Consumption Details		
	Month Utility		
1	Gross Consumption	Quantum (Mus)	Remarks
A	Own Generation		
	Source 1		
	Source 2		
	...		
	Source N		
	Sub Total (1)		
B	Purchase from Other Generators/Intermediaries		
	Source 1		
	Source 2		
	...		
	Source N		
	Sub Total (2)		
C	Sale to Other Licencee/Intermediaries		
	Lic 1		
	Lic 2		
	..		
	Int. 1		
	Sub Total (3)		
	Total For The Month	(A)+(B)-(C)	
2	RPS % Obligation		

Form III - MONTHLY RE PROCUREMENT**RE Sources Detail****Month:****Eligible Person Name:**

1	Own Generation	Quantum (Mus)	Remarks
	RE 1		
	RE 2		
	RE N		
	Sub Total (1)		
2	Purchase From Other RE Sources/Licensee		
	Source 1		
	Source 2		
	Source N		
	Sub Total (2)		
3	RE Sold to Other Persons		
	Party 1		
	Party 2		
	Sub Total (3)		
	Total RE Procurement	1+2-3	

Form IV - MONTHLY OA/CAPTIVE ENERGY CONSUMPTION			
Month			
OA/Captive Consumer Name			
1	OA/Captive Consumption Detail	Quantum (Mus)	Remarks
	Source Details		
	Source 1		
	Source 2		
	...		
	...		
	Source N		
	Total For The Month		
2	RPS % Obligation		

FORM V - NON COMPLIANCE PENALTY CHARGES -		
Eligible Person	Shortfall (MUs)	Penalty (@___ per Unit) Rs