

Before the
MAHARASHTRA ELECTRICITY REGULATORY COMMISSION
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Case No. 1 of 2004

In the matter of
Determination of Renewable Purchase Obligation (RPO) for Distribution Licensees
in Maharashtra.

Shri P. Subrahmanyam, Chairman

Dr. Pramod Deo, Member

Shri A. Velayutham, Member

1.1 ORDER

Dated: 3rd September, 2004

In their Petition dated 17th March, 2004, the Maharashtra Energy Development Agency (MEDA) have raised the matter of determination of Renewable Portfolio Standard (RPS) for Utilities and Licensees in Maharashtra in the context of Section 86(1)(e) of the Electricity Act (EA), 2003.

2. MEDA's Petition has to be seen in the background of certain other Petitions and Orders. At para 1.10 of its Order dated 24th November, 2003 regarding procurement of wind energy, the Commission had stated that its Order would

"be applicable for energy purchase from wind power projects by the MSEB/Utilities/Licensees in the State of Maharashtra and for wheeling of energy delivered by wind power projects through the grid of



MSEB/Utilities/Licensees for self-use/sale to third party within the State of Maharashtra."

At para 2.4.8, the Commission had also stated that

"every utility is required to consider long term fuel options while developing generating capacity... It is essential to develop other sources of energy."

Further, at para 2.4.9, the Commission had stated that it

"shall specify a percentage of the total consumption of electricity for purchase from renewable sources of energy in the area of each distribution licensee under Section 86(1)(e) of the Electricity Act, 2003."

The Maharashtra State Electricity Board (MSEB), in its Petition dated 5th March, 2004 (Case No. 59 of 2003), had approached the Commission for various clarifications/modifications ostensibly to remove difficulties faced by them in implementing the Order dated 24th November, 2003. MSEB had stated inter alia, as follows:

"In the absence of guidelines for sharing of wind energy purchase obligation among various utilities in Maharashtra, the stipulation of purchasing wind energy at promotional rates by MSEB in the interest of promoting non-conventional sources of energy would put MSEB at a disadvantageous position as compared to its competitors. The Hon'ble Commission may consider allocating the responsibility of purchase of percentage of power from non-conventional energy sources to all the utilities in a fair and equitable manner, in the interest of encouraging such energy and to ensure that a level playing field exists among the utilities... The Petitioner wishes to submit to the Hon'ble Commission to take into account the efforts of MSEB towards encouraging non-conventional sources of power, while allocating the responsibility on a fair and equitable basis to other utilities in the State. The stipulation on the Petitioner may then be insisted upon after the relative parity has been achieved among all the utilities... It may therefore be necessary to make some indicative year-wise allocation to enable MSEB to plan for the development of necessary evacuation facilities in a phased manner."

In its interim Order dated 12th March, 2004 on that Petition, the Commission had stated, while citing para 2.4.9 of its Order regarding wind energy, that this matter is very much on its agenda, and would be determined in due course.

3. In their present Petition dated 17th March, 2004, MEDA had asked the Commission to approve the principles for the design of RPS, and had identified key parameters to be addressed in the context of design of RPS policy. The Petition was accompanied by a detailed Concept Paper outlining various issues to be addressed and principles to be approved in respect of design of RPS policy to be applicable to the Utilities/Licensees in Maharashtra. The specific issues covered in the Concept Paper for which MEDA had sought approval of the Commission include (i) Basis for design of RPS target - 'Energy



based' or 'Capacity based' (ii) Eligibility of Renewable Energy (RE) sources to be covered under RPS (iii) Percentage requirement to be specified as a part of RPS policy (iv) Treatment of generation/sale only from 'New' RE projects, or covering generation/sale from 'Existing' RE projects under the RPS policy (v) Applicability of RPS to entities (Utilities/Licensees etc.) (vi) Operating mechanism for RPS (vii) Enforcement (viii) Administration of RPS (ix) Sunset date for RPS.

4. In setting out the grounds for filing the Petition, MEDA had stated that –

- a) *“MEDA believes that it is essential to have wide deliberations among stakeholders including the licensees, which will be subjected to Renewable Portfolio Standard on the various issues which are critical in design of RPS and have been brought out clearly in enclosed Concept Paper.*
- b) *MEDA also believes that it is essential to seek approval of the Hon'ble Commission to the principles enunciated in the Concept Paper before the detailed design work is undertaken.”*

Accordingly, MEDA prayed to the Commission to specify the principles for design of RPS to be applicable to Licensees in Maharashtra in accordance with S. 86(1)(e) of EA 2003.

5. The Commission held a hearing on 28th April, 2004 in which the Licensees, namely, MSEB, Tata Power Company Limited (TPC), Reliance Energy Limited (REL), Mula Pravara Electric Co-operative Society Ltd (MPECS) and Prayas (as authorized consumer representative) participated. (The Brihanmumbai Electricity Supply and Transport Undertaking (BEST) did not attend the hearing.)

6. During the hearing, reference was made to the national target for capacity addition through renewable energy projects as 10% out of overall capacity addition target of 1,00,000 MW by 2012. The Commission observed that, in accordance with its previous Orders in respect of renewable energy sources such as wind energy, it was committed to review the issue upon achievement of specified capacity addition or in 2007, whichever is earlier. The Commission also observed that MEDA's Petition did not specifically seek approval for any percentage specification.

7. MEDA clarified that the limited purpose of the Petition was to make the renewable energy purchase obligation applicable to all licensees in Maharashtra, to specify such purchase obligation of the Licensees in terms of a percentage of their energy consumption in line with S. 86(1)(e) of EA 2003, and to outline principles for design of RPS which could be finalized in consultation with stake-holders and approval of the Commission before proposing target percentages for each Licensee.

8. Further, MEDA submitted that RPS policy as a long-term regulatory mechanism would facilitate development of renewable energy projects by providing regulatory



certainty, and would also provide regulatory clarity to Licensees while specifying their purchase obligation for renewable energy.

9. The Commission observed that its immediate concern was the sharing/allocation of the requirement to purchase renewable energy amongst the various Utilities/Licensees. Further, any long-term arrangement for renewable purchase obligation would need to address the existing contractual commitments and the Orders already passed by the Commission in respect of renewable energy and other such projects. The present Petition has not sought approval for a specific percentage in respect of renewable energy purchase obligation for each Licensee. In view of this, the Commission asked MEDA to submit a proposal to address this specific issue through a supplementary affidavit.

10. MEDA proposed that, as a general principle the Licensees should purchase renewable energy in such a manner that total renewable energy generation in the State and purchase obligation thereof is shared on a pro-rata basis of consumption by Licensees in their area of supply. MEDA also clarified that the percentage of renewable energy purchase obligation (RPO) should be linked to energy input, being 'consumption' as distinct from 'sale' of Licensee in its area. Further, the target RPO can be devised based on 'gross energy input' of all Utilities/Licensees in the State and 'total RE generation' from intra-State RE sources. MEDA also submitted that, while determining the target RPO, inter-utility sale, RE generation by developers meant for captive consumption, and third party sale to consumers should be excluded.

11. Prayas submitted that, while it concurs with Commission's views and the RPO mechanism suggested by MEDA, there is also a need for a long-term approach after taking into consideration requisite inputs from the Utilities. Prayas suggested that MEDA should initiate a debate by way of a Discussion Paper on the subject.

12. MSEB expressed their concern regarding the existing long-term power purchase agreements with RE developers, and submitted that the same should be taken into consideration while determining the RPO target. It was clarified that uniform RPO targets for Licensees in the State would be set, and these targets would be based on overall RE generation within the State and total consumption of all Licensees in the State. Further, the RPO mechanism would be devised in such a way that excess/under recovery amongst the Licensees would be settled in financial terms. They would thereby share the obligation. It was suggested that detailed operating procedures would need to be developed for energy accounting, financial accounting and recording of energy exchange amongst the Licensees based on capacity contracted / energy purchase agreements executed by them.

13. MSEB further submitted that the proposed mechanism should address the issue of sharing of cost of power evacuation facilities and additional cost of system strengthening required to be undertaken by MSEB. MSEB proposed that the same should be shared by other Licensees as well. It was clarified that MSEB or the State Transmission Utility as may be notified as per the requirement under EA 2003 would be responsible for providing grid connectivity as well as for providing open access. The cost associated with grid network and system strengthening would form a part of the Annual Revenue Requirement of the Transmission Utility and be recoverable in the form of transmission



charges. Further, it was pointed out that the Commission has already set out in its previous Orders the responsibility of costs of evacuation arrangements upto interconnection points.

14. TPC agreed with the RPO mechanism suggested by MEDA, and submitted that the respective Licensees should purchase the entire energy from the RE sources within their own area. TPC further submitted that the target RPO should be based on RE generation and consumption of the Licensee and not on the generation capacity owned by it. However, if generation capacity is contracted by the Licensee, credit should be given.

15. REL submitted that the target RPO should be distributed among the Licensees on a pro-rata basis in proportion to the installed generation capacity of each. It was clarified that, as per Section 86(1)(e) of EA 2003, the RPO target has to be specified as a percentage of total consumption of electricity in the area of the distribution Licensee in terms of energy units rather than installed capacity.

16. Considering the deliberations at the hearing, the Commission directed MEDA to file a supplementary affidavit to propose a basic framework for 'Renewable Purchase Obligation (RPO)' to be applicable to Licensees in Maharashtra in line with the discussions, the detailed mechanism for operationalisation of which could be finalized in consultation among the Licensees.

17. Accordingly, MEDA have filed a supplementary affidavit dated 17th May, 2004 outlining a basic framework for 'Renewable Purchase Obligation (RPO)' to be applicable to the Utilities/Licensees in Maharashtra. The Petition covers the principles in respect of denomination and basis of RPO, terms and conditions for applicability to Utilities/Licensees, date of effect of the RPO, specification of target RPO for each Licensee, eligibility of RE sources under RPO, and the conditions for operationalisation of RPO in Maharashtra.

18. Keeping in view the background set out at para. 2 above, the Commission asked MSEB to furnish information and sample workings for Renewable Purchase Obligations for Licensees taking into consideration energy units for 2003-04 in line with the supplementary affidavit filed by MEDA. In their reply dated 9th August, 2004, MSEB have presented sample workings of RPO for 2003-04 under three conditions, viz (i) RE generation excluding generation for self consumption and third party sale purposes (ii) RE generation including generation for self consumption purposes and (iii) RE generation including generation for self consumption and third party sale purposes, subject to validation of energy units for 2003-04 in respect of other Licensees.

19. In this context, a further hearing was held on 30th August, 2004 during which MEDA summarised the proposal contained in their supplementary affidavit through a presentation. MEDA also noted that the sample workings furnished by MSEB for 2003-04 are not strictly in accordance with the RPO proposal since it is based on 'sale of energy units of Licensees', instead of 'gross energy inputs of Licensees' as proposed by MEDA. MEDA have argued that, as per Section 86(1)(e), the percentage RPO has to be linked to 'consumption' by the Licensee rather than 'consumption' by its consumer.



20. MSEB agreed to the proposal to link the RPO percentage specification to 'gross input energy units' as proposed by MEDA. However, they expressed concern that MSEB have to incur substantial development costs to provide evacuation facilities, which also need to be shared apart from sharing of the RE purchases.

21. While consenting to the proposed RPO mechanism in principle, REL submitted that the RPO arrangement should be simple in operation. They also stated that the following matters need clarification with regard to operationalisation of the RPO arrangement:

- Which Licensee should enter into contract for purchase of energy from a RE developer?
- Can RE purchase by REL from RE resources generated outside the State be considered to fulfill their RPO?
- REL would prefer to have a specific target (short term/long term) in absolute terms rather than sharing of RPO based on year-end adjustments depending on actual RE generation and gross energy input of all Licensees in the State during the fiscal year. REL requested the Commission to specify such RPO target in absolute terms.

22. With regard to the various issues raised at the hearing, the Commission notes that, in its various Orders in respect of wind energy, non-fossil fuel based co-generation projects, etc., it has issued directives in respect of evacuation arrangements and sharing of their costs. Further, as per Section 172 of EA 2003, MSEB, in their capacity as State Transmission Utility (STU) in accordance with the transitional provisions (or their successor entity, if and when notified as STU as per Section 39 of EA 2003 by GOM) would be obliged to provide grid connectivity, evacuation facilities and transmission access to generation projects. The recovery of costs associated with transmission infrastructure would be the subject matter of an ARR Petition from a Transmission Licensee, and not of the Petition under consideration.

23. Moreover, under EA 2003, generation (including RE generation) is a de-licensed activity. Further, RE developers and Licensees are free to enter into agreement for purchase/sale of RE energy subject to and in accordance with the Orders already issued by the Commission for various renewable energy sources. While this would be the primary responsibility of the concerned distribution Licensee in whose distribution area the renewable energy source or RE project is situated, it does not bar any other distribution Licensee from contracting for purchase with a RE developer who is not located in its area provided that the RE source is located/harnessed within the State.

24. The Commission also notes that, under Section 86(1)(e) of EA 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, any RE purchase from RE resources located outside the State will not be considered as a part of fulfillment of RPO of the distribution Licensee.



25. The Commission believes that, in principle, the RPO obligation should be non-discriminatory, i.e. it should not place any distribution Licensee at a competitive advantage or disadvantage vis-à-vis any other. Therefore, the 'Percentage Obligation' under the RPO mechanism shall be the same and applicable uniformly to all the distribution Licensees within the State. Thus, there is no need to specify any separate percentage in absolute terms at this stage. Further, it is envisaged that the RPO mechanism would entail excess/under recovery to be settled by way of 'financial settlement' rather than 'energy settlement' amongst the Licensees. It is expected that Licensees shall mutually agree the details of operationalisation of such RPO mechanism and furnish details to the Commission.

26. In the above background, and taking into consideration MEDA's supplementary affidavit and the deliberations at the hearings, the Commission hereby stipulates the renewable energy purchase obligation to be applicable to all electricity distribution Licensees in Maharashtra as follows:

(1) Applicability of RPO

The RPO mechanism shall be applicable to all existing and future electricity distribution Licensees in Maharashtra, including successor entity(ies) of MSEB as and when they are constituted.

(2) Date of effect of RPO

The RPO mechanism shall be applicable from the financial year 2004-05, and in subsequent years till it is revised or revoked.

(3) Denomination and Basis for RPO

The RPO for each Licensee shall be denominated in terms of percentage of 'gross input energy units' handled by each Licensee for supplying power to the retail consumers in its designated area within Maharashtra. For the purpose of determination of RPO target for the Licensee, the 'gross input energy units' handled by that Licensee shall exclude any inter-se sale/consumption of electricity amongst the Licensees.

(4) Target Percentage Specification under RPO for each Licensee

The 'Percentage RPO' for each Licensee shall be the same as the 'Percentage RPO' for the State as a whole. The 'Percentage RPO' (as defined in the following clauses) for the State for a financial year shall be the ratio of 'total RE generation' in the State to the 'sum of gross input energy units' for all Licensees for that financial year, excluding any inter-se sale/consumption of electricity amongst the Licensees.



(5) Eligibility of RE sources /RE Generation to be covered under RPO

For the purposes of determination of 'Percentage RPO', generation from all types of renewable energy sources such as wind energy, bagasse, solar energy or such other sources as approved by the Ministry of Non-Conventional Energy Sources, Govt. of India as constituting renewable energy, shall be considered. However, for the above purposes, only 'RE generation' from grid-connected RE generation projects shall be considered, and RE generation from 'off-grid' projects or stand-alone systems shall not be considered.

In addition, for the purpose of determination of 'Percentage RPO', the 'RE Generation' shall exclude RE generation by developers meant for self-consumption and third-party sale purposes to the Licensee's consumers. Further, the above 'RE generation' shall also exclude generation by small hydel power projects set up by the Irrigation Department, Govt. of Maharashtra for self-consumption purposes.

(6) Operationalising RPO

As the actual 'RE generation' for the State as well as 'Gross input energy units' for each Licensee for a financial year would be known only by the end of the year, the Licensees shall undertake purchase/generation from RE sources on a monthly basis to meet their target 'Percentage RPO' for the year, based on their 'Percentage RPO' for the previous year. The year-end adjustments shall be undertaken in the last month of the financial year, depending on actual 'RE generation' and 'gross input energy units' for that year.

The Commission also directs that the Licensee shall meet its 'Percentage RPO' by way of own RE generation or by purchase from RE developer or from another Licensees, in case that Licensee has surplus 'RE generation' available in excess of its 'Percentage RPO'. In case a Licensee meets its 'Percentage RPO' by a combination of the above, the quantum of energy corresponding to self-generation and purchase from RE developers would be first set off against its overall RPO, and the balance will be treated as purchase from other Licensee(s). Further, it is directed that the Licensee purchasing RE generation from another Licensee shall pay the contributing Licensee at a rate determined on the basis of the weighted average cost of RE purchase of the contributing Licensee for that financial year.

27. The Commission directs further that the Licensees should together work out detailed modalities, including accounting of energy, and formulate a mechanism for operationalising RPO, by consensus. MEDA, being the State Nodal Agency for



renewable energy sources, should provide requisite information, extend support, co-ordinate with the Licensees and facilitate early finalization of a suitable mechanism to enable operationalisation of RPO. Accordingly, the Licensees should finalise and submit, through MEDA, details of the RPO operating scheme as agreed, together with the RPO target for each Licensee for 2004-05 and the details of the arrangements made by each Licensee to meet its target RPO for the current financial year, within two months from the date of this Order for the Commission's information and record.

28. Further, taking note of the need expressed by Prayas at the first hearing, MEDA are directed to prepare an Approach Paper on the long-term development of renewable sources and associated enabling regulatory framework for Maharashtra, and submit it to the Commission after eliciting public comment and debate.

29. MEDA's Petition is disposed with the above observations and directions. This Order also disposes of one of the matters raised by MSEB in their separate Petition in Case No. 59 of 2003, and referred to at para. 2 above.

Sd/-

(Dr. Pramod Deo)
Member

Sd/-

(A. Velayutham)
Member

Sd/-

(P. Subrahmanyam)
Chairman, MERC

Sd/-

(A.M. Khan)
Secretary, MERC

